PŴER NIWCLEAR
HORIZON
NUCLEAR POWER

WYLFA NEWYDD

ENERGY WORKING FOR BRITAIN

Wylfa Newydd Project
Pre-Application Consultation
Stage Two

STAGE 2

Main Consultation Document

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1 Introduction

Overview

1.1 This Main Consultation Document has been produced by Horizon Nuclear Power Wylfa Limited (Horizon) to support the Stage Two Pre-Application Consultation about Horizon's proposed new nuclear power station and associated development and facilities on Anglesey, North Wales, known as the Wylfa Newydd Project.

1.2 This document presents Horizon's latest proposals for the Wylfa Newydd Project and provides a description of how they have evolved since the Stage One Pre-Application Consultation in September 2014, and the Project Update consultation in January 2016 (January Project Update), including how the feedback has been taken into account. The document invites comments in response to the latest proposals and highlights particular areas where feedback from consultees is sought to influence the further development of the Wylfa Newydd Project. It contains a series of specific consultation questions designed to assist with this consultation. It incorporates some Preliminary Environmental Information (PEI) to assist consultees in formulating their responses, supported by cross-references to where further environmental information can be found in the PEI Report and online technical resources. The information provided outlines the types of effects that different components of the Wylfa Newydd Project may have on local communities and the environment. It includes an overview of the preferred proposals and options being considered. A summary of this document, called the Consultation Overview Document, is also available as part of the consultation materials (in both Welsh and English).

1.3 This introductory chapter provides details of the approach to consultation and the areas of influence where comments and feedback are particularly invited. The chapter sets out the planning consenting route for the various components of the Wylfa Newydd Project and provides an indicative timeline for the submission of the Development Consent Order (DCO) application and various applications for Associated Development, which are explained later in this chapter. The chapter also sets out in detail the structure of the Main Consultation Document to assist in navigating to each section of interest.

About Horizon Nuclear Power Wylfa Limited

1.4 Horizon is a UK energy company developing a new generation of nuclear power stations to help meet the UK's need for stable and sustainable low carbon energy. Building on the core values of safety, courage, integrity, collaboration and inspiration, Horizon's vision is as follows:

"*We believe there is a compelling requirement for new nuclear power in the UK to help tackle the vital and complex challenge of delivering a sustainable energy future. Horizon will deliver secure, affordable, low carbon energy for present and future generations.*"

1.5 Horizon is part of the Horizon Nuclear Power Limited group of companies, a subsidiary of Hitachi, Ltd., and has its headquarters in Gloucestershire and a site office on Anglesey.

1.6 Horizon is currently planning to develop a new nuclear power station, the 'Wylfa Newydd Power Station', on land west of Cemaes on Anglesey, representing an investment of around £10 billion. Nuclear power can play a vital role in meeting the challenge of

maintaining secure energy supplies for the UK, whilst also tackling the global threat of climate change by meeting greenhouse gas emissions reduction targets. Horizon's new nuclear power station on Anglesey would deliver approximately 2,700 megawatts (MW) of electricity, enough power for around five million homes.

1.7 The construction of the Wylfa Newydd Power Station will be delivered by Menter Newydd (meaning 'new venture' in the Welsh language). Menter Newydd is a joint venture of Hitachi Nuclear Energy Europe Ltd, Bechtel Management Company Ltd, and JGC Corporation (UK) Ltd, to be overseen by Horizon. Combined, the Menter Newydd partners have been involved in the delivery of more than 170 nuclear power stations, as well as a huge array of complex infrastructure mega-projects. Hitachi Nuclear Energy Europe draws on Hitachi's 50 year history of Boiling Water Reactor deployment, including four Advanced Boiling Water Reactors (ABWRs), the technology that will be built at Wylfa Newydd, whilst Bechtel last year completed construction of the first new nuclear power station authorised to operate in the USA this century, at Watts Bar in Tennessee. Hitachi-GE will continue to provide the UK ABWR technology, under sub-contract to Menter Newydd.

Planning Policy Context Overview

1.8 Onshore electricity generating stations (including nuclear) are defined as a Nationally Significant Infrastructure Project (NSIP) under the Planning Act 2008, if they exceed 50 megawatts capacity. The Wylfa Newydd Power Station will include two UK ABWRs, with a combined electrical output of approximately 2,700MW. NSIPs must be consented by a DCO and Horizon is therefore required to apply for a DCO for the construction and operation of the Wylfa Newydd Power Station with that application being determined by the relevant Secretary of State.

1.9 The principal policy framework for the Wylfa Newydd Power Station comprises the Overarching National Policy Statement for Energy EN-1, 2011 (NPS EN-1) and the National Policy Statement for Nuclear Power Generation EN-6, 2011 (NPS EN-6). NPS EN-1 sets out the overarching policy for nationally significant energy infrastructure and describes the urgent need for new (particularly low carbon) electricity generation in the UK, within 10 to 15 years of its publication. New nuclear power is considered to be one of the key elements of the Government's strategy for moving towards a decarbonised, diversified electricity sector by 2050, to provide security of supply on a large scale.

1.10 The principle of the need for Wylfa Newydd Power Station is established under NPS EN-1 and by NPS EN-6, which identify the Wylfa Newydd Power Station Site (the "Wylfa NPS Site") as potentially suitable for the deployment of a new nuclear power station, based on the conclusions of the UK Government's Strategic Siting Assessment (SSA). The principle of the development itself is supported by UK, Welsh and local planning policy. It is also supported as a priority development by the Isle of Anglesey County Council (IACC) and Gwynedd Council. It is highlighted as a priority development by national policy including *Energy Wales: A Low Carbon Transition March 2012*, and is supported by the emerging *Anglesey and Gwynedd Joint Local Development Plan 2011-2026 (JLDP)* and the *New Nuclear Build at Wylfa: Supplementary Planning Guidance*, adopted by the Isle of Anglesey County Council (IACC) in July 2014.

1.11 The NPSs establish a number of policies against which New Nuclear will be assessed. Alongside the generic impacts identified by NPS EN-1, EN-6 sets out a list of "Nuclear

Impacts" that are considered particularly relevant to the development of new nuclear generating stations and identifies a series of "Flags for Local Consideration" to be considered by the decision-maker at the project level. Annex C of NPS EN-6 provides site assessments for each of the potentially suitable sites for new nuclear power stations, including Wylfa Newydd, and this identifies specific issues for further consideration. Further detail is provided in chapter 3 of this document, which confirms the corresponding assessments carried out as part of the preliminary environmental information to support the proposals.

1.12 The application for a DCO for the Wylfa Newydd Power Station will be determined in accordance with NPS EN-1 and EN-6 unless the adverse impacts of doing so would outweigh the benefits.

1.13 In addition to the Wylfa Newydd Power Station encompassed by the DCO, the Project includes elements that will require a number of additional licences and environmental permits to meet the requirements of other legislation relevant to the development and operation of a nuclear power station. These will include a marine licence to be applied for under the Marine and Coastal Access Act 2009 for the proposed marine works associated with the Project. Horizon also may need to obtain a Harbour Empowerment Order (HEO) from the Marine Management Organisation (MMO) to enable it to control security, access and navigation in the marine areas of the Wylfa Newydd Development Area.

1.14 The Wylfa Newydd Project includes a number of Associated Developments that cannot currently be included in the DCO application and would require separate applications under the Town and Country Planning Act 1990 (TCPA). These would be determined by the IACC as the relevant local planning authority. The local planning policies are the principal determining policies for Associated Development applications, as well as being important and relevant considerations for the DCO.

1.15 The Wales Bill introduced in June 2016 by the Wales Office would allow for Associated Development related to electricity generation NSIPs in Wales of over 350MW to be consented by a DCO. Horizon may therefore have the ability to consent some of its Associated Development in its DCO. To preserve this opportunity Horizon intends to consult on its Associated Development in the same way as is required under the Planning Act 2008 for the development of the Power Station.

1.16 On 23rd June 2016 the United Kingdom public voted in a referendum to leave the European Union. The UK Government has confirmed that it intends to negotiate the UK's exit from the European Union under Article 50 of the Lisbon Treaty. Article 50 provides for exit within 2 years of a formal notification (at the date of writing such a notification as not been made) or such period as may be extended by unanimous agreement. In practice therefore the UK's exit (commonly known as "Brexit") is unlikely to be before the latter part of 2018.

1.17 A large part of the UK's environmental legislation is derived from European law. It is not clear what the status of this legislation will be after Brexit. In the interim, legislation will continue to be enforceable. For the purposes of this second stage consultation we have assumed that all relevant legislation will be in force at the time the DCO application is determined. This assumption is consistent with the Brexit timetable outlined above. In particular the environmental impact assessment methodology will follow the

requirements of the EIA Directives, including Directive 2014/52/EU which is due to be transposed into UK legislation in 2017.

1.18 The planning policy context relevant to the Wylfa Newydd Power Station and the proposed Associated Development, is set out in chapter 3 of this document and the Planning Statement Framework document.

The Wylfa Newydd Project

1.19 The Wylfa Newydd Project as a whole includes:

- **The Wylfa Newydd Power Station** - the proposed new nuclear power station including two UK Advanced Boiling Water Reactors (UK ABWR) to be supplied by Hitachi-GE Nuclear Energy, Ltd (Hitachi-GE), associated plant and supporting structures and features to be constructed and operated on Anglesey; and
- **Associated Development**[1] - development to support the delivery and operation of the Wylfa Newydd Power Station, for example highways improvements along the A5025, a Park and Ride facility for construction workers, a Logistics Centre, Temporary Workers' Accommodation and a Visitor and Media Reception Centre.

1.20 The Wylfa Newydd Project requires the development of complex infrastructure that will generate electricity at the Power Station and export it to the National Grid electricity transmission network. Additionally, the surrounding land and marine areas would have an important role during construction and operation of the Power Station, supporting essential construction facilities, temporary and permanent infrastructure and enabling the creation of an appropriate landscaped setting for the Power Station.

1.21 The creation of the Wylfa Newydd Power Station would build on the long-established history of safe nuclear power generation on Anglesey, creating significant employment opportunities and injecting many million pounds per year into the economies of Anglesey and North Wales. Horizon is committed to working with existing training and service providers, including Coleg Menai and Bangor University, to maximise the opportunities available to residents across North Wales both in preparation and for the lifetime of the Wylfa Newydd Power Station. In the long term, the Wylfa Newydd Project would also contribute to the IACC's aspiration to create 'a world-renowned centre of excellence for the production, demonstration and servicing of low carbon energy.[2]

1.22 The Wylfa Newydd Project is expected to create up to 850 permanent jobs at the Wylfa Newydd Power Station on Anglesey and up to 1,000 additional temporary jobs during periodic outages for maintenance, presenting opportunities to draw on the experienced regional skills base in nuclear power generation and servicing. Several thousand construction workers would be required during the 10 year construction programme with numbers estimated to reach between 8,000 and 10,000 shift workers during peak periods, plus operational and facilities management workers employed over the same

[1] Section 115(2) of the Planning Act 2008 gives the term 'associated development' a narrow and specific meaning in Wales. Horizon recognises this; however, uses the term with the wider meaning set out in this paragraph.

[2] Anglesey Energy Island – *Energy Island: Potential Opportunities and Economic Impacts – Executive Summary, May 2010*. Energy Island: Vision. http://www.anglesey.gov.uk/Journals/public/attachments/126/Energy_Island_Exec_Summary_english.pdf

peak period. Full details are provided in chapter 9 - Workforce Accommodation Strategy. There would be considerable additional opportunities generated for supporting businesses such as catering, facilities management and logistics. Horizon is already actively engaged with potential supply chain businesses as a result of the Hitachi and Horizon online business registration systems and series of activities and events that have been hosted and attended over the past three years (see chapter 8 for further details).

Stage Two Pre-Application Consultation materials

1.23 The Stage Two Pre-Application Consultation materials comprise a series of non-technical and technical documents, as well as online technical resources on specific specialist topics, as set out below. Horizon has prepared the non-technical documents to be more accessible to the public, but expects the technical documents and online technical resources to be of particular assistance to local authorities and other statutory bodies being consulted.

Non-technical documents

Consultation Overview Document

1.24 This document provides a non-technical overview and summary of the Wylfa Newydd Project in its entirety. It includes all of the consultation questions being asked as part of the Stage Two Pre-Application Consultation and provides details of the ways in which communities can engage in the consultation process and lodge their responses. The overview document is available in both Welsh and English.

Preliminary Environmental Information Non-Technical Summary

1.25 This document summarises the potential effects of the Wylfa Newydd Project in relation to a number of environmental topic areas, reports on predicted environmental effects that have been identified through the Environmental Impact Assessment (EIA) process to date and includes Horizon's emerging proposals for reducing effects through mitigation measures. The material draws on the more detailed information presented in the PEI Report described below. The non-technical summary document is available in both Welsh and English.

Summary of Project Update January 2016 Consultation Feedback

1.26 This document provides a summary of the responses received to the January Project Update Consultation and includes the informal non-statutory consultation and engagement which is ongoing as part of the Project evolution. The non-technical summary document is available in both Welsh and English.

Welsh Language Impact Assessment Non-Technical Summary

1.27 This document provides a non-technical summary of the key findings of the Welsh Language Impact Assessment (WLIA) Interim Report described below, setting out the likely significant effects of the Wylfa Newydd Project on Welsh language and culture of the communities of Anglesey, including our emerging proposals for mitigation and enhancement measures. The non-technical summary document is available in both Welsh and English.

Health Impact Assessment Non-Technical Summary

1.28 This document provides a non-technical summary of the assessment currently being undertaken of the links between health and well-being and the predicted effects that may arise as a result of the Wylfa Newydd Project. Details of the progress made on the assessment are set out in the Health Impact Assessment (HIA) Interim Report described below. The non-technical summary is available in both Welsh and English.

Technical documents

Main Consultation Document

This Document is the Main Consultation Document

1.29 As outlined above, the Main Consultation Document presents Horizon's proposals for the Wylfa Newydd Project and provides a description of how they have evolved since the previous consultations, how previous feedback has been considered and provides a series of questions inviting responses on the latest proposals. The document also briefly sets out relevant preliminary environmental information, to assist consultees in formulating their responses. The document is available in English only.

Preliminary Environmental Information Report

1.30 The PEI Report sets out the preliminary environmental information relating to the Wylfa Newydd Project as part of the EIA process. It summarises the predicted effects that could arise from the Wylfa Newydd Project. It also provides initial suggestions for mitigation measures where the potential for significant adverse effects has been identified. The document is arranged into volumes and encompasses consideration of the Wylfa Newydd Power Station proposals, the emerging proposals and options for Associated Development and the potential cumulative impacts that may arise.

1.31 The purpose of the PEI Report is to provide sufficient preliminary environmental information to enable members of the public, statutory consultees and other stakeholders to develop an informed view of the Wylfa Newydd Project as part of the pre-application process. The report is available in English only.

Consultation Summary Report

1.32 This report outlines the approach that Horizon followed for the Stage One Pre-Application Consultation on the Wylfa Newydd Project, including the January Project Update. The report provides information on the formal statutory consultation responses received to the Stage One Pre-Application Consultation (as required under Section 47 of the Planning Act 2008), as well as the responses to the January Project Update, and the informal non-statutory consultation and engagement that has been undertaken to date. The consultation responses are reported in the format of key themes and also collated into responses from the main communities on Anglesey. Horizon's responses to the feedback received from consultation will be provided in the Consultation Report which will incorporate the consultation responses to the Stage Two Pre-Application Consultation and ongoing stakeholder engagement, to be submitted with the DCO application. This report is available in English only.

Welsh Language Impact Assessment Interim Report

1.33 This interim report describes the findings of specialist assessment work undertaken to date in relation to the predicted effects of the Wylfa Newydd Project on Welsh language

and culture. It describes the existing baseline conditions, focusing on demographics, linguistics and other factors that influence use of the Welsh language. It also provides emerging proposals for mitigation and enhancement measures, with objectives linked to addressing potentially significant adverse effects identified in the assessment. The report provides an update on progress since the Stage One Pre-Application Consultation and January Project Update, which has been influenced by responses received and input from technical stakeholders who participate in the independently chaired Welsh Language Steering Group. The report is available in both Welsh and English.

Health Impact Assessment Interim Report

1.34 This interim report provides a progress update on the specialist assessment work Horizon has commissioned, in order to examine the links between health and well-being and the potential effects that may arise as a result of the Wylfa Newydd Project. The report sets out the current status of the assessment work, drawing on outputs of modelling work and findings documented in relevant parts of the PEI Report, together with the feedback from discussions with a range of technical stakeholders including the Betsi Cadwaladr University Health Board, IACC, the Emergency Planning Consultative Committee (EPCC)[3], Public Health Wales (and England), Natural Resources Wales (NRW) and the Office for Nuclear Regulation (ONR). An update on progress since the Stage One Pre-Application Consultation and January Project Update is also provided. The report is available in English only.

Habitats Regulations Assessment Interim Report

1.35 This interim report sets out the progress of the work undertaken to date relating to the assessment of the potential effects of the Wylfa Newydd Project on European Designated Sites. The purpose of the Interim Report is to explain how Horizon has approached the assessment to date and the stage in the process that has been reached (including progress since Stage One Pre-Application Consultation and the January Project Update); to identify the preliminary findings of that work; and to set out what further work remains to be undertaken. The report is available in English only.

Equality Impact Assessment Interim Report

1.36 This report presents an interim assessment of the predicted effects of the Wylfa Newydd Project on people with protected characteristics (as defined by the Equality Act 2010). It sets out the methodology for assessment, summarises the characteristics of the local population, identifies potential equality effects and sets out the next steps for the assessment. It examines the significant residual effects identified by the impact assessments in the PEI Report and considers whether these could have a disproportionate or differential effect on groups of people sharing a protected characteristic. Whilst Horizon is not a public body and is not bound by the public sector equality duty (defined under the Equality Act 2010) to undertake an Equality Impact Assessment, we recognise that an overarching assessment of potential equality effects arising from major infrastructure projects is both good practice and of assistance in the identification of additional measures to avoid adverse equality effects, or to improve inclusion. The report is available in English only.

[3] The Emergency Planning Consultative Committee (EPCC), is made up of Isle of Anglesey County Council, Emergency Services, Local Health Service and other organisations such as ONR and NRW.

Online technical resources

1.37 Horizon has undertaken a considerable amount of survey and data analysis work to inform the preparation of the PEI Report and associated interim reports, including the mitigation and enhancement strategies that are introduced in this Main Consultation Document. This work is documented in a series of technical notes and specialist topic reports.

1.38 The technical notes and specialist topic reports have been uploaded to the Horizon consultation website as online technical resources, providing background reference material. They may be of particular interest to technical consultees and people with a specialist area of interest in relation to the Wylfa Newydd Project. They comprise the documents set out in the following sections.

Associated Development Site Selection Report

1.39 This report presents the approach to site selection and the criteria applied to assess the suitability of alternative site options for the Off-Site Associated Development required to support the construction phase of the Wylfa Newydd Project. The findings have been considered in selecting preferred and alternative sites for public consultation. The selection process is ongoing in so far as it draws on additional or revised information and evidence as it becomes available, for example as a result of consultation feedback, ongoing land acquisition, the development of the construction worker profile, and negotiation with third party accommodation providers. The Associated Development considered by this report comprises a Park and Ride facility for construction workers, a Logistics Centre and Off-Site Temporary Workers' Accommodation. The report is available in English only.

Off-Site Power Station Facilities Site Selection Report

1.40 This report assesses the site options for the Off-Site Power Station Facilities that are required to support the operation of the Wylfa Newydd Power Station. The facilities comprise the proposed Alternative Emergency Control Centre (AECC), the Environmental Survey Laboratory (ESL) and Mobile Emergency Equipment Garage (MEEG). These facilities, although located Off-Site, will form part of the NSIP to be consented by the Development Consent Order (DCO), as they are integral parts of the Wylfa Newydd Power Station. This report outlines the need and operational requirements for each of the facilities together with the process adopted to assess the potential alternative sites, before recommending the preferred sites for public consultation and further design development. The report is available in English only.

Construction Workers' Accommodation Strategy

1.41 The Construction Workers' Accommodation Strategy is summarised in chapter 9 of this Main Consultation Document and outlines Horizon's strategy to provide accommodation for the workers during the 10 year construction period. While we expect approximately 2,500 (25%) of peak construction workforce to be drawn from Anglesey and neighbouring mainland communities, many workers will not already live in and around Anglesey and will therefore require temporary accommodation for the period of their work on the site. The strategy seeks to ensure the safe and efficient construction of the Power Station whilst also minimising any adverse effects on existing communities and businesses caused by the workers residing on Anglesey. It therefore seeks a balanced approach that ensures the Project can attract a productive workforce, whilst avoiding excess

demand being placed on existing provision and minimising other disruption to local communities. The strategy is based on information drawn from the workforce profile and transport assumptions, and a summary of our proposals for an online Accommodation Management Portal. The report is available in English only.

Traffic and Transport Technical Note

1.42 This technical note has been produced to summarise the transport work that has been undertaken since the Stage One Pre-Application Consultation in 2014 and the January Project Update, detailing the current transport proposals, the key issues remaining and how these will be considered further before the DCO application and Associated Development planning applications are made. The note is available in English only.

Planning Statement Framework

1.43 The Planning Statement Framework sets out the national, regional and local planning policy context for the Wylfa Newydd Project, as well as the marine licence and HEO requirements for the proposed marine works. The document will form a central resource for the planning assessment and EIA of Horizon's proposals for the Wylfa Newydd Project, to ensure a consistent approach to policy selection and alignment. The Planning Statement Framework will form the basis of the Planning Statements to be prepared for the DCO application and the applications for planning permission for the Associated Development under the TCPA. The document is available in English only.

Draft Masterplans

1.44 The draft masterplan documents listed below provide Horizon's current thinking and design rationale for the Power Station Site, Associated Development sites and Off-Site Power Station Facilities. They set out a description of the context for each facility and how the preferred schemes have developed to date to take account of this context. The documents are available in English only.

- Main Power Station Site;
- Off-Site Power Station Facilities; and
- Associated Development:
  - Park and Ride Facility and Logistics Centre; and
  - Temporary Workers' Accommodation.

Accessing the Stage Two Pre-Application Consultation materials

1.45 The Stage Two Pre-Application Consultation materials are available to download from Horizon's website at www.horizonnuclearpower.com/consultation. With the exception of the online technical resources and Consultation Summary Report, the Stage Two Pre-Application Consultation materials are also available in hard copy form at all libraries across Anglesey as well as the Anglesey Business Centre in Llangefni and some libraries and public buildings on the mainland in Conwy and Gwynedd.

1.46 The online technical resources are available on Horizon's website as specialist background reference material only. However, if you are not an internet user and require

access to particular documentation then please contact Horizon on 0800 954 9516 to discuss your needs.

1.47 There will be a comments form available at all Horizon events and from the website, as well as an option to register and comment electronically. Both the hard copy and electronic response routes allow consultees to respond to Horizon's consultation questions. Comments may be made in Welsh or English.

1.48 The non-technical documents, which are the Consultation Overview Document and the Non-Technical Summaries, as well as the Welsh Language Impact Assessment, are available in Welsh and English. These documents are also available on request in both large text and audio versions and it may be possible to provide them in other languages on request. The technical documents are currently provided in English only, primarily due to the considerable length of some of the documents and the difficulty of translating the technical terms into the Welsh language, particularly within the PEI Report.

Approach to consultation

The need for consultation

1.49 The Planning Act 2008 requires the developer of an NSIP, such as a nuclear generating station, to undertake pre-application consultation before making an application for a DCO. Horizon has adopted a two-stage formal consultation process.

1.50 Horizon undertook its first stage of formal pre-application consultation (Stage One Pre-Application Consultation) from September to December 2014 and a Project Update consultation from January to March 2016. This document is part of Horizon's Stage Two Pre-Application Consultation and is one of a suite of reports that together form the complete consultation package.

1.51 This consultation is proposed as the second, statutory, stage of our consultation for the Wylfa Newydd Project, and the final stage of consultation on our Project as a whole. Following this, there may be a need to hold supplementary consultations if there are significant material changes proposed to the Project, which may arise from the Stage Two consultation responses, new or amended legislation or policy guidance, or substantial changes to the Power Station design, Associated Development or Off-Site Power Station Facilities. Once we have collated and considered the feedback from the Stage Two Pre-Application Consultation and incorporated any final changes to the proposals, we will proceed with the preparation and submission of the TCPA applications for the Associated Document, the DCO application and the marine licence application.

Purpose of this document

1.52 The main purpose of this document is to invite consultees to comment on Horizon's proposals for the Wylfa Newydd Project. Comprehensive consultation is a central principle of the Planning Act 2008 with pre-application consultation being a key requirement for applications for DCOs:

- Section 42 of the Planning Act 2008 sets out details of who must be consulted, including local authorities, other statutory bodies, and persons having an interest in the land to be developed; and

- under section 47 of the Planning Act 2008, a developer intending to submit an application for a DCO must prepare a Statement of Community Consultation (SOCC) setting out how it intends to consult the local community. Horizon consulted widely on the content of its SOCC, which was published in September 2014 and updated in January 2016, and carried out its Stage One Pre-Application Consultation and subsequent engagement in accordance with the document.

1.53 This Stage Two Pre-Application Consultation conforms to the commitments established in Horizon's SOCC. It is a formal pre-application consultation in terms of satisfying both section 42 and section 47 of the Planning Act 2008. It also meets with the objectives of Horizon's Maximising Inclusion Strategy which applies to all stages of consultation.

1.54 In addition to the obligations under the Planning Act 2008 described above, Horizon must follow the consultation requirements of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (the EIA Regulations), which includes the requirement to provide PEI.

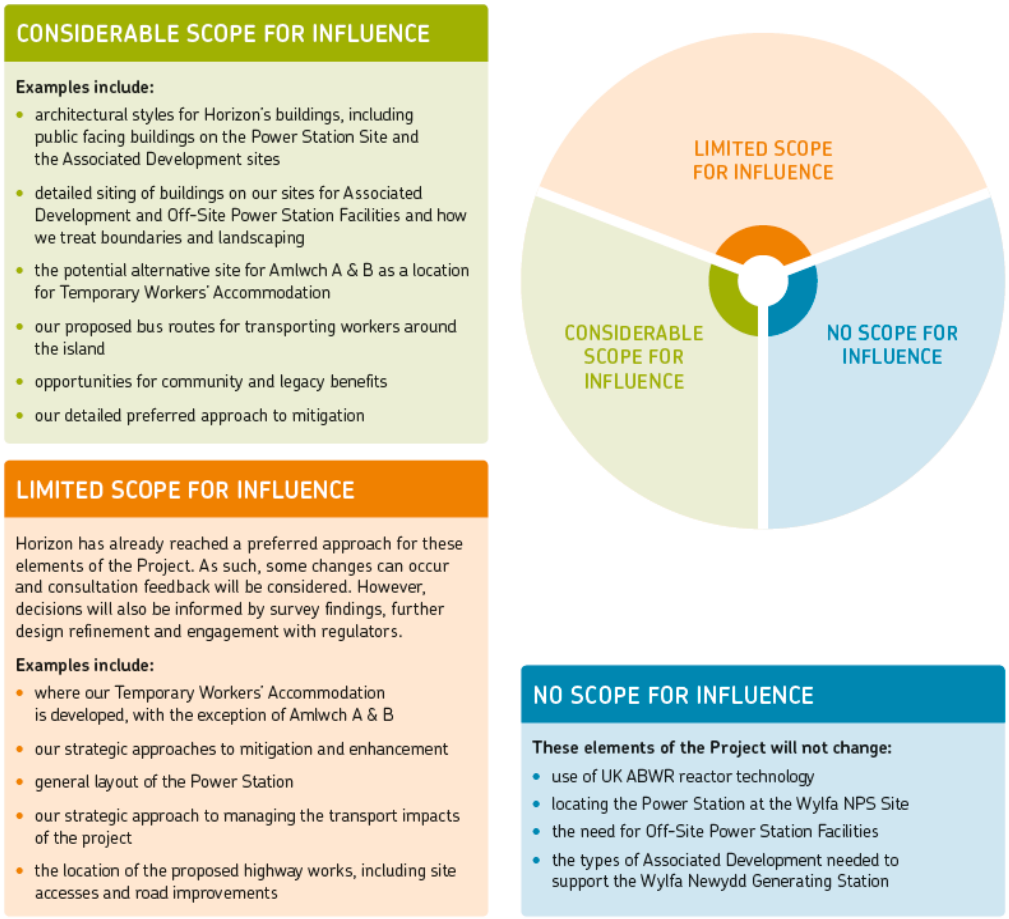
1.55 Ultimately, in accordance with section 37 of the Planning Act 2008, Horizon will prepare a Consultation Report for submission as part of DCO application to give details of what has been done in compliance with Sections 42, 47 and 48, as well as a summary of the responses received at each stage of consultation and the account taken of those responses in the further design development of the Wylfa Newydd Project.

Understanding this Document

1.56 Since the Stage One Pre-Application Consultation, Horizon has developed the Wylfa Newydd Project further, progressing certain elements to a preferred option. A number of strategies have been developed in principle in the past 18 months, for example, those relating to waste management, construction workers' accommodation, transport, jobs and skills, education and community benefits. This work has been further informed by the feedback received in response to the January Project Update consultation, which has developed our thinking on matters such as the workforce profile and construction worker accommodation, the landform design of the Power Station landscape proposals and workforce transport solutions. This Stage Two Pre-Application Consultation is used to present the strategic approaches and, where available, the proposed measures that emerge from them.

1.57 As explained at the Stage One Pre-Application Consultation, the degree to which consultation responses may influence design development and refinement will vary. The scope for influencing different elements of the Wylfa Newydd Project is shown in figure 1.1 and provided in detail in table 1.3.

Figure 1.1 Scope for influencing the Wylfa Newydd Project



1.58 There are three broad types of description of the Wylfa Newydd Project contained in this document. These are linked to the scope for influence, as shown in table 1.1 and provided in table 1.3.

1.59 This document contains a number of devices designed to help readers identify the parts that are thought to be of most interest, for instance:

Throughout this document, the particular areas on which your feedback is sought are highlighted in purple-coloured text contained within a purple box, like this. The boxes suggest which question to write your comments in.

Consultation questions are contained in purple boxes like this one. Each question is named so that you can find it on the comments form.

1.60 Horizon welcomes participation in this consultation. This is a key opportunity to express your opinions on the parts of the Wylfa Newydd Project that matter most to you. Horizon

is most interested to hear consultee views on the options presented, together with the detailed approach to mitigation, because these are the areas where there is greatest scope to further influence Horizon's proposals for the Wylfa Newydd Project. However, consultees are also welcome to make comments in relation to matters that are largely decided. In providing consultation responses, it will be particularly useful for Horizon to understand the reasons for any preferences you may have and comments about particular strengths or areas of the proposals that you consider need further development.

1.61 The status of the various elements of the Wylfa Newydd Project (in terms of scope for influence) is explained further in table 1.3 at the end of this chapter. This consultation is intended to ensure that the local community, key stakeholders, technical and prescribed consultees have a chance to comment and influence the Wylfa Newydd Project proposals, building on the dialogue established through the Stage One Pre-Application Consultation and the January Project Update. Horizon would greatly appreciate hearing your views. Responses to this consultation need to be submitted to us by 25th October 2016.

The approach to consultation and engagement

1.62 The Wylfa Newydd Project is Horizon's commitment to Anglesey, bringing significant investment to the Island and helping to secure its long-term economic future. In this endeavour, Horizon recognises the responsibility to protect and enhance the unique characteristics of this part of Wales, which include its language, landscape and established communities. As part of this commitment to the communities of Anglesey, Horizon has developed a series of communication routes to share information and provide people with the opportunity to ask questions and share their views and concerns relating to the Wylfa Newydd Project. These activities form part of the commitment to consultation that is integral to Horizon's engagement with Anglesey communities, which will continue throughout construction and extend into the operational and decommissioning stages: they are set out in table 1.1.

Table 1.1 Summary of Horizon's regular programmed consultation and engagement activities

Activity	Format and purpose
Open Surgery	A monthly series of community engagement events where local people can drop in to discuss issues with members of Horizon's site-based team.
Project Liaison Group	A forum, held three or four times a year, where community representatives receive an update on the Wylfa Newydd Project and have the opportunity to ask questions of senior members of the Horizon team.
Community Update	A newsletter, distributed two or three a year, to every household on Anglesey containing Wylfa Newydd Project updates and a range of news from Horizon.
Neighbour News	A newsletter update to our nearest neighbours (including community councils) living within 1km of the site boundary informing them of upcoming work.

Activity	Format and purpose
Charitable Donations, Community Support and Sponsorship Policy	An ongoing fund to support community projects across Anglesey, Gwynedd and Conwy, part of Horizon's approach to sustainability.
Anglesey Show	A key, annual Island event taking place over two days each August. Horizon has a significant presence with a marquee located near the main show rings. Representatives from Horizon, in partnership with Menter Newydd, are on hand to raise awareness of the Wylfa Newydd Project and answer questions from members of the community.

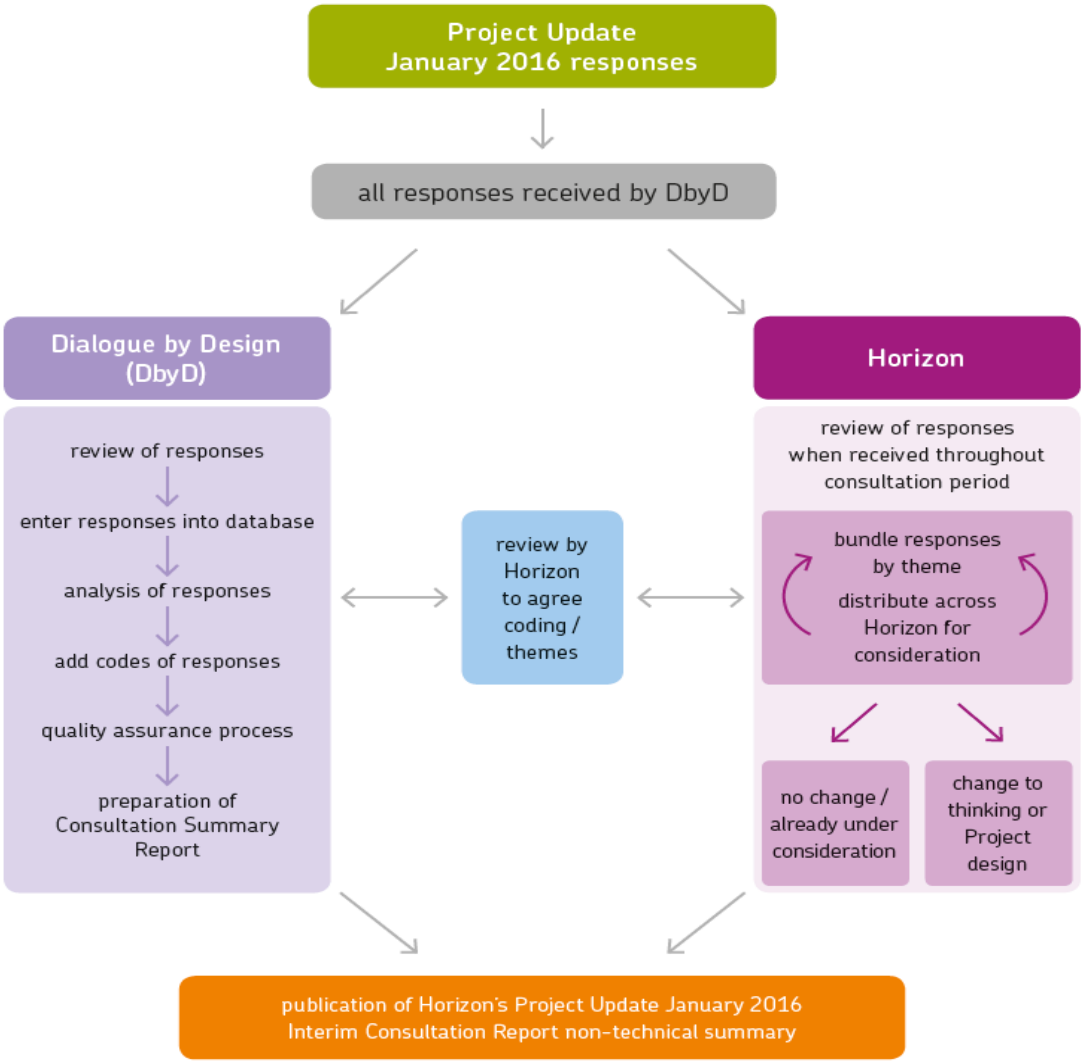
Stage One Pre-Application Consultation

1.63 Horizon's Stage One Pre-Application Consultation period concluded on 8 December 2014. Horizon employed an independent specialist consultation firm called Dialogue by Design (DbD) to collate, record, document and analyse the consultation responses received in respect of the Stage One Pre-Application Consultation – this process is described within the Consultation Summary Report and summarised in figure 1.2.

1.64 Since the consultation closed, Horizon has completed an analysis of the consultation responses to understand common themes, areas of consensus amongst respondents and identify aspects of the Wylfa Newydd Project where there were conflicting or opposing views.

1.65 The results of this analysis are set out in Horizon's Consultation Summary Report. This has been published on Horizon's website.

Figure 1.2 Flow diagram illustrating the analysis process for Stage One Pre-Application



Process by which consultation responses are processed and considered

Consultation feedback

1.66 Horizon has used the analysis of consultation feedback to develop the Wylfa Newydd Project further. As part of this development work, Horizon has entered into more detailed engagement on specific components of the Wylfa Newydd Project with IACC officers, other technical consultees and stakeholders representing a range of organisations including the Welsh Government, Gwynedd Council, Natural Resources Wales (NRW), the Environment Agency (EA) and the Office for Nuclear Regulation (ONR). Stakeholder meetings have been used as a forum for discussing feedback, presenting emerging options and obtaining comment on proposals to allow Horizon to progress and refine the Wylfa Newydd Project in an informed way.

1.67 The way in which this consultation and engagement has combined with the formal findings of the Stage One Pre-Application Consultation to influence the evolution of the Wylfa Newydd Project as a whole is described in chapter 4 of this document.

July 2015 engagement events

1.68 In July 2015, Anglesey residents received a special edition newsletter providing an update on emerging proposals for Associated Development, including a map of Anglesey highlighting the general locations where options were being considered. The newsletter invited residents to attend staffed events of their choice from a selection of five locations at which a 3D interactive visualisation of the A5025 Off-line Highway Improvements was available, together with aerial photographs overlain with the highway improvements, an indicative timeline for construction of the Power Station and illustrative layouts for Associated Development and Off-Site Power Station Facilities.

1.69 Feedback was captured at events through a choice of completing a brief online survey form provided on i-pads or paper comments form. A summary of the findings, insofar as they relate to the proposed highway improvements and the individual Associated Development sites and Off-Site Power Station Facilities is provided in later chapters of this document, particularly chapters 11 to 18.

January 2016 consultation and engagement events

1.70 In recognition that the Wylfa Newydd Project had developed significantly since the Stage One Pre-Application Consultation in 2014, Horizon presented a Project Update consultation from January to March 2016, to provide an opportunity for residents and organisations to review the latest plans and proposals. The primary consultation document was the Wylfa Newydd Project Update, which built on the information presented in 2014, and explained how the Project had progressed in 2015. The consultation materials also included a series of Fact Sheets to summarise Horizon's strategic approaches and information on topics of particular interest (e.g. jobs and skills, Welsh language and construction worker accommodation), and a Summary of the Stage One Pre-Application Consultation Feedback. All the consultation materials were printed in Welsh and English, and published on Horizon's website.

1.71 A total of 11 public exhibition events were hosted across Anglesey and in Conwy town and Caernarfon, where display boards and maps of the various Project components were available to view and discuss with representatives from Horizon. A 3D visual presentation of the proposals was also presented to enable visitors to examine each element from the perspective of their own home to gauge potential effects. The consultation materials and comments forms were available to take away, provided in both Welsh and English. Feedback was also encouraged via online survey forms provided on i-pads at the events. Project Update information was publicised by press releases, adverts, the Community Update newsletter (distributed to every household on Anglesey in January 2016), Horizon's Twitter account and the consultation website.

1.72 More than 450 people attended the exhibitions and 88 i-pad surveys were completed at lunchtime drop-in sessions held in secondary schools. A total of 105 written feedback responses were received to the Project Update document and Fact Sheets, with all comments recorded and collated by DbD. The key themes drawn from the consultation feedback formed the basis of discussion for decision-making panels at Horizon, and have

further informed strategy and Project development ahead of this Stage Two Pre-Application Consultation.

May 2016 consultation on Site Preparation and Clearance and On-line Highway Improvements

1.73 Public consultation was held from 16 May to 31 May 2016, to provide details of the draft proposals for the Site Preparation and Clearance works planned for the Wylfa Newydd Development Area, including the On-line A5025 Highway Improvements (involving road widening and resurfacing works). Information was also provided on the emerging health impact assessment. The consultation was well publicised, with newspaper advertisements in the Holyhead Mail, Daily Post and the Anglesey Mail, the display of posters in various locations across Anglesey, press releases posted on the Wylfa Newydd Project website and postcards distributed to Anglesey households. Horizon also used its Twitter account to promote the consultation.

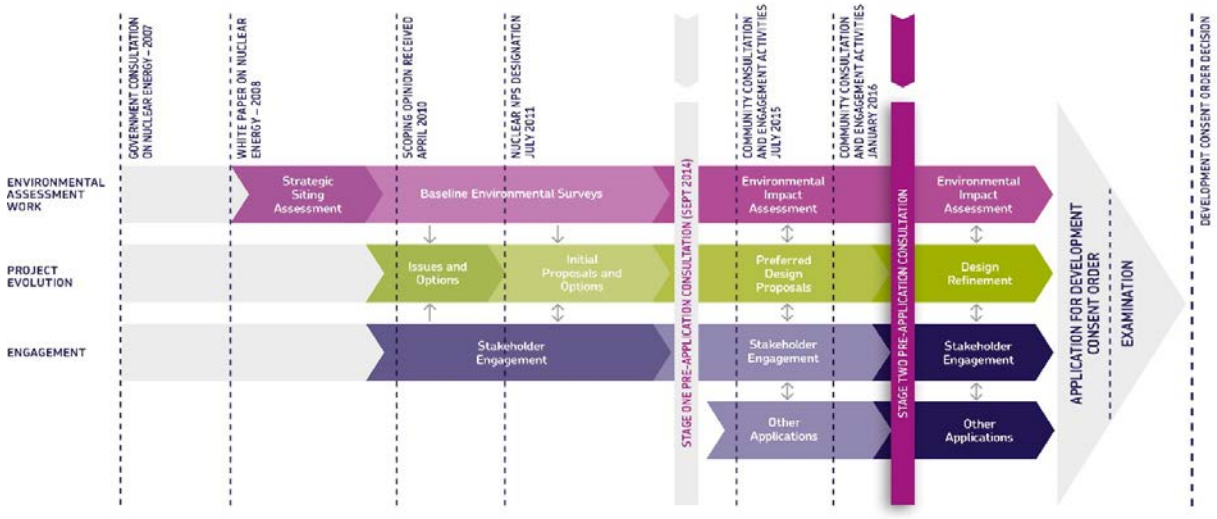
1.74 Horizon held five public exhibitions to present the information in Cemaes, Llanfachraeth, Wylfa Sports and Social Club at Wylfa Power Station, Valley and Tregele, with a further stakeholder preview at Cemaes. The proposals were presented on exhibition panels, large scale maps and a 3D visual presentation. The events gave the public and stakeholders the opportunity to ask questions of Horizon staff and give their views. Exhibitions were held on weekdays and weekends and across a range of times to allow for the greatest number of people to attend. Over 300 people attended the public exhibitions over a five-day period. Feedback forms (in both Welsh and English) were available to complete at the exhibitions, or via Freepost, or online via the Horizon consultation website, or via email.

1.75 The feedback received will help to inform the preparation of the planning applications for the Site Preparation and Clearance works (to be submitted in October 2016), and the On-line A5025 highway improvements (to be submitted in late 2016/early 2017).

Continuing consultation and engagement

1.76 Figure 1.3 provides an outline of the work Horizon has undertaken since April 2010 and also demonstrates Horizon's commitment to continue using feedback from consultation and engagement to develop the Wylfa Newydd Project. This Stage Two Pre-Application Consultation is shown, together with Horizon's intention to undertake further consultation and engagement prior to making the application for a DCO. Further information about this is contained in chapter 22, which describes the next steps in evolving the Wylfa Newydd Project.

Figure 1.3 Evolution of the Wylfa Newydd Project



Consenting Strategy for the Wylfa Newydd Project

1.77 The development of the Wylfa Newydd Project will require a number of applications to be made under different legislation to different regulators. As set out previously, a new nuclear generating station is a NSIP under the Planning Act 2008. The developer must therefore obtain a DCO, which is granted by the Secretary of State.

1.78 With reference to the requirements of the Planning Act 2008, as they currently apply to NSIPs in Wales, individual planning applications would need to be prepared for the proposed Associated Development to be submitted under the TCPA. However this approach may change if the Wales Bill introduced by the Wales Office in June 2016 is enacted in time to meet the Project consenting programme. This would enable Horizon to include some of the proposed Associated Development as part of the DCO application. Further details regarding the Wales Bill are included in chapter 3 of this document.

1.79 Notwithstanding this potential change in legislation, Horizon intends to undertake the pre-application consultation process required under the Planning Act 2008 for NSIPs for each of the proposed Associated Developments, to ensure either of the consenting approaches is achievable.

1.80 In addition to the DCO for the Wylfa Newydd Power Station, Horizon will also require marine licences (together with a potential HEO), environmental permits and regulatory licences, including a Nuclear Site Licence (NSL). Planning permissions will be needed for Associated Development within the Wylfa Newydd Project. Further information on the regulatory context is provided in chapter 22 of this document.

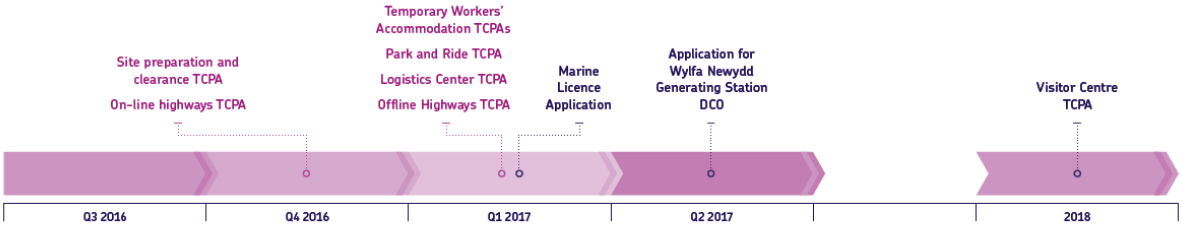
1.81 Table 1.2 provides a summary of the currently proposed planning consent route for each of the components of the Wylfa Newydd Project that would be promoted by Horizon. This is followed by figure 1.4, which presents an indicative timeline for the submission of applications to obtain these consents, recognising that some may be submitted by third parties in support of the Wylfa Newydd Project.

Table 1.2 Outline of Wylfa Newydd Project consenting route by component

Project component	Consenting route
Enabling Works: • Site preparation and clearance works at Power Station Site and environs (see chapter 5), including: - short term temporary footpath closures and diversions as required; and - interim drainage works.	Application for planning permission under the TCPA Temporary footpath and road closures by Traffic Regulation Orders
Replacement Alternative Emergency Control Centre and District Survey Laboratory for Existing Power Station (on behalf of Magnox Limited)	Application for planning permission under the TCPA (planning permission was issued in June 2016)
Wylfa Newydd Power Station: • Power Station land-based elements, including Main Plant, Common Plant and supporting buildings (see chapter 6); • Power Station construction and landscaping, including: - closure of Cemlyn Road; - drainage proposals; and - permanent footpath works (see chapters 6 and 7) • Power Station Access Road (see chapter 6); • Off-Site Power Station Facilities (see chapter 18): - Alternative Emergency Control Centre; - Environmental Survey Laboratory; and - Mobile Emergency Equipment Garage. • Temporary Workers' Accommodation adjacent to the Power Station Site, in the Wylfa Newydd Development Area, for construction workers undertaking essential tasks (see chapter 6).	Application for DCO for the Wylfa Newydd Power Station, in accordance with the Planning Act 2008
Power Station marine elements as part of the Wylfa Newydd Power Station: • Cooling Water System, breakwaters and Marine Off-Loading Facility, including dredging (see chapter 6).	Application for marine licences in relation to works in the marine environment in accordance with the Marine and Coastal Access Act 2009 (including HEO if required)
Nanner Road highway improvements (see chapter 11)	Permitted Development by IACC as Highway Authority under the Town and Country Planning (General Permitted Development) Order 1995
A5025 On-line Highway Improvements (see chapter 11)	Application for planning permission under the TCPA
A5025 Off-line Highway Improvements (see chapter 11):	Application for planning permission under the TCPA

Project component	Consenting route
• Valley junction; • Llanfachraeth; • Llanfaethlu; and • Cefn Coch.	
Purpose built Temporary Construction Workers' Accommodation (Off-Site) (see chapters 14, 16 and 17), with the exception of Kingsland and Cae Glas which was issued with planning permission in April 2016 (see chapter 15)	Applications for planning permission under the TCPA
Park and Ride facilities for construction workers (see chapter 12)	Application for planning permission under the TCPA
Logistics Centre (see chapter 13)	Application for planning permission under the TCPA
Visitor Centre (see chapter 8)	Application for planning permission under the TCPA

Figure 1.4 Indicative consenting timeline



1.82 Chapter 22 of this document (Next Steps and Ongoing Engagement) includes an overview of the DCO process as established in the Planning Act 2008, including the role of the Local Impact Report, which is prepared by local authorities affected by a NSIP and submitted to the Planning Inspectorate for the Examining Authority to consider as part of its evaluation of a DCO application.

1.83 The Planning Statement Framework also incorporates further information relating to the TCPA application process, marine licensing, HEO, other permits and consents such as Traffic Regulation Orders, permitted development arrangements under the General Permitted Development Order 1995 and a brief summary of EIA legislation. The document concludes with sections about the nuclear regulatory context, other legislative requirements, including environmental permitting and protected species licensing, and reference to the connection from the Power Station to the National Grid electricity transmission network.

How this document is structured

1.84 The general content of this document is set out in table 1.3, which includes signposting to the areas for comment and particular matters for consultation in each of the relevant chapters. These are the areas where consultation feedback would be most likely to influence the ongoing refinement of the Wylfa Newydd Project.

1.85 For some matters for consultation, we have identified a specific questions for consultees to answer. For other areas, we have suggested that you respond by answering our question asking for general comments on the Project, but we have suggested areas that those responding may particularly wish to focus on.

Table 1.3 Document structure and areas for comment with scope to influence the Wylfa Newydd Project

Chapter	Content	Areas for comment (Limited Scope for Influence)	Matters for consultation (Considerable Scope for Influence)
1 - Introduction	Provides a brief introduction to the Wylfa Newydd Project and the proposed Consenting Strategy, along with the purpose of this document and scope for influencing the proposals.	Not applicable.	Not applicable.
2 - Project Vision and Objectives	Presents the Project vision, principles and objectives and how these will be delivered in the context of the Project proposals.	Comments invited on Horizon's vision, principles and objectives for the Wylfa Newydd Project and alignment of the preferred proposals with our Project Vision.	Not applicable.
3 - Planning Policy Context	Provides details of the legislative and planning policy context against which the proposals will be considered.	Not applicable.	Have we identified the correct policies against which our preferred proposals will be considered?
4 - Project Overview	Contains a brief overview of the key components of the Wylfa Newydd Project, with reference to location mapping; summarises the main ways in which the Wylfa Newydd Project has altered since the Stage One Pre-Application Consultation and January 2016 Project Update; and provides an outline of the principal benefits of the Project.	Not applicable.	At this stage, the components of our Project are relatively fixed, however, we are still considering some strategic options, as follows: - whether to develop at Amlwch Sites A and B, to the west and east of the B5111, as an alternative site for Temporary Workers' Accommodation; - whether to develop the Llanrhyddlad School site, as an alternative site to Cefn Coch for the AECC/ESL

Chapter	Content	Areas for comment (Limited Scope for Influence)	Matters for consultation (Considerable Scope for Influence)
5 - Building and operating the Wylfa Newydd Power Station	Provides an overview of the construction programme for the Wylfa Newydd Project, the proposed enabling works, key activities involved in the main construction, commissioning and operating the Power Station and an indication of the likely environmental effects arising from these activities. Horizon's decommissioning strategy is also introduced.	Horizon's preferred approaches to build and operate the Power Station are largely influenced by constructing and commissioning requirements to deliver the power station in an efficient and timely manner, as such the is limited scope to influence this. We do however welcome any comments on the information presented, including shift patterns. There is the opportunity to influence some of the detailed mitigation we are proposing on the Power Station Site, including footpath diversions and measures to protect the SSSI.	We would welcome views on our preferred options for: - public access to the construction site during construction, including diversions of Public Rights of Way; - construction techniques for marine works; and - approach to SSSI mitigation and precautionary compensation.
6 – Main Development Site	Describes the site and the preferred proposals, ONR requirements, the main parts of the operational Power Station, and the proposed on-site accommodation campus, marine works, training and simulator building, access facilities and landscape setting. Provides a summary of the proposed Off-Site Power Station Facilities. Also indicates how the proposals have changed as a result of consultation and the principal environmental considerations.	Horizon's preferred approaches to the Power Station layout and design is largely fixed, and influenced by regulatory requirements however, we would welcome comments on our preferred approach. There is however scope to influence some of the more public facing areas of the public and our detailed approaches to mitigation.	We would welcome your views on our preferred options for: - the three options we are presenting for external treatment of the Power Station buildings; - detailed design and appearance of on-site accommodation campus; - detailed design and appearance of the training and simulation building; and - our preferred landscape strategy for the Power Station site.
7 – Landscape and Environmental Masterplan (LEMP)	Set outs the background, evolution and rationale for the LEMP, a detailed description of the proposals and the phasing sequence, together with reference point mapping and cross sections. Also indicates how the proposals have changed as a result of consultation and the principal environmental considerations.	We have developed a preferred LEMP strategy, taking into account of consultation received during the Stage One and January Project Update consultations and having regard to the principle of reducing HGV movements off the site, mitigating noise and air quality	We would welcome your views on our preferred option, in particular in relation to: - the ground levels for the Power Station buildings, to reduce visual impacts to the areas south of the Power Station Site; - the shape and height of mounding around the training

Chapter	Content	Areas for comment (Limited Scope for Influence)	Matters for consultation (Considerable Scope for Influence)
		impacts for local communities closest to the site and providing wider visual screening. The principle of the LEMP is therefore not something we are consulting on. We are however seeking views on the detailed appearance of the LEMP.	and simulator building, to reduce visual impacts to the south of the Power Station Site; - the on-site Temporary Workers' Accommodation to reflect the latest accommodation design and construction works in the area; - areas of the Power Station Site adjacent to landowners to provide additional information on the effect of the LEMP; - proposed diversion of the Wales Coastal Path; - our proposals for the relocation of the Fishermans car park; - detailed appearance and profile of the mounding; and - future use of land post-construction.
8 - Jobs, skills and business development	Provides details of the likely construction and operational worker profiles, including education initiatives, measures for skills development and specialist training. The latest thinking on supply chain and procurement is set out, including Horizon's Supply Chain Charter and Procurement Strategy.	Following feedback from the Stage One and Project Update consultations, we have developed Horizon's preferred approaches in conjunction with construction partners, relating to education, skills development and the purchase of goods and services.	We would welcome your views on whether the preferred measures set out in this document are likely to be effective in Improving access to jobs and skills development and access to supply chain opportunities, business development and procuring services and whether you have any other suggestions which may improve opportunities for local people.
9 - Workforce Accommodation Strategy	Explains Horizon's working assumptions for the likely accommodation requirements of the construction and operational workforces then introduces the Construction Worker Accommodation Strategy, including different accommodation types, Temporary Workers' Accommodation proposals and the Construction Worker Accommodation Management Portal.	We have presented Horizon's revised workforce profile, proposed Construction Worker Accommodation Strategy and management procedures, and proposed balance and phasing of accommodation between sites. This strategy has been develop taking account of feedback received during the Stage One and	We are presenting an alternative option for the location of Temporary Workers' Accommodation: - whether to develop at Amlwch Sites A and B, to the west and east of the B5111, as an alternative site for Temporary Workers' Accommodation.

Chapter	Content	Areas for comment (Limited Scope for Influence)	Matters for consultation (Considerable Scope for Influence)
		January Project Update consultations and therefore there is limited scope to influence our strategy as a whole, although we are presenting an alternative site for the location of Temporary Workers' Accommodation. We have also set out how we anticipate the workforce would be accommodated, including the percentage that would be based at home. Although there is limited opportunity to influence this work, you are welcome to comment on the information presented.	
10 - Transport	Summarises the existing transport context, the anticipated transport requirements and the Integrated Traffic and Transport Strategy context. Includes the emerging proposals, summary of principal traffic effects and options for movement of people and goods.	We have presented Horizon's preferred approach to managing the movement of people, materials and freight; mitigating traffic effects; and the updated Integrated Traffic and Transport Strategy, taking into account feedback received from the Stage One and January Project Update consultations. As such, there is limited opportunity to influence our preferred transport strategy at this stage.	We would welcome your comments on the detailed routes of buses to transport workers' from the park and ride and Temporary Workers' Accommodation sites to the Power Station site, including the location of bus stops.
11 – Highway Improvements	Description of site locations and proposed works; summary of principal options considered, how the proposals have changed as a result of consultation and principal environmental considerations.	We have presented Horizon's detailed preferred proposals for A5025 on-line and off-line highway improvements. These have been developed in close consultation with the highway authority and have been subject to separate consultation in July 2016. As such, there is limited opportunity to influence the proposals at	We have identified areas where we are proposing additional highway improvements, which we would welcome your views on as follows: - localised road widening and junction improvements to the local road connecting our preferred Temporary Workers' Accommodation site at Rhosgoch with the A5025; and - Accesses to the Associated

Chapter	Content	Areas for comment (Limited Scope for Influence)	Matters for consultation (Considerable Scope for Influence)
		this stage.	Development Sites.
12 – Park and Ride Site	Description of site, the proposals and parking capacity; summary of principal options considered, how the proposals have changed as a result of consultation and principal environmental considerations.	We have selected Dalar Hir as our preferred site for a Park and Ride, following consultation received from the Stage One and January Project Update. There is therefore limited opportunity to influence the choice of site.	We would welcome your views on the detailed design and mitigation presented in the preferred proposals. We have asked for specific views on: - how we can improve the preferred plans, including such issues as the layout of buildings and parking areas; - how we can improve the external appearance of the buildings, landscaping and boundary treatment; and - our proposed legacy for each site.
13 – Logistics Centre	Description of site, the proposals and planning status; summary of principal options considered, how the proposals have changed as a result of consultation and principal environmental considerations.	We have selected Parc Cybi as our preferred site for a Logistics Centre, following consultation received from the Stage One and January Project Update. There is therefore limited opportunity to influence the choice of site.	We would welcome your views on the detailed design and mitigation presented in the preferred proposals. We have asked for specific views on: - how we can improve the preferred plans, including such issues as the layout of buildings and parking areas; - how we can improve the external appearance of the buildings, landscaping and boundary treatment; and - our proposed legacy for each site.
14 – Rhosgoch Temporary Workers' Accommodation	Description of site and the preferred proposals; summary of principal options considered, how the proposals have changed as a result of consultation and principal environmental considerations.	We have selected Rhosgoch as one of our preferred sites for Temporary Workers' Accommodation following consultation received from the Stage One and January Project Update. There is therefore limited opportunity to influence the choice of site.	We would welcome your views on the detailed design and mitigation presented in the preferred proposals. We have asked for specific views on: - how we can improve the preferred plans, including such issues as the layout of buildings and parking areas; - how we can improve the external appearance of the buildings, landscaping and boundary treatment; and - our proposed legacy for each site.

Chapter	Content	Areas for comment (Limited Scope for Influence)	Matters for consultation (Considerable Scope for Influence)
15 – Kingsland and Cae Glas Temporary Workers' Accommodation	Description of site and the preferred proposals; summary of principal options considered, how the proposals have changed as a result of consultation and principal environmental considerations.	We have selected Kingsland and Cae Glas as one of our preferred sites for Temporary Workers' Accommodation following consultation received from the Stage One and January Project Update. There is therefore limited opportunity to influence the choice of site. Furthermore, these sites benefit from outline planning permission, which sets parameters for the detailed design and location of buildings within the sites. On this basis, there is no opportunity to influence the detailed design of these proposals.	Not applicable.
16 – Amlwch (Sites A and B, to the west and east of the B5111) Temporary Workers' Accommodation	Description of site and the preferred proposals; summary of principal options considered, how the proposals have changed as a result of consultation and principal environmental considerations.	Not applicable.	We are presenting Amlwch (Sites A and B) as an alternative site for Temporary Workers' Accommodation. If this site was to form part of the preferred proposals, it would mean less accommodation would be provided elsewhere. We would welcome your views on the principle of Amlwch Sites A and B as an alternative site. We would also welcome your views on the detailed design and mitigation presented for this site, if it was to form part of our preferred proposals. We have asked for specific views on: - how we can improve the preferred plans, including such issues as the layout of buildings and parking areas; - how we can improve the external appearance of the buildings, landscaping and boundary treatment; and - our proposed legacy for each site.

Chapter	Content	Areas for comment (Limited Scope for Influence)	Matters for consultation (Considerable Scope for Influence)
17 – Madyn Farm permanent residential development (for use during construction as Temporary Workers' Accommodation)	Description of site and the preferred proposals; summary of principal options considered, how the proposals have changed as a result of consultation and principal environmental considerations.	We have selected Madyn Farm as a site for permanent housing, following its use for Temporary Workers' Accommodation following consultation received from the Stage One and January Project Update. There is therefore limited opportunity to influence the choice of site.	We would welcome your views on the detailed design and mitigation presented in the preferred proposals. We have asked for specific views on: - how we can improve the preferred plans, including such issues as the layout of buildings and parking areas; - how we can improve the external appearance of the buildings, landscaping and boundary treatment; and - our proposed legacy for each site.
18 – Off-Site Power Station Facilities	Description of sites and the preferred proposals; summary of principal options considered, how the proposals have changed as a result of consultation and principal environmental considerations.	We have selected Llanfaethlu and Cefn Coch as our preferred sites for the MEEG and the AECC/ESL Centre. These locations are defined by specific regulatory requirements. There is therefore limited opportunity to influence the choice of site for the MEEG. We are however consulting on an alternative site for the AECC/ESL, on the former Llanrhydladd school site.	The availability of the former Llanrhyddlad School site was raised with us at a late stage; however, it is considered to be a potentially suitable alternative to Cefn Coch, and therefore we are seeking views on its choice as an alternative site for the AECC/ESL. We have not yet carried out any detailed design work to determine whether the AECC/ESL can be accommodated on site, but this would be done in due course, taking account of responses to consultation.
19 – Other Assessments	Update on other assessments being carried out that will support the DCO application and marine licence, including Habitats Regulation Assessment (HRA), Welsh Language Impact Assessment (WLIA), Health Impact Assessment (HIA) and Equality Impact Assessment.	Not applicable.	We have provided our interim assessments of the Project in relation to Welsh Language, health and equality as part of this Stage Two Pre-Application Consultation. The Welsh Language Impact Assessment Interim Report sets out our initial proposals for enhancing the benefits and reducing the negative effects of the Project. We have asked a question on the measures that we have identified to enhance benefits and reduce negative effects to Welsh-speaking communities, or the Welsh language and culture. The Health Impact Assessment

Chapter	Content	Areas for comment (Limited Scope for Influence)	Matters for consultation (Considerable Scope for Influence)
			Interim Report sets out our initial proposals for enhancing the benefits and reducing the negative effects of the Project on health and well-being and we have asked for views on the assessment presented. We want to reduce the potential effects on social and equality issues on Anglesey and our initial work can be found in the Equality Impact Assessment Interim Report. We have asked for information on equality issues on Anglesey, or suggestions for measures to help reduce effects, that may help us in further work on the Equality Impact Assessment.
20 – Community Effects	Identifies and describes the local communities affected by the Wylfa Newydd Project components and summaries the likely effects for each community and the approach to mitigation to address community impacts.	We are not consulting on anything specifically as part of this chapter, but the matters for consultation across the Project as a whole will be relevant to a number of different communities across Anglesey. The information presented in this chapter should help consultees to respond on the other matters, particularly in relation to the Associated Development sites.	Not applicable.
21 – Mitigating the Effects and Enhancing the Benefits	Presents a summary of the proposed strategies, plans and programmes for managing the effects of the Wylfa Newydd Project and the potential mechanisms for their delivery.	Not applicable.	We have approached design of many aspects of the Project to have long-term benefits within the community. Having regard to the information presented in this chapter and the mitigation presented in the Preliminary Environmental Information (PEI) Report, we are seeking views on our proposals for enhancing the benefits or reducing the negative effects of the Project and asking for your suggestions that we should consider to develop our proposals further.

Chapter	Content	Areas for comment (Limited Scope for Influence)	Matters for consultation (Considerable Scope for Influence)
22 - Next steps	Sets out the ways in which people can respond to the consultation, how comments will be recorded and taken into account and how engagement can continue to inform the final proposals for the Wylfa Newydd Project, including through the DCO and TCPA application processes. Also summarises the regulatory context for the Wylfa Newydd Power Station.	This chapter sets out context and the way in which consultees can continue to be engaged in the Project, rather than setting out aspects of the scheme for consultation.	Not applicable.

Glossary

1.86 This Document uses a number of technical terms and abbreviations. Key terms are capitalised and explained with their acronyms in the Glossary provided in table 1.4 below. References to legislation are to that legislation as in force at the time of the publication of this Document.

Table 1.4 Glossary of terms and acronyms

Full Title	Abbreviation / Acronym	Description
Abnormal Indivisible Loads	AILs	A load that cannot be divided for the purpose of being carried on a road without undue expense or risk of damage.
Above Ordnance Datum	AOD	Above the mean sea level at Newlyn in Cornwall calculated between 1915 and 1921, taken as a reference point for the height data on ordnance survey maps.
Advanced Boiling Water Reactor	ABWR	A third generation evolution of the boiling water reactor design. The Wylfa Newydd Power Station will use the ABWR design provided by Hitachi-GE, adapted for use in the UK.
Alternative Emergency Control Centre	AECC	A facility that is physically separate from but local to the Power Station and forms part of the Wylfa Newydd Power Station. This would provide back-up command and communications facilities that would be used to manage an incident at the Power Station Site in the extremely unlikely event that the primary facilities on the Power Station Site were not available.
Anglesey Energy Island Programme	EIP	An initiative led by IACC involving several stakeholders within the public and private

Full Title	Abbreviation / Acronym	Description
		sector working in partnership to catalyse employment, growth and development opportunities in the energy sector.
Area of Outstanding Natural Beauty	AONB	Areas designated under the Countryside and Rights of Way Act 2000 for the purpose of conserving and enhancing the natural beauty of the designated area.
Associated Development	-	Development to support delivery of the Wylfa Newydd Power Station, for example highway improvements along the A5025, Park and Ride facilities for construction workers, at least one Logistics Centre and Off-Site Temporary Workers' Accommodation.
Best Available Techniques	BAT	The legislative requirements whereby operators must demonstrate that certain operations are conducted in the optimum manner, to prevent or minimise releases and limit the impact on the environment, taking a number of factors into account including technological advances, economic feasibility and time.
Birds Directive	-	The European Union's Directive on the conservation of wild birds (79/409/EEC of 30 November 2009).
Broad Area of Search	-	The area of land within which Horizon will consider sites for the construction of certain types of Associated Development, comprising Park and Ride facilities, Logistics Centre and Off-Site Temporary Workers' Accommodation.
Cadw	-	Statutory body charged with protecting the historic and built environment of Wales (part of Welsh Government).
Commissioning	-	A series of tests conducted on the structures, systems and components of the Wylfa Newydd Power Station.
Construction Compounds	-	Enclosed areas situated adjacent to the Power Station Site, off-Site Power Station facilities and Associated Development sites, as the focus for fabrication, laydown, site offices, parking, welfare, concrete batching, plant and other facilities needed for the construction of the Wylfa Newydd Project.
Construction Site	-	Land within a defined boundary on which

Full Title	Abbreviation / Acronym	Description
		construction-related activities take place.
Cooling Water	CW	The water used to remove heat from the Units at the Wylfa Newydd Power Station.
Cooling Water System	CWS	The once-through water cooling system that removes, using CW, the proportion of heat energy produced by the nuclear reactors, which cannot be converted to electricity, and for the Wylfa Newydd Project includes the intakes, pumphouses, breakwaters, seal pits and outfall structures as well as connecting pipelines and tunnels, for each Unit.
Copper Trail	-	The northern section of national route 566, forming part of the Sustrans national cycle network.
Daily Construction Commuting Zone	DCCZ	The boundary for assuming reasonable daily commuting behaviour to the Power Station Site during the construction and operation of the Wylfa Newydd Power Station.
Decommissioning	-	The transition of the Power Station Site to a de-licensed state so that it is no longer a Nuclear Licensed Site and such that the land becomes available for alternative uses. Once a nuclear site reaches the end of its operational life, it needs to be decommissioned and cleaned up. This involves the progressive reduction of hazards on site in order to allow further development to take place, or release the site from regulatory control.
Department for Business, Energy and Industrial Strategy	BEIS	The UK Government department with responsibility for (among other things) energy issues, including the security of the UK's energy supplies.
Design Commission for Wales	DCfW	A private limited company incorporated by the Welsh Government in 2002 to promote good design across all sectors in the interest of good quality in the built environment and design quality in Wales.
Designated Freight Route	-	The A55 (on Anglesey), the A5 and the A5025 from Valley to the Wylfa Newydd Development Area.
Development Consent Order	DCO	The consent for a Nationally Significant Infrastructure Project required under the

Full Title	Abbreviation / Acronym	Description
		Planning Act 2008.
Development Plan	-	A hierarchy of planning documents that together form the Local Planning Authority's policies for the development and use of land and buildings in its area.
Dŵr Cymru: Welsh Water	DCWW	The company responsible for sewers, rising mains, potable water, water, temporary surface drainage and redundant water mains in Anglesey.
Emergency Control Centre	ECC	The primary facility, on the Power Station Site, that provides the primary location for managing the site response to an incident.
EN-1 - Overarching National Policy Statement for Energy	NPS EN-1	The National Policy Statement designated by the Secretary of State (for Energy and Climate Change) in July 2011, which sets out national policy for major energy infrastructure projects.
EN-6 - National Policy Statement for Nuclear Power Generation	NPS EN-6	The National Policy Statement designated by the Secretary of State (for Energy and Climate Change) in July 2011, which sets out national policy on new nuclear power stations and against which an application for a DCO for a nuclear power station is assessed.
Enabling Works	-	The works required to remove and clear parts of the Wylfa Newydd Development Area of vegetation, topsoil, existing services, utilities and other features and structures, including ecology mitigation, in order to allow the earthworks and Main Construction stage activities to commence. This work would also include the installation of any new services or utilities required to support the Main Construction stage activities.
Environment Agency	-	The executive non-departmental public body with responsibility for environmental regulation in England. The Environment Agency gives advice to Natural Resources Wales in relation to the radioactive substances regulation under the Environmental Permitting (England and Wales) Regulations 2010 and to the Welsh Government in respect of Generic Design Assessment for the UK ABWR.
Environmental Impact	EIA	The process in which the likely significant

Full Title	Abbreviation / Acronym	Description
Assessment		effects of a development on the environment are identified and assessed.
Environmental Management Plan	EMP	A document that sets out the key environmental and planning/consenting considerations that must be taken into account for any works taking place. There will be more than one plan and the development of these plans is an iterative process.
Environmental Permit	-	A permit that is required to operate a regulated activity under the Environmental Permitting (England and Wales) Regulations 2010.
Environmental Statement	ES	The document in which the results of an Environmental Impact Assessment are presented.
EURATOM Treaty	-	The Treaty establishing the European Atomic Energy Community, signed on 25 March 1957.
European Designated Sites	-	The following sites that are designated and therefore given special protection under the Habitats Directive and the Birds Directive: • Special Areas of Conservation (SACs); • Special Protection Areas (SPAs); • Sites of Community Importance (which is the second step in being formally designated as a SAC); • candidate SACs (which is the first step in formal designation as a SAC); and • potential SPAs (which are approved by the Government but are not yet classified as SPAs). Collectively, the above European Designated Sites are known as Natura 2000. There are also internationally important and designated wetland sites which often overlap with the European designated sites listed. These wetlands are known as Ramsar sites (identified under the Ramsar Convention, 1971).
European Protected Species	-	Animals and plants protected under The Conservation of Habitats and Species Regulations 2010.

Full Title	Abbreviation / Acronym	Description
European Protected Species Licence	-	The licence issued to permit an activity affecting European Protected Species that would otherwise be an offence under the Conservation of Habitats and Species Regulations 2010.
Existing Power Station	-	The existing Magnox nuclear power station at Wylfa.
Full Operation	-	The stage of the Wylfa Newydd Project's life when the Wylfa Newydd Power Station is operational.
Funded Decommissioning Programme	FDP	A programme, required by the Energy Act 2008, detailing what the expected cost of the Decommissioning of a nuclear power station will be and how those costs will be met.
Generic Design Assessment	GDA	The process being used by the Office for Nuclear Regulation and the Environment Agency to assess the safety, security and environmental implications of new nuclear reactor designs for the UK, separately from applications to build them at specific sites.
Geological Disposal Facility	GDF	A highly-engineered facility capable of isolating radioactive waste within multiple protective barriers, deep underground, to ensure that no harmful quantities of radioactivity ever reach the surface environment.
Habitats Directive	-	The EU Directive on the conservation of wildlife, plants and habitats (Council Directive 92/43/EEC of 21 May 1992).
Habitats Regulations Assessment	HRA	The process by which plans and projects are assessed for their likely significant effects on European Designated Sites, pursuant to the Habitats Directive and the Conservation of Habitats and Species Regulations 2010.
Hazardous waste	-	Waste is generally considered hazardous if it (or the material or substances it contains) are harmful to humans or the environment.
Health Impact Assessment	HIA	The process by which the Wylfa Newydd Project will be assessed to determine its health effects on a population, particularly vulnerable or disadvantaged groups. It will make recommendations seeking to minimise negative health effects as well as identifying opportunities to maximise positive health

Full Title	Abbreviation / Acronym	Description
		effects.
Heavy Goods Vehicle	HGV	A truck with a mass of over 3,500kg.
High Level Waste	HLW	Radioactive waste that is highly radioactive, usually produced as a by-product of nuclear reactions that occur inside nuclear reactors.
Integrated Traffic and Transport Strategy	ITTS	The strategy to be developed by Horizon to present a holistic approach for the delivery of sustainable transport and access solutions to and between the key development sites that together form the Wylfa Newydd Project, including to ensure efficiency, manage environmental impacts, ensure safety and present transport solutions.
Intermediate Level Waste	ILW	Waste that has a radioactive content exceeding the LLW limit and that does not have a significant heat output.
Isle of Anglesey County Council	IACC	The local authority governing the area within which the Wylfa Newydd Power Station and Associated Development is intended to be constructed. IACC has a number of functions, including the granting of planning permission as local planning authority.
Landscape and Environmental Masterplan	LEMP	A fully coordinated environmental landscape design covering the Wylfa Newydd Development Area, including the formation of mounds, habitat and woodland creation, targeted biodiversity mitigation and enhancement measures, temporary and permanent public footpath diversions, management of watercourses and surface water drainage and other relevant environmental considerations.
Landscape Character Areas	LCA	Single, unique areas which are the discrete geographical areas of a particular landscape type.
Licence Condition	-	A condition set by the ONR that requires the Site Licence Company to make and implement adequate arrangements, providing the main basis for regulation by the ONR.
Listed Building	-	A building or structure designated under the Planning (Listed Buildings and Conservation Areas) Act 1990 as being of 'special architectural or historic interest'.

Full Title	Abbreviation / Acronym	Description
Local Impact Report	LIR	A written report prepared by the relevant Local Planning Authority giving details of the likely impact of a proposed Nationally Significant Infrastructure Project development on the Local Planning Authority's area under the Planning Act 2008.
Logistics Centre	-	An Off-Site facility at which deliveries can be consolidated into fewer loads and the timing of traffic movements to the Wylfa Newydd Development Area can be controlled during both the Enabling Works and Main Construction stages.
Low Level Waste	LLW	Waste that has a radioactive content not exceeding 4 GBq (gigabecquerels) per tonne of alpha, or 12 GBq per tonne of beta/gamma activity.
Magnox Limited	-	The Site Licence Company carrying out operations on behalf of the NDA at various nuclear sites.
Main Construction	-	Construction activities within the Wylfa Newydd Development Area that would result in the completion of the Power Station, including final levelling and deep excavations for the Power Station foundations, civil construction activities, commissioning of both Units and site finishing.
Marine Licence	-	The licence required to undertake works in the marine environment under the Marine and Coastal Access Act 2009.
Marine Off-Loading Facility	MOLF	A facility comprising two purpose built quays to allow delivery of freight such as AILs and construction materials by sea.
Megawatt	MW	Unit of measurement of power, equal to one million watts.
National Grid	-	National Grid Electricity Transmission Plc.
National Policy Statements	NPS	Statements prepared and designated by the Secretary of State under the Planning Act 2008, which establish national policy for nationally significant infrastructure projects, including energy, transport and water, waste water and waste and against which applications for development consent orders are assessed.

Full Title	Abbreviation / Acronym	Description
Nationally Significant Infrastructure Project	NSIP	A type of project listed in the Planning Act 2008, and which must be consented by a development consent order. The construction of a generating station is an NSIP.
Natural Resources Wales	NRW	The public body whose stated purpose is to ensure that the natural resources of Wales are sustainably maintained, enhanced and used, now and in the future. It absorbed the regulatory and advisory duties of the Environment Agency Wales, Countryside Council for Wales and the Forestry Commission in Wales. It is the regulatory authority in Wales for a wide range of environmental legislation including environmental permitting (under the Environmental Permitting (England and Wales) Regulations 2010) and is a statutory consultee for development consent orders.
New Nuclear Build at Wylfa: Supplementary Planning Guidance	Wylfa SPG	IACC's supplementary planning guidance, in respect of the new nuclear power station at Wylfa, Anglesey, published in July 2014.
Nuclear Decommissioning Authority	NDA	The non-departmental public body created through the Energy Act 2004 responsible for decommissioning and cleaning up civil nuclear facilities in the UK, and providing for the disposal of all the resulting wastes.
Nuclear Licensed Site	-	A site in respect of which a Nuclear Site Licence has been granted.
Nuclear Site Licence	NSL	The licence required under the Nuclear Installations Act 1965 for the installation and operation of a nuclear reactor granted by the Office for Nuclear Regulation.
Office for Nuclear Regulation	ONR	The public corporation, which is responsible for (among other things) the regulation of nuclear safety and nuclear security at nuclear licensed sites in the UK.
Off-line highway improvements	-	Highway improvements that involve the construction of new sections of road.
Off-Site	-	Areas of land needed for the Wylfa Newydd Project that would be outside the Wylfa Newydd Development Area.

Full Title	Abbreviation / Acronym	Description
Off-Site Power Station Facilities	-	The emergency and other facilities that would be physically separate from the Power Station Site and would complement the facilities within the Power Station Site, including an Alternate Emergency Control Centre, Environmental Survey Laboratory and specialist vehicle storage.
On-line highway improvements	-	Highway improvements that are made to the existing road, generally within the existing highway corridor.
Park and Ride facilities	-	An Off-Site facility from which construction workers will park and travel via a dedicated bus service to the Wylfa Newydd Development Area.
Planning Act 2008	-	The UK legislation which, among other things, establishes a consenting regime for Nationally Significant Infrastructure Projects.
Planning Inspectorate	-	The body that accepts and examines applications for development consent orders and makes recommendations to the Secretary of State in support of determining whether to grant consent.
Power Station	-	The proposed new nuclear power station, including two UK ABWRs, associated plant and ancillary structures and features, to be constructed and operated at Wylfa on Anglesey.
Power Station Access Road	-	The proposed access road from the A5025 south of Tregele, to the Power Station Site.
Power Station Site	-	The indicative area of land and sea within which the majority of the permanent Power Station buildings, plant and structures would be situated.
Preliminary Environmental Information	-	Preliminary information about the environmental context and potential environmental effects of the Wylfa Newydd Project, which is compiled from the early stages of the environmental studies being conducted to inform development of the Project, and is provided during consultation in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009.

Full Title	Abbreviation / Acronym	Description
Preliminary Environmental Information Report	PEI Report	The report, prepared for this Stage Two Pre-Application Consultation, in which the Preliminary Environmental Information available at this stage of the Wylfa Newydd Project is presented.
Project or Wylfa Newydd Project	-	The Power Station and Associated Development.
Proposed Activities	-	The activities that Horizon intends to undertake within the Wylfa Newydd Development Area during construction and operation, and the resulting built developments.
Ramsar Sites	-	Wetlands of international importance, designated under the Ramsar Convention 1971.
Radioactive Waste Building	-	Building to collect and treat radioactively contaminated water from the reactor building and turbine building.
Radiation (Emergency Preparedness and Public Information) Regulations	REPPIR	REPPIR establishes a framework of emergency preparedness measures to ensure that members of the public are: • properly informed and prepared, in advance, about what to do in the unlikely event of a radiation emergency occurring; and • provided with information if a radiation emergency actually occurs. A "radiation emergency" is an event that is likely to result in a member of the public receiving an effective dose of 5 mSv during the year immediately following the emergency.
Register of Parks and Gardens of Special Historic Interest in Wales	-	Historic parks and gardens in Wales are those sites thought to be of national importance and which have been included in this register by Cadw/ICOMOS (International Council of Monuments and Sites UK).
Safety Case	-	A set of documents that describe the radiological hazards in terms of a facility or site and modes of operation and the measures that prevent or mitigate against harm being incurred.
Scheduled Monument	-	Scheduled Monuments are designated under the Ancient Monuments and Archaeological

Full Title	Abbreviation / Acronym	Description
		Areas 1979 and are, by definition, of national importance.
Secretary of State (for Business, Energy and Industrial Strategy)	-	The cabinet minister in charge of BEIS and who (among other things) ultimately determines applications for energy DCOs.
Site Licence Company	-	The company that has been granted a Nuclear Site Licence, whether or not the licence remains in force.
Site Specific Pre-Construction Safety Report	SS-PCSR	A PCSR will be produced as part of the GDA process; this will be developed to incorporate site-specific information to produce the SS-PCSR. On approval of the SS-PCSR, ONR will issue a consent for nuclear-related construction activities.
Sites of Special Scientific Interest	SSSI	Sites designated as being of special interest for their flora, fauna or geological or physiographical features and protected under the Wildlife and Countryside Act 1981.
Special Area of Conservation	SAC	Areas that have been identified as being important for a range of vulnerable habitats, plant and animal species within the European Union and are designated under the Habitats Directive.
Special Landscape Area	-	A non-statutory designation applied by the local planning authority to define areas of high landscape importance within their administrative boundary. Areas of high landscape importance may be designated for their intrinsic physical, environmental, visual, cultural and historical value in the contemporary landscape. Landscapes designated as a Special Landscape Area may be unique, exceptional or distinctive to the local authority area.
Special Protection Areas	SPA	Sites designated under the Birds Directive due to their international importance for the breeding, feeding, wintering, or the migration of, rare and vulnerable species of birds.
Spent Fuel	-	Fuel that has been used in a nuclear reactor.
Statement of Community Consultation	-	A statement in which a developer sets out how it intends to consult the local community in respect of its proposed NSIP pursuant to section 47 of the Planning Act 2008.

Full Title	Abbreviation / Acronym	Description
Statement of Design Acceptability	SoDA	On completion of the Generic Design Assessment the Environment Agency will issue a SoDA if they judge the design to be satisfactory.
Statutory Working Group	SWoG	The forum established by Horizon for formal communication, engagement and sharing of information amongst key statutory bodies in relation to consents and permissions pertinent to the Wylfa Newydd Project.
Strategic Siting Assessment	-	The process which was used during the preparation of NPS EN-6 to identify and assess sites which are considered strategically suitable for the deployment of new nuclear power stations by the end of 2025.
Temporary Workers' Accommodation	-	The specially provided type of new housing stock for construction workers, which would comprise campus style development of a minimum of 500 modular single worker en suite accommodation units, arranged in blocks that would each be served by a number of communal rooms such as a kitchen, dining area and sitting room. The modular units would be designed for temporary occupation, to be dismantled and removed after use.
Town and Country Planning Act 1990	TCPA	The Act that forms part of the land use planning regime in the UK and (among other things) establishes the legal framework in respect of applications for, and determination of, planning permissions.
UK Advanced Boiling Water Reactor	UK ABWR	The UK advanced boiling water reactor to be supplied by Hitachi-GE Nuclear Energy, Ltd., as part of the Power Station.
Unit	-	All plant and systems, nuclear and non-nuclear, associated with a single nuclear reactor and connected steam turbine generator.
Very Low Level Waste (High Volume)	VLLW	Waste that has a radioactive content not exceeding 4MBq (megabecquerels) per tonne of total activity. This waste type typically includes lightly contaminated concrete and steel.
Wales Coast Path	-	An 870 mile network of public footpaths and other routes around the coastline of Wales,

Full Title	Abbreviation / Acronym	Description
		which incorporates the Isle of Anglesey Coastal Footpath.
Water Framework Directive	WFD	Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy.
Welsh Government	-	The devolved Government for Wales.
Welsh Language Impact Assessment	WLIA	The systematic, criteria-based assessment of the likely impacts of a development or project on Welsh language and culture.
Wylfa Gateway Complex	-	The parcel of land within the Wylfa NPS Site that would contain replacement premises for the alternative emergency control centre and district survey laboratory for the Existing Power Station, which Horizon would deliver on behalf of Magnox Limited.
Wylfa Newydd Development Area	-	The indicative areas of land and sea, including the Power Station Site, the Wylfa NPS Site and the surrounding areas that would be used for the construction and operation of the Power Station. This area is representative of the maximum area extending around the Power Station Site that would be directly affected by Power Station Main Construction activities and used to form the setting and features of the operational Power Station.
Wylfa Newydd Power Station	-	Horizon's proposed new nuclear power station, including two UK ABWRs, associated plant and ancillary structures and Off-Site Power Station Facilities, to be constructed and operated on Anglesey.
Wylfa Newydd Project	-	See Project.
Wylfa NPS Site	-	The Wylfa site designated by NPS EN-6 as potentially suitable for the deployment of a new nuclear power station.
Wylfa SPG	-	See New Nuclear Build at Wylfa: Supplementary Planning Guidance.

2 Project vision and objectives

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2 Project vision and objectives

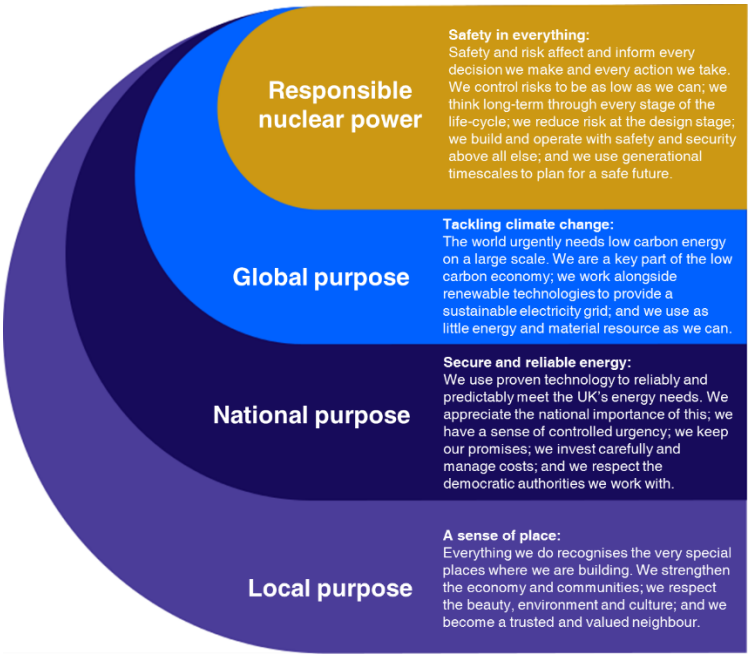
2.1 Horizon Nuclear Power Limited is a UK energy company developing a new generation of nuclear power stations to help meet the UK's need for stable and sustainable low carbon energy. Building on our core values of safety, courage, integrity, collaboration and inspiration, Horizon Nuclear Power Limited's vision is as follows:

"We believe there is a compelling requirement for new nuclear power in the UK to help tackle the vital and complex challenge of delivering a sustainable energy future. As part of this vision Horizon will deliver secure affordable, low carbon energy for present and future generations.'

2.2 Horizon Nuclear Power Limited's ultimate parent company is Hitachi Ltd., which is a Japanese corporation and the parent company of the multi-national Hitachi group of companies. Horizon Nuclear Power Wylfa Limited (Horizon) is part of the Horizon Nuclear Power Limited group of companies and has premises in Gloucestershire and a site office on Anglesey.

2.3 Our purpose, as a developer of nuclear new build is encapsulated in the figure below.

Figure 2.1 Our purpose



2.4 We are planning to develop a new nuclear power station on land west of Cemaes on Anglesey, adjacent to the recently decommissioned Existing Power Station, representing an investment of around £10 billion. Nuclear power can play a vital role in meeting the challenge of maintaining secure, low carbon energy supplies for the UK, whilst also tackling the global threat of climate change by meeting emissions reduction targets. Horizon's new nuclear power station on Anglesey would deliver a capacity of approximately 2,700 megawatts (MW) of electricity, enough power for around five million homes.

2.5 The need for new nuclear power stations, to help contribute towards a secure and diverse energy mix for future generations is a central component of the Government's energy policy. We believe that projects such as Wylfa Newydd have a fundamental role to play in realising this vision.

2.6 Given this urgent need, we believe in delivering Wylfa Newydd as early as possible, working with our construction partner Menter Newydd, whilst delivering the Project in a safe, efficient and sustainable way.

2.7 We are also aware of the impact that a major construction project such as this could have on local communities and that the majority of effects during construction, whilst temporary, could be experienced over a period of up to 10 years. These effects will be both: positive, such as an increase in employment, supply chain opportunities and local spending; and negative, including changes to the immediate landscape and the potential language impacts of a significant and diverse workforce. These effects are discussed in the Preliminary Environmental Information (PEI) Report provided as part of this consultation.

2.8 We will be delivering an important legacy, both through the Power Station, which would be in place for 60 years, but also through the long lasting opportunities we will seek to create.

2.9 Our vision is therefore to deliver the Project in a safe and efficient manner, whilst seeking to reduce effects and maximise the benefits on the environment and our local communities on Anglesey as far as possible.

Project objectives

2.10 In order to realise this vision, we have set a series of Project-wide objectives for the Wylfa Newydd Project. The Project should:

- help to meet the energy challenge in the UK, by providing a reliable source of low carbon electricity;
- to be delivered in a safe and efficient manner;
- reflect the importance of its setting in Anglesey;
- uphold the unique culture and language of Anglesey;
- integrate sustainability into all physical designs;
- develop a green and sustainable approach in the development and management of the buildings and operational activities;
- be a good neighbour; keeping local disruption to a minimum throughout the Project life cycle;
- build on the legacy of the Existing Power Station, and help to create a positive legacy for Anglesey; thinking about each significant investment and how it can create a positive future for the area, where appropriate;
- ensure that all the elements are designed to connect with the varied beauty and character of Anglesey and conserve and enhance the natural environment as far as possible; and

- respect our communities and ensure that the effect of the Project on them is minimised and that opportunities to provide enhancements are taken, as far as possible.

The Power Station Site

2.11 The site vision for the Wylfa Newydd Nuclear Power Station reflects the importance of its setting on Anglesey. The Power Station will sit alongside the recently decommissioned Existing Power Station, and the two power stations will share the landscape setting of this coastal location on the northern coastline of Anglesey.

2.12 The construction of the Power Station buildings, Off-Site Power Station Facilities, Associated Development and infrastructure will undoubtedly alter the local landscape; however we will seek to minimise this as far as possible.

2.13 In addition to the Project-wide objectives set out above, our proposals for the Power Station Site aim to:

- minimise visual impact as far as possible;
- ensure that the design reflects the difference between immediate and longer distance views;
- reflect the importance of the human scale activities on the Power Station Site; and
- respect our communities, and minimise impact on them as far as possible, particularly those very close to the Power Station Site.

Associated development

2.14 In addition to the Project-wide objectives set out above, our proposals for the Associated Development sites should, whilst recognising the temporary nature of the proposals:

- provide the necessary facilities to ensure the delivery of the Power Station that meets the urgent need for new nuclear power as early as possible in a safe and efficient manner;
- minimise visual impact as far as possible;
- respect local communities, and minimise impact on them as far as possible, particularly those very close to the Associated Development sites and;
- help to create a positive legacy for Anglesey, thinking about each significant investment and how it can create a positive legacy for the area, recognising that this will not always involve retaining the buildings on the Associated Development sites.

Project values

2.15 We will ensure that our values are integrated in everything we do. These are:

Safety

2.16 Safety is our fundamental guiding principle and central to everything we do. We recognise the specific challenges associated with the nuclear environment and the high levels of responsibility this entails. We will challenge unsafe behaviours. We will prioritise the safety, security and well-being of the public, our employees, the environment and our stakeholders.

Courage

2.17 Horizon will display strong, measured leadership and act responsibly to ensure we make effective decisions, taking full account of all relevant factors. We will then implement them diligently and with determination.

Integrity

2.18 We will deliver what we promise and insist on an honest approach to everything we do, always aiming to do the right thing in a principled, reliable and trustworthy manner. Our people will be encouraged to participate in a culture of challenge, listening and mutual respect.

Collaboration

2.19 We will work in a collaborative spirit all the time, building a sense of commitment to one another's success and valuing the contribution of people both inside and outside the organisation. We will work together with our stakeholders, partners and suppliers through effective dialogue and consultation to deliver success for the organisation.

Inspiration

2.20 We will encourage everyone to achieve their full potential and seek to inspire future generations. We will act as a catalyst for change to enable the delivery of our vision. We will recognise and nurture people's talents and their hopes for the future.

General Comments

Do you have any comments on our Project Vision and objectives? If so, please include them in your responses to the general question.

3 Legislation and Planning Policy Context

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3 Legislation and Planning Policy Context

3.1 This chapter provides an overview of the legislative and policy framework against which the Project will be assessed, in order to assist consultees in making their responses. A Planning Statement Framework document is also available for this consultation: this provides more detail about the proposed approach to assessing the Wylfa Newydd Project proposals against planning policy. The application for a Development Consent Order (DCO) and applications for Associated Development made under the Town and Country Planning Act 1990 (TCPA) will be accompanied by Planning Statements that will provide a full assessment of compliance against the relevant planning policies. Further details on the consenting strategy for the Project are provided in chapter 1 of this document.

Legislative Context

Planning Act 2008

3.2 As a Nationally Significant Infrastructure Project (NSIP), the principal consent for a new nuclear power station is obtained by the grant of a DCO. A DCO provides a single, overarching consent that removes the need to obtain several consents that would otherwise be required for development separately, including planning permission and compulsory purchase orders. The relevant Secretary of State is the decision-maker for a DCO application, guided by recommendation from the Planning Inspectorate following examination.

3.3 The Planning Act 2008 is the primary legislation that establishes the legal framework for applying for, examining and determining DCO applications for NSIPs. Section 104 of the Planning Act 2008 sets out that the decision on the DCO must be in accordance with any relevant National Policy Statement (NPS), except in limited circumstances including where the adverse impacts of the proposed development would outweigh the benefits. An NPS therefore has a particular legal status in the Secretary of State's decision-making under the Planning Act 2008.

3.4 In addition, under the requirements of the Planning Act 2008, as they currently apply to NSIPs in Wales, permission for Associated Development remains to be applied for under the TCPA regime. This means that national and local planning policies are the principal determining policies for the Associated Development applications, as well as being important and relevant considerations for the DCO.

3.5 The Wales Bill introduced in June 2016 by the Wales Office would allow for Associated Development related to electricity generation NSIPs in Wales of over 350MW to be consented by a DCO. Horizon may therefore have the ability to consent some of its Associated Development in its DCO. To preserve this opportunity Horizon intends to consult on its Associated Development in the same way as is required under the Planning Act 2008 for the NSIP; this is also consistent with Horizon's commitments in its Statement of Community Consultation.

Infrastructure Planning (Environmental Impact Assessment) Regulations 2009

3.6 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (EIA Regulations) specify that the consultation statement prepared under section 47 (duty to

consult the local community) must set out whether the NSIP development is EIA development and, if so, how the applicant intends to publicise and consult on preliminary environmental information (PEI).

3.7 The PEI Report that is included in this consultation sets out the PEI for the purposes of the EIA Regulations.

Marine Licence and Harbour Empowerment Order

3.8 The proposed consenting route for the marine elements of the Project is to seek consent through the DCO and separate marine licences. Marine licences are required under the Marine and Coastal Access Act 2009 before carrying out any licensable marine activity. Licensable marine activities of relevance to the Wylfa Newydd Project include constructing works in the sea or on the sea bed, using a vehicle or vessel to remove any substance from the sea bed (carrying out dredging), and the deposition of any substance or object in the sea or on or under the sea bed (disposal of dredgings).

3.9 Marine licences are required for the marine elements below mean high water springs (MHWS), whether or not they are included within the DCO, because Wales does not benefit from s149A of the Planning Act 2008 allowing for a deemed marine licence within a DCO. The responsibility for marine licensing in Wales lies with the Welsh Government, but day-to-day authority has been delegated to Natural Resources Wales (NRW).

3.10 It is envisaged that up to three marine licences could be required for the Wylfa Newydd Project, one covering the offshore power station components, including cooling water intake and outfall related infrastructure and the Marine Off-loading Facility (MOLF) and two related to dredging activity and offshore disposal of dredging arisings (sediment and rock).

3.11 In addition to the Marine licences, there may be a requirement to obtain a Harbour Empowerment Order (HEO) to enable control over security, access and navigation. The responsibility for HEO in Wales lies with the Marine Management Organisation (MMO), but day-to-day authority has been delegated to the Welsh Government.

National Policy Statements

3.12 The NPSs that are relevant for the Wylfa Newydd Power Station comprise:

- Overarching National Policy Statement for Energy EN-1, 2011 (NPS EN-1); and
- National Policy Statement for Nuclear Power Generation EN-6, 2011 (NPS EN-6).

3.13 These form the primary policy context for a decision on Horizon's application for a DCO for the Wylfa Newydd Power Station. A summary of the key principles of NPS EN-1 and NPS EN-6 is provided below: a more thorough analysis is available in the Planning Statement Framework document.

Overarching National Policy Statement for Energy EN-1

Need for the Project

3.14 NPS EN-1 sets out the overarching national policy for nationally significant energy infrastructure. It explicitly describes the urgent need for new (and particularly low carbon) electricity NSIPs in the UK within 10 to 15 years. It outlines the challenges facing the UK's energy security in light of the Government's carbon reduction objectives and notes

that the UK not only needs a secure, diverse and reliable supply of electricity, but needs it in the context of reducing greenhouse gas emissions by at least 80% by 2050 (under the Climate Change Act 2008) (para 3.3.14).

3.15 It is recognised that the failure to decarbonise and diversify the country's energy sources could result in the UK becoming locked into a system of high carbon generation, which would make it very difficult to meet its climate change targets (para 3.3.16).

3.16 Para 3.1.3 therefore urges the decision-maker in the DCO process to keep in mind that the need for all types of energy infrastructure has already been demonstrated by the Government. The principle of the need for the Wylfa Newydd Power Station is therefore established and does not need to be addressed in the consideration of the DCO application.

3.17 Given the level and urgency of the need, para 4.1.2 advises the decision-maker to "*start with a presumption in favour of granting consent to applications for energy NSIPs".*

3.18 For the UK to meet its energy and climate change objectives, new nuclear power is considered as one of the three key elements of the Government's strategy for moving towards a decarbonised, diversified electricity sector by 2050 (paras 3.3.22, 3.5.2, 3.5.6). Para 3.5.9 explains that the need for new nuclear power stations is urgent and that it is important that they are constructed and start generating as soon as possible.

3.19 Para 3.5.1 describes nuclear power as a "*low carbon, proven technology, which is anticipated to play an increasingly important role as we move to diversify and decarbonise our sources of electricity*". Para 3.5.3 elaborates that new nuclear power stations will ensure a diverse mix of technology and fuel resources which will potentially reduce supply interruptions and sudden spikes in electricity prices *"that can arise when a single technology of fuel dominates the electricity generation"*. Furthermore, nuclear fuel fabrication is described as a stable and mature industry, with a key advantage of having separate supply chains from gas and coal.

3.20 Nuclear power is described as "*the only non-renewable low carbon technology that is currently proven and can be deployed on a large scale*" (para 3.5.7). Other advantages listed are low generating costs and the ability to operate for longer periods without refuelling (para 3.5.4, 3.5.7, 3.5.8).

3.21 The principle of the need for new nuclear power stations, and that this need is urgent, is therefore established in NPS EN-1 and NPS EN-6.

Assessment Principles

3.22 Paragraph 4.1.3 of NPS EN-1 explains that when considering any proposed NSIPs, the decision-maker should weigh its adverse effects, including long term and cumulative adverse impacts as well as measures to avoid, reduce or compensate these, against its benefits, including the contribution of a project to meeting the need for energy infrastructure, job creation and any other long term or wider benefits.

3.23 Paragraph 4.1.4 provides additional policy on decision making and states that the decision-maker should take into account "*environmental, social and economic benefits and adverse impacts, at national, regional and local levels"*.

Generic Impacts

3.24 Section 5 of the NPS EN-1 sets out generic impacts relevant to all energy NSIPs. This is followed by detailed guidance on a topic by topic basis to guide applicants as well as the decision-maker in their detailed approach to NSIP projects, informing their design, assessment and mitigation.

National Policy Statement for Nuclear Power Generation EN-6

3.25 NPS EN-6 provides specific national policy for new nuclear power stations. It echoes the principles outlined in NPS EN-1 asserting the urgent need for new nuclear power stations and their role in contributing towards a secure and diverse energy mix (para 1.1.1, 2.2.1). The decision-maker is required to "*assess applications for new nuclear power stations on the basis that the need for such infrastructure has been demonstrated"* and give "*substantial weight"* to the benefits associated with such a project including displacement of carbon dioxide emissions (para 2.2.24). Hence consultation on the Wylfa Newydd Project proceeds on the basis that the need for the Project is settled.

3.26 NPS EN-6 specifically identifies the Wylfa Newydd Power Station Site (Wylfa NPS Site) as potentially suitable for the deployment of a new nuclear power station before 2025, based on the conclusions of the UK Government's Strategic Siting Assessment (SSA). The Government does not believe there are any alternatives to the eight sites identified in the NPS and considers all of them necessary for its energy goals (para 2.4.3, 2.4.4, 2.5.4).

3.27 The SSA was carried out on the basis that applications for development consent may also include land beyond the boundary for additional elements such as car parks, access roads or marine landing facilities or for the construction or decommissioning of the nuclear power station (para 2.3.4). More details on the SSA process are presented in the Planning Statement Framework document.

Nuclear Impacts and Flags for Local Consideration

3.28 In addition to the generic impacts set out in NPS EN-1, EN-6 sets out a list of "Nuclear Impacts" that are considered particularly relevant to the development of new nuclear generating stations (para 3.4.3). This is followed by detailed guidance on these topics, informing their design, assessment and mitigation (para 3.6 to 3.12). These "Nuclear Impacts" are:

- flood risk;
- water quality and resources;
- coastal change;
- biodiversity and geological conservation;
- landscape and visual impacts;
- socio-economic; and
- human health and well-being.

3.29 NPS EN-6 also identifies a series of "Flags for Local Consideration" to be considered by the decision-maker that were identified through the SSA, but were considered more

appropriately explored at the project level (para 3.5.2), and provides detailed policy in relation to these (sections 3.13- to 3.16). These are:

- proximity to civil aircraft movements;
- access to transmission networks;
- impact on significant infrastructure and resources; and
- size of site to accommodate construction and decommissioning.

3.30 In addition, NPS EN-6 states that there are other Flags for Local Consideration that will be considered at the time of the development consent application by the Office for Nuclear Regulation (ONR), including matters such as demographics, seismic risk and meteorological conditions.

Annex C: Site Assessments

3.31 Annex C of the NPS EN-6 provides site assessments for each of the potentially suitable sites for new nuclear power stations, including the Wylfa NPS Site at Section C.9. This includes analysis and conclusions drawn by the Government against the SSA criteria and reflects advice received from specialists and the Nuclear Regulators, as well as key points made by the public. Paragraph 4.2.3 states that the decision-maker should have regard to the relevant site assessment in addition to the impacts and general siting considerations in EN-6 and EN-1.

3.32 For the Wylfa NPS Site, specific concerns identified during the SSA include potential adverse impacts on internationally protected nature conservation sites, sites of special scientific interest, amenity, cultural heritage, landscape, health and well-being, and the potential effects of the influx of workforce on language, culture and welfare. More information on these potential impacts is presented in the PEI Report.

3.33 Additionally, Annex C notes that for the Wylfa NPS Site, particular issues were raised during the SSA consultation on:

- health;
- socio-economic effects; and
- seismic risk.

3.34 Overall, however, it states that none of these factors are sufficient to prevent the site from being considered as potentially suitable (para C.9.117).

3.35 Table 3.1 provides a list of all generic and nuclear impacts (from both NPS EN-1 and NPS EN-6) along with the Flags for Local Consideration and issues raised during the SSA consultation. It also provides links to the relevant chapters in the PEI Report (or other standalone report) where preliminary environmental information can be found.

Table 3.1 Summary of generic and nuclear impacts identified in NPS EN-1 and NPS EN-6

Source	Topic	Chapter of the PEI Report
NPS EN-1	Air quality and emissions	Chapter B5: air quality
	Biodiversity and geological conservation	Chapter B6: soils and geology Chapter B8: terrestrial and freshwater ecology Chapter B10: the marine environment

Source	Topic	Chapter of the PEI Report
	Civil and military aviation and defence interests	Scoped out of EIA in accordance with the Scoping Opinion for Wylfa Newydd Power Station adopted by the Secretary of State on 28 April 2016 (Scoping Opinion) (para 3.46)
	Coastal change	Chapter B9: coastal processes and coastal geomorphology
	Dust, odour, artificial light, smoke, steam and insect infestation	Chapter B5: air quality Chapter B11: landscape and visual
	Flood risk	Chapter B7: surface water and groundwater
	Historic environment	Chapter B12: archaeology and cultural heritage
	Landscape and visual impacts	Chapter B11: landscape and visual
	Land use including open space, green infrastructure and green belt	Chapter B1: socio-economics
	Noise and vibration	Chapter B4: noise and vibration
	Socio-economics	Chapter B1: socio-economics
	Traffic and transport	Chapter B3: traffic and transport
	Waste management	Chapter B15: waste and materials management
	Water quality and resources	Chapter B7: surface water and groundwater
NPS EN-6	Flood risk (including storm surge and tsunami)	Chapter B7: surface water and groundwater
	Water quality and resources	Chapter B7: surface water and groundwater
	Coastal change	Chapter B9: coastal processes and coastal geomorphology
	Biodiversity and geological conservation	Chapter B6: soils and geology Chapter B8: terrestrial and freshwater ecology Chapter B10: the marine environment
	Landscape and visual impacts	Chapter B11: landscape and visual
	Socio-economics	Chapter B1: socio-economics
	Human health and well-being	Interim Health Impact Assessment Report
NPS EN-6; 'flags'	Proximity to civil aircraft movements	Scoped out of EIA in accordance with the Scoping Opinion (para 3.46)
	Access to transmission networks	Scoped out of EIA in accordance with the Scoping Opinion (except in relation to cumulative effects (para 2.65))

Source	Topic	Chapter of the PEI Report
	Impact on significant infrastructure and resources	Volume I: Cumulative Impact Assessment
	Size of site to accommodate construction and decommissioning	Scoped out of EIA
SSA Consult-ation	Health	Interim Health Impact Assessment Report
	Socio-economic effects	Chapter B1: socio-economics
	Seismic risk	Scoped out of EIA

Welsh Planning Policy Context

3.36 For development in Wales, the principal strategic policy documents are Planning Policy Wales (2016), Technical Advice Notes (TANs) and the Wales Spatial Plan (2010). Together these comprise the national planning policy framework for the preparation of local development plans and are material considerations in determining individual planning applications. They are also important and relevant considerations for the DCO application under Section 104(2)(d) of the Planning Act 2008, although, in the case of inconsistencies, the NPSs take precedence.

Planning Policy Wales (Edition 8, Jan 2016)

3.37 Planning Policy Wales (Edition 8, Jan 2016) (PPW) sets out the land use planning policies of the Welsh Government, forming a strategic framework to guide development.

3.38 Section 4.4 in Chapter 4 '*Planning for Sustainability'* outlines specific objectives for the planning system, which reflect the Welsh Government's view on sustainable development across Wales. Although there are no specific policies related to nuclear power generation or the Wylfa site, para 4.4.3 sets out some broad objectives that are relevant to the Project:

- respect and encourage diversity in the local economy; promote quality, lasting, and flexible employment opportunities;
- promote resource-efficient and climate change resilient settlement patterns; minimising land-take and maximising the use of previously developed land;
- tackle the causes of climate change by moving towards a low carbon economy; facilitating development that reduces greenhouse gas emissions;
- encourage sustainable communities by ensuring the provision of sufficient and good quality housing and infrastructure;
- protect and improve the environment, quality of life and local ecosystems;
- ensure developments do not produce irreversible harmful effects on the natural environment and support measures that allow the natural heritage to adapt to the effects of climate change;
- conserve and enhance biodiversity, habitats and landscapes;

- conserve the historic environment and cultural heritage;
- reduce waste and all forms of pollution and promote good environmental management;
- maximise the use and re-use of renewable resources and materials and use locally produced sustainable materials where possible;
- facilitate an integrated transport system. Improve transport facilities, safety, amenity and overall accessibility to employment, shopping, education, health, leisure and community facilities; maximising opportunities for community development and social welfare;
- locate developments to minimise the demand for travel, especially by private car; and
- protect and improve people's health and well-being.

Technical Advice Notes

3.39 PPW is supplemented by 22 topic-based Technical Advice Notes (TANs), which set out the Government's policies on various planning issues. The principles and objectives of TANs align with the overarching national guidance for the specific topic. The TANs that are most relevant to the Wylfa Newydd Project are listed below. More information on these documents is presented in the Planning Statement Framework document:

- TAN 5: Nature, Conservation and Planning, 2009;
- TAN 6: Planning for Sustainable Rural Communities, 2010;
- TAN 11: Noise, 1997;
- TAN 12: Design, 2016;
- TAN 13: Tourism, 1997;
- TAN 14: Coastal Planning, 1998;
- TAN 15: Development and Flood Risk, 2004;
- TAN 16: Sport, Recreation and Open Space, 2009;
- TAN 18: Transport, 2007;
- TAN 20: Planning and the Welsh Language, 2013;
- TAN 21: Waste, 2014; and
- TAN 23: Economic Development, 2014.

Wales Spatial Plan (Adopted 2004) (Update 2008)

3.40 *The Wales Spatial Plan - People, Places, Futures* provides policy direction for development plans and sets out the cross-cutting national spatial priorities within six identified sub-regions within Wales. The Wylfa NPS site falls within the north west Wales – Eryi a Môn sub-region.

3.41 The Vision for The North Wales Spatial Plan (NWSP) promotes "*a high quality natural and physical environment supporting a cultural and knowledge based economy that will enable the area to maintain and enhance its distinctive character, retain and attract back young people and sustain the Welsh language"* (page 67).

3.42 Economic challenges facing north west Wales are recognised, particularly economic restructuring and the decline of traditional industries along with high rates of out migration. Specific reference is made to the loss of employment in the nuclear industry at Wylfa and Trawsfynydd and the impact this has on the north west Wales economy. Priorities for developing north west Wales in the NWSP are:

- planned spatial development including a strong Menai area, Llandudno hub and secondary hubs in the north and south of the region;
- broadening the region's economic base;
- developing an outward looking knowledge based economy, focussing on bio sciences, environmental services, renewable energy, nuclear decommissioning technologies;
- maximising the opportunities for Holyhead as a major international gateway; and
- capitalising on the region's outstanding environment, including its coast, historic heritage and strong cultural identity.

3.43 The NWSP also recognises that jobs could be created by supporting the energy sector of the area (para 17.4).

Local Planning Policy and Guidance

3.44 The statutory Development Plan for the Isle of Anglesey comprises the Gwynedd Structure Plan (GSP, 1993) and Ynys Môn Local Plan (YMLP, 1996). The Development Plan will be replaced on adoption of the Anglesey and Gwynedd Joint Local Development Plan 2011-2026 (JLDP), which is currently being prepared by the Isle of Anglesey County Council (IACC) and Gwynedd Council.

3.45 The Development Plan is the principal policy document for the consideration of Horizon's TCPA applications for the Associated Developments related to the Wylfa Newydd Project. It is also an important consideration for local authorities when preparing their Local Impact Reports in relation to the DCO examination, but, where there are inconsistencies, policies in the NPSs take precedence.

3.46 It should be noted that as the periods covered by the extant Development Plan have expired, policies in these documents may be generally considered out of date, although some of the strategic principles are still relevant. The following local planning policy and guidance documents are also considered to be relevant material considerations when assessing the Associated Development applications for the Wylfa Newydd Project:

- Stopped Unitary Development Plan, 2005;
- the emerging Anglesey and Gwynedd Joint Local Development Plan (JLDP);
- IACC Interim Planning Policy;
- IACCs New Nuclear Build at Wylfa: Supplementary Planning Guidance, July 2014 ('Wylfa SPG'); and
- other relevant SPG.

3.47 Relevant GSP and the YMLP policies are summarised in the subsequent sections for completeness, although these policies are considered to carry limited weight because the plans are out of date.

3.48 Further details on the existing Development Plan, its validity and what weight should be given to different emerging documents will be presented in the Planning Statements to be submitted with the DCO and TCPA applications.

Gwynedd Structure Plan, 1993

3.49 The GSP provided strategic guidance for development on Anglesey from 1991 to 2006, and does not therefore consider new energy-related development, such as the Wylfa Newydd Project. Policies are focused around other forms of power and electricity, although a presumption in favour of such proposals is stated, "…*provided that the impact upon the locality is acceptable to the local planning authority*." (Policy C7).

Ynys Môn Local Plan, 1996

3.50 The YMLP covered the period from 1991 to 2001 and set out policies to support the broader framework of the GSP. It contained a policy for renewable energy developments, but did not consider new nuclear power. However, the YMLP recognises the existing Wylfa Nuclear Power Station as an important employer and that in considering the decommissioning of the power station, alternative employment schemes and the provision of new infrastructure to support economic development would be required (page 6). Furthermore, para 3.13 explains that with the approaching decommissioning, any significant changes to the workforce could have a major impact on the local economy.

Stopped Unitary Development Plan, 2005

3.51 The Deposit Version of Anglesey's Unitary Development Plan (UDP) was subject to Public Inquiry in 2003, and the Inspector's recommendations were presented in a Report published in August 2004. The IACC, however, voted to stop work on the Anglesey UDP on 1st December 2005 in order to move to the then new Local Development Plan system.

3.52 The UDP does not therefore form part of the Development Plan, but due to its advanced stage of preparation and more recent origin than other Development Plan documents, it will nevertheless be a material consideration in the determination of the TCPA applications for the Associated Developments.

3.53 The UDP recognises the need to respond to the changes in energy generation, stating "*There is a need to plan appropriately for energy generation in the light of issues around new power stations; the closure process that will eventually affect Wylfa nuclear power station and the emergence of new wave energy and renewable technologies*" (p.9).

3.54 Policy PO8b, Energy Developments, clarifies that applications for the development of renewable and non-renewable energy resources should be permitted if there are no unacceptable adverse impacts on the environment.

Emerging Joint Local Development Plan Anglesey and Gwynedd (2011-2026), Draft Deposit Plan, 2015 (including the Schedule of Focussed Changes, Feb 2016)

3.55 Gwynedd Council and the IACC have decided to prepare a JLDP for their Plan areas. The JLDP will, upon adoption, replace the current Development Plans and form the basis for decisions on land use planning in Anglesey and Gwynedd.

3.56 The deposit version of the JLDP was published for consultation between February and March 2015 (Deposit Plan), and the plan was submitted to the Welsh Government for independent examination, including a number of focused and minor changes, in March 2016. Examination of the JLDP will take place from September 2016 and the Inspector's report is expected in March 2017. The JLDP is currently scheduled for adoption in spring 2017.

3.57 Should the expected programme for adoption of the JLDP be realised, then it is expected that the applications for the majority of Associated Development will be submitted to the IACC in advance of its adoption. For these applications the JLDP will be a material consideration in decision making; in particular three key strategic policies which it promotes, i.e. Strategic Policy PS5, PS8 and PS9.

3.58 If the JLDP is adopted before the DCO application is submitted then it will be a "relevant and important" matter to be taken into account in decision-making (NPS EN-1 para 4.5.1). Even if it is not adopted when the DCO application is submitted, it will carry considerable weight given the advanced stage it will have reached.

3.59 Strategic Policy PS5 requires all proposals to demonstrate compliance with the principles of sustainable development. These revolve around adapting to climate change, greater use of previously developed land, promoting the Welsh language, protecting the natural, built and historic environment, promoting a varied local economy, reducing the need to travel and encouraging good design.

3.60 Strategic Policy PS8 requires (as far as is appropriate or relevant) all Nationally Significant Infrastructure Projects and Associated Developments to be accompanied by a comprehensive assessment of their "*environmental[…], social[…], linguistic and cultural, transport and economic impacts (positive, negative and cumulative) during the construction, operation and decommissioning and restoration (if relevant) phases, as well as measures to be achieved where appropriate to avoid, reduce, alleviate and/or offset the harm done.*"

3.61 Strategic Policy PS9 is specific to the Wylfa Newydd Project. It explains the factors that the IACC will consider in detail when considering various components of the Wylfa Newydd Project. These factors are listed below.

- planning compliance;
- minimising impact and maximising re-use of existing facilities and materials;

- highways and transport proposals in the form of the Integrated Traffic and Transport Strategy;
- accommodation requirements of construction workers;
- siting and design of associated development and legacy uses;
- scheme layout, design and scale of green infrastructure;
- screening results in accordance with the Conservation of Habitats and Species Regulations 2010 (as amended) and Appropriate Assessment (where required);
- procurement, employment, education, training and recruitment strategies;
- community infrastructure and benefits including legacy;
- promotion of social cohesion and community safety;
- voluntary community benefits; and
- treatment, storage or disposal of radioactive waste outside of the DCO.

IACC Interim Planning Policy

3.62 **Interim Planning Policy (Large Sites and Rural Clusters), 2011** – This policy ensures that sufficient housing land is made available to maintain a five year supply and to take advantage of any significant employment opportunities that may arise until the JLDP is adopted. The policy is used, in conjunction with relevant policies in the Development Plan and the stopped UDP, to deal with major housing applications of 50 or more units or a site area of 1.5 hectares or more within or adjoining Holyhead, Llangefni or Amlwch.

3.63 **Isle of Anglesey Single Integrated Plan 2013-2025 (2012)** – The Vision of the Plan is "*working together to create jobs, improve health and deliver a safe and sustainable place to live."* Four plans make up this Integrated Plan, comprising the Health, Social Care and Well-being Strategy, Community Strategy, Children and Young People's Plan and Community Safety Plan.

New Nuclear Build at Wylfa: Supplementary Planning Guidance, 2014

3.64 A number of Supplementary Planning Guidance (SPG) documents have been published by the IACC to further inform development plan policies, the most relevant of which for the Project is the Wylfa SPG, published in 2014 in the context of the Project. It sets out the IACC's vision and objectives for the new nuclear development at Wylfa and is the most up to date guidance available for the Project.

3.65 The overarching purpose of the Wylfa SPG is to provide supplementary guidance on important local, direct and indirect matters. Although the SPG is not supplemental to the JLDP, it does seek to be consistent with the direction of travel set out in the emerging JLDP. The Wylfa SPG also aspires to:

- inform the IACCs position in its Local Impact Report and subsequently the Statement of Common Ground (documents to be submitted to PINS as part of DCO examination);

- provide a planning framework to guide applicants and influence the Project's design and development to ensure sustainable outcomes; with a focus on associated development;
- inform pre-application discussions for the Wylfa Newydd Development Area and associated developments;
- offer supplementary local level guidance consistent with the NPSs; and
- form a material consideration in the assessment of the Wylfa Newydd Project elements that are subject to TCPA applications.

3.66 The Wylfa SPG recognises the important contribution new nuclear power can make to the UK's energy mix and security of supply and supports the principle of development of a new nuclear power station at Wylfa. IACCs vision for the Project is clear and aligns with its wider socio-economic and legacy aspiration. The vision states:

"*the New Nuclear build at Wylfa is a positive driver for the transformation of the economy and communities on Anglesey, providing sustainable employment opportunities, improving the quality of life for existing and future generations and enhancing local identity and distinctiveness."*

3.67 The transformative potential of the Project is also recognised with the Wylfa SPG calling it an "*unprecedented opportunity"* to transform the economies of Anglesey and wider North Wales region, whilst delivering investment in employment, services and infrastructure. The project can also be a catalyst for cultural and behavioural change ensuring sustainable economic development, community cohesion and a better quality of life (para 4.1.1).

3.68 The Wylfa SPG notes that the key strategic importance of Horizon's Wylfa Newydd Project is fully recognised in the IACCs Anglesey Energy Island Programme and the Welsh Government's Anglesey Enterprise Zone, stating that together they *"aim to create a geographical hub of excellence for the development, implementation and servicing of low carbon energy initiatives"* (para 1.1.4).

3.69 The SPG outlines particular considerations and constraints relating to the impacts of the Project in relation to Anglesey's largest settlements and key transport corridors and also includes general guidance on a number of topics, including:

- economic development;
- tourism;
- population and community;
- construction worker accommodation;
- Welsh language and culture;
- transport;
- utilities;
- waste;
- climate change; and
- natural and historic environment.

Other Supplementary Planning Guidance

3.70 Other SPGs produced by the IACC that are relevant to the Wylfa Newydd Project are listed below. More discussion on these SPGs, as they are relevant to the Project, is presented in the Planning Statement Framework document:

- Design in the Urban and Rural Built Environment, 2008;
- Parking Standards, 2008;
- Planning and the Welsh Language, 2007; and
- Planning Obligations (Section 106 Agreements), 2008.

Marine Policy

3.71 The marine elements of the Wylfa Newydd Project will be consented through the DCO and three separate marine licences. These marine licences consents will be assessed in accordance with the UK Marine Policy Statement, the Marine and Coastal Access Act 2009 and any relevant marine strategies and policies.

The Marine and Coastal Access Act, 2009

3.72 The Marine and Coastal Access Act, 2009 provides the legal mechanism to help ensure clean, healthy, safe, productive and biologically diverse oceans and seas by putting in place a system for improved management and protection of the marine and coastal environment. It established a strategic Marine Planning System which includes production of a Marine Policy Statement and streamlines the marine licensing system.

3.73 It designates Marine Conservation Zones (MCZ) to steer sea users and decision-makers towards more efficient, sustainable use and protection of marine resources and provide the legal mechanism to deliver UK's European and international marine conservation commitments. It encourages the creation of a continuous and well-managed coastal route around the entirety of the English and Welsh coastline and promotes sustainable coastal and estuarine development through a system of Integrated Coastal Zone Management.

UK Marine Policy Statement, 2009

3.74 The Marine Policy Statement will support and facilitate the formulation of Marine Plans; ensuring marine resources are used in a sustainable way thereby promoting sustainable economic development, enabling the shift to low carbon economy and mitigating the causes of climate change and ocean acidification. It also encourages a sustainable marine environment which promotes healthy ecosystems, protects marine habitats/ species and heritage assets.

UK Marine Strategy (Part One, Two and Three), 2012

3.75 The UK Marine Strategy aims to fulfil the requirements of the Marine Strategy Framework Directive (MSFD) for the UK; which requires member states to put in place measures to achieve Good Environmental Status (GES) in their marine waters by 2020.

3.76 The UK Marine Strategy presents an outline for how the UK will move towards GES status in UK seas by 2020. It covers:

- an initial assessment of the state of the UK's seas;

- proposals for characteristics of GES for the UK's seas; and
- proposals for more detailed GES targets and indicators, through which the progress towards achieving GES will be measured.

3.77 Part 2 of the strategy sets out how the UK will monitor progress against the 11 descriptors for GES. Part 3 outlines the measures that contribute to the achievement and maintenance of GES in UK seas by 2020.

Clearing the Waters, (Stages one, two, three and four), 2012

3.78 The 'Clearing the Waters' are guidance documents to explain the implications of Water Framework Directive (WfD) on marine dredging applications and operations.

3.79 The WfD aims to improve the ecological condition of Europe's waterbodies. It requires the surface and groundwater bodies of all member states to achieve 'good status' and not experience any deterioration. 'Good status' is a function of good ecological status and good chemical status, as defined by a number of quantifiable quality elements which are biological, hydromorphological, physio-chemical and chemical in nature.

3.80 The aim of 'Clearing the Waters' guidance documents is to provide the necessary context to decision making; whether or not the proposed dredging or disposal activity can proceed and, if so, whether any measures are required to help ensure compliance with the WfD. If it is demonstrated that the dredging or disposal activity will not affect status at water body level, or where a potential effect on status can be successfully mitigated, the activity is WFD compliant and the licensing or consenting process can continue. If a dredging or disposal activity would cause deterioration as a result of a physical modification, it may be possible to seek an exemption under Article 4(7) of the WFD so that the activity can go ahead. Where an activity would cause any other type of deterioration at water body level, there is no provision in the WFD for an exemption further advice should be sought from the relevant stakeholders.

Other plans, programmes and strategies

3.81 Apart from the UK, Welsh and local planning policy documents explored in the sections above, there are some other plans, programmes and strategies which lend overall support to the Wylfa Newydd Project. These are listed below and described in the Planning Statement Framework document:

- Climate Change Act, 2008;
- White Papers on Energy Policy, Various;
- UK Low Carbon Transition Plan, 2009;
- National Infrastructure Plan, Various;
- Climate Change Strategy for Wales, 2010;
- Energy Wales: A Low Carbon Transition, 2012 and Delivery Plan 2014;
- Environment Strategy for Wales, 2006;
- Welsh Government Enterprise Zone, Anglesey;
- IACCs Energy Island Programme, June 2010; and
- Anglesey Economic Regeneration Strategy 2005-2015, 2004.

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4 Project overview

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4 Project overview

4.1 This chapter gives a brief overview of the preferred proposals for the Wylfa Newydd Project by way of context for the more detailed descriptions that follow later in this document, highlighting particular matters for consultation and where further information is contained later in this document. It also outlines the main areas of change in the Wylfa Newydd Project since the Stage One Pre-Application Consultation and January 2016 Project Update consultation, highlighting the main drivers for such changes.

4.2 This chapter also introduces a number of strategies that Horizon is developing to manage the effects of the Project, including our plans for the landscape setting and mitigation of the Power Station Site, the proposed workforce profile, our preferred approach to temporary construction workers' accommodation, promoting jobs, skills and business development, proposed transport and highway improvements, changes to public rights of way and cycle routes, enhancing community benefits and protecting the Welsh language. Each strategic approach is described in detail in relevant chapters of this document.

Wylfa Newydd Project components

4.3 Horizon is intending to deploy two UK Advanced Boiling Water Reactors (UK ABWRs) supplied by Hitachi-GE Nuclear Energy Ltd, with a combined electrical output of approximately 2,700MW, at the proposed Wylfa Newydd Power Station located on the north coast of Anglesey adjacent to the Existing Power Station and west of Cemaes.

4.4 The UK ABWR nuclear reactor is a UK-compliant version of the Advanced Boiling Water Reactor technology that is already in use in Japan. The UK ABWR is a 'generation III+' light water reactor that has been developed based on operational experience, utilising tested and proven technology of previous Boiling Water Reactor designs, as well as further simplification in the design of reactor systems and containment for improved safety and reliability. As outlined in chapter 1, the construction of the Wylfa Newydd Power Station will be delivered by Menter Newydd, to be overseen by Horizon.

4.5 The majority of the main construction activities and permanent development would take place within the Wylfa Newydd Development Area, which would include the Power Station Site and the surrounding areas that would be used for the construction and operation of the Power Station, including its landscaped setting. A number of Project components would fall outside the Wylfa Newydd Development Area comprising Off-Site Power Station Facilities and Associated Development, required for the construction and operation of the Power Station. These are listed below, with further detail provided in the sections that follow.

Power Station Site and surroundings (see figure 4.2)

4.6 The main operational plant and structures of the Wylfa Newydd Power Station (described in detail in chapter 6 of this document) would be brought into operation in accordance with Horizon's Commissioning Strategy and include:

- Main Plant – those parts of the Power Station that are unitised, meaning that there would be one for each Unit and therefore two of each within the Power Station Site;

- Common Plant – those parts of the Power Station that service the generation of power but would be shared between the two UK ABWRs;
- Supporting facilities, buildings, structures and features – those parts of the Power Station that are integral to the Wylfa Newydd Power Station, but would not be process related;
- Radioactive waste and spent fuel storage;
- Marine works – Cooling Water System (CWS), Marine Off-loading Facility (MOLF) and breakwater structures;
- On-site Temporary Workers' Accommodation campus;
- Training and Simulator Building;
- Landscape works and planting - to be implemented through a Landscape and Environmental Masterplan (LEMP), including drainage and footpath works;
- Public access – involving closure and diversion of Public Rights of Way as part of landscape works;
- Power Station Access Road;
- Car parking; and
- Main perimeter fence and construction fence.

Off-Site Power Station Facilities (see figure 4.3)

4.7 In order to provide resilience against extreme events with very low probabilities, and in line with industry good practice, Horizon is required to develop a suite of integral facilities that would be physically separate from, but local to, the Power Station Site. These facilities form part of the Wylfa Newydd Power Station and would include the following:

- Alternative Emergency Control Centre (AECC);
- Environmental Survey Laboratory (ESL); and
- Mobile Emergency Equipment Garage (MEEG).

Associated Development (see figure 4.3)

4.8 The following Associated Development, required for the construction and operation of the Power Station, will lie mostly outside the Wylfa Newydd Development Area:

- Highways improvements;
- Park and Ride facilities;
- Logistics Centre;
- Off-Site Temporary Workers' Accommodation; and
- Visitor and Media Reception Centre (within the Wylfa Newydd Development Area).

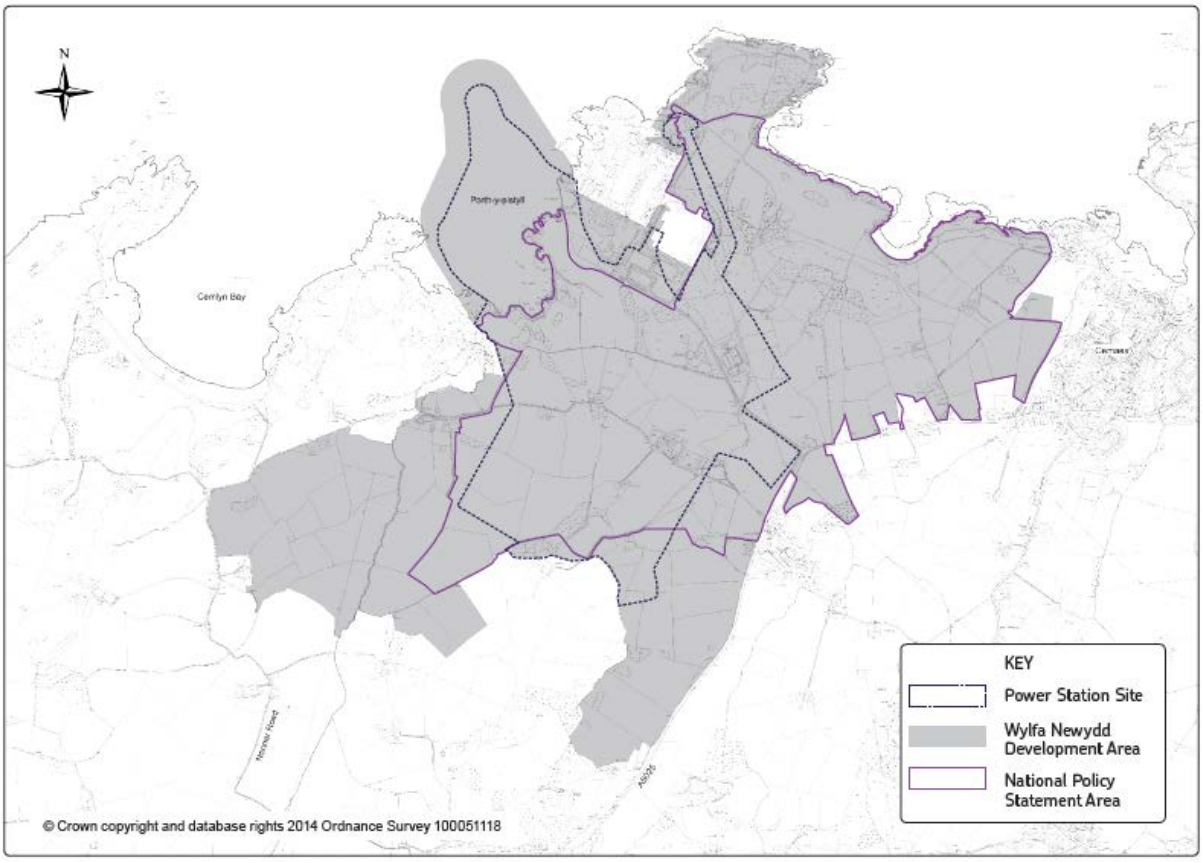
Distribution of Project components on Anglesey

4.9 This section presents the geographic distribution of the Wylfa Newydd Project components in general terms, followed by a brief description of their key features. Four areas are used when describing the Wylfa Newydd Project:

- **Power Station Site** – the indicative areas of land and sea within which the majority of the permanent Power Station buildings, plant and structures would be situated. It would include the two nuclear reactors, steam turbines, the CWS intake and pumphouse, outfall structures, breakwaters and the MOLF, as well as other ancillary structures. These features form part of the overall Wylfa Newydd Power Station, which includes the Off-Site Power Station Facilities that would be included within the application for a DCO;
- **Wylfa NPS Site** – the Government has issued a National Policy Statement for Nuclear Power Generation EN-6 (NPS EN-6) that identifies a small number of sites in the UK as being potentially suitable for the deployment of a new nuclear power station. NPS EN-6 identifies one such site on Anglesey. Horizon refers to this as the Wylfa NPS Site;
- **Wylfa Newydd Development Area** – the indicative areas of land (about 380 hectares) and sea including the Power Station Site, Wylfa NPS Site and the surrounding areas that would be used for the construction and operation of the Power Station. This area is representative of the maximum area that would be physically affected by Power Station Main Construction activities and used to form the setting and features of the operational Power Station; and
- **Off-Site** – the areas of land needed for the Wylfa Newydd Project that fall outside the Wylfa Newydd Development Area. Components that would be Off-Site include most of the Associated Development needed for both construction and operation of the Power Station for which planning applications would be made, as well as the Off-Site Power Station Facilities that would be included within the DCO application for the Wylfa Newydd Power Station.

4.10 The first three of these areas are shown in figure 4.1.

Figure 4.1 Geographic areas of the Wylfa Newydd Project



4.11 Figure 4.2 illustrates the preferred locations of Wylfa Newydd Project components within the Power Station Site and surroundings. Figure 4.3 shows the general physical distribution of the Off-Site Wylfa Newydd Project components across Anglesey.

Figure 4.2 Preferred locations of Wylfa Newydd Project components within the Power Station Site and surroundings

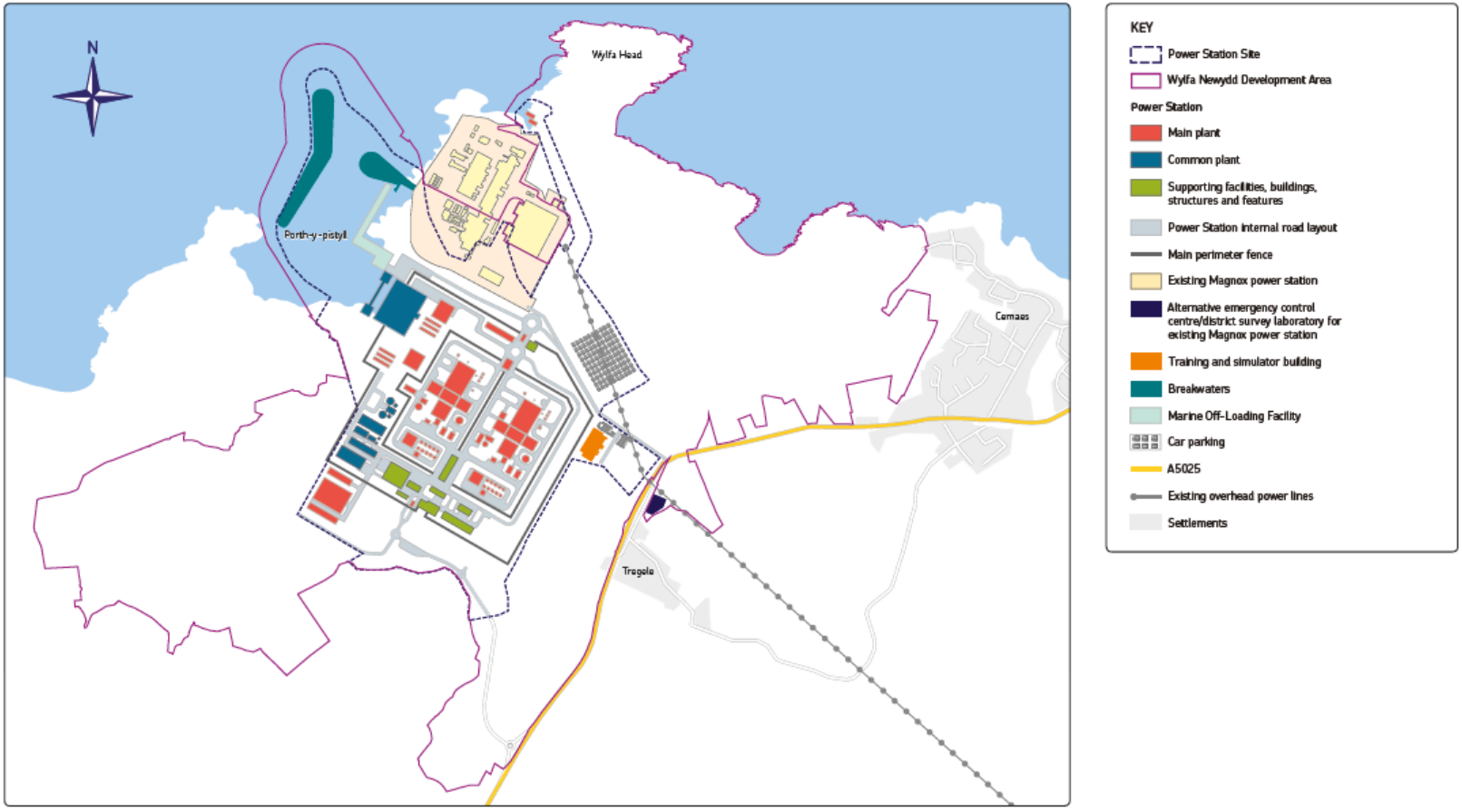
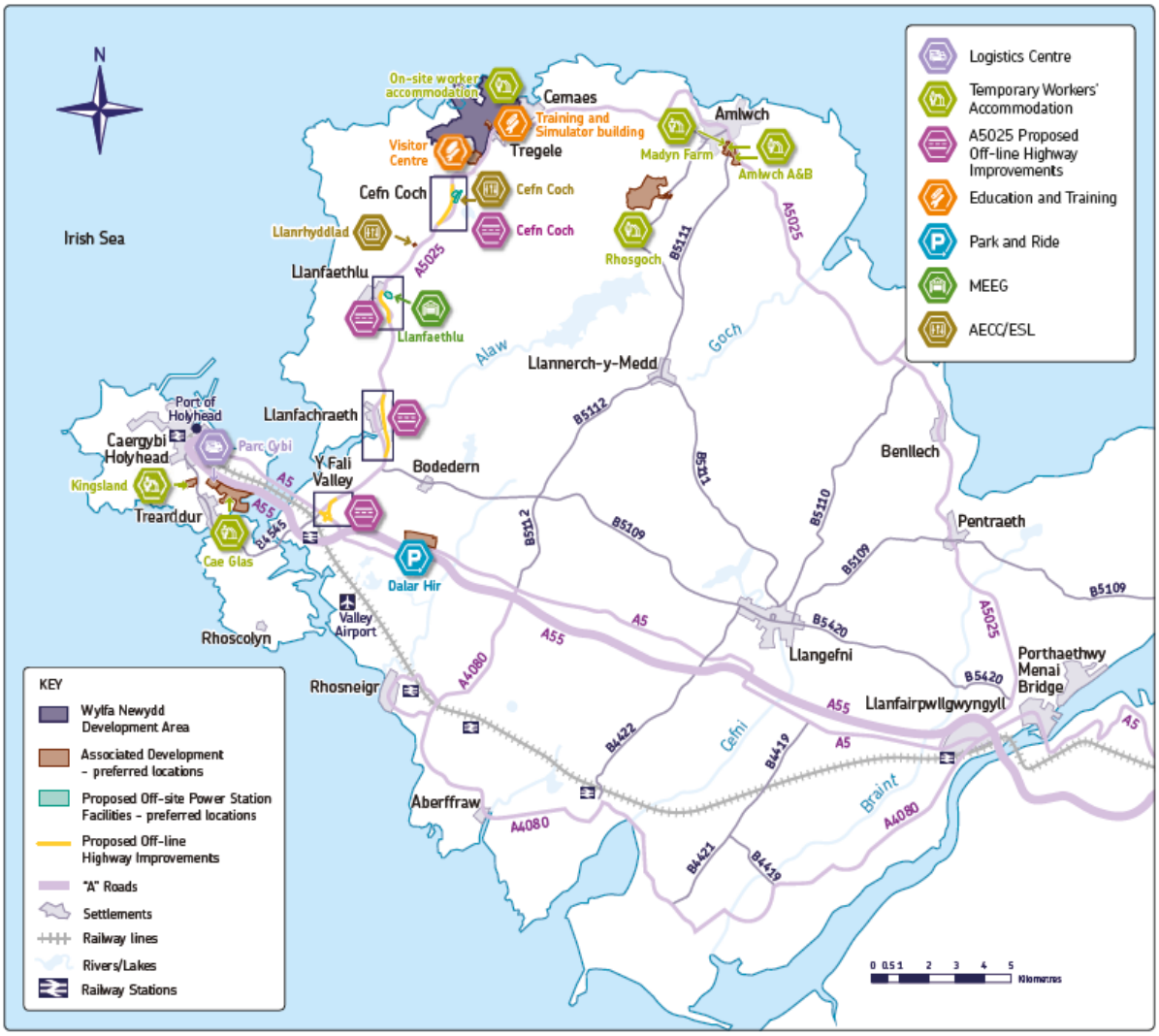


Figure 4.3 Indicative distribution of Off-Site Wylfa Newydd Project components



4.12 The components of the Wylfa Newydd Project have been grouped into five different types:

- Power Station construction activities;
- Associated Development to support construction;
- Associated Development to support operation;
- Power Station; and
- Off-Site Power Station Facilities.

4.13 Table 4.1 summarises which Wylfa Newydd Project components are within each grouping, as well as stating Horizon's current preferred location and options or alternatives for each.

Table 4.4.1 Distribution of Project components by type

Type	Component	Location(s), including options
Power Station construction activities	Enabling Works, including Site Preparation and Clearance	Wylfa Newydd Development Area (part)
	Marine works, including marine elements of CWS	Wylfa Newydd Development Area
	Main Construction	Wylfa Newydd Development Area
	Temporary Workers' Accommodation for critical construction workers	Wylfa Newydd Development Area
	Landscape and Environmental Masterplan implementation (including drainage, footpath works and Cemlyn Road closure)	Wylfa Newydd Development Area
	Mitigation works for Sites of Special Scientific Interest (SSSIs), ecology and protected species	Wylfa Newydd Development Area; and Off-Site
Associated Development, to support construction	Park and Ride facilities	Off-Site: Dalar Hir (preferred site)
	Logistics Centre	Off-Site: Parc Cybi (preferred site)
	Off-site new accommodation stock for construction workers (excluding those in essential construction roles), including: • new build permanent housing to be first used by construction workers; • facilitation of the re-use of empty homes; and • specially provided Temporary Workers' Accommodation.	Amlwch (Madyn Farm) (preferred site) and Holyhead (Kingsland) (preferred site) Existing homes on Anglesey Holyhead (Cae Glas) (preferred site) Rhosgoch (preferred site) Amlwch (Land to the west and east of the B5111, known as Sites A and B) (alternative site)
	Replacement Alternative Emergency Control Centre and District Survey Laboratory (AECC/DSL) for Existing Power Station (on behalf of Magnox Limited)	Wylfa Newydd Development Area

Type	Component	Location(s), including options
Associated Development, to support construction and operation	On-line Highway Improvements	A5025 between Valley and Power Station Site Minor road from Rhosgoch Temporary Workers' Accommodation site to A5025 at Burwen (potential widening improvements)
	Off-line Highway Improvements	A5025 between Valley and Power Station Site: • Valley; • Llanfachraeth; • Llanfaethlu; and • Cefn Coch.
	Visitor and Media Reception Centre (incorporating marshalling point)	Wylfa Newydd Development Area (preferred site, combined with media briefing and marshalling point)
Power Station	Main Plant	Power Station Site
	Common Plant	Power Station Site
	Supporting Facilities, Buildings, Structures and Features	Power Station Site
Off-Site Power Station Facilities	Alternative Emergency Control Centre (AECC)	Parcel of land off the A5025 at Cefn Coch (preferred site)
	Environmental Survey Laboratory (ESL)	Parcel of land off the A5025 at Cefn Coch (preferred site)[1]
	Mobile Emergency Equipment Garage (MEEG)	Former bus garage adjacent to A5025 in Llanfaethlu (preferred site)

Question – Project components

Do you have any general comments on the Project components and their distribution? If so, please answer our general question. Questions on our preferred proposals for each of the Project components are provided within the later chapters of this document.

[1] We are also asking for views on the potential of an alternative site, the Llanrhyddlad School site to accommodate the AECC/ESL. We still have further work to confirm whether it would be suitable for the proposed facility, but have produced an Addendum Report as part of this consultation which shows how the building may be accommodated on the site and provides Preliminary Environmental Information.

Wylfa Newydd Project description

4.14 The components of the Wylfa Newydd Project outlined above are set out in further detail in this Main Consultation Document, including the proposed elements of the Power Station Site and immediate surroundings, Off-Site Power Station Facilities, Associated Development, Power Station construction activities and the strategic approaches to be employed in the delivery of the Project.

Power Station Site and surroundings

4.15 The principal components of the Power Station Site are outlined below and described in detail in chapter 6 of this document.

Main Plant

4.16 The positioning and layout of the various structures and buildings comprising the Main Plant have been developed and optimised taking into account regulatory and technical design requirements.

4.17 Each of the two UK ABWR Units would comprise the following buildings and plant:

- reactor building;
- control building;
- turbine building, containing steam turbine, condenser, electrical generator, various auxiliary plant and connecting systems;
- heat exchanger building;
- filter vent building;
- back-up building;
- radioactive waste building;
- service building; and
- emergency generators including EDGs, BBGs and DAGs[2].

4.18 The following components are associated with the conversion of the energy contained in the steam generated in each nuclear reactor into electrical power for export to the National Grid:

- generator transformers and auxiliary transformers; and
- integral connection of the transformers to the grid substation.

Common Plant

4.19 The common plant would serve the two ABWR Units and would comprise:

- CWS (intake structures, screens and fish deterrent and return system, pump house structures, pumping plant and equipment, seal pits, ball strainers, discharge culverts/tunnels and outfall), together with a biocide treatment plant and two marine breakwaters that maintain a favourable wave climate at Porth-y-pistyll where the CW intake structures are located;

[2] Emergency Diesel Generators; Back-up Building Generators; Diverse Additional Generators

- auxiliary ('House') boilers and fuel tanks;
- makeup water treatment building (and associated water and chemical storage tanks);
- fire-fighting buildings (and associated water storage tanks);
- storage of spent fuel and other types of radioactive waste, and
- additional structures or facilities such as security fences and gatehouses, site lighting, garages and workshops, distributed power supply buildings, administration building, an outage[3] building to be used during refuelling and for the use of temporary maintenance staff, a main Power Station Access Road and various internal roads and car parking.

Supporting Facilities, Buildings, Structures and Features

4.20 In addition, there would be supporting structures such as offices, maintenance and managerial facilities, roads and other features necessary to support the construction, operation and management of the power station. These would be integral to the Wylfa Newydd Power Station, but would not be process related.

Radioactive waste storage

4.21 The Wylfa Newydd Power Station would necessarily give rise to radioactive waste and spent fuel. Horizon has developed an Integrated Waste Strategy that includes proposals for specially designed facilities to be constructed to store various types of radioactive waste and spent fuel, as well as dealing with conventional waste. Horizon is fully cognisant of the responsibilities that come with operating a nuclear power station and all necessary safety, environmental and security arrangements for the Wylfa Newydd Power Station would be put in place in accordance with the UK regulatory regime. Horizon has commenced preparatory work on its Safety Case Strategy to illustrate how these responsibilities will be met.

Marine works

4.22 A number of Wylfa Newydd Project components would be required in the marine environment to support the construction and operation of the Wylfa Newydd Power Station. Water for the CWS, which is used to condense steam, would be taken from and returned to the Irish Sea via intake and outfall structures. A cooling water intake and pumphouse would be located at Porth-y-pistyll. Breakwater structures may be required at Porth-y-pistyll to protect the cooling water intake and pumphouse structures. The proposed configuration of these breakwaters has altered since the Stage One Pre-Application Consultation to reduce the overall environmental effects on the coastline and facilitate the repositioning of the planned MOLF adjacent to the potential north-eastern breakwater (see table 4.3).

On-site Temporary Workers' Accommodation campus

4.23 A campus-style development is proposed near to the Power Station Site to house up to 500 construction workers who will need to be located on-site to undertake essential and multi-shift tasks, such as 24-hour concrete pouring for the main works. The preferred site is to the north east of the Existing Power Station. The site would be serviced with

[3] A period when a power supply or other service is not available or when equipment is closed down.

facilities such as a canteen, welfare facilities, occupational health room and first aid room. Further details are available in chapter 6 of this document.

Training and Simulator Building

4.24 The Horizon Training and Simulator Building would contain two full scope simulators of the UK ABWR Units, together with a range of classrooms and training spaces. As well as testing responses to non-routine situations, the building would be used for the specialist training of Horizon's operational workforce, described further in chapter 6 of this document. The proposed site for the building occupies the north-eastern corner of the Wylfa Newydd Development Area, just north of the village of Tregele, off the A5025.

Replacement AECC/DSL

4.25 The Wylfa Newydd Development Area includes a building, accessed from Cemlyn Road, currently used as an Alternative Emergency Control Centre (AECC) and District Survey Laboratory (DSL) in support of the Existing Power Station. This building is required to be removed to facilitate the construction of the new Power Station. The AECC and DSL facilities continue to be required to support the Existing Power Station and therefore Horizon has obtained planning permission for a replacement facility on land to the north of Tregele. The development includes a secure compound comprising a single storey main building with ancillary sample preparation room, new access from the public highway and external landscaping works. A planning application for the development was submitted to the Isle of Anglesey County Council (IACC) in April 2016 and was granted conditional approval in June 2016.

Landscape works

4.26 In order to provide some visual and noise screening of the Power Station Site for neighbouring communities, earth mounds would be formed during the construction phase and landscaped as soon as practicable, helping to create an appropriate setting for the Power Station. To achieve this, material excavated during construction activities would be used and, as such, the appearance of the land within the Wylfa Newydd Development Area will change as construction progresses. A phased approach would be taken to the implementation of the landscaping, in accordance with an overall Landscape and Environmental Masterplan (LEMP), illustrated in chapter 7 of this document.

Public access

4.27 A number of public rights of way, including the Wales Coast Path, would be affected by construction activities, necessitating the creation of diversions and some closures. The existing Cemlyn Road, which is part of the Copper Trail cycle route, would also need to be closed through the Power Station Site. Nanner Road provides an alternative access to Cemlyn Bay from the A5025 and highway works will deliver improvements to this route. Details of the proposed works associated with public access are set out in the Public Access and Recreation chapter of the PEI Report (Volume B2).

Power Station Access Road

4.28 There would be a single principal point of access for staff and the majority of vehicles approaching the Power Station under normal operational conditions - the Power Station Access Road. This would approach the Power Station at the south-east corner, connecting to the A5025 via a proposed new roundabout junction to the south of Tregele.

4.29 There are some options around the final alignment of the Power Station Access Road at its northern end. This would be refined as part of the finalisation of the LEMP proposals because it would be influenced by the ground levels at the southern part of the Wylfa Newydd Development Area (see chapter 7).

Car parking

4.30 The Power Station Site layout includes car parking for three main user groups, with a number of locations identified within the Power Station Site:

- day staff, typically working Monday to Friday, comprising a combination of Horizon staff and contractors permanently based at the Power Station Site;
- shift staff, comprising Power Station operation staff working a variable shift pattern providing cover 24 hours each day, seven days each week; and
- outage staff, generally comprising contractors who would only attend the Power Station Site during outages.

Main perimeter fence and construction fence

Construction fencing

4.31 During Site Preparation and Clearance works, a perimeter fence would be erected to define the extent of the construction works. The perimeter fence would provide gaps to preserve access to public footpaths. Where required these gaps would be closed temporarily and affected public footpaths temporarily diverted to enable clearance and development works to be undertaken. Public footpaths would not be diverted or closed permanently until the DCO was granted.

4.32 For the main construction works further perimeter fencing may be installed and upgraded to suit the stage of works being undertaken and the requirements of a nuclear construction site. The construction fence, where appropriate, would meet the Centre for the Protection of National Infrastructure (CPNI) standards and may require approval from the Office for Nuclear Regulation (ONR).

Main perimeter fence

4.33 There would be both an inner and an outer security fence. The fences would meet the Centre for the Protection of National Infrastructure standards and would require approval from the ONR. Each fence would comprise a double fence structure with clear zones between them.

4.34 The operational site would also require permanent perimeter lighting and it is assumed the fences would be monitored by alarm systems and CCTV. Both the inner and outer security fences would include gatehouses for site security control. A third entrance (without gatehouse) would be provided at the south west corner of the site.

4.35 Clear signage would be erected on the Power Station Site boundary (which would sit within the construction boundary) in accordance with ONR licensing requirements, to define the boundary clearly.

Off-site Power Station Facilities

4.36 These facilities are located outside the Wylfa Newydd Development Area, as they are required to be physically separate from the Power Station Site, in order to provide

essential emergency support services during the commissioning and operation of the Power Station. The facilities are described in detail in chapter 18 of this document.

AECC and ESL

4.37 The AECC would provide back-up command and communications facilities to the Power Station Site. It would facilitate the strategic management of the required response in the extremely unlikely event of a Power Station Site incident if the main Emergency Control Centre is unavailable or if there is no access to the Power Station Site (see chapter 18 for details).

4.38 The ESL would provide facilities to manage environmental monitoring and radiological surveys in the local area, including radiation monitoring equipment controls, for analysing samples and assessing the implications for people and the environment. A small number of vehicles would need to be based at this facility.

4.39 It is proposed that the AECC and ESL would be co-located in a single building with associated access, utilities and communication links to the Power Station Site. As set out in detail in chapter 18, there are specific locational factors that must be met in selecting a site for these facilities. Horizon has identified a preferred site at Cefn Coch, shown in figure 4.3, adjacent to the A5025 just south of the hamlet of Pandy, - on land that will be altered by the proposed A5025 Off-line Highway Improvements in this area (see chapter 11).

MEEG

4.40 The MEEG would store a number of specialist vehicles at a location close to, but separate from, the Power Station Site, which would allow them to be rapidly deployed if needed to support an incident. The MEEG could also be used as a marshalling point for support arriving on Anglesey before onward dispatch to the Power Station Site in an emergency situation.

4.41 Similarly to the AECC and ESL, as part of the emergency arrangements for the Wylfa Newydd Power Station, there are certain locational criteria that must be met in selecting a site for this facility. Horizon has identified a preferred site for the MEEG on a parcel of land currently in use as a bus depot and maintenance garage for commercial and heavy goods vehicles, towards the northern end of Llanfaethlu, with direct access to the A5025.

Associated Development

4.42 There are other proposed facilities that are needed for the construction and operation of the Power Station that are not considered integral to the Wylfa Newydd Power Station. Under the current Welsh regulatory system, such Associated Development cannot be included in the DCO application and would therefore currently require separate applications for planning permission under the Town and Country Planning Act 1990 (see figure 4.3 for the proposed locations).

4.43 The Wales Bill introduced in June 2016 by the Wales Office would allow for Associated Development related to electricity generation Nationally Significant Infrastructure Projects (NSIPs) in Wales of over 350MW to be consented by a DCO. Horizon may therefore have the ability to consent some of its Associated Development in its DCO. To preserve this opportunity Horizon intends to consult on its Associated Development in the same way as is required under the Planning Act 2008 for the NSIP; this is also consistent with Horizon's commitments in its Statement of Community Consultation.

A5025 Highway Improvements

4.44 Horizon intends to define and enforce the use of a specific route for the movement of construction workers from the Dalar Hir Park and Ride site and the Temporary Workers' Accommodation sites to the Power Station Site, in addition to road-based freight associated with the Wylfa Newydd Project. In the case of traffic from Dalar Hir, Cae Glas and Kingsland, this would follow the A55, the A5 and the A5025 from Valley to the Power Station Access Road. The improvements focus on the section of the A5025 between Valley and the Power Station Site and include a number of by-passes and sections of carriageway widening to improve the geometry for HGVs to pass and deliver environmental improvements as part of the Wylfa Newydd Project. The improvements are described in detail in chapter 11 of this document.

4.45 The proposed Off-line Highway Improvements on the A5025 comprise:

- A5/A5025 Valley Bypass - a four-arm roundabout junction connecting the A5 with the A5025 to the east of the existing signalised junction that connects the A5 with the A5025 and B4545;
- Llanfachraeth Bypass (A5025) - a new 2km highway to provide a bypass to the east of Llanfachraeth village;
- Llanfaethlu Bypass (A5025) - proposed to eliminate two existing substandard bends near the Black Lion pub and through Llanfaethlu village; and
- Cefn Coch Bypass (A5025) - proposed to eliminate two existing substandard radius bends in Llanrhwydrus near two farms.

4.46 The proposed On-line Highway Improvements on the A5025 predominantly relate to carriageway widening in locations where the constrained nature of the carriageway could restrict two-way HGV movements. It is proposed to widen the existing A5025 to a standard minimum carriageway width of 6.7m with two 0.3m hard strips on either side of the carriageway to provide a minimum paved width of 7.3m, wherever possible. The design includes a number of departures and relaxations from standards. Either side of the paved area a minimum of 450mm verge width will remain within the existing highway boundary, where possible.

4.47 Nanner Road would be upgraded to cater for the additional traffic movements following the closure of Cemlyn Road (which leads from the A5025 at Tregele to Cemlyn Bay) to allow site clearance. The upgrades will be in the form of some local widening to a standard width of 3.3m, additional passing places and pavement re-construction.

4.48 A scheme of localised road signage and markings is also currently being investigated on the A5025 between Amwlch and the Power Station Site, to help to address concerns raised during the Stage One Pre-Application Consultation and January Project Update consultation relating to highway safety on this part of the road. These works would be within the existing highway boundary.

Park and Ride facilities

4.49 A Park and Ride facility is proposed at Dalar Hir, immediately to the north-east of Junction 4 of the A55. This would act as a hub for the transfer of construction workers from private vehicles to buses, to reduce the effect of vehicles travelling along the A5025 to the Power Station Site. The proposed facility allows for secure vehicle parking and transportation of

the workers to the Wylfa site by bus in a controlled manner. The facility would become operational once the number of workers at the Power Station Site reaches around 1,500.

4.50 Once operational, this facility would provide secure car parking for around 2,700 vehicles, including staff parking and a Bus Waiting, Pick-up and Drop-off Zone for up to 40 buses. The level of provision depends on the shift pattern and the final parking number and may be between 25 and 40 buses. A Bus Transport Facility Building would provide transport information, waiting area, welfare facilities, a bus driver canteen, cycle store and management office facilities. It would be manned 24 hours a day with lighting, secure fencing and CCTV. A full description of the proposal is provided in chapter 12 of this document.

Logistics Centre

4.51 A Logistics Centre is proposed at a site within Parc Cybi close to Junction 2 of the A55, south of Holyhead (described in detail in chapter 13 of this document). This facility is intended to control the timing of construction related traffic movements to the Power Station Site and to allow consolidation of deliveries into fewer loads. This will ensure vehicle movements along the A5025 are managed, reducing the potential for congestion. Construction deliveries would be directed to this facility for registration and either holding or short term storage and repackaging prior to onward movement to the Wylfa Newydd Development Area. This would enable Horizon to control the times that deliveries are able to travel onward from the Logistics Centre to the Wylfa Newydd Development Area.

Off-Site Temporary Workers' Accommodation

4.52 It has been estimated that of the 8,000 to 10,720 workers required to build the Power Station, approximately 2,500 of the peak construction workforce would be drawn from Anglesey and neighbouring mainland communities. Many of the construction workers would therefore require temporary accommodation for the period of their work on the site. They would be housed off-site in campus style modular development, based on a minimum of 500 bed spaces per location, and designed for temporary occupation. There would also be provision of some permanent housing that would be used in the short term by construction workers. Horizon's preferred sites for the development of Temporary Workers' Accommodation campuses are in Holyhead, Amlwch and Rhosgoch, with further optionality in the vicinity of Amlwch, as follows:

Preferred sites:

- Kingsland and Cae Glas at Holyhead, identified for up to 3,500 temporary bed spaces (described in chapter 15). This would provide a legacy of holiday accommodation and permanent residential development following the completion of the construction works;
- Madyn Farm, Amlwch (west of the B5111), a site of 50 houses to provide 200 bed spaces for construction workers (described in chapter 17), which would revert to permanent social rented housing following the completion of the construction works; and
- Rhosgoch (former Shell site) for the provision of up to 1,500 bed spaces for temporary workers (described in chapter 14). This would be brought forward in blocks of 500 bed spaces, but only if required to meet demand for worker accommodation beyond the supply of existing accommodation (private rented,

tourism bed spaces, owner occupied stock, latent supply and re-use of empty homes).

Alternative site:

- Amlwch (Madyn Farm sites A and B, east and west of the B5111), for the provision of up to 800 bed spaces for temporary workers (described in chapter 16).

4.53 Each site would accommodate a range of worker facilities. For instance, the campus facilities at Rhosgoch, Kingsland and Cae Glas would include:

- amenity and welfare building to include catering and dining; administration and facilities management; TV common room; medical treatment/first aid room; security/control office; laundry drop and collection area; shop for basic provisions; recycling point;
- ancillary buildings for support services such as site utilities; laundry requirements; waste management; general materials/equipment storage; cycle storage; energy centre;
- parking areas; and
- bus waiting, pick up and drop off zone.

Visitor and Media Reception Centre

4.54 A facility to inform the public about Horizon, nuclear energy and the Wylfa Newydd Power Station and to provide information about how it is operated and managed. The Centre would host exhibitions, conferences and educational events. The facility would also accommodate a media briefing and marshalling point where the press could gather and receive briefings in the event of an incident at the Wylfa Newydd Power Station.

4.55 The proposed site for the Visitor and Media Reception Centre is at the proposed junction of the A5025 and new Power Station Access Road, just under a kilometre south of Tregele. The site is largely undeveloped, with some derelict agricultural buildings along its boundaries. Full details of the proposal are provided in chapter 8.

Power Station construction activities

4.56 The principal construction activities to deliver the Wylfa Newydd Project would comprise the following stages:

Site Preparation and Clearance

4.57 Enabling Works would include a package of Site Preparation and Clearance works to prepare parts of the Wylfa Newydd Development Area for the Power Station Main Construction stage. These would be subject to a separate application for planning permission under the TCPA. The Site Preparation and Clearance works have changed as compared to the proposals in the Stage One Pre-Application Consultation materials, with two phases now introduced:

- the first phase would focus principally on the Power Station Site as opposed to the full extent of the Wylfa Newydd Development Area and would include translocation of protected species, clearance of vegetation, demolition of above ground buildings and structures and some preparation for later stages of construction works, including elements of soil stripping. The first phase of the Site Preparation and

Clearance works, together with parts of the broader scope of Enabling Works (such as utilities works), would commence before the grant of the DCO; and

- the second and larger phase of Site Preparation and Clearance may overlap with Main Construction works, anticipated to progress once Horizon has obtained the DCO for the Wylfa Newydd Power Station. The scope of these works is similar to the first phase but on additional land areas to the south west of the WNDA, with the majority of soil stripping also undertaken in this phase of works.

Power Station Main Construction

4.58 The Power Station Main Construction stage would start once the DCO had been secured. Any remaining clearance activities, including soil stripping where required, would extend more broadly over the Wylfa Newydd Development Area. Levelling and grading works to form building and construction platforms, with progressive mound creation in accordance with mitigation proposals, would be aligned with deep excavations to create the main foundations of Unit 1 and Unit 2 and the wider Power Station.

4.59 Power Station construction requirements would also include temporary fabrication and laydown areas, construction office and welfare facilities, car parking, materials management, waste handling and temporary storage areas.

4.60 A MOLF, which would include two purpose built quays to allow delivery of construction components and other materials by sea, would be constructed within Porth-y-pistyll, taking advantage of the shelter provided through early construction of the breakwaters required for the CWS.

4.61 Main Construction would then proceed with the building construction and main mechanical and electrical installation works required to construct the wider Power Station. These works would necessitate the use of a substantial amount of equipment including many large cranes, together with a large construction workforce.

4.62 Utilities such as water, sewerage and power supplies would be needed to support both construction and operation of the Power Station. Horizon is working with statutory undertakers to finalise proposals to ensure appropriate utilities provision. Much of this work will begin in the early stages of the Power Station construction, as part of the Enabling Works for Main Construction. Full details of the construction and operation of the Wylfa Newydd Project are provided in chapter 5 of this Document.

Landscape and Environmental Masterplan

4.63 In order to provide some visual and noise screening of the Power Station Site for neighbouring communities, mounds would be formed during the construction phase and landscaped as soon as practicable, helping to create an appropriate setting for the Power Station. A phased approach would be taken to the implementation of the landscaping, in accordance with an overall LEMP, illustrated in chapter 7 of this Document.

4.64 The LEMP adopts an efficient approach that seeks to minimise double handling of materials and deliver earth mound landforms to provide visual screening and noise mitigation to nearby properties, to be implemented as soon as practicable in the construction programme. Provisions in the LEMP would focus particularly on mitigating potential effects of the Power Station on the residents of Tregele and Cemaes. The LEMP has also been developed to take account of the predicted environmental effects at each phase in construction and incorporates proposals covering drainage, ecology,

recreation and agricultural use, all of which are integrated with the progressive provision of the earthworks within the Wylfa Newydd Development Area. The LEMP proposals rely on the sequential use of materials that would be excavated during construction activities and, as such, the appearance of the land within the Wylfa Newydd Development Area would change as construction progresses, leading to the completion of the final landscaped WNDA.

Walking and cycling routes

4.65 A number of public footpaths, including the Wales Coast Path, would be affected by construction activities, necessitating diversions and some closures. The existing Cemlyn Road, which is part of the Copper Trail cycle route, would also need to be permanently closed through the Power Station Site. Nanner Road provides an alternative access to Cemlyn Bay from the A5025 and highway works would deliver improvements to this route. Nanner Road also provides an opportunity to divert the Copper Trail in combination with a new off-road section routed to the west of the A5025, which would then cross the A5025 and join the existing route south of Tregele, providing connections towards Llanfechell. The Power Station Access Road would be constructed early in the Main Construction stage, providing a link to the A5025 via a new junction to the south of Tregele.

Decommissioning

4.66 Horizon's proposals for the Wylfa Newydd Power Station have been developed with consideration of the way in which decommissioning would be undertaken. Horizon has therefore developed an outline Decommissioning and Waste Management Plan, which has shaped strategic decision making relating to construction techniques, layout and building design as well as the consideration of radioactive waste management.

Strategic approaches to mitigation

4.67 Horizon has developed a holistic approach to managing and mitigating the effects of the Wylfa Newydd Project, by developing a number of strategic approaches related to the predicted effects and benefits of the Project. These strategies are derived from the consultation comments received at the Stage One Pre-Application Consultation and Project Update consultation; ongoing stakeholder engagement; and the likely effects of the Project, identified in the Preliminary Environmental Information (PEI). They are described in this document where relevant.

Wylfa Newydd Project evolution

4.68 Horizon has continued to evolve the Wylfa Newydd Project proposals both during and subsequent to the completion of the Stage One Pre-Application Consultation in 2014 and the January 2016 Project Update consultation. Feedback from consultees and the stakeholder and public engagement outlined in chapter 1 has influenced changes to the Project design and proposals, further details of which are included in this section.

4.69 In addition, there are three other important areas that have driven Horizon to make changes or refine emerging proposals in the past 18 months, which are described later in this sub-section:

- the Generic Design Assessment (GDA) process, which Hitachi-GE as designer is responsible for;
- technical stakeholder requirements and engagement, undertaken by Horizon; and

- Environmental Impact Assessment (EIA) processes, undertaken by Horizon.

4.70 This section provides an outline of the ways in which the Project design and proposals have developed and changed as a result of the key contributions received from consultation feedback, the GDA and EIA processes, and technical stakeholder requirements and engagement. The principal changes are outlined in table 4.3, which shows how these contributions have affected Horizon's thinking and led directly to changes as part of the design process over the last two years following the Stage One Pre-Application Consultation. The contributions have been fundamental to the evolution the Project prompting changes such as the Power Station layout and ground levels, Site Preparation and Clearance sequencing, the LEMP proposals and phasing, the construction programme and workforce profile, together with the development of a series of strategies to deliver and manage the key elements of the Project.

Consultation feedback

Stage One Pre-Application Consultation

4.71 The Stage One Pre-Application Consultation was held from September to December 2014, involving a series of events across Anglesey and the distribution of consultation documents both online and in libraries and public buildings, including newsletters delivered to every household. Details are provided in the Consultation Summary Report, which is available on Horizon's consultation website. Horizon received 424 responses from statutory and non-statutory respondents to the consultation. The Consultation Summary Report describes the main points raised in the consultation responses, which included grouped responses from the events held with young people and 'hard to reach' groups (those who may not ordinarily be in a position to access the consultation process), plus two grouped responses comprising a petition and formatted letter relating to specific potential Temporary Workers' Accommodation sites raised by community members. Responses can be summarised around the following themes, with feedback commonly seeking further detail or clarity on Horizon's proposals:

- Associated Development;
- mitigation of environmental effects;
- highways and transport;
- ITTS;
- coastal development;
- landscaping;
- local labour;
- training programmes;
- Socio-economics – effects on communities and housing;
- tourism;
- community benefits; and
- Welsh language and culture.

4.72 There were 38 technical consultees amongst the full list of respondents. The IACC returned the most detailed response. The high-level themes identified in the IACC's

covering letter are representative of underlying themes across the full suite of consultation responses. Table 4.2 sets out these high level themes and Horizon's responses which include references to locations within this document and the PEI Report, where further information is provided:

Table 4.2 Key issues raised by IACC and Horizon responses

Summary of IACC Key Issues	Horizon Response	Main Consultation Document and PEI Report References
New nuclear build at Wylfa Supplementary Planning Guidance (Wylfa SPG) – Concerned about a lack of express regard to the recently adopted Wylfa SPG.	Consideration of the Wylfa SPG has been integral to the site selection process for Associated Development and Off-Site Power Station Facilities. The Wylfa SPG forms part of the site selection criteria, alongside the need to consider environmental designations and site constraints, operational and safety requirements, travel distance to the Power Station Site, and planning considerations such as compliance with national and local planning policy as a whole and the re-use of previously developed land. The Wylfa SPG locational guidance forms part of the site selection criteria in the following reports which accompany the Stage Two Pre-Application Consultation materials: • Report on Horizon's Approach for Siting Associated Development to Support Construction of Wylfa Newydd; and • Report on Horizon's Approach for Siting Off-Site Power Station Facilities	• chapter 3 (Planning Policy Context) • chapter 9 (Workforce Accommodation Strategy) "Justification for Preferred Site and Consideration of Alternatives" section within the following chapters: • chapter 12 (Park and Ride Site) • chapter 13 (Logistics Centre) • chapter 14 (Rhosgoch Temporary Construction Workers' Accommodation) • chapter 15 (Land and Lakes Temporary Construction Workers' Accommodation) • chapter 16 (Amlwch Temporary Construction Workers' Accommodation) • chapter 17 (Madyn Farm Permanent Construction Workers' Accommodation) • chapter 18 (MEEG and AECC/ESL) • PEI Report (Appendix 1 – Overview of planning policy requirements) The Wylfa SPG is also listed as relevant guidance in the Planning Statement Framework, also provided as part of this consultation.
Nuclear waste - A major concern about the length of time that Intermediate Level Waste and Spent Fuel may require storage on	As part of the regulatory process surrounding the granting of a Nuclear Site Licence, Horizon would need to comply with relevant licence conditions, including minimising accumulation of radioactive wastes and preventing leakage of	• chapter 5 (Building and Operating the Power Station) • Integrated Waste Strategy • PEI Report Volume B13 (Radiological Issues) • PEI Report Volume B14

Summary of IACC Key Issues	Horizon Response	Main Consultation Document and PEI Report References
site at Wylfa. The environmental effects of it remaining in situ should be identified and rigorously assessed.	radioactive material. Horizon would need a number of permits for carrying out radioactive substances activities, water discharge activities and combustion activities in respect of the Environmental Permitting (England and Wales) Regulations 2010. Compliance with the radioactive substances Environmental Permit would require the implementation of Best Available Techniques, which are measures to minimise the generation and optimise the disposal of radioactive wastes. Horizon would also need to demonstrate that the Intermediate Level Waste and spent fuel arising from the Wylfa Newydd Power Station could be safely and securely stored within the nuclear licensed site until such time as it can be disposed to a national geological disposal facility (GDF). Accordingly, Horizon has prepared an Integrated Waste Strategy for the management of all wastes, both radioactive and conventional (and materials that could become waste) in solid, liquid or gaseous form, arising from the construction, operation and decommissioning of the Wylfa Newydd Power Station. The strategy is summarised in chapter 5 of this Main Consultation Document and provides details of the main waste streams and proposals for management and disposal.	(Radioactive Waste)
Construction/ operational worker profiles – Concerned about the lack of detail surrounding the breakdown of the	A revised and updated profile of the Wylfa Newydd Project workforce is provided in chapter 8 (Jobs, Skills and Business Development). Figure 8.1 provides details of the anticipated workers required for	• chapter 8 (Jobs, Skills and Business Development) • chapter 9 (Workforce Accommodation Strategy) • chapter 10 (Transport) • chapter 21 (Mitigating the

Summary of IACC Key Issues	Horizon Response	Main Consultation Document and PEI Report References
construction (and operational) workforce, both with regard to skills and training, but also from a social, community and Welsh language perspective.	Enabling Works, Main Construction, Commissioning and Operation of the Power Station, including the construction and operational workforce for the Off-Site Power Station Facilities and Associated Developments. Table 8.1 provides an indicative breakdown of construction workforce requirements with details of skills and trades needed for each main element of the works including their duration, with table 8.2 providing similar details for the operational workforce. Chapter 8 includes details of Horizon's Jobs and Skills Strategy which provides information on the recruitment, employment and training of workers for each Project stage. Our analysis suggests that about 25% of the construction workforce may commute daily from the local area. The Construction Worker Accommodation Strategy (chapter 9) sets out a range of measures for directing the remaining 75% of the construction workforce to suitable accommodation provision, whilst allowing for flexibility between the different accommodation stock that could be used. Chapter 10 sets out the transport strategy and the daily movement of workers to the Power Station Site. The profile of the workers themselves and the potential impact on local services is set out in the socio-economic assessment of the PEI Report (Volume B1), with potential mitigation measures provided in chapter 21 of the Consultation Document (Mitigating the Impacts and Enhancing the Benefits). The Welsh Language Assessment (WLIA) Interim Report also provides an interim assessment of the impact	Impacts and Enhancing the Benefits) • PEI Report Volume B1 (Socio-economic Assessment) • Welsh Language Impact Assessment Interim Report (and NTS)

Summary of IACC Key Issues	Horizon Response	Main Consultation Document and PEI Report References
	of the construction of the Project on the Welsh Language and sets out a number of proposed mitigation measures, based on the work carried out to date.	
Local employment – Concerned about lack of commitment towards promoting local employment opportunities, especially during the construction phase of the development.	Chapter 8 (Jobs, Skills and Business Development) provides details of the Wylfa Newydd supply chain and procurement programme, with an aspiration of utilising 60% of the UK supply chain throughout the full lifecycle of the Project. This includes the engagement of local and regional businesses, to be delivered primarily by Menter Newydd, responsible for the construction of the Power Station. Menter Newydd will generate a substantial requirement for goods, services and works and will be directly responsible for managing procurement activity relating to the Power Station Site construction. In order to build and promote supply chain opportunities, Horizon has established a close working relationship with the IACC, North Wales Economic Ambitions Board, the Anglesey Energy Island Programme, Welsh Government and other public sector partners and third party business/trade associations, with a series of supply chain events, initiatives and programmes, including the planned recruitment of a supply chain development officer based on Anglesey to continue to drive engagement with local and regional businesses. The work carried out so far has been successful in securing contracts with local businesses on Anglesey and across north Wales, to support contracts such as environmental surveys, ground investigation studies and enabling works within the Wylfa Newydd Development Area.	• chapter 8 (Jobs, Skills and Business Development • PEI Report Volume B1 (Socio-economic Assessment)

Summary of IACC Key Issues	Horizon Response	Main Consultation Document and PEI Report References
Displacement – Concerned about lack of recognition of potential displacement effects i.e. the implications of the Wylfa Newydd development on the take up of existing jobs, bedspaces, facilities and services and how these are maintained and safeguarded going forward.	Displacement effects in terms of jobs and employment opportunities have been assessed as part of the socio-economic assessment (PEI Report, Volume B1). This is recognised as an opportunity in chapter 8 of this Consultation Document, with any potential displacement effects of workers moving from established local businesses into roles associated with the Wylfa Newydd Project, presenting an opportunity to draw new workers into existing businesses, widening the employment base in the area. Chapter 9 (Workforce Accommodation Strategy) provides details of an online Accommodation Management Portal which would manage and monitor the take up of existing accommodation registered on the Portal, to ensure no particular tenure is over subscribed. The socio-economic assessment (PEI Report, Volume B1) has identified effects on local services and community facilities as a result of the increase in the number of workers to the Island. Chapter 21 of this Consultation Document outlines potential mitigation including options being considered for the enhancement of existing services or dedicated health care provision at the Temporary Workers' Accommodation, as well as emergency health care provisions on-site.	• chapter 8 (Jobs, Skills and Business Development) • chapter 9 (Workforce Accommodation Strategy) • chapter 21 (Mitigating the Impacts and Enhancing the Benefits) • PEI Report Volume B1 (Socio-economic Assessment)
Supply Chain – Seeking further commitment on the principle of Horizon and its contractors' ability to influence the supply chain through their letting of contracts.	Chapter 8 (Jobs, Skills and Business Development) provides details of the Wylfa Newydd supply chain and procurement programme (see the response to the 'Local Employment' comment above for details).	• chapter 8 (Jobs, Skills and Business Development • PEI Report Volume B1 (Socio-economic Assessment)

Summary of IACC Key Issues	Horizon Response	Main Consultation Document and PEI Report References
Welsh Language and culture – Preserving and enhancing the Welsh language and culture is fundamentally important to the people and communities of Anglesey. Welsh language needs to be an underlying thread throughout all the Horizon public consultation documentation; such is its importance to Anglesey.	Horizon see Welsh Language as the 'golden thread' running through the Wylfa Newydd Project. The importance of the Welsh language and culture has been reflected in this Main Consultation Document and Consultation Summary Document, as well as the site selection reports for Associated Development and Off-site Power Station Facilities, which are also provided with this consultation. The Welsh Language Impact Assessment (WLIA) Interim Report and accompanying NTS also explain how Welsh language considerations have been taken into account.	• chapter 1 (Introduction) • chapter 2 (Introduction) • chapter 4 (Project Overview) • chapter 8 (Jobs, Skills and Business Development) • chapter 9 (Construction Workforce Accommodation Strategy) • chapter 19 (Other Assessments) • chapter 20 (Community Effects) • chapter 21 (Mitigating the Impacts and Enhancing the Benefits) • PEI Report Volume B1 (Socio-economic Assessment) • Welsh Language Impact Assessment (and NTS)
Tourism – Concerned that the significance of tourism as a sector is not given full and proper consideration.	The potential impacts on tourism have been fully embraced by Horizon with the undertaking of a Tourism Impact Assessment, informed by a visitor behaviour survey and an accommodation survey (to gauge the potential latent accommodation stock), all of which are reported in the Socio-economic Assessment (PEI Report, Volume B1). This includes analysis of the effects on tourism during the construction, operation and decommissioning of the Power Station, such as minor effects on the availability of bed spaces in the tourism stock (with supply regulated by the Accommodation Management Portal), increased revenue to tourism providers (through increased expenditure on accommodation, food and drink during construction) and the change in visitor numbers as a result of construction (around 90% of the 524 respondents to the visitor behaviour survey in summer 2015, indicated that construction would	• chapter 4 (Project Overview) • chapter 8 (Jobs, Skills and Business Development) • PEI Volume B1 (Socio-economic Assessment)

Summary of IACC Key Issues	Horizon Response	Main Consultation Document and PEI Report References
	have no effect on their likelihood of returning to Anglesey).	
Highways and transport – Concerned about the level of detail provided with regard to highway improvements and the transport effects of the Project, particularly on the Britannia Bridge, and on Anglesey and the wider North Wales region during construction and operation.	The full impact of the Wylfa Newydd Project on highways and transportation is to be addressed by a Transport Assessment to be submitted with the DCO application. Current progress on the assessment is reported in chapter 10 of this Consultation Document, supported by a Traffic and Transport Technical Note (available to view on Horizon's consultation webpage). These include details of the traffic modelling underway of the effects of the Project on Britannia Bridge. The Technical Note indicates that for those workers living on the mainland, a specific travel strategy is being developed to minimise the numbers of additional vehicles that would cross the A55 Britannia Bridge and A5 Menai Bridge onto Anglesey. Various options are under consideration, in liaison with the IACC, Welsh Government and Gwynedd Council. The current proposals are that for those workers living in the main towns on the mainland, such as Caernarfon and Bangor, direct bus services would be provided to the Wylfa Newydd Development Area. Chapter 11 of this Consultation Document provides full details of the proposed on-line and off-line highway improvements and chapter 10 outlines the main provisions of the Integrated Traffic and Transport Strategy. This comprises a multi-modal strategy for the movement of materials and freight (around 70% to be transported by sea to the MOLF) and the transportation of construction workers across Anglesey to the Power Station Site, supported by measures such as the proposed Park and Ride and Logistics Centre.	• chapter 4 (Project Overview) • chapter 6 (Main Development Site – including marine works) • chapter 10 (Transport) • chapter 11 (Highway Improvements) • chapter 12 (Park and Ride Site) • chapter 13 (Logistics Centre) • PEI Volume B3 (Traffic and Transport) • Traffic and Transport Technical Note

Summary of IACC Key Issues	Horizon Response	Main Consultation Document and PEI Report References
Impacts on Anglesey communities and housing –Further work is required to establish baseline social conditions for Anglesey so that impacts can be appropriately benchmarked, assessed and mitigated against a common and agreed baseline.	The predicted impacts on Anglesey's communities and housing is addressed by the Socio-economic Assessment (PEI Report, Volume B1), using baseline conditions derived from data and information already available, supplemented by a series of surveys and assessments completed by Horizon as listed in sections B1.36 and B1.37 (with further details available in Appendix 3 of the assessment). The established Socio-Economic Forum, with representatives from IACC, Gwynedd Council and Horizon, meets quarterly to discuss issues related to community impacts and appropriate enhancement and mitigation measures.	• chapter 9 (Worker Accommodation Strategy) • chapter 20 (Community Effects) • PEI Report Volume B1 (Socio-economic Assessment)
Communities local to the Wylfa Newydd Development Area – Early and detailed consideration of impacts on communities and their mitigation is sought through specific impact studies, particularly for those within 5km of the main development site.	The assessment of impacts on communities immediately surrounding the Power Station Site are inherent to Volume B of the PEI Report, however these are topic-based. A summary of the effects of the Wylfa Newydd Project on individual communities as a result of each relevant project component, including Enabling Works, Associated Development, Main Site Construction and Off-Site Power Station Facilities, during both construction and operation, is provided in chapter 20 of this Consultation Document, which also includes an indication of potential mitigation measures. A Community Impact Report would also be carried out and submitted with the DCO application.	• chapter 20 (Community Effects) • PEI Report
Cumulative impacts – Further information required in relation to cumulative impacts, both with regard to	An assessment of cumulative impacts across Anglesey and the north Wales region as a result of the Project is provided by Volume I of the PEI Report. This takes account of the accumulation of the social,	• chapter 8 (Jobs, Skills and Business Development) • PEI Report Volume I (Cumulative Effects)

Summary of IACC Key Issues	Horizon Response	Main Consultation Document and PEI Report References
the potential effect across the sub-region, but also to potentially enable a strategic and co-ordinated approach by Horizon and key stakeholders to enable local people access jobs and skills.	economic and environmental effects of the Project on human and other sensitive receptors, the cumulative effects of multiple Project components on receptors, and the effects of other projects that would be developed during the Wylfa Newydd Project, such as the National Grid connection to the Power Station. The availability of other projects on Anglesey and across the north Wales region is seen as a substantial opportunity to promote economic activity and increase job opportunities in new and expanding employment sectors, as well as filling positions in any local employment that may be displaced by Wylfa Newydd and other projects. Horizon's supply chain and procurement programme is gearing up for this level of activity at both the local and strategic level, with the support of public sector partners and business/trade associations as outlined in the response to 'Local Employment' above.	

4.73 Since the close of the Stage One Pre-Application Consultation in December 2014, Horizon has continued to consult and engage with both statutory and non-statutory bodies. The analysis of consultation responses and key themes within them have been used to help guide such discussions and influence the way in which Horizon's thinking has developed. Table 4.3 identifies particular aspects of the Wylfa Newydd Project that have been shaped by the feedback received from the Stage One Pre-Application Consultation, referenced as 'Stage One feedback', including the Associated Development consultation in July 2015.

Project Update January 2016

4.74 Horizon acknowledged that the Wylfa Newydd Project had developed significantly since the Stage One Pre-Application Consultation and, as a result, Horizon provided a Project Update in January 2016, to present an opportunity for residents and organisations to view the latest plans and proposals and to provide feedback, particularly in relation to potential sites for Associated Development and Temporary Workers' Accommodation. The feedback has enabled Horizon to take account of the latest views and comments to inform the further development of the Project in preparation for the Stage Two Pre-Application Consultation.

4.75 The consultation was held from January to March 2016. Comments were invited on a Project Update document with details of the current Project proposals, building on information that was available during the Stage One Pre-Application Consultation in 2014 and explaining how the project had moved on during 2015. The consultation materials included a series of fact sheets summarising Horizon's strategic approaches and information on topics ranging from community benefits, education engagement and jobs and skills, to Welsh language, construction workers' accommodation, transport and landscape proposals. Further details of the Project Update consultation undertaken by Horizon, including events and feedback received, are provided in the Consultation Summary Report.

4.76 In summary, a total of 11 public exhibition events were hosted across Anglesey and also in Conwy town and Caernarfon, and more than 450 people attended. Two school lunchtime drop-ins were held, with 88 i-pad surveys completed. The Project Update document and fact sheets were circulated widely and uploaded onto the Wylfa Newydd website, to which 105 written feedback responses were received from local communities, statutory and non-statutory organisations.

4.77 Key themes received from the public events and written feedback from local communities are as follows:

- Horizon’s role in ensuring that the importance of Welsh language and culture is integral to the Wylfa Newydd Project and its proposals;
- concerns regarding an influx of construction workers and effect on local services and community facilities;
- support for the construction worker accommodation proposals at Kingsland and Cae Glas in Holyhead, and the potential to boost local employment and business opportunities;
- support for some construction workers' accommodation at Amlwch, particularly the permanent houses at Madyn Farm, but resistance to potential temporary accommodation;
- mixed views regarding temporary workers' accommodation at Rhosgoch, with some support for holiday units as legacy development;
- more information sought on the community benefits and improvements resulting from the Project and effects on local services;
- particular interest and general support for the proposed A5025 highway improvements, with emphasis on extending these to the A5025 between Amlwch and the Power Station Site;
- support for local education, training and skills development to encourage young people and local workforce to engage in employment opportunities to be presented by the Project;
- encouragement of supply chain opportunities for local and regional businesses; and
- some concerns about the management and long term storage of radioactive waste on the Power Station Site.

4.78 Statutory and non-statutory respondents to the Project Update document and strategy fact sheets included the IACC, NRW, Welsh Government, Gwynedd Council, National

Trust, North Wales Wildlife Trust, NHS Wales University Health Board, Amlwch Town Council, Holyhead Town Council and Llanbadrig Community Council. The principal issues raised by organisations are set out below:

- **Associated Development and Off-Site Power Station Facilities** - there is support for considering legacy during the site selection process for Associated Development.
- **Health and well-being** - there are concerns that GPs, emergency and other services are stretched and need investment to cope. The NHS Wales University Health Board thinks they may be unable to meet the increased costs of services, and have requested details about Horizon's idea to provide healthcare.
- **Jobs, skills and business development** - there are concerns about job displacement during construction. Support was expressed for investment in training facilities on the Llangefni Campus; calls for investment in schools from primary age; and requests for training facilities to support evening classes for all.
- **Landscape and environment** - there is a general feeling that the landscape, seascape, wildlife and natural environment must be protected from harm. There is concern about ecology in general, protected species, SSSIs and a need for mitigation; and concern about integration of the development.
- **Legacy** - the NHS Wales University Health Board believes there are potential legacy benefits for new health buildings and services if planned and funded properly.
- **Roads and traffic** - there is support and requests for a commitment to improving the A5025 from Amlwch to Power Station site. There is a call for an assessment of traffic congestion and capacity resilience for Britannia Bridge and a request to see the Transport Assessment and traffic model.
- **Strategies** - there is a request for Horizon to ensure strategies are consistent in terms of geography and recognise the positive and negative effects across the region, and mitigation. Greater detail has been requested for the housing strategy and there is a feeling that the Welsh language should be the 'golden thread' running through strategies.
- **Supply chain** - many would like to see priority for local businesses and contractors, co-operative working encouraged and support for small local partnerships. There are calls for a transport hub at Holyhead and supply chain initiatives across Wales.
- **Tourism** - there are calls for a comprehensive assessment of the effect on tourism.
- **Travel planning** - there is support for Park and Ride and a Logistics Centre on the mainland.
- **Waste** - more details have been requested about spent fuel storage that could remain on site.
- **Welsh language and culture** - there are concerns about the effect of migrant workers on the Welsh language and culture especially in schools, and a call to safeguard bilingualism.
- **Workers' accommodation** - there is support for developing workers' accommodation for tourism after construction and for using the Land and Lakes

development for Temporary Workers' Accommodation. There are strong objections to large modular facility near Amlwch, and a preference for Rhosgoch (up to 500 workers). Questions were raised about when existing housing stock could be renovated.

- **Worker facilities** - there is support for new facilities that anyone could use and to improve existing community facilities and services that anyone could use.

4.79 In February and March 2016, concurrent with the Project Update consultation, a series of working draft technical documents (Environmental Impact Assessment Progress Report, Health Impact Assessment Progress Report, Welsh Language Impact Assessment Progress Report, Draft Consultation Document and the Siting Strategies for Associated Development and Off-site Facilities) were shared with the IACC, NRW, Welsh Government and other stakeholders, as relevant, to invite feedback to inform the scope and methodologies of the assessments to help inform the Stage Two Pre-Application Consultation.

Generic Design Assessment

4.80 The GDA process was introduced by the UK Government and the regulators for the generation of nuclear energy in the UK (the ONR and the Environment Agency (EA)). The first step would be the preparation of an application for a Generic Environmental Permit, to provide the information requested from the EA in order to obtain a Statement of Design Acceptance. The GDA is officially a non-mandatory process, but is widely regarded as the first step in licensing a new nuclear plant in the UK. The process gives reactor vendors an increased level of confidence that their generic reactor designs are licensable in the UK.

4.81 The GDA allows the nuclear regulators to assess the safety, security and environmental implications of new reactor designs separately from applications to build them at specific sites. It allows the regulators to get involved with designers at the earliest stage, where they have the most influence. By assessing at the design stage, any potential issues can be identified and highlighted so they can be addressed by the requesting parties (the companies who have submitted a design for assessment) before commitments are made to construct the reactors.

4.82 ONR adopts a four step approach to the GDA, with the assessment becoming more detailed at each step. ONR will publish its findings in a set of reports at the end of each step. The EA carries out an initial assessment and a more detailed assessment prior to consulting on its findings. The GDA process has led to a number of design changes that have already been incorporated into Horizon proposals for the Wylfa Newydd Project – these are identified in table 4.3. These largely derive from the adaptation of the Japanese Reference Plant Design to meet the UK ABWR's safety, technical and engineering requirements, following UK good practice guidance and advice from the nuclear regulators. Examples of design changes since 2014 include amendments to the emergency power supply system; introduction of a new plant building to house emergency diesel generators (EDGs) and their fuel supply day tanks (relocated from the Reactor Buildings); and the employment of a non-penetration aircraft impact protection design on the Reactor Buildings and protection of the Control Buildings through shielding by the location and siting of its surrounding buildings.

Technical stakeholder requirements and engagement

4.83 Horizon seeks positive engagement with consultees and stakeholders to invite their feedback and expertise to assist in shaping the Project. In addition to this, a number of more formalised arrangements have been established to engage directly with technical stakeholders as part of supporting and challenging Horizon in the ongoing processes of design refinement.

4.84 Since the Stage One Pre-Application Consultation, Horizon has undertaken more targeted engagement with various groups and organisations. This has continued in association with the January 2016 Project Update consultation and the sharing of working draft technical documents with selected statutory consultees, as part of Horizon's process of providing updates on the latest Wylfa Newydd Project progression. A number of meetings and workshops have been used to follow up on specific consultation feedback received, provide ongoing updates and clarifications about Horizon's work and explore emerging proposals. These activities include:

- regular meetings with ONR and NRW to periodically deliver progress updates and seek informal feedback on issues and proposals. This has particularly involved better understanding expectations surrounding the design of the Wylfa Newydd Power Station;
- a combination of strategic and technical officer level briefings, meetings and discussions with representatives of the IACC, together with the establishment of a formalised process and jointly owned database (Master Issues Tracker) for capturing progress and resolution of issues raised. This has included collaborative work on the development and communication of the proposals for A5025 Highway Improvements; discussions focussed on the siting strategies for Associated Development and Off-Site Power Station Facilities; a number of workshop sessions related to EIA methodologies and progress updates; and technical briefings and working groups on specialist areas of interest such as Welsh language and culture, workforce profile and construction worker accommodation strategy, materials management and landscape setting, traffic impact and transport solutions, public rights of way and cycle routes, radioactive waste and spent fuel storage, emergency planning, security, education development, supply chain engagement activities and business development opportunities;
- discussions with specialist representatives of NRW to clarify expectations and information requirements set out within the Stage One Pre-Application Consultation response. This has included matters surrounding Habitats Regulations Assessment and emerging proposals for works within the marine environment;
- meetings with representatives of Welsh Government and the Planning Inspectorate, looking particularly at matters surrounding the consenting processes for the Wylfa Newydd Project. Matters of importance at the national scale for Wales have also been discussed with Welsh Government officers, particularly in relation to the strategic energy development context and economic opportunities associated with the Wylfa Newydd Project;
- meetings, site visits and workshops with the Design Commission for Wales and the IACC, to discuss design principles and approaches in relation to Associated Development and Off-Site Power Station Facilities; and

- further development of arrangements for working across the education sector as a whole. This has involved engagement with head teachers across Anglesey to develop proposals for supporting science, technology, engineering and mathematics (STEM) subjects in particular. At the higher and further education scales, ways of working have been formalised and discussions are underway regarding roles and responsibilities linked to Horizon's Jobs and Skills Strategy, aiming to maximise opportunities for local people.

4.85 Horizon has also worked with a number of major construction companies in advance of engaging a preferred contractor (Menter Newydd, see chapter 1) for the Wylfa Newydd Project. These companies have provided useful perspectives to test assumptions for the construction activities and offered informed commentary to assist Horizon with optioneering various construction techniques, as well as challenging the practicality and efficiency of emerging proposals.

Environmental Impact Assessment

4.86 The EIA process has progressed since the publication of the first PEI Report as part of the Stage One Pre-Application Consultation. Additional survey and data analysis has allowed the baseline environmental conditions to be better understood and described in further detail, providing a more robust basis for analysing the potential effects of the Wylfa Newydd Project. Building on this improved baseline understanding, further assessment work has been undertaken throughout 2015 and 2016, affording Horizon a greater degree of certainty about the potential environmental effects resulting from the Wylfa Newydd Project and associated mitigation or enhancement measures that may be implemented to address adverse environmental effects.

4.87 Horizon has also used the EIA process (described in chapter A2 of the PEI Report), to support decision making relating to the design of particular aspects of the Wylfa Newydd Project. Horizon's methodology incorporates iterative feedback loops whereby the findings of effect prediction and evaluation are shared with design teams. This integrated approach allows options where changes to the design could help to avoid or reduce potential environmental effects to be understood and considered as part of the design development process. Particular examples of this process contributing to main areas of change since the Stage One Pre-Application Consultation are included in table 4.3.

Main areas of change

4.88 Table 4.3 provides a summary overview of the main areas of change resulting from one or more of these influences and identifies where further information about the nature of the change can be found within this document.

4.89 The majority of Project components and topics are included in table 4.3, with the exception of the Associated Development sites, Temporary Workers' Accommodation sites and Off-Site Power Station Facilities, which are addressed in the individual chapters within this document.

Table 4.3 Overview of Wylfa Newydd Project evolution – main areas of change

Project component	Area of change	Important driver(s) for change
Power Station: Power Station Site plan	Separation between the two Units; and location of diesel generators (chapter 6).	**GDA** – nuclear safety related in terms of the change in location of diesel generators outside the reactor building.
	Alterations to the ground level for Units 1 and 2 (chapter 5) and introduction of terracing for the ground levels across the Power Station Site (chapter 6).	**Stage One feedback** – review influenced by comments relating to construction methodology and creation of the landscape setting for the Power Station. **Project Update feedback –** requests for details of proposed volume and height of landforms created through spoil removal and re-deposition, and management of run off from new landforms including protection of lagoon and sea water environments. **EIA** – optimisation of Unit 1 and 2 platform height, balancing operational and environmental considerations.
	Development of proposals for the Integrated Waste Strategy, for both radioactive and conventional waste, including clarity on the facilities required within the Power Station (chapter 6).	**Stage One feedback** – comments raised seeking clarity on the manner, justification and potential duration of storage of radioactive waste within the Power Station Site have been considered in the drafting of the Integrated Waste Strategy. **Project Update feedback –** concerns regarding the principle of nuclear energy at Wylfa and the legacy of the safe management of radioactive waste on the Power Station Site have informed the further development of the Radioactive Waste Management Strategy. **Technical stakeholder requirements** – more detailed analysis and interpretation of ONR and UK government requirements and expectations in planning for the management, processing, on-site storage and subsequent disposal of radioactive waste streams in UK nuclear new build.
Power Station: emergency arrangements	Development of the emergency preparedness arrangements and identification of preferred locations for specific Off-Site Power Station Facilities (chapter 6).	**Stage Onefeedback** – review influenced by comments seeking additional detail and justification for the need and siting of emergency facilities Off-site. **Project Update feedback –** comments regarding the proposed AECC/ESL site at Cefn Coch relating to proximity to an existing watercourse and flood zone; and bat habitation in the existing buildings on the proposed

Project component	Area of change	Important driver(s) for change
		MEEG site. **Technical stakeholder requirements** – in principle support for Horizon proposals, enabling clarity in the definition of the functional specification for facilities.
Site Preparation and Clearance scope	Alterations and some reductions to the intensity and geographic extent of construction activities at the early stages of the programme, through the introduction of a two phased approach – part before and part after DCO grant (chapter 5)	**Stage One feedback** – comments relating to the duration and extent of pre-construction Enabling Works considered during Horizon's review of construction programme, approach, scheduling and risk management. **Project Update feedback –** comments on significance of impacts relating to topsoil strip, hedgerow removal, demolition of buildings, installation of perimeter fence and closure of Cemlyn Road. **EIA** – iterative consideration of options for construction, influencing the duration and nature of environmental effects.
Construction programme and worker numbers	Increased confidence in the construction programme (chapter 5) and definition of construction worker numbers (chapter 9). This has resulted in alterations to the numbers previously stated in the Stage One Pre-Application Consultation and January 2016 Project Update.	**Stage One feedback** – comments requesting additional detail and explanation around the worker profile considered in Horizon's development work relating to construction programme and skills requirements. **Project Update feedback –** queries regarding justification and explanation for the increase in construction workers (from 6,000/8,500 at the Stage One Pre-Application Consultation stage to 10,000 in the Project Update document), and the additional effect for Anglesey's local communities and services. **Technical stakeholder engagement** – influence from a combination of specialist advice procured by Horizon and benchmarking exercises with data from major construction organisations to improve confidence levels in construction programming and worker numbers.
MOLF	Specific siting of the MOLF within Porth-y-pistyll (chapter 6)	**Technical stakeholder engagement** – influence from a combination of specialist advice procured by Horizon and review work relating to construction methodologies, programming optimisation and risk management. **Project Update feedback –** details requested regarding: size and location of MOLF; construction technique/specification; blasting

Project component	Area of change	Important driver(s) for change
		and excavation; dredging activity and boat movements; changes to hydrodynamics modelling; sediment control and movement; effects on tern commuting/foraging and marine mammal disturbance; contingency plans in the event of delays (construction/ weather); ability to accommodate all Abnormal Indivisible Loads (AILs); potential to utilise Holyhead Port; and consideration sought for breakwater constructed of natural materials to reflect existing marine environment. **EIA** – iterative consideration of options for construction and design, influencing the techniques and location of MOLF infrastructure, together with specialist assessment of optimum breakwater locations to meet CWS protection requirements in context of tides and currents.
LEMP	Iterative development with changes to the plot plan ground levels and construction schedule and approach. This has enabled the refinement of the indicative landscape proposal shown at the Stage One Pre-Application Consultation and January 2016 Project Update, and the definition of four indicative phases of development (termed reference points) that combine construction methodologies with requisite mitigation measures. These include earth mounds for noise and visual screening and planting for landscape and visual enhancement. (chapter 7).	**Stage One feedback** – comments relating to the practicality of delivering the indicative landscape proposal and requests for further detail on approach considered during the review and development of the LEMP. Consideration of concerns expressed regarding the potential effects on the closest communities in shaping the approach and phasing, introducing targeted visual and noise mitigation as soon as practicable. **Project Update feedback –** comments focussed on visual integration of the development with the landscape and coastal setting; planting rationale; effects of construction phases on Tre'r Gof SSSI; importance of an integrated approach to ecology and landscape; terrestrial and aquatic habitat creation and management; proportion of biodiverse managed farmland; green routes, footpaths and linkages through the Wylfa Newydd Development Area; and importance of design at the interface of land and sea. **Technical stakeholder requirements and engagement** – influence from a combination of specialist advice procured by Horizon and review work relating to construction methodologies, programming optimisation and risk management in the construction approach. Also consideration of stakeholder comments regarding feasibility of relocating services,

Project component	Area of change	Important driver(s) for change
		public right of way realignment, ecological clearance and biodiversity enhancement. **EIA** – iterative consideration of options for LEMP content, phasing and overall design, influencing the principles adopted and shaping the mitigation incorporated throughout. Advice on effective and requisite mitigation arising from EIA processes.
Wylfa Newydd Development Area	Definition of the boundary of the Wylfa Newydd Development Area refined to reflect the development of the LEMP, proposed construction methodologies, MOLF layout and Power Station Site plan. The main alterations have been made to incorporate expected MOLF construction activities and refine the alignment around proposed works relating to the cooling water outfall and in the vicinity of Cestyll Garden.	**Stage One feedback** – the Wylfa Newydd Development Area captures the maximum extent of land and sea that Horizon expects would be physically affected by Power Station Main Construction activities and used to form the setting and features of the operational Power Station. On this basis, the comments relating to the construction methodologies for the Power Station and the proposals for the LEMP have influenced its refinement. **Project Update feedback –** minor alterations to the Wylfa Newydd Development Area boundary to reflect changes in land ownership and corrections to boundary alignment. Comments regarding the need to provide links across the Wylfa Newydd Development Area and around coast to create semi-natural habitats and an ecologically permeable landscape. **Technical stakeholder requirements and engagement** – the refinement of the Wylfa Newydd Development Area has been informed by specialist advice procured by Horizon and review work relating to construction methodologies for both land and marine elements of the Wylfa Newydd Project, as well as programming optimisation and risk management in the construction approach. Inputs from technical consultees on the proposals for the landscape setting of the Power Station have also influenced the refinement of the boundary for the Wylfa Newydd Development Area. **EIA** – iterative consideration of options for LEMP content, phasing and overall design, influencing the footprint required. Advice on effective and requisite mitigation arising from EIA processes, particularly in relation to marine works.

Project component	Area of change	Important driver(s) for change
Wales Coast Path	Introduction of potential option that could revise temporary and permanent alignments to bring users closer to the coast, subject to final Power Station design (chapters 6 and 7). This forms part of the draft Public Rights of Way Strategy which sets out Horizon's approach to the management of PRoW throughout site preparation and clearance, the construction and operation of the Power Station and the approach to diverting or extinguishing the rights of way that would be affected by the Project.	**Stage One feedback** – review of Wales Coast Path alignments triggered by comments requesting consideration of potential ways to provide a permanent route closer to the coast. **Project Update feedback –** comments regarding protection and management of Wales Coast Path during all development phases; no negative effect on coastal landscape; opportunity to improve signage, seating and condition of path; protect and enhance access to Wylfa Head; prompt reinstatement of temporary diversions to minimise disruption to community and tourism. **EIA** – consideration of a broad range of options as part of developing the Public Access and Recreation Strategy. **Technical stakeholder requirements and engagement** – discussions with various local stakeholders, including site visits with the Ramblers Association. Review of precedent for coastal access in front of nuclear power stations, taking security and likely ONR expectations into consideration.
Copper Trail	Further more detailed consideration of the Copper Trail realignment necessitated by the closure of Cemlyn Road. Identification of options using the A5025, internal network of routes within the Wylfa Newydd Development Area that could be created as part of the LEMP and inclusion of cycling provision within the design of Nanner Road improvements (chapter 6 and chapter 7). A draft Cycling Strategy has been prepared which details the cycle provision to be incorporated as part of the Project.	**Stage One feedback** – comments relating to the potential to improve cycling routes and accessibility have been considered as part of developing the proposals for both highway improvements and landscape design. **Project Update feedback -** reassurance requested that the route of the Copper Trail will remain unbroken. Details sought of proposed cycle routes as part of the A5025 improvements. **EIA** – consideration of a broad range of options as part of developing the Public Access and Recreation Strategy. **Technical stakeholder engagement** – further detailed consideration of options, practicality and potential user experience as part of ongoing highway improvement design refinement work, in collaboration with IACC technical officers.

Project component	Area of change	Important driver(s) for change
Jobs and Skills Strategy	Clarity on the measures proposed for investment in education, training and skills development, focusing on existing regional training providers and new provision linked to Coleg Menai as a complement to Horizon's bespoke training programmes (chapter 8).	**Stage One feedback** – comments seeking clarity and further commitment to maximising opportunities for local people taken into consideration when developing the Jobs and Skills Strategy for the Wylfa Newydd Project. **Project Update feedback** - information sought on Horizon's approach to training programmes for apprenticeships, work placement and graduate opportunities, plus local training facilities for support skills (e.g. Welsh language). **Technical stakeholder requirements and engagement** – progression and cementing of the relationships established between Horizon, Coleg Menai and Bangor University, resulting in increased confidence in the measures that can be delivered in partnership and targeted particularly at Anglesey residents and the wider north Wales region.
	Development of Horizon aspirations and expectations in respect of investment in training and skills development to be delivered through Menter Newydd and the supply chain (chapter 8).	**Stage One feedback** – comments seeking clarity and further commitment to maximising opportunities for local people taken into consideration when developing the Jobs and Skills Strategy for the Wylfa Newydd Project. Particular emphasis on developing the approach for construction workers. **Project Update feedback** - information sought on: type of construction jobs to be created and range of local job opportunities; ancillary workforce requirements; commitment to ensuring local and regional resources are engaged in tendering processes and supply chain opportunities (including Advanced Manufacturing, ICT, Construction and Engineering sectors); the need for focused engagement on supply chain activity and delivery programme, timelines and specific company requirements; a range of contracts to suit local businesses and contractors; encourage and support business and contractor partnerships and co-operatives; displacement of existing skills; operational period shift patterns and effect on infrastructure and other services including education. **Technical stakeholder engagement** – influence from a combination of specialist advice procured by Horizon and benchmarking

Project component	Area of change	Important driver(s) for change
		exercises with data from major construction organisations and projects to improve understanding of industry norms and confidence levels in Horizon's expectations for delivery through the construction partner and supply chain.
Construction Worker Accommodation Strategy	Implementation of more detailed stages of siting selection for specially provided Temporary Workers' Accommodation, resulting in the identification of a shortlist of preferred and alternative sites. Focused engagement with IACC officers and other stakeholders to identify additional opportunities for different types of new stock. Clarity relating to the housing hub concept introduced at Stage One Pre-Application Consultation, leading to the launch of a Construction Worker Accommodation Management Portal, incorporating mechanisms to assist in the monitoring and subsequent control of the supply from each sector and potential impacts arising from construction worker accommodation (chapter 9).	**Stage One feedback** – comments relating to the proposed siting of Temporary Workers' Accommodation, including two grouped responses, considered as part of the process of site identification and evaluation of options. Horizon also considered comments requesting further review of opportunities for permanent housing legacy as part of the Construction Worker Accommodation Strategy, as well as responding to concerns raised about how the accommodation of construction workers could be managed particularly in relation to linguistic impacts and community cohesion. **Project Update feedback** – further development of the Construction Worker Accommodation Strategy and site selection process, driven by requests for clarity on: changes to the workforce profile and distribution; preferred sites for Temporary Workers' Accommodation; details of impacts on legacy and community benefits (job creation, supply chain, housing supply and affordability, tourism, community facilities and local services); the sequential approach to site selection and local policy alignment; reasons for exclusion of other available sites and locations on Anglesey (such as Llangefni), and use of existing housing stock in Gwynedd; plans to improve existing housing stock and re-use of empty homes; and sequencing of accommodation delivery per type. **Technical stakeholder requirements and engagement** – influence from a combination of specialist advice procured by Horizon and benchmarking exercises with data from major construction organisations to improve confidence levels in construction programming, worker numbers and assumptions regarding construction worker accommodation preferences and behaviours. Further detailed consideration of options and opportunities for types of construction worker

Project component	Area of change	Important driver(s) for change
		stock, taking account of existing and current emerging planning policy, deliverability, commercial viability and potential community effects – this has involved iterative development and feedback from IACC technical officers in drafting the Construction Worker Accommodation Strategy. **EIA** – specialist socio-economic analysis provided additional community level baseline analysis and evaluation of headroom within existing and available stock types. This was used to inform proportional targets that would balance meeting needs with managing potential effects – these formed some of the core assumptions for the development of the Construction Worker Accommodation Strategy.
Integrated Traffic and Transport Strategy	Critical review and re-examination of the underlying ITTS principles in light of additional technical analysis of multi-modal baseline and prevailing policy drivers. Consequent introduction of an overarching objective for the ITTS and re-drafting of the principles presented at Stage One Pre-Application Consultation to become desired outcomes from the ITTS (chapter 10).	**Stage One feedback** – comments questioning the rationale behind the discounting of rail as a realistic option for meeting some of the transport requirements of the Wylfa Newydd Project triggered a re-evaluation and additional review work relating to the multi-modal baseline and prevailing policy and strategy context. ITTS principles were also reviewed in light of comments regarding their scope and focus. **Project Update feedback** – the ITTS has been reviewed in response to comments which seek to encourage: use of rail, air and local bus services to reduce overall traffic effect; shuttle bus services on mainland to reduce effect on Britannia Bridge; Park and Ride facility on mainland; improvements to A5025 from Amlwch to Power Station Site; improvements to road from Rhosgoch TWA site to A5025; materials delivery by sea to MOLF, Holyhead Port and rail freight; assessment of HGV road movements; traffic capacity assessment of Britannia Bridge and effects on routes across the mainland (A55, A487); effect on health and well-being for residents close to main traffic routes, Logistics Centre and Park and Ride site. **EIA** – further more detailed analysis of the transport requirements of the Wylfa Newydd Project, building on the more detailed information that has emerged regarding

Project component	Area of change	Important driver(s) for change
		construction programming and sequencing, has informed the development of transport measures. Iterative review of emerging proposals by technical specialists has also helped to shape and refine the proposed measures, including more detailed site evaluation, traffic flow and modal split data or assumptions. **Technical stakeholder requirements and engagement** – combination of specialist advice procured by Horizon and benchmarking exercises with data from major construction organisations and projects to improve understanding of transport requirements; and specific measures informed by ongoing highway improvement design refinement work, in collaboration with IACC technical officers.
Community Benefits Strategy	Focused technical work has resulted in the development of a common approach and understanding between Horizon and IACC officers regarding the appropriate definition of community benefits in respect of the Wylfa Newydd Project. There is now improved clarity regarding the categorisation of different types of benefits and specific examples are cited as part of this consultation (chapter 21).	**Stage One feedback** – a wide variety of comments were received suggesting different types of community benefits, support for existing projects and initiatives and proposals for legacy for the host communities and wider Anglesey were received. Horizon has recognised that there is a need to provide greater clarity on the definition of community benefits and the way in which they would relate to the Wylfa Newydd Project as a whole. Horizon is using planned engagement events as an opportunity to share this definition and gather further feedback on preferences amongst communities and stakeholders. **Project Update feedback** – concerns regarding effects on local services and community facilities (healthcare, emergency services, community safety and policing); preference to design the legacy benefits into development proposals; clarity sought on type of legacy benefits to be delivered and anticipated Community Benefits Work programme; clear governance required for distribution and allocation of Voluntary Community Benefits; adopt Welsh Government's Community Benefits Measurement Tool to demonstrate the benefits realised; alignment with existing Welsh Government programmes in the area, such as Communities First and Families First; limited emphasis on long term legacy or community

Project component	Area of change	Important driver(s) for change
		benefits for wildlife features, natural landscape or the tourism they attract; and lack of recognition of effects on communities outside Anglesey, particularly Gwynedd. **EIA** – this process is a critical part of determining the scope of the community benefits package that would form part of the Wylfa Newydd Project. The initial effects assessment and resultant proposals for mitigation provide a core benchmark for what Horizon should deliver and there is then scope for further EIA work to inform decision making about further enhancements that Horizon might wish to propose. **Technical engagement** – Horizon has worked closely with IACC technical officers since the Stage One Pre-Application Consultation to explore and reach a common understanding regarding the definition of community benefits in the context of the Wylfa Newydd Project.

Principal benefits of the Project

4.90 The purpose of developing the Wylfa Newydd Power Station is to produce safe, secure and clean electricity for Wales and the UK into the future. The Wylfa Newydd Project also has the potential to deliver significant and long-term benefits to local and regional communities, including targeted training opportunities, employment during construction and operation, and a long-term economic benefit through the demand for local goods and services. Horizon is committed to ensuring that the Wylfa Newydd Project delivers benefits and enhancements for communities throughout the life of the Wylfa Newydd Power Station, including positive legacy benefits.

Community benefits

4.91 Horizon is working with the IACC to develop a common approach for the ways in which community benefits would be defined and delivered as part of the Project. Examples of the principal community benefits likely to be associated with the Project, including the current status of initiatives and schemes launched by Horizon, are set out below:

- **employment** – the potential to provide very significant employment opportunities on Anglesey and across North Wales to support the main construction activities at each stage of the Project, the provision of local goods and services and the potential to join the operational workforce for long term employment at the Power Station once completed;
- **supply chain** – Horizon has an active programme of business development and engagement with potential suppliers across Anglesey and North Wales and has already contracted a number of local and regional suppliers to deliver survey and

early enabling works. Horizon is developing ways to continue to encourage, promote and engage the use of local suppliers throughout the Project;

- **skills and training** – through the emerging Jobs and Skills Strategy, Horizon is developing opportunities to provide significant new skills and training to meet the needs of the Wylfa Newydd Project, for both construction and operational activities. This includes collaboration with Grŵp Llandrillo Menai (particularly Coleg Menai) and Bangor University in student and graduate programmes, re-training of existing skilled workers, promotion of STEM subjects and career paths, sponsorships and research;
- **apprenticeship schemes** - significant opportunities for those wishing to gain new skills, especially in construction and related trades to support the Project, resulting in a legacy of skilled workers who could then support future projects and initiatives within the region. Horizon launched its own engineering apprenticeship scheme in North Wales in February 2016 in partnership with Coleg Menai, to be offered on an annual basis;
- **Welsh language and culture** – Horizon is working closely with the IACC, Gwynedd Council, Menter Môn, Wylfa Newydd's Project Liaison Group and other partners to ensure the impacts of the Wylfa Newydd Project are minimised and to develop proactive measures to support the Welsh language and culture. These include maximising the opportunities for local people due to growth in employment opportunities and the local economy, supported by investment in skills, training, engaging with education at all scales and the offer of apprenticeships, which may reduce out-migration and attract Welsh speaking residents who may have left the area to return to Anglesey. Other potential measures include financial support to local schools which may receive an increase in non-Welsh speaking children, including dedicated language immersion centres; support to existing health services such as additional bi-lingual GPs; and support to local language initiative groups to normalise the use of the Welsh language in the community and measures to integrate newcomers into Welsh-speaking communities;
- **sponsorship in further and higher education** - Horizon is developing a scheme to sponsor young people from North Wales who wish to study STEM vocational subjects at Coleg Menai and other centres of further education, and the study of electronic and control engineering, such as the courses at Bangor University. This includes prospective students (including mature students) who are already studying, or planning to study in specific disciplines that have relevance to the Wylfa Newydd Project and future employment. Examples include sponsorship of STEM vocational subjects at Coleg Menai and engineering at Bangor University;
- **schools engagement** – Horizon is working in collaboration with the IACC, the Energy Island Partnership (EIP), Coleg Menai, Anglesey head teachers and education agencies to put in place an educational programme to help inspire and guide school age children in the region and to unlock future employment opportunities arising from the Wylfa Newydd Project and other projects in North Wales;
- **tourism** – Horizon is working with the IACC and other stakeholders, such as the Destination Anglesey Partnership, to ensure the potential for adverse effects on tourism during construction are minimised. This includes the introduction of the Worker Accommodation Management Portal to monitor and regulate the take up of

tourist bed spaces, while providing owners with potential rental beyond the tourist season; and infrastructure improvements to enhance visitors' experience, such as the proposed improvements to the A5025, public rights of way and cycle paths, and provision of the Visitor and Media Reception Centre, a resource for both leisure and education; and

- **charitable donations, community funding and sponsorship** - this scheme was launched by Horizon in 2014 to support local communities and is particularly aimed at registered charities, schools, places of learning and community organisations or groups who wish to apply for small grants. Overall, Horizon provided in excess of £75,000 support to local community groups and good causes during 2014, More than £100,000 in 2015 and this support continues. Further details, including guidance and application materials are available on Horizon's website www.horizonnuclearpower.com/community-support.

Delivery mechanisms

4.92 Horizon recognises that delivering community benefit is a key part of the Wylfa Newydd Project and will do so in compliance with relevant planning law, policy and guidance. Horizon and the IACC have developed a common approach document, *Towards a Common Approach on Community Benefits arising from the Wylfa Newydd Project, March 2016*, setting out an agreed means for working together to maximise the local opportunities arising from the Wylfa Newydd Project. Community benefits would be delivered by means of the following principal mechanisms:

- **inherent community benefits** - that would arise as a direct result of the Wylfa Newydd Project being delivered. Examples would include the benefits arising from the provision of jobs and from the associated skills and training opportunities;
- **planning community benefits** - that would arise from the operation of planning law, policy or guidance through agreements under section 106 of the Town and Country Planning Act 1990, or related provisions under the Planning Act 2008 in respect of the DCO application. These community benefits are likely to relate to the mitigation measures adopted to address the adverse effects predicted by the DCO Environmental Statement as likely to arise from the Wylfa Newydd Project. They must be directly linked to the DCO, necessary in order for the consent to be granted and fair and reasonable in scale and kind in relation to the development to which they are linked;
- **voluntary community benefits** – these are goodwill contributions brought forward by Horizon voluntarily in recognition of the communities of Anglesey hosting developments over their lifespan and in meeting the wider sustainability objectives of Horizon. These include voluntary or charitable contributions (for example of donations of money, time or resources) by Horizon to local communities. Horizon would ensure that an independent governance process was developed to allow such payments to be administered by an independent fund holding body. Recent examples of contributions include:
  - Ynys Môn Search and Rescue – support provided in the form of funding;
  - Ysgol Parc Y Bont – to develop a wildlife garden as an outdoor teaching resource;
  - Môn FM – to purchase new equipment for the community radio station; and
  - Cylch Meithrin Amlwch – funding equipment in the Welsh language nursery.

Legacy benefits

4.93 The Wylfa Newydd Project is expected to give rise to positive and lasting legacy benefits. Examples include the benefits that would be connected with the Associated Development after construction of the Power Station has been completed; benefits of safer roads due to road improvements; and the long lasting legacy benefits through acquiring new skills and training and from associated training facilities.

4.94 Horizon will remain engaged with the IACC, Anglesey EIP, North Wales Economic Ambition Board and key local stakeholders to understand how the considerable potential for legacy benefit might be realised. Horizon is still considering opportunities that might be brought forward along the lines of those discussed at the Stage One Pre-Application Consultation, including:

- **highway improvements** – these include preferred proposals for on-line and off-line improvement schemes to the A5025 between Valley and the Power Station Site (refer to chapter 11) to improve highway capacity, safety and manage environmental effects at Valley, Llanfachraeth, Llanfaethlu and Cefn Coch. Measures are also being considered as part of these works to provide improved safety for pedestrians and cyclists in the long term;
- **health service provision** – the Project could offer positive benefits in terms of better health facilities that could, subject to the findings of the HIA process, result through the need to improve or enhance existing facilities in response to the demand from the Wylfa Newydd Project workforce (further information about the HIA in chapter 19 and the HIA Interim Report);
- **benefits arising from future uses for Associated Development** - our preferred proposals include the provision of the Logistics Centre which could be available for continued use after the Project, and the provision of up to 50 permanent housesat Madyn Farm, Amlwch; tourist accommodation at Cae Glas and up to 320 units of permanent residential units at Kingsland, Holyhead; and a serviced site remaining at Rhosgoch following the use of the sites by construction workers;
- **better leisure and recreational provision** – examples would include the proposed Visitor and Media Reception Centre, which would provide a tourist and educational asset for visitors interested in the Power Station and nuclear energy generation; and potential planning benefits to improve local recreational provision, as well as through new or enhanced facilities to support construction workers occupying new housing stock;
- **enhancement of existing housing stock** – provision of a Housing Fund by Horizon to facilitate the renovation of suitable houses and bring empty housing back into use, to support the accommodation of construction workers, which would then provide a positive housing legacy of increased and improved stock for future occupation (see chapter 9); and
- **measures to protect and enhance access and recreational facilities** - including new and improved footpath and cycle routes (introduced in chapters 7 and 11), together with facilities to enhance visitor experience to Wylfa Head and environs, such as an option to provide a car park at the headland near Porth Wylfa to enhance access for coastline activities, a wildlife observatory shelter at Wylfa Head,

and enhancements to footpaths including picnic areas, seating, viewpoints, interpretation boards and paved sections for wheelchair access.

General Comments

Do you have any general comments about the Wylfa Newydd Project as described in this consultation? If you do, please answer our general question.

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5 Building and operating the Wylfa Newydd Power Station

List of Figures

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5 Building and operating the Wylfa Newydd Power Station

5.1 This chapter provides a general introduction to the way in which the Wylfa Newydd Power Station would be built and operated. It provides a list of the main activities from Enabling Works, through Main Construction, Commissioning and Operation and into Decommissioning, including a high level, indicative construction programme.

5.2 Information is provided in relation to each of the main construction phases. The Landscape and Environmental Masterplan (LEMP) is introduced, then it is explained and illustrated in detail in chapter 7. Information about construction shift patterns is also provided. Consultation questions are included on topics where there is the greatest scope for influence.

5.3 The main activities expected during Operation and Commissioning are then covered. The Integrated Waste Strategy is introduced, supported by an explanation of some basic principles in the management of radioactive waste. Information is set out regarding operational and emergency arrangements that would apply once nuclear fuel was present on the Power Station Site. The chapter also includes details of Horizon's Decommissioning Strategy. The security arrangements, which would evolve throughout the lifecycle of the Wylfa Newydd Power Station, are outlined at the end of the chapter.

5.4 The information in this chapter includes, where appropriate, descriptions of preferred proposals and options under consideration, for which Horizon is still evaluating the optimum solution for delivering and operating the Wylfa Newydd Power Station. These descriptions are supported by an explanation of what is most likely to influence future decision making, offering clarity on the areas where feedback would offer the greatest scope for influence.

Main activities

5.5 The main activities within the Wylfa Newydd Project that are required to support the construction and operation of the Wylfa Newydd Power Station are set out here. They are not in strict chronological order. The list is an aspect of the Wylfa Newydd Project that is largely settled.

Wylfa Newydd Power Station

Power Station Site (and Wylfa Newydd Development Area)

Enabling works

5.6 A package of activities encompassing the scope of Horizon's proposed Site Preparation and Clearance works, as well as utilities work by third parties, involving:

- archaeological works;
- utility diversions and terminations;
- establishment of main site compound, car parks, site offices, provision of temporary lighting and erection of perimeter security fence;
- establishment of satellite compounds;

- establishment of materials and waste storage areas;
- removal/utilisation of rock outcrop to win rock (with associated crushing and screening);
- formation of haul roads and signalled crossing point on Magnox access road;
- erection of temporary fencing;
- erection of localised construction and ecology fencing within perimeter fence;
- laying of perimeter security track (optional);
- demolition of existing buildings and structures to ground level;
- removal of features above ground such as walls, gates, posts and field boundaries within perimeter;
- translocation of protected species;
- vegetation and tree clearance and removal;
- removal/treatment of contaminated soils and invasive non-native species;
- watercourse realignment (Afon Cafnan Tributary);
- targeted topsoil strip, storage and land management;
- provision of other surface/groundwater drainage and sediment treatment ponds and location of headwalls that feed into existing outfalls;
- temporary closure of Cemlyn Road;
- temporary closures and diversion of public rights of way (PRoWs) as required; and
- installation of construction related services.

Main construction

5.7 Construction site establishment, major civil works and marine construction, involving:

- site establishment, mobilisation for main construction works, siting of temporary site offices, compounds and welfare facilities;
- construction and commissioning of concrete batching plant;
- managed site-wide road network and security and access control;
- establishment of site perimeter fence;
- construction of the Cooling Water System (CWS) breakwaters and Marine Off-Loading Facility (MOLF) quays;
- option 1 - Offshore or “wet” marine excavation including dredging;
- option 2 – Partially dry or “semi-dry” marine excavation including construction and removal of coffer dam and piling;
- installation (and removal) of coffer dams for Cooling Water (CW) intake and outfall construction;
- excavation and construction of CW intake and outfall, including tunnelling;

- bulk earthworks including site levelling and grading, building platforms for Unit 1 and Unit 2 and construction and laydown areas;
- installation of drainage;
- construction of Power Station Site Access Road and junction from A5025;
- further construction of haul roads and bridges, expanding on those provided for Enabling Works;
- construction of temporary buildings and infrastructure, including Temporary Workers' Accommodation within the Wylfa Newydd Development Area for essential workers;
- deep excavation (Unit 1 then Unit 2) and construction of base mat for each unit;
- excavation of other features such as culverts and building foundations;
- progressive mound creation; and
- construction of internal roads, car parking, security fencing and permanent lighting.

Building construction and mechanical and electrical installation

- operation of MOLF;
- operation of concrete batching plant;
- operation of heavy lifting crane, tower cranes, construction plant and equipment
- main plant construction (Unit 1 and Unit 2); and
- construction of other buildings, structures and features.

Final landscaping and demobilisation

- creation of final mounds; and
- final landscaping (progressively delivered through Main Construction, in accordance with the LEMP).

Commissioning and operation

- operation; and
- construction of spent fuel storage facilities, Intermediate Level Waste (ILW) storage facilities and High Level Waste (HLW) decay storage facilities (to begin several years after the operational stage is launched).

Decommissioning

- Implementation of Decommissioning Strategy.

Off-Site Power Station Facilities

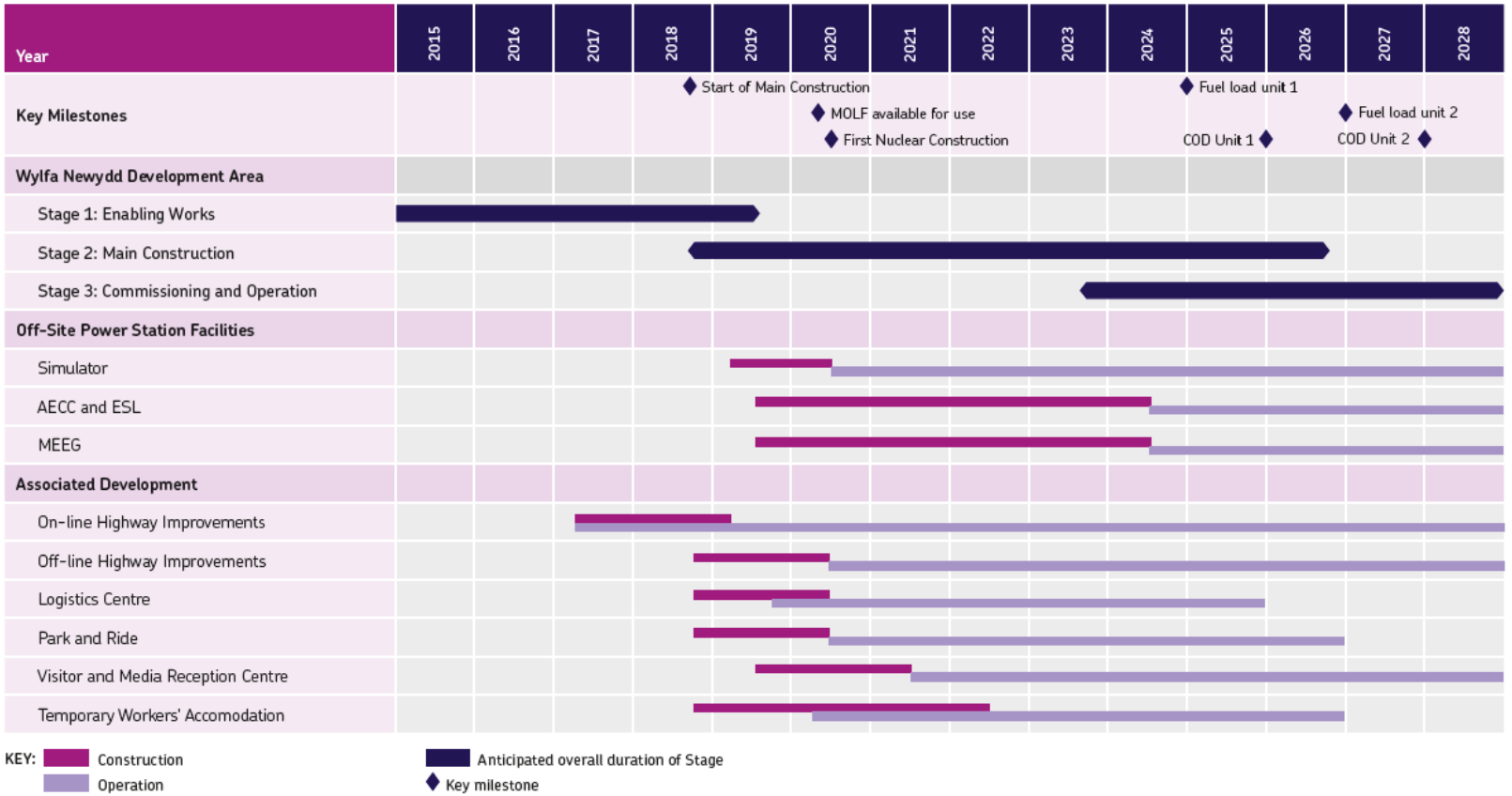
- preparatory works, construction and operation of the Alternative Emergency Control Centre (AECC) and Environmental Survey Laboratory (ESL); and
- preparatory works, construction and operation of the Mobile Emergency Equipment Garage (MEEG).

Construction programme

5.8 The overall programme for site construction at Wylfa Newydd is anticipated to be approximately 11 years for both Units. Horizon plans to adopt a phased approach to the detailed planning and scheduling of the overall construction works (from Enabling Works, through Main Construction and on to full operation of the Wylfa Newydd Power Station). Reference point plans are provided later in this chapter, supported by a description of how they relate to the evolving implementation of the LEMP for the Wylfa Newydd Development Area. These plans (figures 7.1 to 7.5 in chapter 7 of this document) also include a number of the features described in relation to the main activities, including indicative locations for construction compounds, fence lines and earthworks proposals and may be a useful cross-reference for readers.

5.9 Figure 5.1 provides an indicative high level programme for the construction of each of the Wylfa Newydd Project components. This relates to the main activities associated with the construction of the Power Station Site, the Off-Site Power Station Facilities and the Associated Development.

Figure 5.1 Indicative construction programme – Main Site Works



Construction shift working

5.10 Horizon has identified that multiple shift working would be required in order to deliver a viable construction schedule. This would be the principal approach adopted throughout the schedule; however, due to construction methodology certain tasks will require periods of 24 hour working.

5.11 The following site operation hours and shift patterns are expected for initial activities during Main Construction:

- earthworks – daylight hours only (single day shift – 7 days/week assumed for assessment purposes);
- marine (dredging) – 24 hour operation, 7 days a week;
- marine (activities other than dredging) – single day shift – 7 days/week assumed for assessment purposes; and
- large concrete pours during the construction phase – yet to be confirmed but likely to be a 24 hour operation, 7 days a week.

5.12 Overarching shift patterns are likely to be as follows:

- the current assumption for Main Construction works is that the site will operate an 11 day fortnight (i.e. 11 days on, 3 days off, including a stagger).
- the current working assumption is a staggered shift start with 3 start times at 07:00, 07:30 and 08:00; this may change once the Engineering, Procurement and Construction contractor has fully assessed the project requirements and constraints.
- staggered night shifts starting at 16:30, 17:00 and 17:30, with certain trades required to work through the night, for example when continuous concrete pours are needed.

5.13 Further work is ongoing in relation to the optimal shift pattern for the construction programme and the proposed pattern may change. A precautionary approach has been adopted for the purposes of assessment work, to ensure that the potential for adverse effects has been fully considered. The impact of construction worker related traffic, particularly during peak hours, is considered in the Traffic and Transport Technical Note, which also accompanies this Stage Two Pre-Application Consultation.

5.14 Horizon will continue to work with the supply chain to optimise the final shift pattern. This would need to take into account the overall construction schedule, safety, welfare and well-being of the construction workforce. However, it is also recognised that consultation responses, the findings and recommendations of the EIA process and further consultation with key stakeholders, including industrial relation bodies, trade unions, the IACC and emergency services, should be important influencing factors in seeking to minimise, as far as practicable, the adverse impacts that could arise from the shift pattern. Elements that might be subject to change include:

- shift start times, for example, to avoid existing peak times on the traffic network;
- the number of staggered starts for each shift, for example, a reduction in staggers could better optimise the use of buses for construction worker transport;

- the extent of activities and thus the workforce required to complete tasks during the night shift – this could affect the relative proportions of the construction workforce travelling to the Power Station Site for day shifts compared to night shifts, potentially reducing the amount of traffic movements in the early hours of the morning;
- increased length of the working day, for example, to allow the night shift end to better correlate to the day shift start; and
- adjustments to shift patterns and shift rotations to optimise productivity.

Lifetime of the Wylfa Newydd Power Station

5.15 There are four main stages in the lifetime of the Wylfa Newydd Power Station, referred to as lifetime stages, as follows:

- stage one – Enabling Works;
- stage two – Main Construction;
- stage three – Commissioning and Operation; and
- stage four – Decommissioning.

5.16 The first three of these lifetime stages are illustrated in figure 5.1 and the information presented in this chapter is arranged into the four stages. The names of these stages are those commonly used in the delivery of major projects in the UK and have been chosen for their relatively common understanding. These names may not align exactly with Horizon's formal Lifestyle Phase titles in other documentation not related to this consultation.

5.17 The overall timeline for the Wylfa Newydd Project is still being developed and will necessarily retain an element of uncertainty associated with the availability of the UK Geological Disposal Facility (GDF). However, the current understanding of the overall timeline is that Enabling Works (which include the works that have been underway at the Power Station Site for the past year) and Main Construction would together last for approximately another 11 years to the completion of Unit 2; however, the start of Commissioning and Operations of the Unit 1 would begin whilst Unit 2 were in its final stages of construction, aiming for the first commercial generation of power in 2025. The Wylfa Newydd Power Station would operate for approximately 60 years and the majority of decommissioning would take 20 years, with the date for the final stages of decommissioning being determined at some point in the future, depending on the availability of the GDF.

Stage One: Enabling Works

5.18 The Enabling Works are a series of works programmed to start prior to and then overlap with the early parts of the Main Construction stage. They include clearing the Power Station Site and parts of the Wylfa Newydd Development Area of existing constraints such as electricity and water utilities, as well as the establishment of new service connections to facilitate Main Construction and, in some cases, Operation. There are also numerous surface features to be cleared including trees, shrubs and other vegetation, field boundary features (such as walls and fences), buildings, paving, posts and topsoil together with realignment of a watercourse. Certain ecological and archaeological mitigation works would also be carried out as part of the Enabling Works,

together with the establishment of construction, ecology and temporary security fencing for site preparation and clearance.

5.19 The Enabling Works as a whole are needed to prepare the Wylfa Newydd Development Area for the construction of the Power Station to facilitate commissioning and generation of first power in the first half of the 2020s. Horizon is submitting a planning application to the Isle of Anglesey County Council for a specific element of the Enabling Works, termed Site Preparation and Clearance, which is described here.

Site Preparation and Clearance

5.20 At the Stage One Pre-Application Consultation, Horizon described proposals for Site Preparation and Clearance that would extend across the full Wylfa Newydd Development Area. At that time, the works were envisaged to cover clearance activities, but also include site levelling with associated earthworks and drainage, along with the closure and diversion of Cemlyn Road and various PRoW. These works were anticipated to be substantially complete by the grant of the DCO, assumed to be in 2018.

5.21 In the intervening period, Horizon has decided to amend the overall scope of the Site Preparation and Clearance activities, by reducing the physical area of clearance works and the overall amount of activity in the initial stages of works, re-shaping the construction programme to reduce physical impacts on the Wylfa Newydd Development Area prior to the grant of the DCO. This change responds in part to concerns raised through Stage One Pre-Application Consultation feedback about the extent of the works proposed early in the programme and also recognises that there is merit in reducing the amount of activities that may be undertaken prior to securing a DCO for the Wylfa Newydd Power Station. The change represents a reduction in the overall disruption from construction activities that might otherwise have been experienced in the local areas of influence (5km from the Power Station Site) during these early stages of works. It also has the effect of compressing and therefore reducing the overall duration of the most intense construction activities, which are anticipated to largely happen after Horizon secures a DCO for the Wylfa Newydd Power Station.

5.22 The peak workforce during Site Preparation and Clearance is anticipated to be in the region of 80 workers. The additional traffic associated with the movement of workers and materials based upon the programme of works, equates to around 150 – 200 vehicles per day, including the following:

- approximately 50 – 70 car movements daily (Monday to Saturday) at each peak period into and out of the site (it is anticipated there would be opportunities for some workers to be transported by minibus to reduce traffic); and
- approximately 30 – 35 HGVs into and out of the site at peak periods (Monday to Friday).

5.23 The workforce is expected to be predominantly locally (North Wales) based, so it is anticipated that the majority of workers would travel to site each day and 100% would be within 90 minute travel time of the site.

5.24 The Site Preparation and Clearance planning submission is planned for autumn 2016. This is likely to present the scope of activities in three main phases: the first would

commence prior to the submission of the application for a DCO, while the second and third would be implemented once a DCO has been granted[1].

Stage 1: Land surrounding Power Station Site

Vegetation clearance and excavations

- targeted removal of vegetation, mostly above ground or to ground level (e.g. large trees will be cut down to stump level);
- removal and storage of the targeted topsoil areas including preparation of targeted topsoil storage areas and topsoil mounding; and
- winning of some 17,000 tonnes of rock from outcrops north of the fisherman's car park and crushing for haul roads (not breaching water table, and with drainage system).

Clearance of other features

- targeted removal of above-ground features such as gates, poles, etc.;
- clearance of walls and buildings to ground level;
- existing telecommunication mast – possible relocation; and
- existing meteorological mast – possible relocation.

Remediation and management

- remediation of land that is known to be contaminated above the hazardous waste limit;
- waste management and material storage/management;
- management of vegetation after grazing ceases;
- eradication/removal of identified Invasive Non Native Species (INNS) and INNS impacted soils; and
- protected species translocation from within the perimeter fence to on- and off- site locations.

Site establishment

- security buildings (modular buildings) including a control room and gatehouse;
- installation of perimeter fencing;
- installation of security fencing for Site Preparation and Clearance site compound area;
- provision of ecology fencing;
- haul roads to topsoil storage areas near Cemaes, Tregele and west of Caerdegog Isaf; these will be left in place for the construction phase;

[1] The scope of works included within the Site Preparation and Clearance planning application would also be incorporated within the application for a DCO, offering Horizon an element of flexibility in respect of timescales for the implementation of the works, recognising the time that would be needed to satisfy DCO requirements and meet relevant legal obligations.

- diversion of a short stretch of the Afon Cafnan tributary watercourse skirting the south of the Wylfa Newydd Development Area;
- drainage system that is adequate for the scope of Site Preparation and Clearance phase; and
- construction of bat barns.

Closures and diversions

- temporary closures of footpaths and provision of diversions;
- short, temporary closures of Cemlyn Road to enable boundary wall/fence removal; and
- traffic management for haul road crossing point across access road to Existing Power Station.

Stage 2: land to south-west of Power Station

- targeted removal of vegetation, mostly above ground or to ground level;
- clearance of walls and other demolitions to ground level and only where these are inside the perimeter fence;
- INNS management;
- installation of perimeter fencing;
- installation of security and ecology fencing;
- species translocation from within the perimeter fence areas to on and off site locations;
- temporary closures of footpaths and provision of diversions; and
- management of vegetation after grazing ceases.

5.25 The scope for stage 2 excludes topsoil strip, drainage and construction of the bridge over the Afon Cafnan.

Stage 3: outstanding site clearance work

South-western land

- topsoil strip/storage and drainage.

Remaining land

- removal of vegetation;
- topsoil strip/storage;
- remaining demolitions to ground level;
- INNS management;
- installation of perimeter fencing;
- installation of security and ecology fencing within, clearance of walls to ground level and only where these are inside the perimeter fence;

- protected species translocation from within the perimeter fence areas to on- and off-site locations; and
- management of vegetation after grazing ceases.

Owned/leased land

- remaining topsoil strip, storage and drainage.

5.26 Topsoil stripping will be to a typical depth of about 275mm. It is currently proposed that the best and most versatile soils would be separated during stripping and subsequent storage. Any topsoil mounds required to be stored for longer than six months would be up to 2m high and would be seeded to minimise impacts. Shorter term, temporary storage topsoil mounds may not be seeded and would be created up to approximately 4m high.

5.27 The drainage to be installed during Site Preparation and Clearance is designed to be suitable for the scope of work to be undertaken during that phase. Once main construction starts, drainage will need to be developed by the contractor such that it remains suitable for the on-going activities on site. The key issues considered in the design of the drainage system include:

- the impact of topsoil removal on drainage flows across the site;
- the impact of alterations in water flow on the Tre'r Gof and Cae Gwyn SSSIs and Cemlyn Bay;
- the impact on drainage and any knock-on effect on flows into culverts, the sea and water systems across the site of the excavations;
- the impact of mounding on drainage, in particular around the SSSIs; and
- the mitigation of the impact of drainage affected by construction works.

5.28 The drainage system will incorporate techniques to limit the discharge of suspended solids into the groundwater and other receiving waters. 'Soft' engineering solutions including open ditches will be used to manage surface water runoff in the areas of land stripped of topsoil and where topsoil is stored. Temporary surface water drainage interception features will be installed to protect Tre'r Gof SSSI.

5.29 The targeted topsoil strip will maintain the existing ground profile. The surface water runoff rates and the rate of erosion are anticipated to increase as attenuation is reduced. The proposed drainage is designed to protect existing watercourses from increased siltation by the use of silt fences and settlement ponds, with flocculants treatment where necessary.

5.30 The Site Preparation and Clearance works would be managed from the construction compound that has already been established close to the Wylfa Sports and Social Club, accessed from the Existing Power Station access road. This would be enlarged and upgraded to allow the provision of fencing and site security facilities, an area for material handling and storage and a secure parking area for plant and machinery. Horizon's existing offices nearby would also be used for supporting the management of the Enabling Works.

5.31 The construction compound will include the following:

- steel modular buildings linked together (with a maximum height of 2 storeys);

- car parking for up to 30 cars;
- external lighting;
- a secure compound (including fencing and security systems) for the storage of plant and equipment;
- material and waste storage and handling area; and
- a security gatehouse, control room, and holding area for searching vehicles.

5.32 There will also be smaller satellite compounds with welfare facilities (including toilets, washing facilities and a rest area) at various places around the main site to save the workforce from having to return to the main compound during the day.

5.33 Material storage areas remote from the main contractor compound will be established as follows:

- a storage area for dry stone wall material north of Tre'r Gof; and
- a storage area for dry stone wall material at the Cafnan Farm property (where agricultural buildings have previously been demolished).

Stage two: Main Construction

5.34 The Main Construction stage refers to the activities focused specifically on the construction of the permanent developments of the Power Station. The Main Construction works would require the grant of the DCO and Horizon would need to satisfy any requirements associated with the DCO, with the intention that the works would start as soon as practicable following completion of sufficient Site Preparation and Clearance and other Enabling Works. This means that some elements of Main Construction may run concurrently with the second phase of Enabling Works – this potential overlap is highlighted in the indicative schedule in figure 5.1.

5.35 The Main Construction works would include a number of different aspects. This section provides an outline of a selection of main activities relating to the Power Station Site only, to provide a more general overview of construction activities. The need for these Proposed Activities is an aspect of the Wylfa Newydd Project that is largely settled and refinement of the construction plans would largely be determined through ongoing discussions between Horizon, Menter Newydd and the main contractors and informed by the findings of the ongoing EIA process. On this basis, the description provided here is principally for information and there is limited scope for consultation comments to have an influence.

Construction site establishment

Construction of temporary buildings and infrastructure

Offices and compounds

5.36 As the Wylfa Newydd Project enters the Main Construction stage, activities at the Wylfa Newydd Development Area would increase in terms of both physical works and construction worker numbers. This would increase demand for construction compounds, office and welfare facilities. Initially, this demand would be met through increasing the size of the construction compounds established to support Enabling Works and introducing further modular buildings, from predominantly double stacked up to four unit

stacks. As the Main Construction works progress, additional smaller construction compounds would also be established to suit construction activities across the Wylfa Newydd Development Area.

5.37 The actual provision and location of temporary buildings would be developed in conjunction with the appointed contractors closer to the beginning of Main Construction, although indicative locations are shown within the LEMP reference points in chapter 7. The position and arrangement of temporary facilities would change through the Main Construction stage, to suit the work. Temporary facilities would be located close to the active working areas (called the 'workfaces') to ensure workers stay close to their workface and, where necessary, site vehicles would be provided for mobility along internal haul routes between welfare facilities and the construction site entrance. The welfare provision would include canteen and medical facilities.

Contractor compounds and prefabrication areas

5.38 Construction site storage and workshop buildings would be located mainly within the construction laydown areas, in proximity to the relevant contractor work area. In addition, there would be a variety of workshops, buildings and fabrication areas within the Power Station Site that would be used by the different construction professions to feed the various workfaces with necessary materials and equipment. A concrete batching plant would be located within the Power Station Site, close to the proposed MOLF.

Security

5.39 Security, access control and site pass facilities during the Main Construction stage would be comprehensive, including turnstiles, secure access gates and vehicular access points.

5.40 The main worker and vehicular security access points would be located on the proposed Power Station Access Road to the south of the Power Station construction site and would extend to approximately 2 hectares to incorporate HGV staging areas, visitor car park and construction worker bus drop-off and pick-up. There would also be security access facilities at the MOLF, access from the Existing Power Station access road and a number of other emergency access points.

5.41 The perimeter security fence line installed during the Enabling Works stage may be utilised for the Main Construction stage, with an upgraded fence introduced to meet the requirements of increasing security as the Project progresses.

Construction of Power Station Access Road, haul roads and bridges

5.42 The Power Station Access Road would be constructed as soon as practicable within the Main Construction stage. It would be facilitated by the completion of necessary grading of the route to the proposed roundabout junction with the A5025, which is shown in the LEMP reference points in chapter 7.

5.43 Site roads would be hard surfaced and durable to serve the construction period, after which the finishing layer would be resurfaced in order to serve the operational station. Temporary bridges over watercourses would be built as necessary. Whilst the alignment of the access roads has yet to be determined, it is anticipated that access around site would be organised as follows:

- two main haul roads to be installed to link the compound to the north of the site and access east to west. These main haul roads would be approximately 10m wide (dual width); and

- existing site access roads (installed during ground investigation works) and haul roads to be installed during Site Preparation and Clearance would be used where possible.

5.44 At key stages during Main Construction, there would be substantial movements of excavated material between the Power Station Site and the areas proposed for mounding to the north-east, east and south-west of the site, using large tipper trucks. These movements would be undertaken within the Wylfa Newydd Development Area and would not use the public highways; however, the route would cross the Existing Power Station access road. At the crossing point, a 10m wide reinforced concrete crossing with four-way manned traffic lights is proposed. The location of the crossing point may be amended to suit the stage of the works, to a point adjacent to the Training and Simulator Building. It is envisaged that priority would be given at these traffic lights to vehicles accessing the Existing Power Station during the daily morning and evening shift changeover periods, as well as daily defueling activities associated with decommissioning of the Existing Power Station.

5.45 The proposed haul road alignment may include a temporary bridge structure on concrete footings (the "temporary Magnox access road bridge") to be built over the access road to the Existing Power Station. The intent of the bridge would be to provide access to the Existing Power Station for all vehicles up to a 7 tonne limit, particularly during the major earthworks and mound construction, and to allow less frequent heavy goods vehicles to use the existing route to the Existing Power Station through a manned haul road crossing.

5.46 A temporary bridge would also be required to provide site vehicular and plant access over the Afon Cafnan watercourse to the south-west of the site. The clearance of the bridge deck will be subject to Natural Resources Wales (NRW) requirements.

Major civil works

Bulk earthworks

Site levelling and grading and building platform creation

5.47 Site levelling and grading would be one of the first activities to be undertaken in the Main Construction stage, required to level out certain parts of the Wylfa Newydd Development Area to create the building platforms. Further work is required to develop the treatment and re-use strategy for the excavated materials; however, it is Horizon's current intention to re-use the materials as far as practicable. The main construction works could give rise to a total of around 12 million cubic metres (bulked) of excavated materials from all activities. A significant proportion of the excavated material would be used to form the level areas needed for the Power Station building platforms and to level the construction compounds. The remaining excavated materials would be used to create an appropriate landscape setting for the Power Station.

5.48 The levelling and grading works would focus in the first instance on the area where the MOLF would be constructed and the location for Unit 1, to facilitate early availability of the MOLF and swift progression into deep excavation works for Unit 1, respectively. The works would then progress to other parts of the Wylfa Newydd Development Area in a staged approach, including the location for Unit 2 and laydown areas in the south-east and south-west. The excavation approach (site grading) would be mechanical

excavation for general soil and weathered rock, and fracturing (which may involve blasting with explosives) and excavation for hard rock.

5.49 Dust emissions from construction site operations would be minimised through the use of water bowsers to keep haul roads and operational areas damp during periods of dry weather. Noise emanating from the construction activities would be controlled in a number of ways, including at source, through careful design in laying out the construction areas and sequences, the creation of noise screening mounds near sensitive locations and the effective management of operations (see chapter B.4 of the PEI Report for further information).

Deep excavation (Unit 1 then Unit 2)

5.50 Many of the Main Plant buildings (as described in chapter 6) are designed to be embedded in the ground and constructed on hard rock. Unit 1 and Unit 2 therefore require deep excavations for the installation of building foundations, particularly for the distinctive cruciform structures. These deep excavation works would use a range of construction methods including rock blasting and mechanical techniques, described in chapter B.4 of the PEI Report. Such activities would be strictly controlled to meet any vibration limits applicable to the works, and near neighbours would receive appropriate notification of periods of blasting.

5.51 Some of the deeper excavations would be below the water table. To ensure that such excavated areas remain dry, water would need to be pumped out of them – this is called dewatering. Any discharge from the construction site dewatering system would be via appropriate treatment and settlement facilities to ensure compliance with the relevant discharge consent.

5.52 Once the deep excavations were complete, access ramps would be removed and the final heavy earthworks equipment would be lifted out by crane. The PEI Report includes an illustration of the anticipated form of the deep excavations for Unit 1 and Unit 2 (see PEI Report chapter B.4).

Excavation of other features

5.53 Deep excavations would also be needed to deliver the CWS pipework to connect the CW intakes and outfalls to the relevant parts of the cruciform structures of Unit 1 and Unit 2. The cooling water tunnels would be primarily constructed using a road header excavation methodology, with cut-and-cover methodology utilised in shallower sections. It is anticipated that blasting/chemical splitting may be used for local areas of hard rock. These works would be undertaken alongside the other deep excavations described in the previous sub-section. Shallower trenches for other services and pipes, together with other building foundations, would also be dug in a similar timeframe, to optimise the use of mechanical plant and machinery, in the interests of construction efficiency.

Progressive mound creation

5.54 As stated above, the remaining excavated material would be used within the Wylfa Newydd Development Area to create an appropriate landscape setting for the power station and help to mitigate potential noise and visual effects. More details are given in the LEMP description in chapter 7 of this document.

Marine construction

Construction of CW breakwaters and MOLF

5.55 A number of Wylfa Newydd Project components would be required in the marine environment to support the construction and operation of the Wylfa Newydd Power Station:

- a north-western breakwater for the CWS at Porth-y-pistyll, which would be detached from the shore once construction was completed;
- a north-eastern breakwater for the CWS at Porth-y-pistyll, which would be connected to the shore;
- CWS intake at Porth-y-pistyll, with associated vessel protection barrier;
- a MOLF adjacent to the north-eastern CWS breakwater, incorporating two separate quays. One quay would allow AILs, large plant and equipment to be driven off the vessels (called a Roll-on/Roll-off quay), while the other would enable bulk materials to be lifted to the shore by crane (the bulk materials quay); and
- CWS outfall infrastructure to the west of Wylfa Head.

Construction method – Porth-y-pistyll

5.56 Prior to the start of marine works, the parts of the Wylfa Newydd Development Area around the shoreline of Porth-y-pistyll would need to be graded to prepare the construction platform that would provide access to the offshore areas. Materials would also need to be stockpiled in this general area in readiness for the construction of the breakwaters.

5.57 A section of the MOLF may be completed early in the marine construction programme in order to allow for access to vessels, and for delivery of materials required for marine construction (e.g. pre-cast concrete elements for the MOLF, and pre-cast concrete armour units for the breakwater).

5.58 The delivery of the marine infrastructure proposed for Porth-y-pistyll would require dredging and preparatory works using a combination of methods that may include blasting. These works could be undertaken either in a completely wet or partially dry construction environment and Horizon is continuing to evaluate the approach that would be taken through engagement with construction partners and other technical stakeholders. The differences in approach are outlined here for information only – there is little scope for consultation comments to influence this aspect of decision making as the decisions will be made based on the technical needs of the Project.

5.59 For both options, there would be a requirement for a coffer dam to allow the construction of the CWS intake structures in dry conditions. The intake would be constructed on the shore of Porth-y-pistyll bay directly to the south-west of the existing station. The main part of the structures will be positioned landward of the Mean High Water line, and the intake structure would extend vertically across the tidal range, ensuring sufficient submergence of the intake at all tidal stages. The construction of the intake structure would progress from seaward to landward, with the screen channels completed first, and the pump chambers later in the construction programme. The seaward side of the intake structure would house the screens (bar screens and drum screens). Fish deterrent and return systems will be installed at the intake entrance. The seawater pumps and

associated equipment, including pipe risers and valves, are located in the landward area of the intake structure.

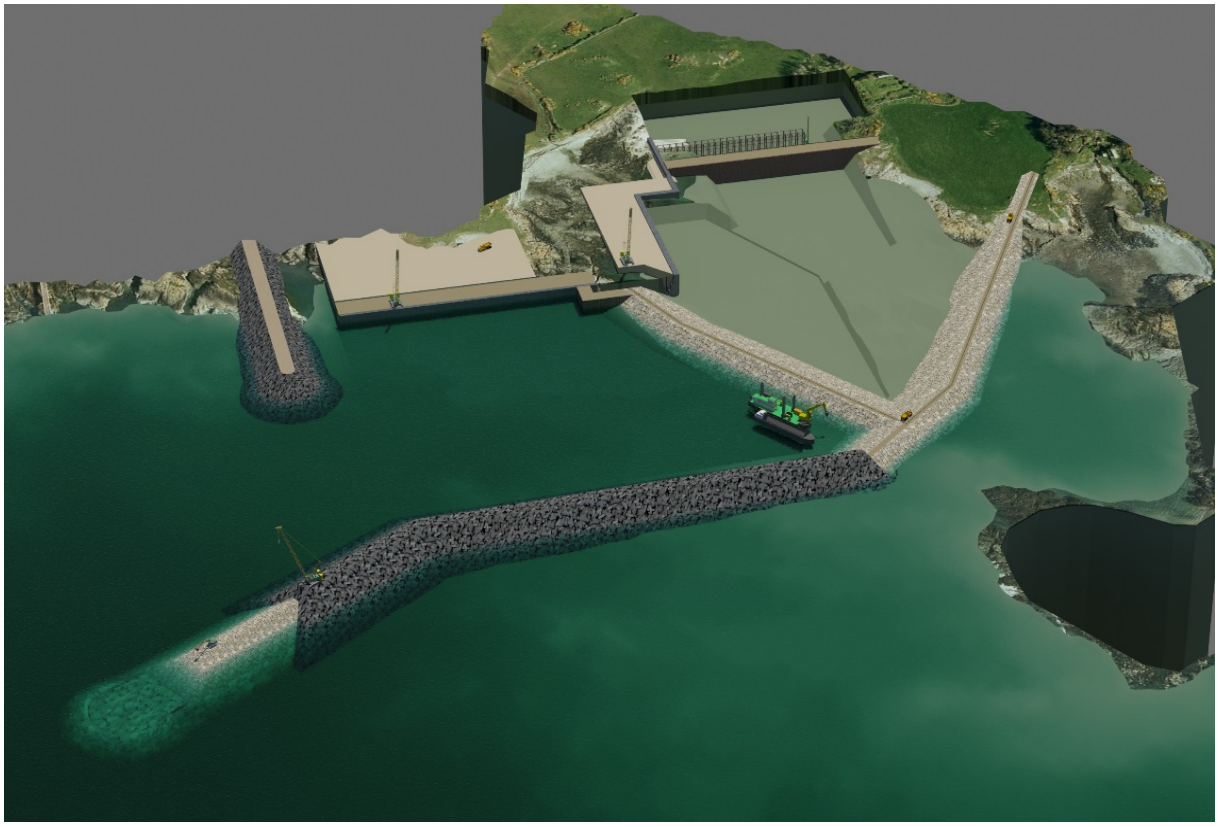
5.60 For the wet construction works approach, all dredging and underwater excavation activities would be completed from the sea. This would involve the use of specialist marine plant that can be mounted on the shoreline, on boats or on floating platform structures that can be anchored to the sea bed. A wet construction approach is more likely to include blasting.

5.61 For the semi-dry construction works approach, there would be a need to construct a temporary coffer dam to form a bund around the working area and then pump sea water out. Coffer dam structures are typically formed from a combination of steel sheet piles and a rock-filled dam with an impermeable core. This construction approach is being considered for the sea bed dredging works needed directly in front of the Porth-y-pistyll shoreline, extending to include the proposed Roll-on/Roll-off quay for the MOLF. Figure 5.2 includes an indicative image of how a coffer dam might look in the Porth-y-pistyll area, incorporating the north-western breakwater and the temporary approach road needed to construct the breakwater as part of the dam structure.

Construction method – Porth Wnal (west of Wylfa Head)

5.62 It is anticipated that the CW outfall tunnels would be placed near to the location of the existing outfalls from the Existing Power Station. Horizon has a preference for the CW outfall infrastructure to be constructed in a dry environment. Similarly to the semi-dry approach at Porth-y-pistyll, the creation of a dry working environment would require the installation of a coffer dam structure to allow sea water to be pumped out of the working area. The outfall structure would consist of the tunnel outlets (one for each unit) arranged in parallel, and a common concrete apron that helps control the flow of water to minimise erosion.

Figure 5.2 Indicative locations of coffer dams for construction of CWS intake infrastructure by the partially dry method



Building construction and mechanical and electrical installation

Main Plant construction (Units 1 and 2)

Reactor building

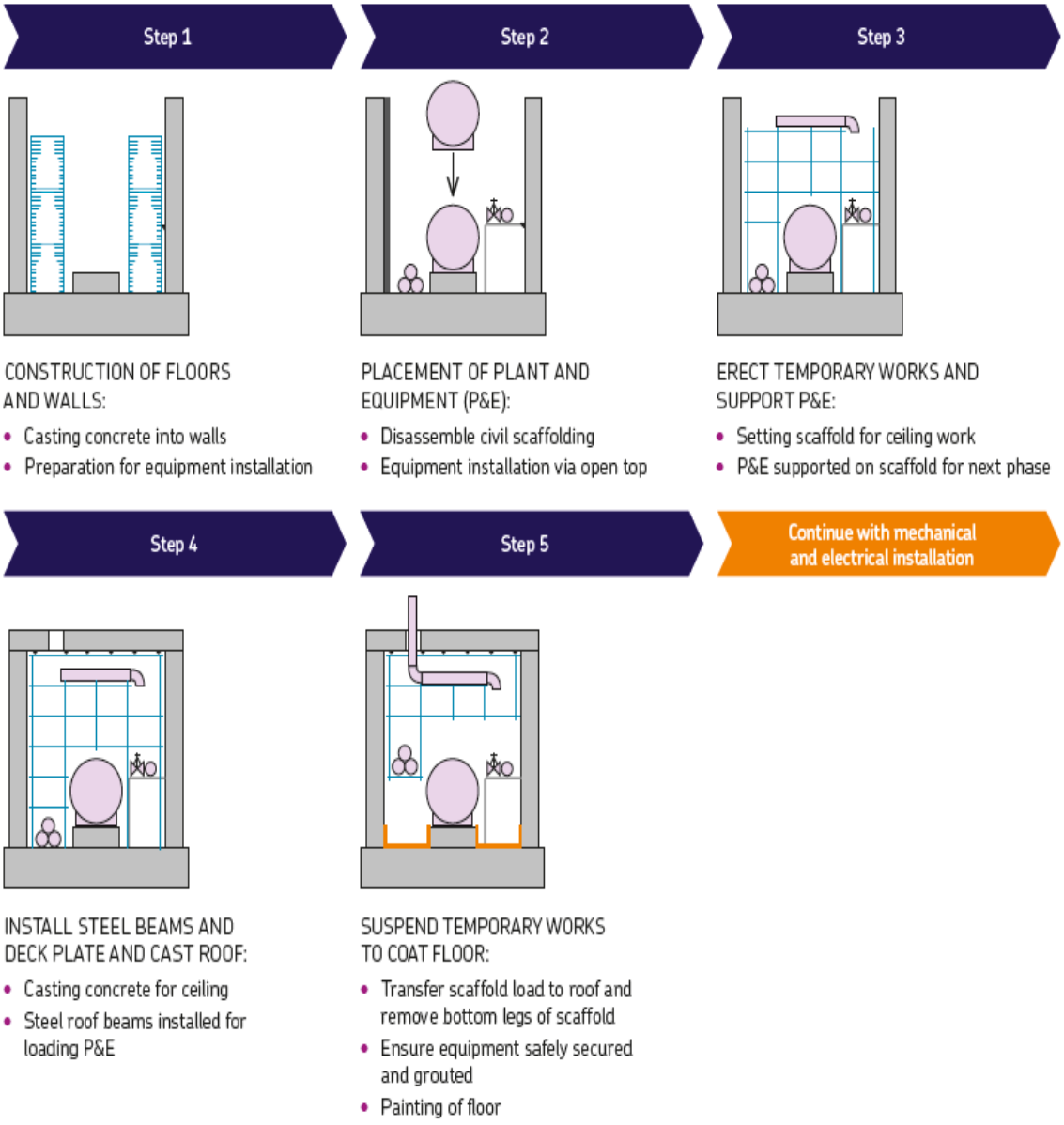
5.63 Horizon plans to adopt the same construction methodology for the reactor building as has been previously tried and tested on other ABWRs in Japan, namely open top parallel construction which is described in more detail below.

5.64 The deep excavations for Units 1 and 2 would be followed by the first levelling concrete placement and installation of drainage, earth electrodes and earthing wires. These activities would then be followed by the installation of the lower reinforcement for the placement of the concrete section of what is referred to as the base mat, which is positioned at the bottom of the reactor building, as well as temporary platforms for upper rebar works that would be needed. This concrete pouring must ensure that a continuous wet face is maintained throughout. It therefore forms a continuous process that requires specialist construction workers to provide 24 hour cover.

5.65 Open top parallel construction is a method whereby the civil contractor works concurrently with mechanical and electrical contractors to build the reactor progressively floor by floor. This means that the civil contractor would erect the walls of the first floor,

then the mechanical plant would be installed and then the civil contractor would return to pour the roof slab, which in turn forms the base of the next floor level. Once the roof slab for each level is poured, the mechanical and civil contractors then continue to work beneath it to install piping and electrical systems, while the civil contractor would focus on erecting the walls for the next level. This process would then be repeated until the top slab were poured, after which the steel roof structure for the reactor building would be installed. The process is illustrated in figure 5.3, which was based upon the Japanese practice. The methods have now been assessed against, and where necessary adapted to meet, UK construction practices and appropriate UK legislation.

Figure 5.3 Indicative stages in the open top parallel construction method



5.66 The careful sequencing and co-ordination of these works between the contractors, would be key to ensuring that the overall construction programme for the Wylfa Newydd Project was achieved safely and efficiently

Other Main Plant buildings

5.67 The Reactor Building, Control Building, Turbine Building, Service Building and Radioactive Waste Building would also be constructed using the same open top parallel method as described for the reactor building (illustrated in figure 5.3).

Construction of other buildings, structures and features

5.68 Other Power Station Site buildings and structures to be constructed would include supporting facilities, buildings, structures and features, as described in chapter 4 of this document, as well as the final landscape setting, illustrated in figure 7.5 in chapter 7 of this document.

5.69 Designs and construction techniques would vary depending on the functional requirements and classification of each building. Across the Wylfa Newydd Development Area, construction activities would include reinforced concrete construction, steel frame and blockwork construction. This means that construction would start with the formation of foundations, usually with concrete or steel bearing piles. A reinforced concrete base slab would then be poured before the erection of the building frame could get underway. After completion of the building frame, a profiled roof would be erected, followed by the fitting of cladding panels. Once the structures were watertight, internal fit-out activities would get underway, together with mechanical and electrical installation.

Cranes

5.70 Construction would require extensive use of mobile and tower cranes, mobile access platforms and scaffolding. At the peak of construction activity there may be in excess of 40 tower cranes on the Power Station Site, as well as a number of mobile cranes. The tower cranes would mainly be located around the power block construction areas. A very heavy lifting crane with a jib lifting to more than 110m AOD would be positioned next to both Units 1 and 2 the Reactor Building construction area and would remain on site for the construction of both Units 1 and 2.

Final landscaping and demobilisation

5.71 The final landscaping status is described in chapter 7 of this document and is referred to in that chapter as ‘reference point five’, which is the completion of the construction of both units. By reference point five, the Main Construction plant and machinery would have been removed from the Wylfa Newydd Development Area, together with the construction fencing.

Stage three: Commissioning and Operation

Operation

5.72 This section describes the way in which the Power Station would be commissioned and operated during the planned 60 year operational lifetime of the Wylfa Newydd Power Station. The various steps that would take place are an aspect of the Wylfa Newydd

Project that is settled and the description in this section is provided principally for information.

Power Station commissioning

5.73 Commissioning is defined as a progressive testing stage between the erection and installation of the Power Station and the start of normal operation. Commissioning is expected to last approximately 36 months per Unit, which would demonstrate that the Power Station has been built as designed and operates as designed. Commissioning tests would be conducted to demonstrate the safe operation of the Power Station and to demonstrate that the claims made in the safety case and other submissions have been met. The testing is broken into three phases:

- construction testing;
- pre-operational testing; and
- start-up testing.

5.74 Commissioning of Unit 1 would start during the final stages of Unit 2 being constructed (internal mechanical elements). Commissioning on each Unit would start at approximately 36 months prior to commercial operations. Receipt of first fuel would be around 15 months prior to commercial operations.

Construction testing

5.75 Construction testing is carried out throughout construction with final testing during the latter stages of construction; it is described here for alignment with the other commissioning phases. This would involve a series of tests conducted on components of the Power Station. These are typically conducted using temporary power supplies and therefore do not rely on the performance of other plant systems. Examples of construction tests are:

- insulation and resistance cable tests;
- hydrostatic pressure tests;
- instrument calibration; and
- circuit control, operation, and logic checks of control and instrumentation circuits, etc.

5.76 During hydrostatic pressure test activities, small amounts of non-radioactive liquid wastes would be generated. Arrangements will be in place to minimise the amount of waste generation, to accord with the relevant Environmental Permit. Small amounts of non-radioactive gaseous waste may be generated from temporary diesel driven electric generators, hydrostatic pressure test pumps, or air compressors, but this will be minimised by use of temporary electrical power supplied to the site from the National Grid. No gaseous, liquid, or solid radioactive waste will be generated during this phase of commissioning.

Pre-operational testing

5.77 Pre-operational testing is the first formal phase of commissioning. This phase of testing is sometimes referred to as cold commissioning or inactive commissioning. Pre-operational testing demonstrates system level operation of the power station. Construction testing of each of the components comprising the system would be

successfully completed before starting the pre-operational testing. Systems which support the operation of the system being tested will have been successfully tested already. This approach supports a Horizon commissioning objective that no plant or process which may affect safety is operated or relied upon prior to it being tested and proved functional.

5.78 Small amounts of non-radioactive gaseous, liquid and solid waste would be generated during the pre-operational testing phase, which would be subject to emission and discharge controls under an Environmental Permit. As the main station systems will be available, demineralised water will be processed and recycled by these systems as in normal operation. In the unlikely event of some equipment failure related to the Condensate Storage Tank, Suppression Pool or Condenser Hotwell, it may be necessary to discharge some water to the environment to support required plant testing. No gaseous, liquid, or solid radioactive waste is expected to be generated during this phase of commissioning.

Start-up testing

5.79 Start-up testing is the final phase of commissioning. This testing phase is sometimes referred to as active commissioning or hot commissioning. This phase would involve testing all of the Power Station systems together (called integrated system operation) and plant performance testing.

5.80 The testing in this phase is conducted in a prescribed sequence to ensure that there is no reliance on system configurations which have not been previously tested and ensured functional. In this phase the plant is operated by appropriately qualified Horizon personnel using normal station operating procedures and processes.

5.81 The start-up testing verifies that all safety functions, of both passive and active systems, work as designed and demonstrate that high power operation can be safely achieved. During this period electricity is generated and exported to the national grid and small amounts of radioactive and non-radioactive gaseous, liquid and solid wastes will be generated, all within acceptable limits, as described in the relevant topic chapters of the PEI Report and outlined in chapter 6 of this document. During this phase, the CWS would be in operation with heat being generated.

Power Station operation

5.82 The final UK ABWR design has not gone through the whole of the GDA process therefore the design continues to evolve and some parts of the safety case and design may change. This section presents the current understanding of the operational phase of the Power Station and highlights where there are options remaining. These options relate to decisions that Hitachi-GE and Horizon will need to make, principally as a result of detailed technical work. Consequently, there is no scope for consultation comments to influence the detailed design of the Power Station and the description of the way in which the UK ABWR would work is provided for information.

5.83 The UK ABWR is a third generation boiling water reactor. Fission reactions within the reactor core generate heat, the heat is used to boil water, which produces steam and the steam powers a turbine connected to a generator that produces electricity. The design is such that once the fuel is loaded in the reactor core, the reactor can operate at full power continuously in a 'fuel cycle' of up to 18 months.

5.84 A simple schematic diagram of a UK ABWR nuclear power station of the type proposed at the Power Station Site is shown in figure 5.4.

Figure 5.4 Schematic of UK ABWR

5.85 The fuel used in a UK ABWR is based on the naturally occurring element, uranium. There are different isotopes of uranium, but for fission in a UK ABWR, uranium 235 (U-235) is the isotope of interest. Around seven atoms in every 1,000 of naturally occurring uranium are fissionable U-235; therefore the uranium dioxide fuel used in the UK ABWR reactor is enriched with U-235.

5.86 The nucleus of the U-235 atom splits when bombarded by neutrons and this reaction generates further neutrons that can go on to split further nuclei, resulting in a sustained chain reaction. The splitting of the atomic nucleus results in substantial amounts of heat being produced. For the chain reaction to continue and be self-sustaining, the atomic nuclei need to be split by 'slow' moving neutrons, known as 'thermal' neutrons. In order to achieve this, the fuel assemblies are surrounded by a substance called a moderator, which slows the neutrons, giving them the opportunity to interact with further U-235 nuclei.

5.87 In a UK ABWR, water is used as the moderator. It is also used as the reactor coolant and carries the heat away from the reactor core. This heat is used to generate high pressure steam as part of the 'water/steam cycle'. This steam is used to turn the steam turbine, which drives a generator, to generate electricity. The steam that passes through the steam turbine is converted back into water in a condenser. The condensate is then pumped back to the reactor to produce more steam.

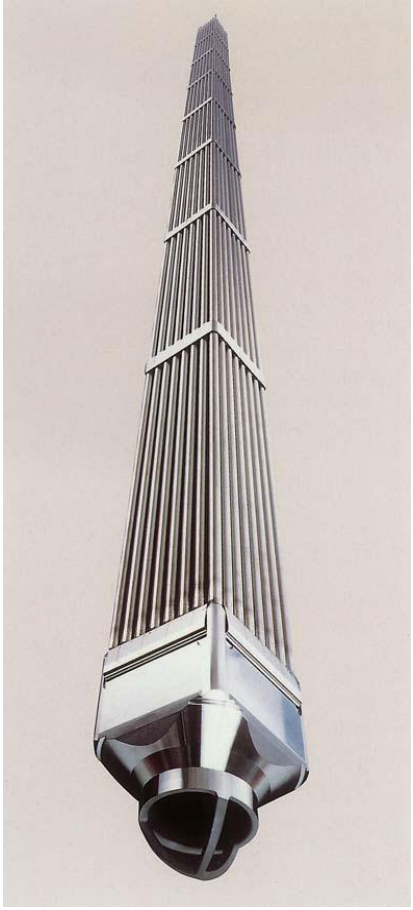
5.88 Reactor power output can be controlled via two methods:

- controlling the flow of water through the reactor: water flow through the reactor core can be increased or decreased to control neutron moderation; or
- using neutron absorbing rods: these 'control rods' can be inserted into or withdrawn from the reactor core if more or less neutron absorption is needed to control reactor heat output.

5.89 The reactor pressure vessel is a very strong, high-integrity steel vessel that contains the reactor core, fuel, control rods, reactor internal pumps and other equipment. The reactor pressure vessel is housed in the reactor building.

5.90 Inside the reactor pressure vessel are 872 fuel assemblies, each one approximately 4.5m long. Each fuel assembly consists of 92 fuel rods; metal tubes containing pellets of fissionable material, which provide fuel for nuclear reactors, shown in figure 5.5. Each fuel rod is made of a tube of zirconium alloy metal, which contains hundreds of fuel pellets. The fuel pellets are made of enriched uranium dioxide and each one is about 1cm long and about as thick as an ordinary pen.

Figure 5.5 Section through a typical fuel assembly

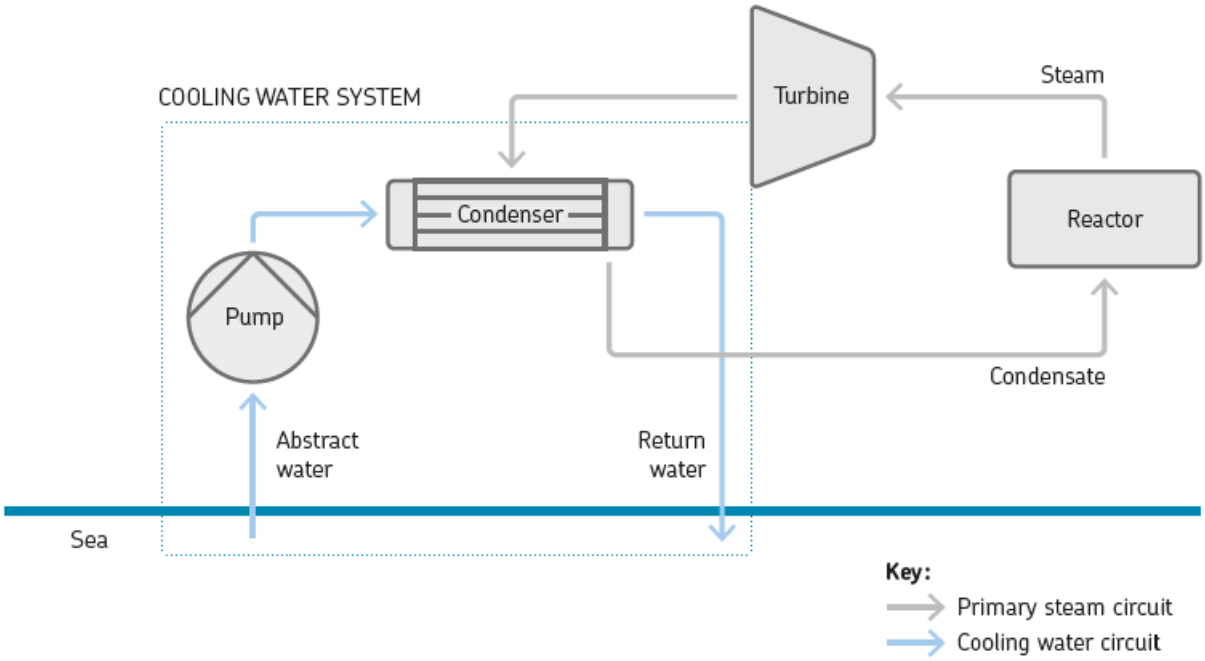


5.91 The fuel assemblies are inserted into the reactor pressure vessel along with control rods and instrumentation. Water passes around the fuel rods taking away the heat generated within the fuel by the fission reaction, turning to steam as a result.

5.92 The thermal energy of the steam generated within the nuclear reactor is then passed through the turbine where the energy is converted to rotational energy. The steam exhausts to a condenser, which is a vessel that sits beneath the steam turbine. To extract as much energy from the steam as possible for the electrical generation process, the steam pressure is reduced to below atmospheric pressure in the condenser. Thousands of tubes run through the condenser, through which cold seawater is pumped. As the steam touches the tubes, it condenses back to water, which is then pumped back to the reactor to again raise steam.

5.93 The Power Station would utilise once-through water cooling to cool the condenser, using seawater abstracted from the Irish Sea through the CWS intake and pumphouse structures. Figure 5.6 provides an illustrative schematic of how the CWS works, shown in blue as the ‘cooling water circuit’.

Figure 5.6 Schematic illustration of how a once-through cooling water system works



Schematic of the once through water cooling system works

5.94 The turbine is connected to the rotor of the electrical generator so the rotational energy from the steam turbine is directly transferred to the generator rotor. The rotor is an electromagnet that is rotated inside copper coils. This in turn induces a voltage, resulting in an electric current that is exported to the National Grid. The Power Station would have one steam turbine and electrical generator per Unit.

Refuelling and maintenance outages

5.95 The UK ABWR would operate on a 12 month fuel cycle for the first cycle and would switch to 18 month fuel cycles thereafter. Following a 17 month period, the Unit would shut down for a scheduled outage (approximately 30 days) whereupon some of the fuel assemblies would be replaced (approximately 224 assemblies per outage). It is anticipated that the total number of fuel assemblies removed from the reactors over 60 years of operation would be approximately 9,600 per reactor. The fuel cycles for the two Units planned at the Power Station would not run concurrently, meaning that planned outages would not be undertaken on both reactors at the same time. This means that one reactor would always be operational under normal operating conditions.

5.96 During these outages, maintenance on plant and equipment that cannot be maintained or tested while power is being generated (for example due to high radiation doses) would be undertaken.

5.97 Refuelling outages would typically last around one month with 24 hour working. Every ten years, a longer outage would be performed to accommodate in service inspection. This would involve a detailed inspection of plant components and equipment.

5.98 Fuel assemblies would be transported to the Power Station Site by road from whichever UK port of entry were deemed most appropriate. They would be transported to the Power Station Site over a short period of time yet to be determined in readiness for each refuelling outage and therefore it is not expected that fuel assemblies would be stored on the Power Station Site for a significant period before being installed. However for initial fuel loading, fuel may arrive at site earlier than routine deliveries to support inspection of a full core of 872 bundles. For routine deliveries the fuel assemblies would be transported directly to the reactor building, inspected and loaded straight into the fuel pool prior to loading into the core.

5.99 On removal from the reactor, spent fuel would be stored in the spent fuel pool for around ten years. The Integrated Waste Strategy description later in this chapter describes how spent fuel would be managed at the Power Station Site.

Transmission to National Grid

5.100 The electrical energy created in the generator would need to be transferred to National Grid's high voltage electricity transmission network. The electricity produced would need to be stepped-up to the transmission network voltage of 400kV for connection at the existing National Grid substation adjacent to the Power Station Site. Each Unit would therefore have an integral 'step-up' transformer, located near to the electrical generator. These transformers would run at all times (24 hours per day, 7 days per week).

Construction of spent fuel storage and radioactive waste storage and processing facilities

5.101 Chapter B1 of the PEI Report sets out the requirement for the spent fuel and ILW storage facilities; the spent fuel storage facility and HLW decay storage facility; and the Low Level Waste (LLW) processing facility. The LLW processing capability will be required from early in the start-up testing phase and will be included in the main construction as it forms part of the radioactive waste building. For the other facilities, their earliest requirements are as follows: ILW storage expected to be 5-10 years after the start of power generation at Unit 1; and spent fuel storage and dry HLW decay store from 10 – 15 years after the start of power generation at Unit 1. The timescale for the construction of the building or buildings needed to house these various facilities is expected to be in the range of 18 to 24 months.

Horizon will determine the construction scheduling and approach for these facilities once the design has been further developed. Design development is expected to be strongly influenced by the ongoing GDA process.

5.102 These aspects of the Wylfa Newydd Project have little scope for influence from consultation responses and will be largely determined through GDA requirements and construction schedule optimisation.

Operational workforce

5.103 The permanent operational workforce is expected to total up to around 850 people comprising a combination of Horizon staff and contractors. In addition to this, up to an

additional 1,000 temporary workers would be needed for planned outages. Chapter 8 of this document provides details of the operational jobs roles and introduces Horizon's draft Jobs and Skills Strategy, which includes proposals for securing an appropriate pipeline of suitable and qualified staff for the Wylfa Newydd Power Station. Chapter 8 also includes the working assumptions relating to the shift patterns for the permanent Power Station staff, while chapter 10 sets out proposals for travel planning measures to meet the transport requirements of the operational workforce.

Water use

5.104 When the Power Station is under construction and operational, in addition to the CWS requirements described earlier in this chapter, there would be a requirement for fresh water supply and disposal (sewage). This requirement is an aspect of the Wylfa Newydd Project that is settled and the description provided here is included for information.

Potable water supply and usage

5.105 Provisional estimates of the potable water demand in the main construction period up to and including commissioning includes:

- potable water consumption (welfare; drinking, sanitary and canteens);
- civil and building work batching and wash down (concrete production);
- mechanical and electrical work (purified water production for pipe pressure test and tank leak test, flushing and commissioning); and
- other site works (e.g. dust suppression).

5.106 At the peak of construction approximately 1870m^3 of water per day (27,000m^3/month) would be required to support the construction work.

5.107 Water re-use on site would be considered for the following typical uses:

- dust suppression/damping down of the roads;
- vehicle wash down water; and
- flushing water for temporary toilet facilities.

5.108 Horizon has consulted Dŵr Cymru Welsh Water (DCWW) to determine the company's capability to provide a secure potable water supply as well as the foul water infrastructure capacity to meet the anticipated operational demand from the Power Station Site. All freshwater would be supplied by DCWW; there is no intention for surface water, groundwater or seawater to be abstracted by Horizon for supply of potable water specifically to meet the project demand for potable supply.

Waste water treatment and disposal

5.109 Waste water would result from both conventional uses (for example, sanitary requirements in the administration building) and liquid process effluents.

5.110 The Integrated Waste Strategy introduced in the next section indicates how the majority of liquid effluents and waste would be managed, treated and disposed.

5.111 Horizon commissioned DCWW to carry out a feasibility study to explore the prospect of scaling up and upgrading the existing waste water treatment plant that serves Cemaes and the Existing Power Station to meet the additional needs that would be created by

operation of the Power Station Site. The study recommends the upgrading of the existing waste water treatment plant with additional secondary treatment and some pipe replacement. It is envisaged this new facility would operate in a similar manner to the existing facility and would discharge treated effluent to the Irish Sea.

Integrated Waste Strategy

5.112 The management of radioactive wastes on a UK nuclear licensed site is the responsibility of the Nuclear Site Licence (NSL) holder and is regulated by the relevant regulators. The Government is responsible for the long term disposal of spent fuel and ILW. Government determines policy in light of international agreements and guidance and prepares appropriate legislation. The regulators publish guidance and enforce Government policy. The nuclear site licensees and operators must then ensure that appropriate waste management strategies are implemented in accordance with legal requirements, policy and guidance.

5.113 As part of the regulatory process surrounding the granting of a NSL, Horizon would need to comply with relevant licence conditions, including minimising accumulation of radioactive wastes and preventing leakage of radioactive material. Furthermore, Horizon would need a number of permits for carrying out radioactive substances activities, water discharge activities and combustion activities in respect of the Environmental Permitting (England and Wales) Regulations 2010. Compliance with the radioactive substances environmental permit would require the implementation of Best Available Techniques, which are measures to minimise the generation and optimise the disposal of radioactive wastes. Horizon would also need to demonstrate that the ILW and spent fuel arising from the Wylfa Newydd Power Station could be safely and securely stored within the nuclear licensed site until such time that it can be disposed to a GDF.

5.114 The storage facilities should be sufficient to accommodate arisings from a 60 year operational lifespan, until a GDF is available. The stores will be designed to be safely operated and maintained for a period of at least 140 years from first receipt of spent fuel and ILW.

5.115 The development of a GDF for ILW and spent fuel generated at nuclear facilities across the UK is a commitment that the UK Government has made in the '*Managing Radioactive Waste Safely programme*'[2] and the '*White Paper: Implementing Geological Disposal (July 2014)*'. Furthermore, UK Government policy[3] is that ILW and spent fuel from nuclear power stations should be stored at the nuclear licensed site in stores for the interim period prior to disposal to the GDF – alternative approaches are not supported.

5.116 Horizon has prepared an Integrated Waste Strategy for the management of all wastes, both radioactive and conventional (and materials that could become waste) in solid, liquid or gaseous form, arising from the construction, operation and decommissioning of the Wylfa Newydd Power Station. The Integrated Waste Strategy is introduced in this section and is an aspect of the Wylfa Newydd Project that is largely decided. The scope for influence from consultation comments on the proposed radioactive waste management and disposal would be limited, with further refinement likely to be developed through targeted engagement with Horizon's regulators.

[2] The programme initiated by the Government to find a practicable framework for managing the UK's higher activity wastes in the long term through geological disposal (i.e. through the GDF).
[3] Paragraph 2.11 and Annex B, NPS EN-6

Objectives

5.117 The principal objective of the Integrated Waste Strategy is to ensure that a consistent and safe approach is adopted in determining decisions on waste management matters for the power station, as well as compliance with environmental protection principles for all waste types, inclusive of material that may become waste in the future. The Integrated Waste Strategy incorporates a set of waste management objectives and principles to guide the refinement of constituent strategies and their implementation. These objectives are to:

- safely control and account for radioactive waste;
- protect human health and the environment, both now and in the future; and
- ensure undisturbed power production from the reactor, provided health, safety and environmental protection are not compromised.

Overview

5.118 This section provides an overview of Horizon's Integrated Waste Strategy, focusing on the following:

- the sources and types of wastes expected to be generated;
- how these wastes would be managed and what facilities would be needed; and
- how the waste would be disposed.

Sources and types of wastes

5.119 Table 5.1 presents an overview of the main waste streams expected to be generated once the Wylfa Newydd Power Station is operational.

Table 5.1 Waste stream categories and sources

Waste stream	Category description	Typical source
Radioactive wastes		
Dry solid low level waste (LLW) (including very low level waste (VLLW))	**VLLW – waste that has a radioactive content not exceeding 4 megabecquerels (MBq) per tonne of total activity** **LLW – waste that has a radioactive content not exceeding 4 gigabecquerels (GBq) per tonne of alpha, or 12GBq per tonne of beta or gamma activity**	• contaminated personal protection equipment; • monitoring swabs; and • items generated from routine operations and maintenance (for example, plastic, wood, cloth, metal, pipes lagging, gas filters, concrete, glass equipment, structures, contaminated plant, HEPA filters and spent filtering materials).

Waste stream	Category description	Typical source
Wet solid LLW	**LLW – waste that has a radioactive content not exceeding 4 gigabecquerels (GBq) per tonne of alpha, or 12GBq per tonne of beta or gamma activity**	• bead resins from demineralisers in the liquid effluent treatment system; and • concentrates from the evaporators in the liquid effluent treatment system.
Wet solid intermediate level waste (ILW)	**ILW – waste that has a radioactive content exceeding the LLW limit and does not have a significant heat output**	• sludge from backwashing hollow fibre filters in the condensate demineraliser and liquid effluent treatment systems. and • powder resins from filter demineralisers in the liquid effluent treatment system.
Dry solid high level waste (HLW)	**HLW – waste that has a radioactive content exceeding the LLW limit and has a significant heat output**	• activate metal removed from the reactors, including control rods, monitors, probes and neutron sources.
Spent fuel	**Spent fuel – fuel that has been used in a nuclear reactor**	• the two reactors at the Wylfa Newydd Power Station.
Liquid radioactive waste	**Liquid waste that has radioactive content**	• low chemical impurity waste – waste water containing low levels of both insoluble and soluble impurities, typically collected from the primary coolant system, FPC and plant make-up water system and floor and equipment drains; • high chemical impurity waste – waste water containing high levels of both insoluble and soluble impurities, typically collected from chemical analysis laboratory drains and condensate demineraliser drains and barrier shower and wash basin drains. However, it is also possible to route liquid consigned to the low chemical impurity waste system and CAD system to the HCW system depending on the expected level of impurities it contains; and • controlled area drain effluents – collected from local air conditioning systems in the reactor building and

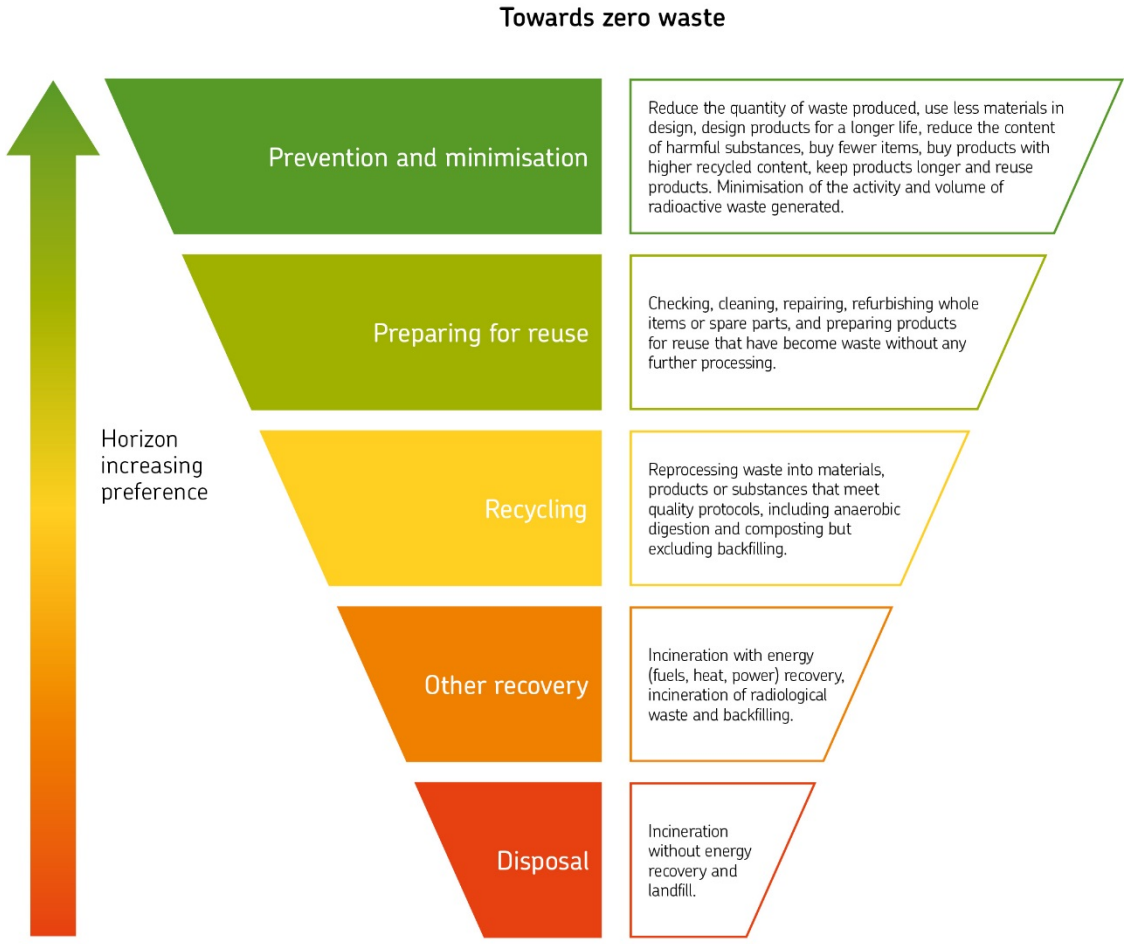
Waste stream	Category description	Typical source
		turbine building and potentially contaminated drains.
Gaseous radioactive waste	**Gaseous waste that has radioactive content**	• off-gas system - receives gaseous radioactive waste from the reactor steam circuit. and • heating, ventilation and air-conditioning system (HVAC) - receives airborne radioactive particulate from contaminated plant and equipment.
Conventional wastes		
Hazardous wastes	**Waste that is harmful to humans or the environment**	• batteries; • oil or chemical contaminated materials; • metal contaminated with hazardous substances; • empty liquid containers; • flammable liquids; • paints and empty paint containers; • machine coolant; • aerosol containers; • gas bottles; • switchgear and transformers; • cleaning materials; • fluorescent tubes; • sludges; and • contaminated soils.
Non-hazardous wastes (including inert waste)	**Waste that is not harmful to humans or the environment** **Inert waste is a sub-set of non-hazardous waste, defined as waste that does not chemically react with other wastes**	• electrical cables and other waste electrical and electronic equipment; • ferrous metals (iron and steel) and non-ferrous metals (aluminium, brass, copper); • stainless steel; • items removed due to maintenance, such as glass, plastics, woods, pumps, fridges, monitors and air conditioning units; • paper, cardboard and other consumables including toner cartridges; • food wastes and catering wastes including fats and edible oils; • soils and rubble; and • biodegradable wastes, such as grasses or seaweed.

Waste stream	Category description	Typical source
Conventional liquid waste	**All non-radioactive liquid effluent**	• cooling water from the CWS, the turbine building service water system and the reactor building service water system; • rainwater run-off; • drainage networks from non-controlled areas of the Power Station Site, including the service water storm drain and non-radioactive storm drain; and • controlled area drain effluents – collected from local air conditioning systems in the reactor building and turbine building and has no detectable radioactivity.
Conventional gaseous waste	**All non-radioactive gaseous effluent**	• standby AC power generation; and • house boilers.

Waste management proposals, including disposal

5.120 The Integrated Waste Strategy cites the Horizon waste hierarchy, which is shown in figure 5.7, as a fundamental component. The waste hierarchy does not apply to radioactive wastes which are discussed above. It aims to encourage the management of waste and material in order to minimise the amount of waste produced and to recover maximum value from the wastes that are produced. It is not applied as a strict hierarchy as many complex factors influence the optimal management approach for any given waste material. However, the basic principle is that waste minimisation should be pursued wherever possible, defined by the Organisation for Economic Co-operation and Development as a collective term for waste prevention, reuse, recycling and recovery.

Figure 5.7 Horizon waste hierarchy



The Horizon waste hierarchy

5.121 Table 5.2 summarises the proposed management of each of the main waste streams across the Project's lifecycle and highlights the facilities that would be needed; this is an aspect of the Wylfa Newydd Project that is decided.

Table 5.2 Summary of waste stream management and facilities

Waste stream	Management and disposal	Facilities
Radioactive wastes		
Dry solid LLW, including VLLW	Sorting and segregation at source. Confirmatory checking at dry LLW processing facility. Processed annually over a period of three months per time (termed 'campaign'). Off-Site disposal in line with Horizon's waste hierarchy (figure 5.7): • compaction and incineration;	Dry LLW processing facility.

Waste stream	Management and disposal	Facilities
	• recycling; and • direct disposal to the Low Level Waste Repository (LLWR).	
Wet solid LLW	Placed in buffer storage tanks in the radioactive waste building. Then Immobilised in cement (3-month campaign conducted annually). Placed in stainless steel drums in the service building. Disposal to the LLWR.	Buffer storage tanks and immobilisation in radioactive waste building.
Wet solid ILW	Placed in buffer storage tanks in the radioactive waste building. Then Immobilised in cement in the radioactive waste building. Transferred to the ILW storage facility. Processed every three to five years over a period of six months per campaign. Disposal to the GDF.	Buffer storage tanks in radioactive waste building. ILW storage facility.
Dry solid HLW	Stored in spent fuel pool for around 10 years. Packaged into stainless steel canisters and transfer overpacks and transferred to the dry HLW decay storage facility. At the point of disposal to the GDF, the dry solid HLW will have decayed to ILW. Repackaged prior to transfer for disposal to the GDF.	Dry HLW decay storage facility, required between 10 to 15 years after the start of power operation of Unit 1. Repackaging facility is anticipated to be required after 2080.
Spent fuel	Stored in spent fuel pool for around 10 years. Packaged into stainless steel canisters and transfer overpacks and transferred to the spent fuel storage facility. Repackaged prior to disposal to the GDF.	Spent fuel storage facility, required between 10 to 15 years after the start of power operation of Unit 1. Repackaging facility is anticipated to be required after 2080.
Gaseous radioactive waste	Off-gas system, using recombiners, filters, condensers and absorption to delay and HEPA filter the release of entrained gases to allow for radioactive decay, supported by monitoring instrumentation. HVAC, limiting the spread of radioactive materials from contaminated plant and equipment and filtering contaminated air prior to its discharge to atmosphere using a high-efficiency particulate arrestance	Off-gas system. HVAC system, designed to operate as multiple independent sub-systems.

Waste stream	Management and disposal	Facilities
	(HEPA) filter. Discharge of potentially radioactive gaseous waste streams through filtration systems and main reactor stacks.	
	Liquid effluents	
Low chemical impurity waste (LCW)	The LCW system consists of filters for the removal of insolubles, demineralisers for the removal of solubles, and sampling tanks. Treated effluents are returned to the Condensate Storage Tank for reuse in the reactor water clean-up system in the reactor building. Therefore, liquid effluents are not discharged to the environment from the LCW system.	LCW treatment system in the radioactive waste building.
High chemical impurity waste	The HCW system comprises an evaporator for distillation and removal of soluble and insoluble impurities, a demineraliser for removal of solubles and sampling tanks. Treated effluents are either transferred to the condensate storage tank for reuse or, in limited circumstances if this tank is full, discharged to the environment via the CWS outfall, following sampling.	HCW system in the radioactive waste building.
Controlled area drain (CAD) effluents	Effluents are collected in the controlled area drain collection tanks and sampled. Liquid waste in the CAD system is not expected to be radioactive but could become contaminated. If the effluents meet the discharge criteria, they will be discharged via the CWS outfall. If effluents require further treatment prior to discharge to the environment, they are routed to the high chemical impurity waste treatment system.	Controlled area drain system in the radioactive waste building.
Reactor cooling circuit and fuel pool – closed circuit systems	The primary circuit and fuel pool (namely the plant areas containing water that comes into direct contact with irradiated fuel elements) are operated as far as is practicable as “closed loop systems” in the turbine building and reactor building. Water is treated for reuse in the following three systems: • condensate water clean-up system; • reactor clean-up water system; and	Turbine building. Reactor building.

Waste stream	Management and disposal	Facilities
	• fuel pool clean-up system and suppression pool clean-up system. Effluent from these systems is not directly discharged to the environment. However, discharges can be made to the low chemical purity waste system in the event of excess liquid during start-up and shut-down operations.	
Conventional wastes		
Hazardous	Segregation at source followed by processing and short term storage in the hazardous waste storage facility. Off-Site disposal to a suitable and compliant facility.	Hazardous waste storage facility.
Non-hazardous	Segregation at source followed by processing and short term storage in the waste and recycling facility within the Power Station Site. Off-Site disposal to a suitable and compliant facility.	Waste and recycling facility.
Sewage	Off-Site treatment using conventional techniques.	Existing Welsh Water facility to be upgraded/expanded. Temporary arrangement may be put in place for period of the construction stage that will comply with legislation.
Liquids	Discharge of trade effluent to controlled waters under the terms of an Environmental Permit[4], following sampling and monitoring.	To be set out in the relevant Environmental Permit.
Gases	The discharge of gaseous emissions from combustion plant is regulated by the issue of an Environmental Permit.	To be set out in the relevant Environmental Permit.

Operational and emergency arrangements

5.122 This section introduces Horizon's proposed approach for operational and emergency arrangements (termed 'Emergency Preparedness'). Horizon's key strategic focus for Emergency Preparedness is to ensure the public, workers, environment and the Power

[4] To discharge trade effluent (which encompasses all non-radioactive effluents generated at the Wylfa Newydd Power Station) to controlled waters (which include coastal waters out to the territorial limit) Horizon would be required to apply for an Environmental Permit under the Environmental Permitting (England and Wales) Regulations 2010 (SI 2010 No.675).

Station plant are protected, and to maintain security of the site, in the unlikely event of an incident. To achieve this goal, development of proportionate Emergency Arrangements will form a key part of the development of the management of the Wylfa Newydd site during all phases of the lifecycle. Horizon intends to adopt a 'one response for all events' philosophy, taking an integrated approach to developing its capability to respond to incidents and emergencies based on Integrated Emergency Management (IEM).

5.123 These aspects of operating the Wylfa Newydd Power Station are highly regulated and the finer details of Horizon's approach will be developed through engagement with the relevant technical stakeholders and nuclear regulators. Consequently there is no scope for influence and the description is provided for information. However, the ONR carries out its own public engagement on emergency conditions.

Protection of the public

5.124 The Radiation (Emergency Preparedness and Public Information) Regulations 2001 (REPPIR) establish a framework for the protection of the public in respect of nuclear power stations through emergency preparedness for accidents and emergencies with the potential to affect members of the public.

5.125 This legislation requires operators of nuclear sites to submit a hazard and risk assessment to the ONR to assess the impact of reasonably foreseeable accidents from an operating power station on the public. The ONR then assesses the submission and determines the appropriate size for an Off-site Emergency Planning Area. This is similar in concept to the Existing Power Station's Detailed Emergency Planning Zone.

5.126 Within this zone, once determination has been received from ONR, REPPIR requires the provision of information to the public in advance for situations where a radiation emergency might arise. Horizon would provide regular information to the residents within this zone regarding actions to take in the event of a radiation emergency. This would include the pre-distribution of potassium iodate tablets to residents, which until recently was a practice undertaken in relation to personnel at the Existing Power Station; its requirement for the Existing Power Station ended recently following a regulatory assessment of conditions now that he Existing Power Station is de-fuelled.

Emergency response

5.127 In the event of an incident at any operating nuclear power station, there is a phased approach to the response.

Phase 1 – Operator response

5.128 On indication of an incident or accident, the operator will assess the event and put in place initial mitigation and a response to control the event. This may include emergency operation of the reactor to a safe state, dispatch of emergency response teams and establishment of emergency facilities. For Horizon, the on-site response would be run by an Emergency Controller from an Emergency Control Centre (ECC) that would be positioned within the Power Station Site and supported by various other emergency facilities such as an access control point and a medical centre. Horizon's AECC may also be used to assist with monitoring the incident or accident.

Phase 2 – Company and local response

5.129 For larger scale events that require off-site support, phase 2 is notification to the local emergency services and the relevant Company Support Centre. These will both provide support to the Power Station and help in limiting the consequences of the event. Horizon's Company Support Centre would be hosted at company headquarters in Gloucester.

Phase 3 – Regional response

5.130 If the event has larger scale impact outside the perimeter of the Power Station Site, then notification will be given to activate the regional level response. This regional level response includes the activation and establishment of the Strategic Coordination Centre (SCC), which will control the off-site response of the emergency services and other local agencies to ensure protection of the public. This would also include the set-up of the Media Briefing Centre (MBC) and local arrangements for press. In North Wales, the SCC and MBC are hosted at regional police headquarters and Horizon plans to develop a Media briefing and marshalling point (to be based at the proposed Visitors Centre) to assist with local press interest, offering a line of sight to the Power Station Site. If required, emergency equipment for severe events can be dispatched. Horizon plans to provide a MEEG for the storage of such equipment (see Off-Site Power Station Facilities in chapters 6 and 18 of this document).

Phase 4 – National response

5.131 Following activation and establishment of the SCC, the national Government-level response will be activated; the degree of the response would depend on the event. Through the Cabinet Office Briefing Room (COBR) and the UK national Emergency Operations Centre, and the ECC Wales, the UK and Welsh Governments would provide support and expert advice to the regional responders and the public as a whole. Other national agencies would also establish their own emergency centres to support the response.

Emergency planning

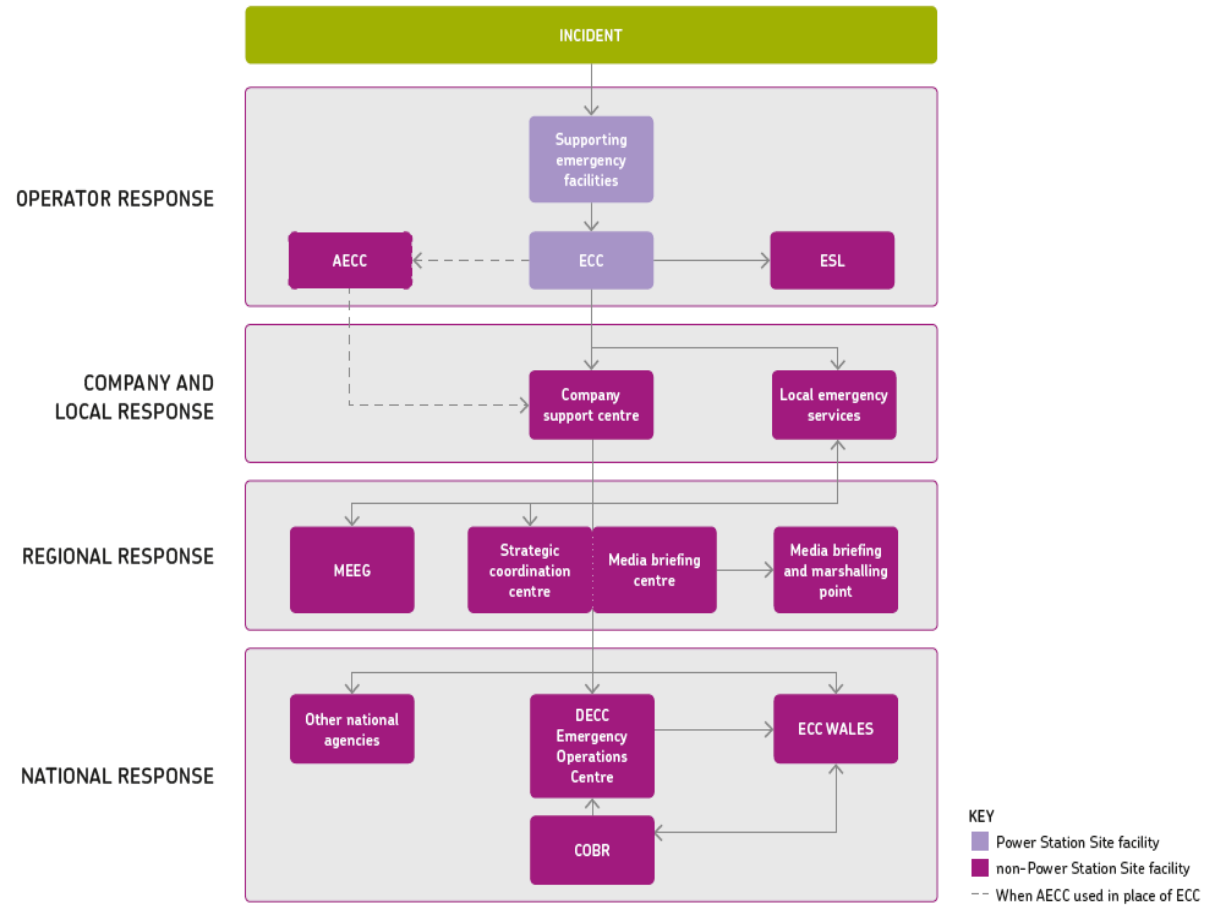
5.132 To ensure that Horizon has adequate arrangements in place, the Wylfa Newydd Power Station will be subject to Nuclear Site Licence (NSL) conditions, notably site licence condition 11. This requires the operator (Horizon) to make and implement adequate arrangements to deal with any accident or emergency arising on the Power Station Site and its effects. This condition would be in place once the NSL was granted and therefore emergency arrangements would be in place throughout the lifetime of the Wylfa Newydd Power Station. These arrangements are outlined in figure 5.8, and would remain proportional to the hazard and risk on the Power Station Site. Emergency arrangements would continue to evolve during the construction period and through to operation of the Wylfa Newydd Power Station.

5.133 To ensure that these arrangements were adequate, Horizon would conduct a detailed safety assessment of the plant and procedures to identify circumstances where an accident could occur. Based on the results of the assessment, procedures may be changed or additional controls added to make the possibility of an accident even more unlikely.

5.134 The assessment would also identify the likely nature of the most serious reasonably foreseeable accidents. Emergency arrangements would be developed to cover the

required actions and mitigation needed to control such an event. These would be in the form of an Emergency Plan, approved by ONR, that would contain information on protection of the public, personnel, plant and the environment. Horizon is developing emergency arrangement proposals that include a number of key roles and specific facilities, some within the Power Station Site and others Off-Site. These would work with the whole regional and national UK response structure as outlined in figure 5.8. The degree of the response would be dependent on the severity and potential effects of the event and the likely impact on the local and national infrastructure.

Figure 5.8 Emergency arrangements – command and control structure



Emergency arrangements – command and control structure

Emergency Control Centre

5.135 The ECC would be the strategic command centre for the Wylfa Newydd response, located within the Power Station Site. The key role would be that of Emergency Controller who would be supported by a number of trained responders and specialist teams, to control the on-site response as well as providing information and advice to local agencies responsible for managing the off-site response. The ECC would be connected to a Technical Support Centre containing the Technical Support Team who would assess the scale of the event and give technical advice and support to the Emergency Controller and Main Control Room Team.

Emergency Control Area

5.136 A dedicated area would be created within the Main Control Room, which would provide the Initial Emergency Controller (Shift Manager) with an area in which to perform the strategic command of an before handover to the Emergency Controller.

Emergency Response Centre

5.137 There would be an Emergency Response Centre within the Power Station Site. This would house the required response equipment and be permanently manned by a 24/7 Emergency Response Team (ERT) skilled in firefighting, environmental response, medical response and specialist rescue. The ERT would be the first responders dispatched to an incident to assess the situation and perform initial mitigation activities. This initial response would then be supported by further teams and emergency services from other locations.

Access Control Points

5.138 The Power Station Site would have two access control points located within the North and South Security Gatehouses to aid arrival and dispatch of emergency services and to support teams during an incident. The access control points would be staffed by teams of trained responders who would control access into and out of the Power Station Site by staff, emergency services and support teams. These areas would also house monitoring and decontamination facilities and a medical treatment centre. Similarly to the ECC, the access control points would be set up for 24 hour occupation for up to seven days.

Forward Control Point

5.139 Two fixed Forward Control Points would be located in each Reactor Unit's service building and would be established for more localised events to facilitate a shorter response time and duration in the event that the ERT requires breathing apparatus.

Off-Site Power Station Facilities

5.140 The emergency arrangements include procedures for the use of the three Off-Site Power Station Facilities described in chapters 6 and 18 of this document, namely the AECC, ESL and MEEG.

Media briefing and marshalling point

5.141 In the unlikely event of an incident, Horizon plans to use the proposed Visitor and Media Reception Centre as a temporary media briefing and marshalling point close to the Power Station Site where the local and regional media could gather and liaise with other regional and national media centres. This location sits sufficiently close to the Power Station Site to offer a direct line of sight. Media would be able to access the welfare facilities within the Visitor and Media Reception Centre and rooms could be converted into briefing areas where they could receive press briefs relayed from the MBC contained within the SCC.

Stage four: Decommissioning of the Power Station

5.142 At the end of the 60 year operating stage, the Wylfa Newydd Power Station would be decommissioned. The decommissioning of a nuclear power station is subject to guidance and regulation at various international and national levels. No single guidance document prescribes a set process; however, there is a consensus that decommissioning

should be done as early as possible, supported by a requirement for planned delays or deferral periods to be robustly justified.

5.143 This section introduces Horizon's latest Decommissioning Strategy, which would be subject to ongoing review and refinement, in conjunction with relevant regulators and stakeholders, during the operational lifetime of the Wylfa Newydd Power Station. This is an aspect of the Wylfa Newydd Project where there is limited scope for consultation comments to have an influence and the description is provided for information.

Decommissioning Strategy

5.144 The objective of decommissioning is to convert a nuclear site from its operational state to an end state that is agreed with the relevant authorities and regulators. This is, in simple terms, a progressive process of controlled hazard removal, demolitions and, if considered necessary, land remediation. Once the end state is achieved for a nuclear site or parts of a nuclear site, it is then expected that regulatory controls would be removed to allow the land to be used for new purposes, which can be non-nuclear related.

Underlying requirements

5.145 UK Government policy and legislation establishes the following underlying requirements for decommissioning of new nuclear power stations and good decommissioning planning also accords with Welsh Government policy in respect of sustainable development:

- the Energy Act 2008 has put in place arrangements and requirements that will ensure a robust mechanism for operators to develop Funded Decommissioning Programmes (FDP) to address 'back-end' decommissioning and waste disposal costs for new nuclear power stations. The Energy Act also creates a monitoring and review framework and provides the Secretary of State with a range of powers to ensure that an operator's FDP is complied with. The FDP must be approved by the Secretary of State before starting those construction activities that require a NSL;
- a Funding Arrangements Plan (FDP) must consist of a Decommissioning and Waste Management Plan (DWMP) and a FAP. The DWMP must contain the estimated costs of the steps the operator would take to treat, store, manage and dispose of wastes, including spent fuel, as well as the steps to decommission the nuclear plant and installations once the Wylfa Newydd Power Station stops producing power. The FAP must set out how the operator intends to meet those costs and the details of the financial and legal arrangements that would be put in place;
- NSL Condition 35 requires licensees to make adequate arrangements for decommissioning facilities on a nuclear licensed site. Although decommissioning is the last stage in the overall lifecycle of a nuclear power station, the need for decommissioning must be taken into account at all stages in the lifecycle, starting at the planning and design stage;
- NSL Condition 35 requires an operator to produce and maintain a decommissioning strategy and plan for its site(s). NSL Condition 35 also requires that decommissioning be carried out in a safe and controlled manner that does not pose a hazard for current or future generations;

- decommissioning operations should be carried out as soon as reasonably practicable, taking all relevant factors into account as provided for in the relevant operator's strategy and plan; and
- sites of decommissioning nuclear facilities may represent a potentially valuable resource and the future use of the site should therefore help to inform the decommissioning operations.

Horizon's approach to decommissioning

5.146 Before decommissioning starts, Horizon would need to obtain consent from the ONR under the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999. This would require a period of consultation relating to the submission of a decommissioning proposal and supporting ES. Horizon expects that this process would begin in the final few years prior to generation ceasing, so that the specific environmental characteristics of the environmental baseline would be known.

5.147 Horizon is taking the following criteria into account during the design refinement for the Power Station as a means of facilitating the future decommissioning stage:

- careful selection of materials to minimise the potential of them becoming radioactive through activation; the measures adopted at the design phase concerning the choice of materials principally include elimination of cobalt wherever possible and by replacing materials with a high cobalt content by alloys with low content of cobalt. Cobalt is significant as it is activated during operation and then undergoes radioactive decay;
- the use of containment structures (barriers and filters) that minimise contamination of equipment;
- tank and pipework design that minimise transport and deposition of contamination;
- using surface materials that are easy to clean; and
- using modular plant components that are easy to disassemble and allowing sufficient handling or lifting equipment and access routes to reduce decommissioning time and dose to workers.

5.148 Horizon has developed a strategy for the decommissioning of the Power Station. This proposes prompt starting of decommissioning with a target timeframe for completion of main decommissioning activities of 20 years following the end of power generation. The main steps that would be involved in the decommissioning are shown in figure 5.9.

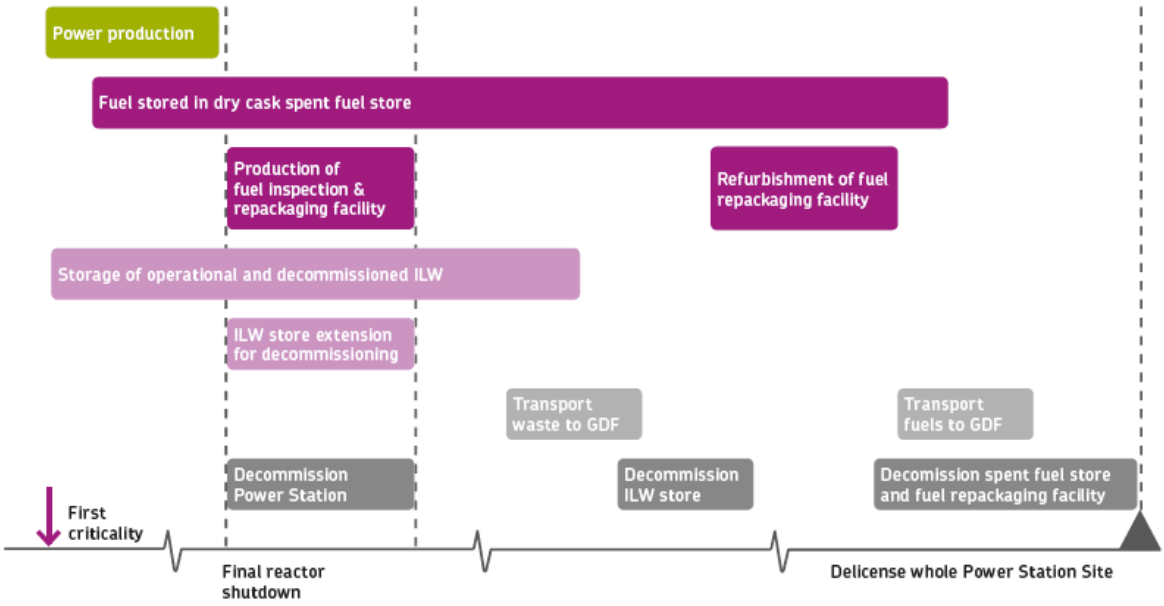
5.149 The Decommissioning Strategy assumes that spent fuel and ILW would be transferred to the UK Government's planned GDF, to accord with relevant current Government guidance. Consequently, storage facilities would need to be constructed as part of the Wylfa Newydd Power Station and these would remain *in-situ* and independently operational beyond the completion of the main decommissioning activities, until such time as the waste streams could be safely packaged and transferred to the GDF.

5.150 The overall timeframe for spent fuel to remain in the storage facilities would depend on the availability of the GDF and the amount of time needed to allow the spent fuel to have cooled sufficiently to allow disposal. At present, this is conservatively estimated at 140 years after the end of power generation, but may in reality prove to be considerably shorter than this. The certainty around this timeframe will not be possible until UK

Government proposals for the GDF become more advanced. This is particularly because the bedrock into which ILW and spent fuel would be placed is a key determining factor, establishing upper limits on the temperature at which material may be disposed. Notwithstanding this, Horizon is already undertaking further technical work to explore ways of packaging spent fuel and ILW to reduce heat output. In addition, as part of the GDA of the UK ABWR, a disposability assessment is being carried out by Radioactive Waste Management Limited, which will provide a revised assessment of the date on which spent fuel will be ready for disposal at the GDF.

5.151 The Decommissioning Strategy assumes that the completion of the process would result in complete clearance of radiological material and delicensing of the Power Station Site. The monitoring, remediation (if required), landscaping and delicensing would occur in two distinct phases, the first within 20 years of the end of power generation and the second following despatch of spent fuel and ILW to the GDF. The final stage of decommissioning is the removal of the nuclear licencing requirements, which occurs once the ONR has established that there is no danger to future users of the land.

Figure 5.9 Overview of Horizon's Decommissioning Strategy for the Wylfa Newydd Power Station



Decomissioning strategy

Security arrangements

5.152 Details of nuclear security measures are considered Sensitive Nuclear Information. In the interests of preventing malicious activity, certain information cannot be shared with members of the public. This section therefore describes the high level security principles that would be followed at the Power Station Site during construction and operation, designed to meet the requirements of the Anti-Terrorism, Crime and Security Act 2001 and defined in the Nuclear Industries Security Regulations 2003 (as amended).

Furthermore, Horizon is engaging with ONR, Home Office and Civil Nuclear Constabularies in developing and refining the proposed security arrangements for the Wylfa Newydd Power Station. This is therefore an aspect of the Wylfa Newydd Project where there is limited scope for consultation comments to have an influence, and the description is provided principally for information.

5.153 Horizon has developed a Security Management Strategy to follow a recognised approach that embeds security fully into the daily business of Horizon. This will be achieved by implementing a Security Management System to provide a holistic approach to security. The approach will be aligned with wider Horizon processes and as a baseline follow the 'Plan, Do, Check, Act' methodology.

5.154 The Horizon Security Manual is the overarching security management document and is supported by a series of further documents including delivery strategies, plans and procedures in the areas of physical, personnel, information and cyber security; some of these are regulatory requirements and others support non-regulatory business needs. Certain of these security documents would outline approaches to be implemented in a phased approach as the project progresses and will be classified 'according to content' as Sensitive Nuclear Information.

5.155 A package of interdependent and mutually supportive security measures, fully integrated across Horizon, would be implemented to prevent unauthorised access to the Power Station Site during both construction and operation. This package would be designed to protect people, property, information and assets, including nuclear material, although care would be taken to ensure arrangements minimise the intrusiveness for local communities. It is expected to include:

- **perimeter fencing** – designed to meet UK Government design standards. During Site Preparation and Clearance, a perimeter fence would be erected to define the extent of the construction works. This perimeter fence would preserve public footpaths access. Where required affected public footpaths would be temporarily diverted to enable clearance and development works and activities to be undertaken. The fence would start to be installed as soon as practicable in the Main Construction stage. It would be combined with temporary fencing panels to create an effective boundary around the Power Station construction areas and ensure that people could not inadvertently stray into a potentially hazardous construction environment. Once the Power Station was operational, the operational perimeter fencing would be finalised to meet the relevant CPNI Government standards;
- **lighting** – proposals would be designed to support security activities as well as for safety purposes. During construction, directional lighting would be sited at access and egress points to support safety and security such as search activities. This type of lighting would be designed to minimise light spill. Lighting would be extended to cover the perimeter once the Power Station was operational;
- **alarm systems** – would be installed at key locations, including along the perimeter fence. These would be designed to allow for early detection of potentially malicious activity and would alert security personnel – they would not be publicly audible;
- **CCTV** – systems would be installed at key locations, including along the perimeter fence, to allow monitoring and the verification of potentially malicious activity. The CCTV systems would be fully compliant with data protection requirements. Armed

response arrangements would be put in place at an appropriate point in the development of the Power Station;

- **security officers** – these would be employed to conduct a number of activities including access control, searching, patrolling and response to security incidents. The numbers would increase over time to meet perceived risks and levels of activity; and
- **access control measures** – all staff working at the Power Station Site would be screened to a level appropriate to their role and allocated an access control pass once they were cleared and inducted – they would be unable to enter without their pass. The number of access and egress points would be kept to a minimum, sufficient to facilitate effective construction, operation and emergency response activities.

5.156 The security measures would each be supported by comprehensive and robust procedures.

6 Wylfa Newydd Power Station - proposals for the main site

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6 Wylfa Newydd Power Station - proposals for the main site

6.1 This chapter provides an overview of the preferred proposals for the main site of the Wylfa Newydd Power Station. It describes the main built components and how they would function. Whilst focussing on those buildings that would be located at the Power Station Site, it also makes reference to those that would be located off-site (described in detail in chapter 18). The need for each of the Wylfa Newydd Power Station components is established by Government policy (see chapter 3) and will therefore not be discussed further in this document.

6.2 The indicative layout for the operational Power Station is provided (see figure 6.8), including Horizon's preferred proposals for the appearance of the buildings and their permanent landscape setting. The preferred location of the majority of buildings, including the layout of the Main Plant and Common Plant has been decided. However, there are some areas where Horizon still needs to make decisions based on further technical work in respect of the detail of the Power Station layout; these are outlined towards the end of this chapter. Alterations to the configuration of the Power Station buildings and plant may occur as a result of detailed design and in close consultation with the relevant regulators. There is therefore limited opportunity for consultation to influence the design of the Power Station itself.

6.3 Horizon's preferred proposals for the detailed design and external appearance of the Power Station supporting facilities, such as administration buildings, are summarised in this chapter and in the Main Site Draft Masterplan document, also provided as part of this consultation. This includes indicative images of how the buildings may look and an explanation of the design principles that would be used to control the final building design. Feedback is invited on the building styles that are shown in this chapter and in the Draft Masterplan document.

Consultation context for this chapter

6.4 The layout and plan for the Main Plant has evolved since the Stage One Pre-Application Consultation and the January Project Update Consultation as a result of feedback and ongoing design and technical work. The 'cruciform' layout of the main power station buildings is the basis for the Generic Design Assessment (GDA) layout and is now largely settled. The Main Plant is orientated to optimise the grid connection and circulating water connections between the intake, condenser and outfall. In addition, Unit 1 would be partially behind Unit 2, when viewed from Tregele, mitigating local environmental effects.

6.5 The proposed site levels have been guided by a desire to balance cut and fill volumes during site clearance and excavation in order to reduce the import and export of materials, while balancing local environmental effects, operational cost and energy demand (especially cooling water (CW) pumping). The minimum ground level has been set above the anticipated extreme flood event level and development platforms have been created as follows:

- 6m above ordnance datum (AOD) for the area around the service and circulating water intakes and Marine Off-Loading Facility (MOLF);

- 14m AOD for main buildings and facilities including all service and circulating water intakes and some auxiliary buildings and facilities;
- Backup Building platform at a level between 19m and 21m AOD subject to detailed design; and
- 21m AOD for auxiliary buildings and facilities and Spent Fuel Store, Intermediate Level Waste Store and Dry High Level Waste decay store.

6.6 These levels may change during the design process to facilitate, for example, site drainage. It is envisaged that the 21m AOD platform level may vary by up to 1m.

6.7 Some further amendments have been made to improve safety and operational efficiency and to reduce environmental effects, including:

- Combined or shared use of some buildings between the two units and grouping them together in one part of the site to optimise operations including:
  - house boilers;
  - fire water pump house;
  - maintenance and administration buildings;
  - makeup water treatment building;
  - radioactive and conventional waste processing and storage facilities; and
  - Spent Fuel Store.
- align turbine building in line with the reactor building and control building to increase separation distance and reduce risk of turbine ‘missile’ strike on critical systems;
- control building surrounded by turbine, service, reactor and Radwaste buildings to protect control equipment from aircraft impact;
- service building arranged close to control building to provide all access controls and locate operational staff facilities close to control facilities;
- relocation of the three emergency diesel generators (EDGs) from inside each reactor building to individual buildings outside of reactor building to minimise the fire risk to the reactor building from diesel fuel in day tanks;
- some radioactive waste treatment and storage buildings brought together in shared units for improved operational efficiency although some unit-dedicated facilities remain;
- service and circulating water biocide treatment building shared between units and relocated to reduce length of pipework/service tunnel;
- circulating water intake screens repositioned to optimise location in Porth-y-pistyll for abstraction of seawater;
- addition of some buildings/facilities including trash pit for seawater cooling system; relocation of auxiliary standby transformers (for diversity of connections to improve safety) and vehicle inspection area remote from main gate (for security reasons); and
- realignment of internal site roads to avoid dead-ends and need to turnaround vehicles to improve traffic flow.

6.8 The way in which our consultation to date has influenced the choice of and proposals for the Power Station Site is summarised in table 6.1. Further detail on previous comments made can be found in the Consultation Summary Report.

Table 6.6.1 Key project and design changes since the Stage One Pre-Application Consultation and the Project Update consultation

Change	Rationale
Changes to platform levels and building layout	Principally in response to technical and safety requirements but also to respond to local visual and other environmental concerns
Amalgamation of some supporting buildings	To optimise operations and to reduce footprints and environmental effects
Choice of preferred location for spent fuel store	Operational and environmental benefits

Description and key characteristics of the Power Station Site

6.9 This section describes the physical characteristics of the Power Station Site and its immediate surroundings and context. The locations of the Off-Site Power Station Facilities are described in chapter 18.

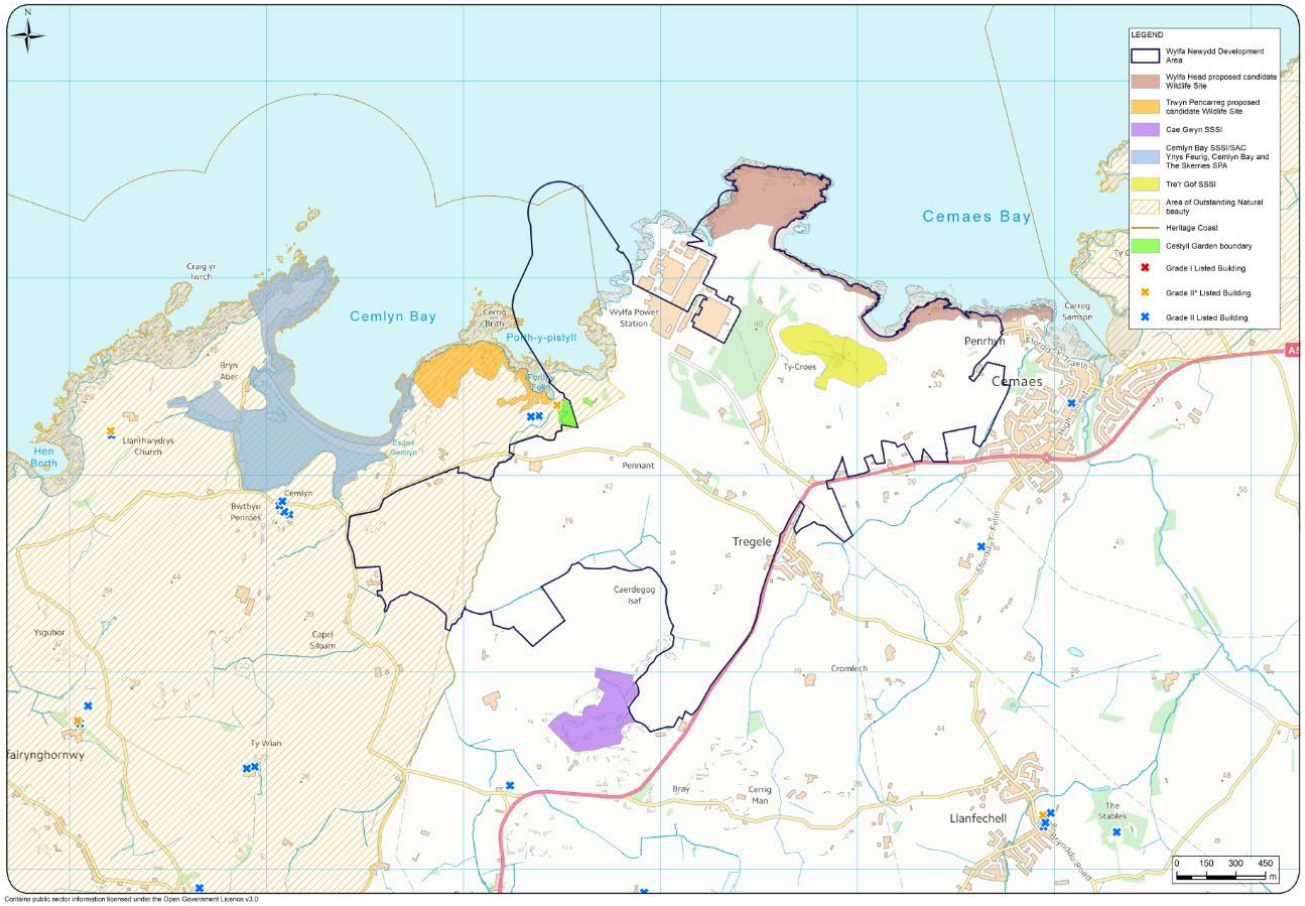
Settlement patterns and land use

6.10 Settlement patterns around the Wylfa Newydd Development Area are characterised by small clusters of residential dwellings and more isolated farmsteads. Larger settlements in the immediate vicinity of the Wylfa Newydd Development Area include the villages of Cemaes to the east and Tregele to the south-east (figure 6.1). Other urban areas further from the Wylfa Newydd Development Area include the towns of Amlwch (9km east), Holyhead (24km south-west) and Llangefni (37km south-east).

6.11 Land extending to the north-east of Cemaes and to the west of Cestyll Garden is designated as an Area of Outstanding Natural Beauty (AONB) and both areas abut coastline that is also designated as part of the North Anglesey Heritage Coast. A small section of the Wylfa Newydd Development Area to the south-west of the existing power station lies within the AONB. The Wylfa Newydd Development Area also lies within the locally designated Anglesey Special Landscape Area (SLA), a designation which applies to the whole of Anglesey outside of the AONB. These designations are shown figure 6.1.

6.12 The road to the Existing Power Station provides access to the former Magnox visitor centre and associated car park, outdoor café and picnic and play area. There are playing fields to the south of the Existing Power Station, within the Wylfa Newydd Development Area.

Figure 6.6.1 Designations in the vicinity of the Power Station Site



6.13 Land within and surrounding the Wylfa Newydd Development Area is predominantly agricultural, used for grazing by sheep or cattle, contained by hedgerows and crossed by a network of rural lanes, watercourses and overhead electricity infrastructure. Soils are generally of low fertility and the majority of the land is of agricultural land classification grade 3b or below.

Transport network

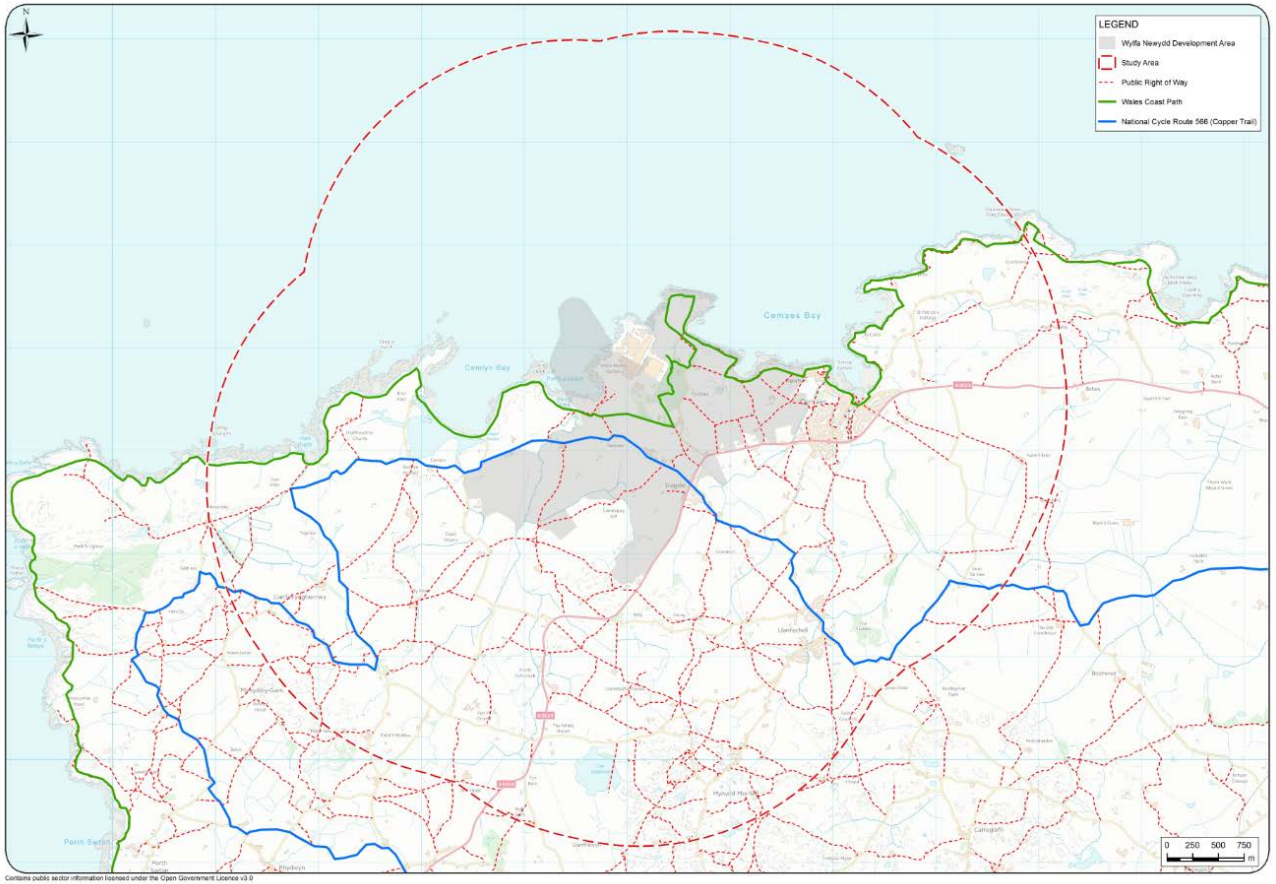
6.14 The main road to the Wylfa Newydd Development Area is the A5025, which connects to Valley (located on the A5) and the A55, approximately 18km to the south. To the east, the A5025 runs to Cemaes and other settlements on the northern and eastern coasts of Anglesey. Outside the settlements, this road passes through areas that are predominantly rural in nature.

6.15 The North Wales Coast Railway Line serves Anglesey. It links the railway stations on the west side of the island between Holyhead and the mainland and onwards along the north Wales coast towards Chester, with connections to London and other destinations on the UK network. The nearest station to the Wylfa Newydd Development Area for passengers and freight is at Valley.

6.16 The principal port on Anglesey is Holyhead, which handles large volumes of freight and passenger traffic. The closest airport is at Valley (Anglesey Airport), which is used by a small number of scheduled and charter flights.

6.17 A number of public rights of way, including the Wales Coast Path and the Copper Trail (national cycle route) cross the Wylfa Newydd Development Area. These are shown in figure 6.2.

Figure 6.2 Public rights of way



Geography and topography

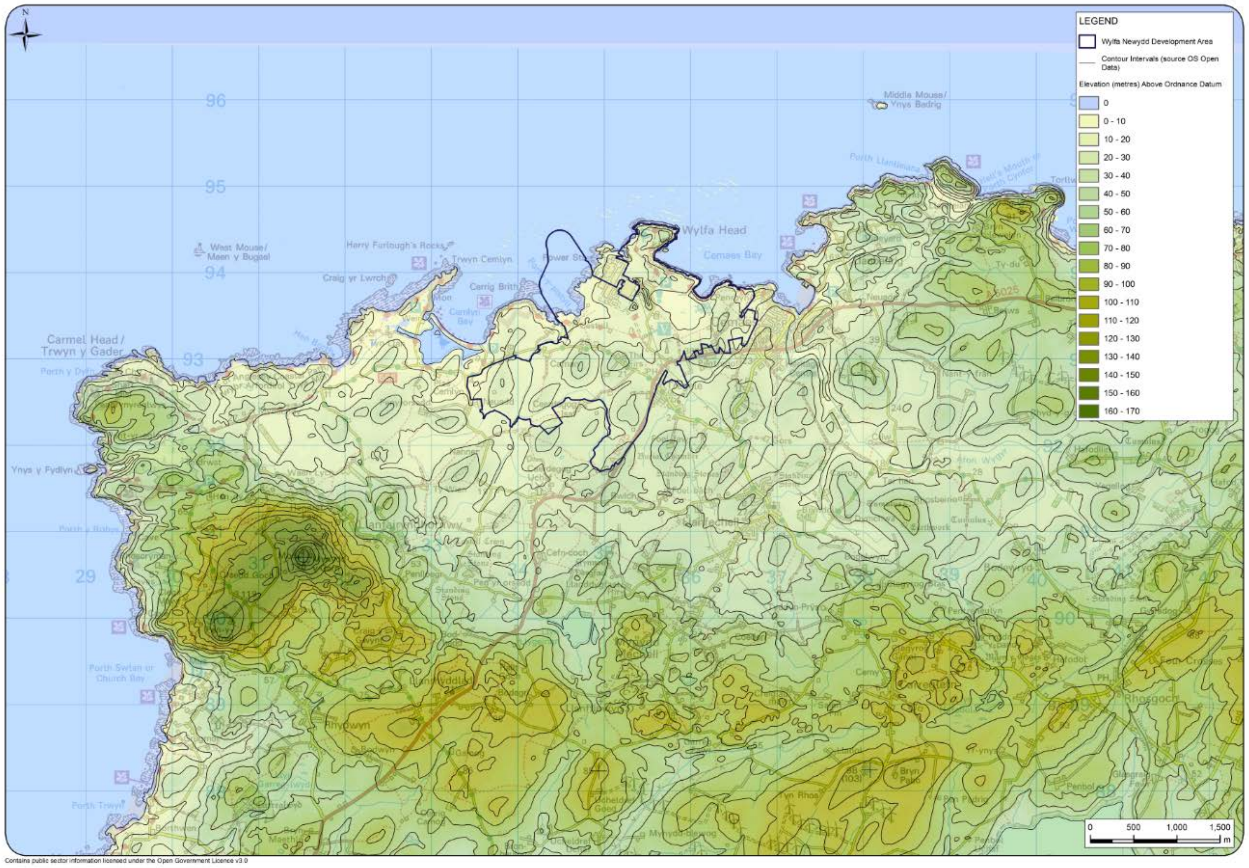
6.18 To the south of the Existing Power Station, land within the Wylfa Newydd Development Area is at an elevation of approximately 12m AOD, with a gentle slope towards a rocky coastline. The area largely comprises coastal grassland and agricultural land, characterised by rocky headlands with small bays. Away from the coast, the land generally comprises rough grazing with exposed rock and gorse thickets. The landscape is characterised by several small, rounded hills, known as 'drumlins', which rise up to about 40m AOD in the southern parts of the Wylfa Newydd Development Area.

6.19 The main landform features comprising the landscape setting are:

- the rocky coastal shoreline to the north;
- the artificial wooded drumlins associated with the Existing Power Station (Dame Sylvia Crowe's mounds); and
- the natural drumlin landscape, supporting the undulating agricultural fields that typify much of the Wylfa Newydd Development Area beyond the immediate vicinity of the existing power station.

6.20 The existing topography within the Wylfa Newydd Development Area is shown in figure 6.3.

Figure 6.3 Existing topography



Geology

6.21 The regional geological setting of the Wylfa Newydd Development Area is complex and predominantly comprises metamorphic rocks of late Pre-Cambrian and early Cambrian age (635 to 508 million years old), which were subsequently intruded by igneous rocks during the Palaeozoic Era and Tertiary Period.

6.22 The bedrock geology is well exposed along the coastline but overlain inland by superficial deposits of variable thickness. The superficial deposits are predominantly of glacial origin, deposited during the Devensian glaciation at the end of the Pleistocene epoch, approximately 122,000 to 24,000 years ago. The glacial deposits are generally unsorted material commonly known as glacial till or boulder clay.

6.23 The bedrock geology underlying the majority of the Wylfa Newydd Development Area and the entire development platform for the Power Station comprises Pre-Cambrian metamorphic rocks of the New Harbour Group.

6.24 The bedrock geology underlying the areas north and east of the existing power station comprises slightly younger Pre-Cambrian to early Cambrian rocks of the Gwna Group. A relatively complex boundary between the New Harbour Group and the Gwna Group can be found on the northern side of the Existing Power Station.

6.25 Made Ground is present in discrete areas on the site, generally around the boundary of the site of the Existing Power Station. This typically comprises arisings from the excavation of naturally occurring materials to create platforms and foundations for the Existing Power Station. In addition, there are likely to be other smaller areas of Made Ground at and around buildings and roads on the site.

6.26 Major (persistent) faults have been mapped across the Wylfa Newydd Development Area, with generally either an east to west or north-west to south-east trend. These faults generally dip at between 30° and 80°. Numerous smaller faults are also known to be present. In addition to faults, the bedrock geology is also cut by joints of various orientations. The joints are predominantly clean, although joints in-filled with clay, silt, sand, or gravel are present near the bedrock surface. Mineralised joints (predominantly quartz and calcite) are also common throughout the bedrock mass.

Soils

6.27 The soils of the Wylfa Newydd Development Area generally comprise freely draining, slightly acid, loamy soils of low fertility; however, towards the south, some soils are described as slowly permeable and are seasonally wet.

6.28 A shallow loam is present across much of the area to the east and south. Within this area there is a significant thickness of peat, with a thin strip of peaty gley soil to the south-west.

6.29 According to available ground investigation data, the shallow loam topsoil rarely exceeds 0.4m in thickness across the majority of the Wylfa Newydd Development Area. Within the area where peat has been identified, up to 0.9m of fibrous peat is present, overlying a further 6.5m of mud containing fibrous or organic material.

The water environment

Surface water

6.30 Several watercourses cross the Wylfa Newydd Development Area and ultimately drain to the Irish Sea (see figure 6.4), including a small stream that occasionally discharges into Porth-y-pistyll and a number of small springs and drainage ditches that feed the Tre'r Gof and Cae Gwyn SSSIs. In addition, smaller ditches form the boundaries of many of the adjacent agricultural fields.

6.31 Five surface water catchments contributing to the watercourses within the Wylfa Newydd Development Area have been identified (figure 6.4):

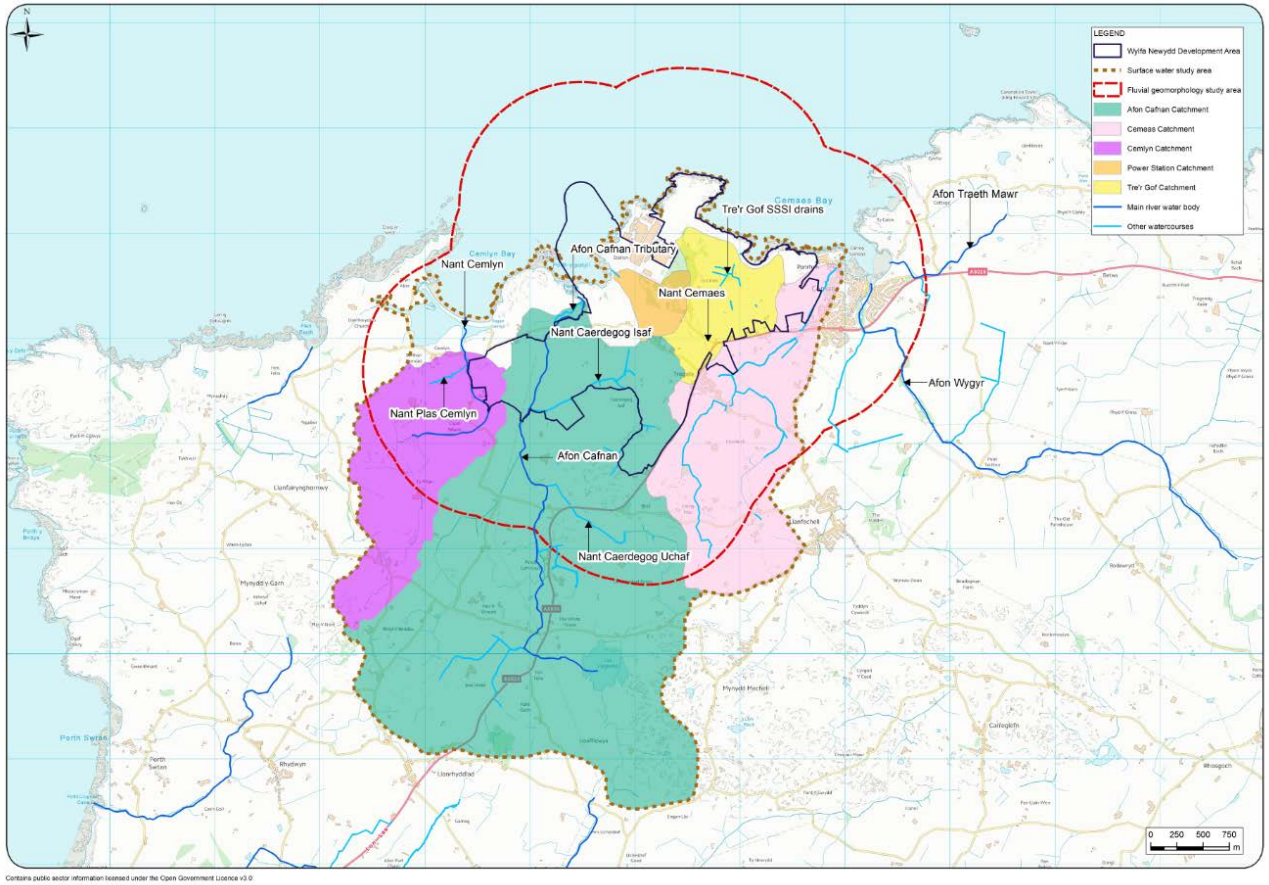
- Catchment 1 (Tre'r Gof catchment; approximately 1km^2) drains northwards towards the Tre'r Gof SSSI, which forms an inland 'drainage basin' fed by a number of small ephemeral watercourses and where there is a high groundwater level. This SSSI is also believed to receive additional flow from shallow groundwater around the basin periphery. The Tre'r Gof SSSI basin drains to the coast via a culvert and outfall at Porth Wylfa;
- Catchment 2 (Afon Cafnan catchment) drains an area of some 10km^2 to the south and west of the Wylfa Newydd Development Area, discharging to the sea south of Porth-y-pistyll. This catchment includes Cae Gwyn SSSI, which drains via a small channel (believed to be ephemeral);
- Catchment 3 (Cemaes catchment), which drains an area of 2.7km^2 immediately to the east of the Wylfa Newydd Development Area, drains north from Llanfechell and discharges into Cemaes Bay;
- Catchment 4 (Power Station Site catchment) drains a 0.3km^2 catchment immediately to the south of the Existing Power Station, flowing westwards and discharging to the coast at Porth-y-pistyll. This stream is part culverted and was possibly realigned during construction of the existing power station; and
- Catchment 5 (Cemlyn catchment) drains an area of approximately 3km^2 that includes a small area of the south-western end of the Wylfa Newydd Development Area, and drains via an unnamed watercourse into the lagoon at Cemlyn Bay.

6.32 In addition to watercourses, there are several small ponds that are apparently isolated from watercourses.

6.33 The Existing Power Station is drained by three surface water drainage systems. Two discharge onto the foreshore, and one discharges into the existing power station's main cooling water outfall.

6.34 The water quality in the watercourses of the five surface water catchments within the Wylfa Newydd Development Area largely reflects the land use with no evidence of significant widespread pollution. Elevated levels of suspended solids occur sporadically. This is probably linked to the movement of cattle or erosion in areas where cattle use the channels for drinking.

Figure 6.4 Surface water



Groundwater

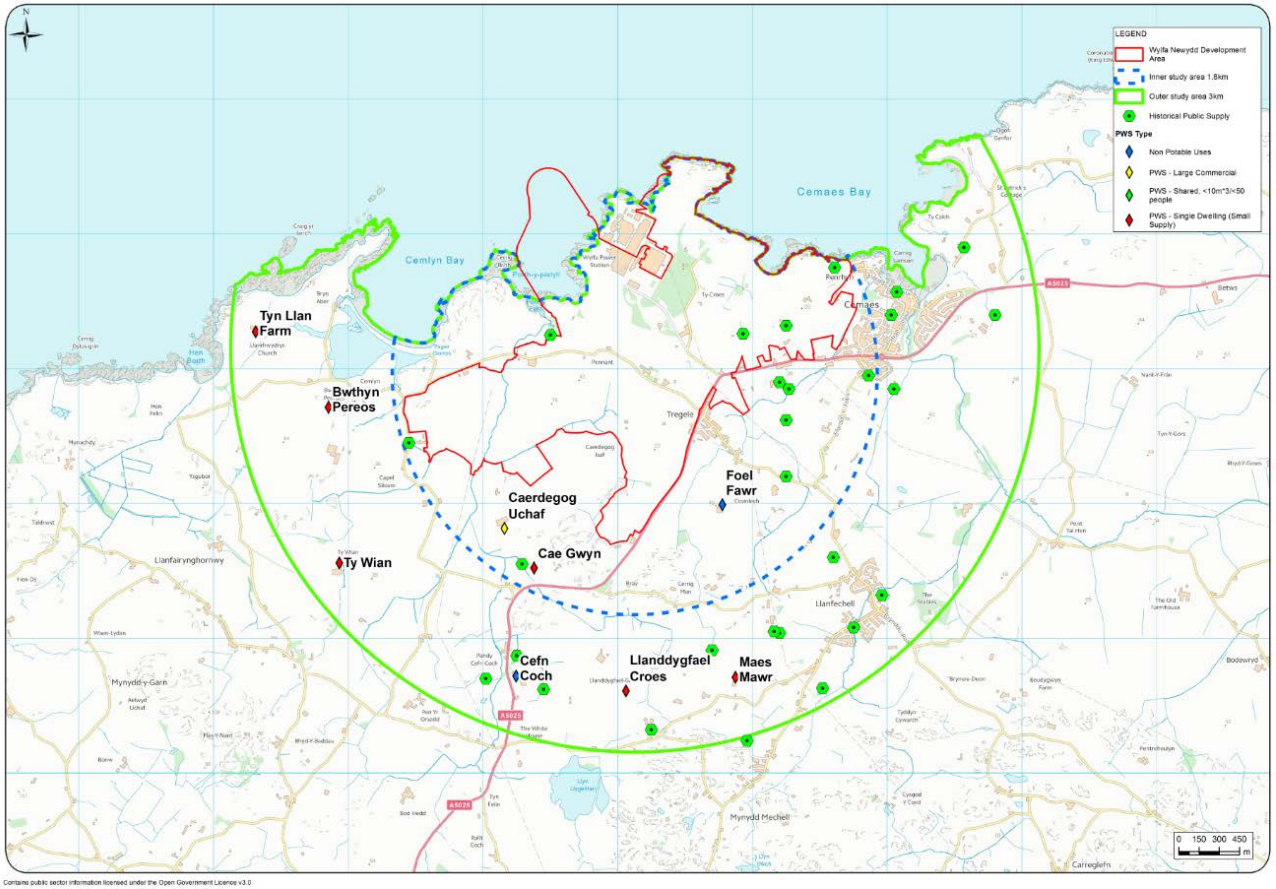
6.35 The superficial strata beneath the Wylfa Newydd Development Area are predominately designated as ‘unproductive strata’, although the superficial materials that infill Tre'r Gof are designated as ‘Secondary A’ aquifers. The underlying solid strata are designated as ‘Secondary B’ aquifers. These designations indicate strata that are important for providing baseflow to rivers and can support small water abstractions.

6.36 Groundwater is found in both the superficial deposits and in discontinuities such as fractures in the underlying bedrock. Over most of the Wylfa Newydd Development Area, groundwater appears to form a continuous body with water in the bedrock interacting with water in the superficial deposits. However, this is not universally the case. In some parts of the Wylfa Newydd Development Area the groundwater in the two deposits is separate, whilst in other areas the superficial deposits have no groundwater and can ‘confine’ the underlying bedrock.

6.37 The groundwater is generally shallow at a depth of between 0.1m and 3.2m below ground level. The data appear to show two groundwater bodies, one with flow towards Tre’r Gof and the second towards Porth-y-pistyll.

6.38 The Wylfa Newydd Development Area lies within the Ynys Môn Minor groundwater drinking water protected area, a secondary aquifer that includes much of Anglesey, with good chemical status. Some farms and households around the Wylfa Newydd Development Area utilise groundwater for potable and stock consumption (figure 6.5).

Figure 6.5 Location of groundwater abstractions and licenced private water supplies



6.39 Average annual rainfall data for the period 1971 to 2000 at RAF Valley suggest that the north coast of Anglesey receives less than the UK national average rainfall. The wettest month is November and the driest is May. Recharge to the groundwater, particularly the shallow superficial aquifer, is most likely to occur from precipitation falling onto the surface water catchments.

Coastal waters

6.40 Local tides are semi-diurnal, occurring approximately every 12.4 hours, and tidal currents are generally strong off Anglesey. The tidal currents at the Existing Power Station are west to east on the flood (incoming) tide and east to west on the ebb (outgoing) tide.

6.41 Wylfa Head sets up stable eddy structures (swirling currents) in Cemlyn Bay and Cemaes Bay on both flood and ebb tides. The rotation and strength of eddies in each bay varies over the flood to ebb cycle.

6.42 Previous surveys of the cooling water spreading from the existing power station outfall showed a northward trend, and little influence of the plume on water temperatures in Cemlyn Bay or Cemaes Bay.

Flood risk

6.43 Studies have indicated the following in relation to the site as it stands at the moment:

- flood zone maps indicate that the majority of the Wylfa Newydd Development Area and surrounding area is located in Flood Zone A. This indicates a low risk of tidal or fluvial flooding in response to flood events with a frequency of greater than 1:1,000 years;
- low lying areas inland of Porth-y-pistyll and Porth Wylfa fall in Flood Zones B and C and extreme sea levels could result in inland flooding;
- flood modelling shows the Wylfa Newydd Development Area to be at minimal risk of fluvial and tidal flooding up to the future 1 in 10,000 probability event. The main source of risk was from surface water flooding as a consequence of extreme rainfall. However, this flooding was generally shallow with small, localised areas of ponding. The deepest simulated flooding was within the Tre'r Gof area, which is a natural depression into which surface runoff flows;
- extreme wave heights locally have been assessed and combinations of extreme tide levels and wave heights with a joint annual probability of up to 1 in 10,000 have been considered. Tre'r Gof was highlighted as the sole location where there was thought to be a substantial risk of inundation. Due to the topography of Tre'r Gof, any flooding from overtopping is likely to be contained and not travel further into the Wylfa Newydd Development Area; and
- there may be potential for localised fluvial and groundwater flooding of low lying areas associated with extreme rainfall events.

Nature conservation

6.44 Sites subject to statutory and non-statutory nature conservation designations are shown on figure 6.1.. The Tre'r Gof and Cae Gwyn SSSIs are within and adjacent to the Wylfa Newydd Development Area, respectively. To the west, Cemlyn Bay forms part of the much wider Ynys Feurig, Cemlyn Bay and The Skerries Special Protection Area (SPA) and the Cemlyn Bay Special Area of Conservation (SAC).

6.45 A further SAC for harbour porpoise is proposed on the north and north-west coasts of Anglesey. An extension of the existing Ynys Feurig, Cemlyn Bay and the Skerries SPA is also proposed, to include tern foraging areas as well as breeding sites. In each case, the proposed boundaries include water that is within and adjacent to the Wylfa Newydd Development Area and partially within the Power Station Site.

6.46 In addition to those identified above, there are several more nature conservation designations within 5km of the Wylfa Newydd Development Area. These are:

- Cemlyn Bay SSSI;
- Henborth SSSI;
- Llyn Llygeirian SSSI;
- Salbri SSSI;
- Llanbadrig - Dinas Gynfor SSSI;
- proposed Wylfa Head Local Wildlife Site (LWS); and
- proposed Trwyn Pencarreg LWS.

6.47 Other European designated sites located more than 5km from the Wylfa Newydd Development Area include the Menai Strait and Conwy Bay SAC, Liverpool Bay SPA, Lavan Sands SPA and Puffin Island SPA. The area also includes the protected wetlands of the Anglesey and Llŷn Fens Ramsar site.

Heritage assets

6.48 Heritage assets locally comprise archaeological remains, historic buildings and historic landscapes. The assets include the adjacent Cestyll Garden (recorded as Grade II on the Cadw/ICOMOS Register of Parks and Gardens of Special Historic Interest in Wales), eight Scheduled Monuments, and eight Listed Buildings, including three that lie near to the Wylfa Newydd Development Area to the west of Cestyll Garden. The locations of assets close to the site are shown on figure 6.1, with a wider distribution of assets shown on figures 6.6 and 6.7.

Figure 6.6 Location of terrestrial archaeological remains and Scheduled Monuments within 6km of the Wylfa Newydd Development area

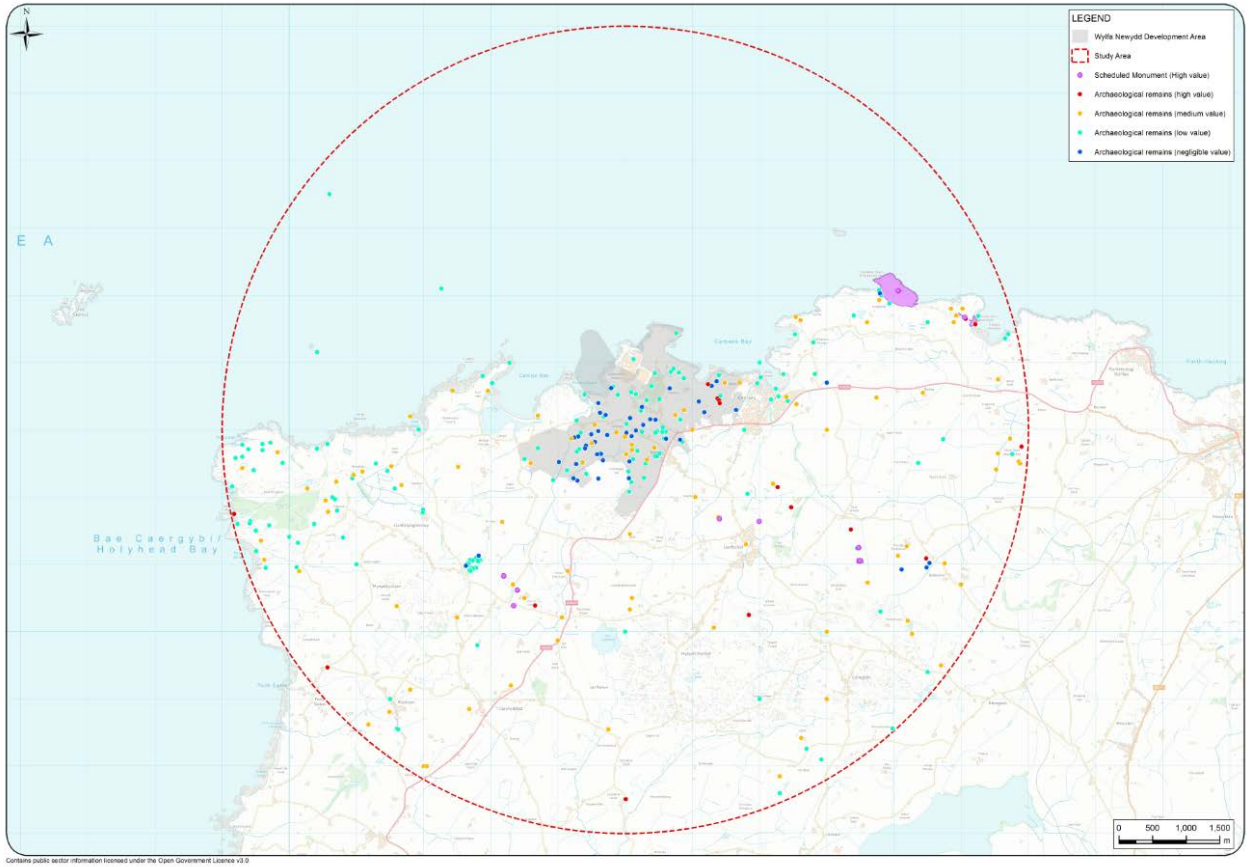
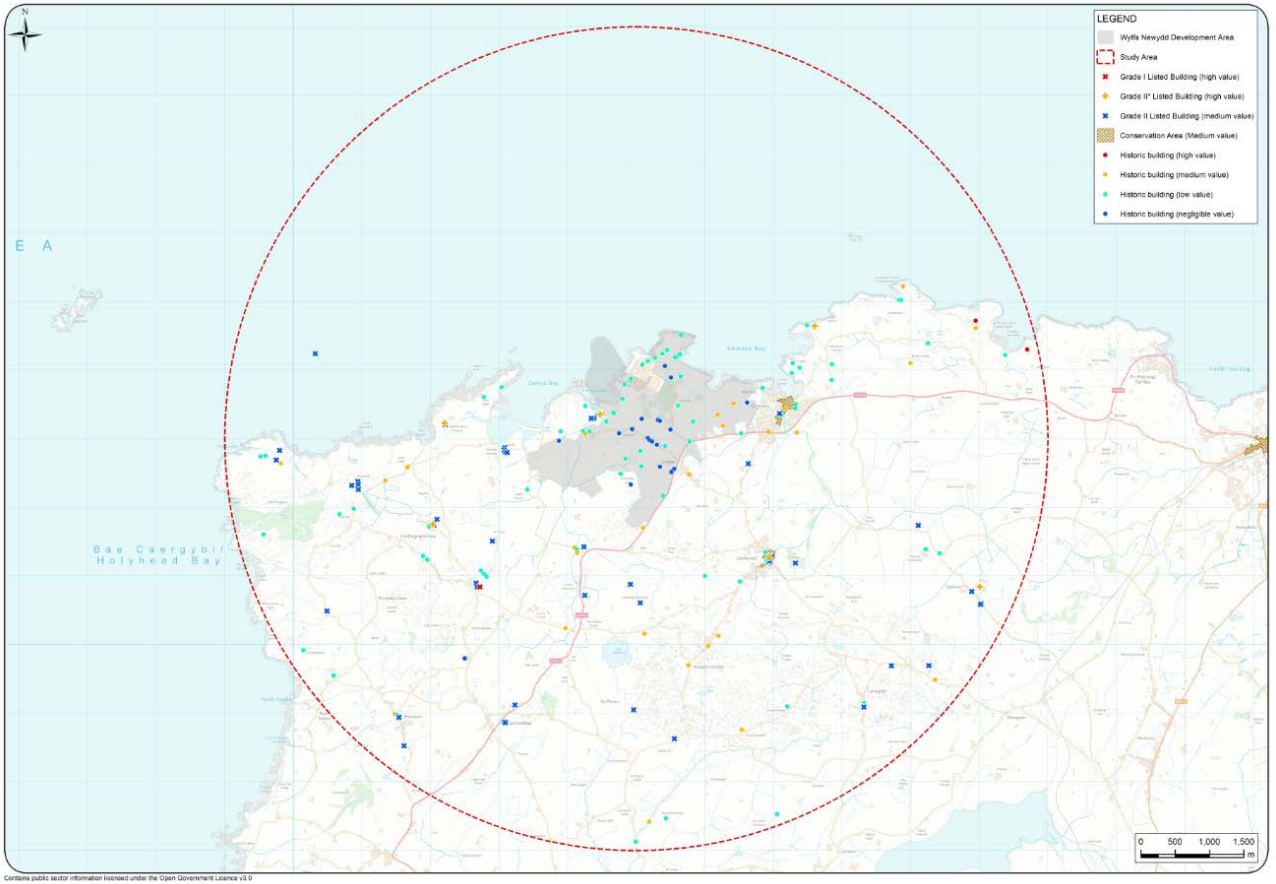


Figure 6.7 Location of historic buildings within 6km of the Wylfa Newydd Development Area



Description of the permanent development – Power Station Site

6.49 This section describes the main facilities, buildings and structures that would form the permanent development at the Power Station Site. A brief outline of the function of each is provided; further information on the operation of the Power Station is provided in chapter 5.

6.50 The Power Station layout is shown in figure 6.8. The buildings, structures and systems within the Power Station are arranged into the following groupings:

6.51 **Main Plant** - those parts of the Power Station that are unitised, meaning that there would be one per reactor unit, and therefore two of each within the Power Station Site, comprising:

- Unit 1 buildings, structures and facilities;
- Unit 2 buildings, structures and facilities;
- unitised radioactive waste buildings; and
- Cooling Water System (CWS) (excluding common structures).

6.52 **Common Plant** - those parts of the Power Station that service the generation of power but would be shared between the two ABWRs, including;

- common radioactive waste buildings; and
- CWS common structures.

6.53 **Supporting Facilities, Buildings, Structures and Features** - those parts of the Power Station that are integral to the Power Station, but would not be process related.

Figure 6.8 Layout for Power Station Site – operational Power Station

6.54 The buildings and structures illustrated in figure 6.8 are listed with indicative dimensions in table 6.2. The need for each of the listed items is an aspect of the Wylfa Newydd Project that is settled. The dimensions of some buildings are not yet settled and decisions on final building sizes will be determined through further technical work.

6.55 As such, there is limited scope for consultation comments to influence this aspect of the Wylfa Newydd Project - the descriptions are therefore provided principally for information, although if you wish to make comments, you can do so, by answering the general question on the feedback forms.

Table 6.2 List of main buildings and structures within the Power Station Site

Building/structure	Indicative dimensions (width x depth x height above relevant building platform)	Building/structure plot plan number
Main Plant – Unit 1 and Unit 2 buildings, structures and facilities:		
Reactor building, which contains the suppression pool	63m x 61m x 44m	101
Main stack (on top of Reactor building)	Steel lattice tower 8m square at base, 6m square at top, enclosing 3m diameter steel tube. Top of stack at 75m AOD	106
Radioactive waste building	53m x 46m x 25m	104 (including 245 and 203)

Building/structure	Indicative dimensions (width x depth x height above relevant building platform)	Building/structure plot plan number
Turbine building (including steam turbine, condenser, electrical generator, various auxiliary plant and connecting systems)	118m x 79m x 37m	108
Control building	70m x 44m x 25m	102
Service building	66m x 44m x 24m	109
Back-up building (including back-up building generators	46m x 46m x 31m	107
Heat exchanger building	68m x 44m x 24m	103
Filter vent building	24m x 24m x 16m	105
Emergency diesel generators	31m x 20m x 23m	110
Diverse additional generator	40m x 10m x 12m	111
Generator transformers and auxiliary transformers	44m x 18m x 14m, not enclosed	506, 518 and 615
Condensate storage tank	15m diameter x 13m	505
Suppression pool drain tank	22.5m diameter x 17m	508
CO_2 storage facility	9m x 4m x 5m	209
Gas Cylinder Store	10m x 7m x 4m	208
CW seal pit	21m x 21m x 0m	413
CW discharge tunnel	Approximately 1km in length from seal pit to discharge point, 6m diameter	417
CW outfall	50m x 40m	416
Reserve ultimate heat sink	Three banks of low profile cooling towers approximately 7m high x 90m length	Linked to 103
Internal 400kV connection (to National Grid electricity substation)	Likely to be below-ground or at ground level	TBC
Reactor building, which contains the suppression pool	63m x 61m x 44m	101
Common Plant:		
CW intake structure (including intake structure and pumphouse building)	50m x 80m 24m deep and generally not extending above the finished ground level of 14m AOD, except	411

Building/structure	Indicative dimensions (width x depth x height above relevant building platform)	Building/structure plot plan number
	for some plant such as drum screens and overhead cranes	
Biocide treatment building	31m x 19m x 12m	237
Make up water treatment Building	31m x 24m x 9m	219
Fire water pumphouse buildings	31m x 11m x 7m	207
Emergency response centre	63m x 18m x 11m	242
Garage for Mobile Emergency Vehicles	32m x17m x 9m	204
Auxiliary boiler	103m x 36m x 15m (2m below ground)	218
Heavy machinery garage	37m x 15m x 9m	206
Conventional waste storage Waste and recycling facility Hazardous waste storage facility	54m x 24m x 9m	222 and 238
Solid LLW processing facility	67m x 57m x 19m	246
ILW storage facility, including service block	127m x 27m x 20m	202
Dry HLW decay storage facility	99m x 26m x 22m	244
Spent fuel storage facility	183m x 125m x 22m	201
Supporting Facilities, Buildings, Structures and Features:		
Administration building	130m x 25m x 15m	220
Entrance buildings	80m x 28m x 15m 30m x 29m x 10m 75m x 45m x 10m 20m x 10m x 5m 75m x 45m x 10m 20m x 10m x 5m	304-307 (inc 306a, 307a)
Maintenance building and workshop	106m x 46m x 16m	226
Horizon Training and Simulator Building	125 x 65 x 16m	904

6.56 In addition to the facilities listed in table 6.2, the Power Station Site will include a number of minor structures such as:

- fences;
- lighting and lamp posts;

- access and internal roads and paved hard-standing areas, including an area for on-site car parking;
- free-standing fuel and water tanks to support both routine operations and emergency response; and
- connecting tunnels and culverts between buildings, tanks etc.

6.57 At the Stage One Pre-Application Consultation, Horizon presented a Power Station Site layout based on a flat site that would be softened into its setting by surrounding landscaping and planting. As set out in chapter 4 of this document, considerable additional design work has since been undertaken in response to feedback from consultees and technical stakeholders. The proposed site levels have been reviewed in the light of operational efficiency, power plant design optimisation, construction methodologies, costs and efficiencies, and environmental implications.

6.58 Figure 6.8 shows the revised terraced Power Station Site design. This shows that the majority of the Main Plant is now proposed to be built on a platform at a level of 14m AOD, which is 1m higher than proposed at Stage One Pre-Application Consultation. The change has been made to achieve optimisation for operational purposes. However, other parts of the Power Station Site are now proposed to rise to around 21m AOD (plus or minus 1m), following further work in relation to our understanding of the volume of excavated material, and Horizon's objective of reducing lorry movements on the A5025. The uncertainty about the precise upper site platform level is incorporated into the Landscape and Environmental Management Plan (LEMP) description provided in chapter 7 of this document and is assessed as a worst case range of between 19m and 26m in chapter B11 (Landscape and Visual Impact) of the PEI Report.

Main Plant

6.59 This section provides a brief description of the main functions of the buildings and structures identified in figure 6.8.

6.60 The Main Plant components in the Power Station Site are all unitised, meaning that there is one associated with each reactor unit, and therefore two of each item listed in table 6.2 – one for Unit 1 and one for Unit 2. The positioning and layout of the various structures and buildings comprising the Main Plant have been developed taking into account regulatory and design requirements and technical analysis. It is now largely settled, with any further design refinement likely to emerge from the GDA process or technical development: this means that there is limited scope for influence through consultation comments.

6.61 Some of the radioactive waste buildings and CWS elements are also unitised, (namely the radioactive waste building, wet ILW processing facility, wet LLW processing facility, the CW intake, pumping plant, seal pit, discharge tunnel and outfall and the reserve ultimate heat sink), whilst the remaining parts form Common Plant. The radioactive waste handling and CWS elements of the Power Station are explained separately towards the end of this section for information, in order to provide a better appreciation of the way in which all aspects of the radioactive waste management and CWS would function during operation.

Unit 1 and Unit 2 buildings, structures and facilities

6.62 The function of each part of the Unit 1 and Unit 2 buildings, structures and facilities is settled, so the description is provided principally for information. There are some finer details of the design where options remain, but these are decisions that Hitachi-GE and Horizon will need to make on the basis of further technical work and agreements with regulators, and there is therefore limited scope for influence from consultation comments for this part of the Power Station.

The reactor building and main stack

6.63 The reactor building is a key part of the distinctive cruciform structure of each Unit that is visible in figure 6.8. The building would have an emissions stack directly on top of it (labelled as the 'main stack'), which would provide the discharge point for the off-gas system (see turbine building description) and for the main ventilation system that would service the main buildings (reactor building, turbine building and radioactive waste building).

6.64 The reactor building would house the nuclear reactor, main steam supply and part of the steam supply tunnel, various safety systems, fuel handling equipment and spent fuel pool. The spent fuel pool would be used for the storage of new nuclear fuel and the storage of spent fuel immediately after it has been removed from the reactor, prior to transfer to the spent fuel store after a period of cooling. The suppression pool would also be inside the reactor building. This would be used to cool steam released when depressurising a reactor, which would occur while shutting down the reactor, as well as in an emergency situation.

6.65 The plant in the reactor building would be supported by safety and auxiliary systems. Each Unit would be served by a number of auxiliary systems, including water cooling systems that would remove heat from the plant auxiliaries to preserve the required functions during all modes of operation (see also the heat exchanger building description).

Radioactive waste building

6.66 See section on Radioactive Waste Facilities below.

The turbine building

6.67 The turbine building would house all equipment associated with the main turbine generator. This includes part of the steam supply system that feeds into the turbine, the turbine generator itself, the main steam condenser and the off-gas system. The off-gas system processes gases mixed with the steam that do not condense in the condenser. The system includes processes to reduce radioactivity in the gaseous phase prior to discharge to the environment via the main stack.

The control building

6.68 The control building would be situated between the reactor building and turbine building. It would include the main control room for the Unit, as well as some of the electrical switchgear and support systems needed to supply electrical power to the Power Station's auxiliary systems. The main steam tunnel from the reactor building to the turbine building would be located on the ground floor of the control building.

The service building

6.69 The service building would accommodate functions essential to the operation of the Unit, such as the personnel monitoring and welfare facilities, and other support functions for the operation of the Power Station that need to be located close to the Unit.

Back-up building

6.70 The back-up building would provide alternative safety management capacity during an emergency if the main control building and associated safety systems were not operational. This would include diverse means of cooling the reactor core and spent fuel pool. The back-up building would be located to provide adequate separation from the reactor building and would include separate power and water supplies, and truck-mounted alternative reactor cooling systems. The location of the back-up building in relation to the reactor building can be seen in figure 6.8.

Heat exchanger building

6.71 The heat exchanger building would house the reactor building service water system and the reactor building cooling water system, as well as the turbine building service water system and the turbine building cooling water system. The systems would use seawater to cool essential plant and equipment, including the turbines and generators. They would also ensure reactor cooling during an emergency. The heat exchanger building would be located close to the sea water intake to ensure proximity to the CW source.

6.72 The location of the heat exchanger building in relation to the reactor building and CWS can be seen in figure 6.8.

Filter vent building

6.73 The filter vent building would contain the filtration and monitoring equipment to enable gases released within the reactor building in an emergency situation to be vented into the environment. In the extremely unlikely event of abnormally high pressure within the reactor primary containment vessel, safety systems would automatically relieve the pressure by venting gases and steam to the atmosphere. This would be done via the filtered vent system, which would protect against harmful releases to the atmosphere.

Standby power generation – emergency diesel generators (EDGs), back-up building generators (BBGs) and diverse alternate generator (DAG)

6.74 Standby alternating current (AC) power generation would be required to provide power to the Power Station safety systems that would be required to shut down and cool the reactor in the event of a loss of power. In order to provide the necessary capacity, resilience and reliability to meet the demands of the Power Station, the following equipment would be installed on the Power Station Site:

- three EDGs per Unit;
- two BBGs per Unit; and
- one DAG per Unit.

6.75 The EDGs will be located in buildings to the south of each of the Units, while the BBGs will be housed in the backup buildings, to the south of the Units on a higher platform. The DAGs will be located in dedicated buildings in the vicinity of both of the Main Plant

cruciforms, though the precise locations have yet to be finalised (see 'Options still under consideration' section below).

Generator transformer and auxiliary transformers

6.76 The electrical energy created in the generator would be transferred to National Grid's high voltage electricity transmission network. The electricity produced would be stepped-up to the transmission network voltage of 400 kilovolts for connection at the existing National Grid substation adjacent to the Power Station Site. Each Unit would therefore have a 'step-up' transformer, located near to the electrical generator. The power would be conducted through buried insulated cables or overhead lines over the relatively short distance from the generator (step-up) transformer to the National Grid substation. Technical studies are ongoing to determine the optimum solution for these connections (see below).

6.77 The auxiliary transformers would reduce the voltage of electricity generated by each Unit, or imported from the National Grid electricity transmission network, to a level suitable for use within the Power Station.

Condensate storage tanks

6.78 One condensate storage tank would be provided per Unit to store demineralised water that would be used in the steam generation systems (reactor and auxiliary boilers), suppression pool and fuel storage pond.

Suppression pool drain tanks

6.79 Water stored in the suppression pool, which would be housed inside the reactor building, would condense steam. The condensed steam would then be returned to the reactor or to the condensate storage tank. The suppression pool drain tanks would be used periodically to allow the pool to be drained and inspected.

Industrial gas storage facilities

6.80 Facilities would be located on the Power Station Site to store gases that would be used routinely in operational processes. These gases would be stored in suitably sized tanks or cylinders depending on specific technical requirements, and would include:

- oxygen, which would be injected into the reactor feedwater to prevent corrosion of the reactor components;
- hydrogen, which would be used to cool the main generator and may also be used for feedwater injection;
- carbon dioxide, which would be used for purging pipework containing hydrogen prior to maintenance; and
- nitrogen, which would be used to provide an inert atmosphere inside the reactor secondary containment.

Wet LLW and wet ILW processing facilities

6.81 See section on Radioactive Waste Facilities below.

CW intakes, pumps, seal pits, discharge tunnels, outfall and reserve ultimate heat sink

6.82 See section on CWS below.

Various water, oil and fuel tanks

6.83 Water would be stored at the Power Station Site in a number of locations and in sufficient quantities to meet the various requirements. Examples of water use include firefighting, potable and welfare uses, and to replace water lost during normal operation of the reactor and steam turbine.

6.84 Lubricating oil would be needed in large quantities for each of the steam turbines, and would be stored in tanks within the Power Station Site.

6.85 Fuel for the EDGs, BBGs, DAGs and auxiliary boilers would be stored in tanks capable of sustaining several days of operation without the need for replenishment. Smaller storage tanks would be provided to refuel vehicles based at the Power Station Site.

Connection from Power Station to National Grid substation

6.86 The electrical energy in the generator would need to be transferred to National Grid's high voltage electricity transmission network. The Power Station would be connected to the 400kV grid via the existing substation adjacent to the Existing Power Station. The connection between the Power Station and the substation would form part of the Wylfa Newydd Power Station application for a DCO, whereas the new infrastructure required for the onward transmission of electricity from the substation would be subject to a separate DCO that National Grid would apply for.

6.87 Horizon has a connection agreement with National Grid that is based on using bays on the north-west side of the existing substation, which are the bays currently used by the Existing Power Station. The intention is that Horizon would deliver new connections into these bays, through four circuits:

- Unit 1 generator circuit: connecting the Unit 1 generator transformer to the 400kV substation;
- Unit 1 standby circuit: connecting Unit 1 auxiliary standby transformer to the 400kV substation;
- Unit 2 generator circuit: connecting the Unit 2 generator transformer to the 400kV substation; and
- Unit 2 standby circuit: connecting Unit 2 auxiliary standby transformer to the 400kV substation.

6.88 In order to achieve diversity and therefore improve the reliability and resilience of the connections, Horizon is evaluating different design options involving the use of both underground cables and overhead lines. These options are outlined later in this chapter in the 'options being considered' section; however, the decisions will be based principally on technical work and there is limited scope for consultation comments to influence this aspect of the Wylfa Newydd Project.

6.89 The connection to the substation for power leaving the Power Station from the main generator transformers would need to be built and operational several months prior to Unit 1 entering the start-up testing stage of commissioning and would be required for the operating lifetime of the Power Station.

6.90 The cables and infrastructure are most unlikely to require replacement during the lifetime of the Power Station, though maintenance works may be required.

Common Plant

6.91 The Common Plant at the Power Station Site provides facilities or delivers functions that are shared between Unit 1 and Unit 2 of the Wylfa Newydd Power Station and is integral to the generation of power.

6.92 Similarly to the Main Plant, there are certain radioactive waste buildings and CWS elements that are shared between the two UK ABWRs, namely the Solid LLW processing and temporary storage facility, ILW storage facility, dry HLW decay storage facility, spent fuel storage facility, CWS common intake structure, pumphouse building and breakwaters. These elements of the Power Station are described separately towards the end of this section to provide a better appreciation of the way in which all aspects of the radioactive waste management and CWS would function during operation.

6.93 This section provides a summary description of the function of each part of the Common Plant. These functions are an aspect of the Wylfa Newydd Project that is settled and the description is provided principally for information. There are some finer details of the design where options are being considered and evaluated – these are decisions that Hitachi-GE and Horizon will need to make on the basis of further technical work and discussions with regulators, and there is therefore limited scope for influence from consultation comments.

CW intake structure

6.94 See section on CWS below.

Biocide treatment building

6.95 Biological control of the CW would be required to discourage the growth of marine organisms within the CWS, known as biofouling. This process takes place in the circulating water biocide treatment building near the CWS intakes.

6.96 Biofouling would be controlled by dosing the CW with chlorine derived from sodium hypochlorite. Sodium hypochlorite would be stored in bulk. The dose level would be controlled through the relevant Environmental Permit conditions to ensure an acceptable concentration of residual chlorine at the outfall, so that secondary dosing to neutralise the residual chlorine content of the discharge would not be necessary.

6.97 The dispersion created by the currents at the CW outfall would rapidly disperse residual biocide and minimise the recirculation of biocide directly back into the intakes.

Demineralised water treatment plant

6.98 The demineralised water treatment plant would comprise the water treatment systems used to make the demineralised water required for various plant systems including the auxiliary boiler house. The building would be designed to accommodate the pumps, tanks, vessels and secondary equipment required to process mains water into demineralised water in a covered, controlled, internal environment. Water that is input to the building would be sourced from the local water supply to the Power Station Site. The output from the building would be treated water, which would be sent to the storage tanks and onward to the Power Station Site demineralised water distribution network.

6.99 The treatment process and its equipment would be based on the quality of the input and output water and the volume of throughput to the process system.

Fire water pumphouse

6.100 The fire water pumphouse building would accommodate the firewater pumps and electrical equipment required to supply pressurised water to the firewater main for the Power Station Site. Bulk water storage tanks would be located to the east of the building and would be fed by a local water supply, with at least two independent supply routes to give flexibility and redundancy, should one source of water fail.

6.101 The building has been designed to accommodate two motor driven fire pumps and two diesel driven fire pumps housed in individual compartments. A separate electrical plant room would be proposed adjacent to the pump room to accommodate the electrical equipment required to operate and control the pumps, mechanical ventilation and domestic electrical control and switch gear.

Emergency response centre

6.102 Personnel, equipment and vehicles intended to respond to an incident within the Power Station Site, including fire response, would be housed within the emergency response centre.

Auxiliary boiler and tanks

6.103 The auxiliary boiler house accommodates the auxiliary steam supply boilers and associated equipment that would be used for plant start-up and operation of various loads requiring non-radioactive steam supply.

6.104 The building would be designed to accommodate the required boilers, secondary equipment and drain treatment process equipment, and would provide a covered, controlled, internal environment to house the equipment.

6.105 A number of associated support facilities would be located in the vicinity of the boiler house including:

- fuel oil storage tanks;
- demineralised water treatment building;
- purified water storage tanks; and
- ancillary equipment inside the building.

Heavy machinery garage

6.106 To operate and maintain the Power Station facilities, Horizon would retain a fleet of vehicles for use within the Power Station Site. These vehicles would support personnel transport, materials handling (such as fork lift trucks) and the transport of large components or nuclear material, including specialist transporters for spent fuel containers. The heavy machinery garage would be used to maintain these vehicles.

Conventional waste storage

6.107 The waste and recycling area within the outer perimeter of the Power Station Site (see figure 6.8) would be for conventional waste streams, including a specific area for the storage of hazardous waste. It would provide facilities for the collection, sorting and temporary holding of waste and recyclable materials generated within the Power Station Site. Collection and removal of sorted waste would occur on a regular basis. Waste

would be stored in ways that would maximise collection efficiency, so the facility is likely to comprise a combination of containers such as wheelie bins and skips of varying sizes.

6.108 Some facilities such as the Administration Building and Training and Simulator Building are likely to have their own separate conventional waste and recyclables management facilities.

Solid LLW processing, ILW storage, dry HLW decay storage and spent fuel storage facilities

6.109 See section on Radioactive Waste Facilities below.

Supporting Facilities, Buildings, Structures and Features

6.110 The Supporting Facilities, Buildings, Structures and Features would serve the entire Power Station and are an integral part of the Power Station. The proposed layout of these components, as shown in figure 6.8, is largely settled and has been refined taking into account the regulatory and design requirements that have shaped the layout of the Main Plant and Common Plant items, as well as considering construction phasing. There is therefore limited scope for consultation comments to influence the general arrangement.

6.111 Some options remain around the final design and appearance of the buildings and this is described later in this chapter in relation to the appearance of the Wylfa Newydd Project permanent buildings. We have noted the feedback from the January Update consultation that suggested a local preference for a 'blend' style of architecture over a 'bold' style and incorporated this into our evolving proposals. Examples of how this might be achieved are set out later.

Administration building

6.112 The administration building would form the main reception for visitors to the Power Station, as well as including canteen facilities, a dosimetry office and the primary document control centre for the Power Station. It would provide office accommodation for approximately 300 people employed at the Power Station, the vast majority of whom would be working standard day shift hours (further details on shift patterns are provided in chapter 5 of this document).

6.113 This building, which would be situated towards the south-eastern part of the Power Station Site, is likely to be visible in a number of glimpsed views from the A5025. The draft Main Site Masterplan document presents three options for the overall appearance of the Power Station Site and ancillary buildings, including an indicative palette of materials.

The design of the Power Station Site has evolved to reflect local materials and colours, while allowing designers the opportunity to be creative and imaginative when developing detailed proposals for each building. Feedback from the January Project Update consultation was generally strongly in favour of styles that 'blend' in to the local landscape (more than 75% of responses), but there is still opportunity to influence preferred approaches to individual buildings. We have therefore developed three options for how the 'blend' approach could be interpreted across the Power Station Site and the public facing buildings. If you have any comments on these options, you can respond to our general question.

Site perimeter fence and entrance buildings

6.114 There would be an inner security fence and an outer security fence. The fences would comply with the highest level UK Government standards and would require ONR-CNS approval. Each fence would be a double fence comprising (from the outside to inside):

- an outer clear zone, followed by the;
- outer perimeter fence, followed by;
- a sterile zone clear of obstructions, followed by the;
- inner perimeter fence, followed by; and
- an inner clear zone.

6.115 The fences would be monitored by alarm systems and CCTV, and would have permanent perimeter lighting.

6.116 Both the inner and outer security fences would have a main gatehouse as well as a secondary gatehouse, forming the entrance buildings to the Power Station Site. For emergency access through the outer security fence, there will be a third entrance (without a gatehouse) provided at the south-west corner of the site.

6.117 The security fence design has not yet been confirmed as it must relate to Horizon's Nuclear Site Security Plan that, once fully drafted, will require ONR (CNS) approval. There is therefore limited opportunity to this aspect of the design to be influenced by consultation.

Maintenance and workshop building

6.118 The maintenance and workshop building would incorporate workshop spaces for heavy and light mechanical, electrical and control and instrumentation activities and a cold laboratory. It would also provide office, welfare and occupational health space for maintenance staff, as well as meeting facilities, a permit office, stores and maintenance planning facilities. The building would be occupied 24 hours a day, seven days a week.

Training and Simulator Building

6.119 Facilities and equipment are required on the Power Station Site to test and safely maintain the operation of the Advanced Boiling Water Reactors, and much of this work would be carried out on purpose-built simulators housed in a Training and Simulator Building.

6.120 The Training and Simulator Building would house two full scope simulators and would accommodate the personnel and resources required to support the operation of the simulators and all associated training activities. The facility would operate 24 hours a day in the case of a full simulation exercise.

6.121 The simulators would also be used to train Power Station operators, and they are therefore required early in the construction schedule. The facility would need to be operational before 2020 to allow sufficient time for the first set of operational staff to be fully trained in readiness for the commissioning activities in the final stages of Main Construction (see chapter 5).

6.122 The preferred location for this building is within the Power Station Site boundary, in the north-eastern corner of the Wylfa Newydd Development Area, just north of the village of

Tregele, off the A5025 road near its junction with the existing power station access road (figure 6.9).

6.123 The facility would be subject to the critical infrastructure protection set by the UK Government, and would be securely fenced within the Power Station Site boundary.

6.124 The overall plot identified for the Training and Simulator Building is wedge-shaped, occupying approximately 8 hectares, of which the construction development footprint is approximately 4.5 hectares. It is an open area, predominantly flat, but falling very gently from approximately 25m AOD adjacent to the A5025 to a pond at the centre of the site at approximately 19m AOD. It is set within the distinctive drumlin topography.

6.125 The choice of location has been guided by the required development area, and the need to provide a suitable learning environment whilst construction activities are underway elsewhere in the Wylfa Newydd Development Area. The chosen location allows for the building to be protected to some degree from the noisiest and potentially most disruptive aspects of the Main Construction activities for the Power Station. An independent access via the Existing Power Station access road and the distance from the majority of construction compounds and proposed stockpiling areas were also important factors (see chapter 5).

6.126 Other locations within the Wylfa Newydd Development Area were considered but rejected due to interference with other construction activities, difficulty of access during main Power Plant construction, being too close to the existing and proposed National Grid high voltage power lines, or insufficient land being available.

6.127 In addition to the main building, the following facilities have been incorporated into the design:

- parking for approximately 150 vehicles, plus six disabled parking spaces, seven motor cycle spaces and provision for bicycle storage;
- delivery area and turning circle for deliveries and refuse collection;
- external recycling and waste storage areas;
- a high voltage substation to the south of main building (approximately 10 x 6 x 5m);
- sprinkler pump housing (approximately 6 x 5 x 3m); and
- packaged treatment area for foul water treatment (approximately 3.75 x 3.5 x 4m).

Figure 6.9 Masterplan for the Training and Simulator Building

6.128 The Training and Simulator Building and its plot have been integrated into the temporary bunding and permanent LEMP structural planting and mounding measures for the Power Station Site, and it would benefit from the extensive earthworks and planting along the A5025 that would assimilate the Power Station into the surrounding landscape. This would provide screening and noise attenuation for the residents of Tregele during both its construction and operation.

6.129 There are a number of factors that are still being examined and could influence the final positioning or orientation of the building within the plot. The general area shown in figure 6.9 is being evaluated, including consideration of the following:

- the interaction of the Wylfa Newydd Project with National Grid's proposals for new overhead power line infrastructure – the current preferred corridor is in close proximity to the area being considered for siting the building and will require special

consideration in the final landscaping plan to ensure it does not conflict with safe working distances;

- the optimisation of the alignment and construction methodology for the CW discharge tunnels, which would pass beneath part of the area being considered for the building;
- the outcome of optioneering for connection to the existing electricity substation, as the position of towers for overhead lines may require some of the area being considered for the building;
- third party activities in the area, including works by Scottish Power Energy Networks in respect of existing power assets; and
- refinement of the design for the Training and Simulator Building, which may alter from a rectangular footprint to, for example, an L-shape, thereby introducing additional options for optimising the position of the building within the area being considered.

Outage building

6.130 The outage building would provide canteen facilities, changing room facilities and welfare for day and night shift temporary outage personnel. The building would also include office areas for use by Power Station staff involved in outages, contract firm outage management and outage planning personnel, as well as an outage control centre and a spare parts storage facility. The building may also support a small number of outage planning personnel and contract staff during normal operational conditions at the Power Station.

Visitor and Media Reception Centre

6.131 The Visitor and Media Reception Centre would be built on the Power Station Site near to the new access off the A5025, though it would be consented though a separate Town and Country Planning Act planning application as it is considered to be Associated Development. Further information is set out in the Jobs and Skills chapter of this document (chapter 8).

Car parking

6.132 The Power Station Site layout includes car parking for three main user groups:

- day staff, typically working Monday to Friday, comprising a combination of Horizon staff and contractors permanently based at the Power Station Site;
- shift staff, comprising Power Station operation staff working a variable shift pattern providing cover 24 hours each day, seven days each week; and
- outage staff, generally comprising contractors who would only attend the Power Station Site during outages.

Marine Off-Loading Facility

6.133 The Marine Off-Loading Facility (MOLF) would be required to facilitate the construction of the Power Station through delivery of key freight by sea, and would therefore be constructed early on in the programme and be operational throughout the Main Construction phase (see chapter 5). Use of the MOLF would greatly reduce the number of deliveries by road and therefore the volume of traffic and its associated environmental effects. Current estimates suggest that some 60% to 80% of all construction materials

(by weight) including the vast majority of Abnormal Indivisible Loads (AILs) would be delivered via the MOLF.

6.134 The MOLF would comprise a bulk quay, approximately 200m long, and a Roll-on, Roll-off (RoRo) berthing facility, approximately 100m long. These would be located in Porth-y-pistyll, directly to the south-west of the Existing Power Station. The concrete batching plant, required during construction only, would most likely be located on the platform formed behind the MOLF.

6.135 The MOLF infrastructure would be incorporated into the design of the north-eastern breakwater, which itself would be required, (together with a second, longer breakwater to the north-west of Porth-y-pistyll) for the protection of the CWS intakes and to maintain suitable and safe wave conditions for the intake of CW (see chapter 5 for further information). The CWS breakwaters would have the additional benefit of offering protection for vessels berthing at the MOLF, particularly in stormy conditions, thus enhancing its availability for deliveries.

6.136 At least one of the two MOLF quays (the quay for the delivery of large construction components including AILs) would also be retained for the operational phase of the Wylfa Newydd Power Station, to provide berths to allow sea transportation for maintenance, such as replacement of turbine rotors, generators and the other heavy equipment. The MOLF would therefore be a permanent structure within the Power Station Site and integral to the construction and operation of the Wylfa Newydd Power Station.

Power Station access road

6.137 There would be a single, principal point of access for staff and the majority of vehicles approaching the Power Station under normal operational conditions - the Power Station Access Road. This would approach the Power Station at the south-east corner, connecting to the A5025 via a proposed new roundabout junction to the south of Tregele.

6.138 There are some options around the final, detailed alignment of the Power Station Access Road at its northern end. This would be refined as part of the finalisation of the LEMP proposals because it would be influenced by the ground levels at the southern part of the Wylfa Newydd Development Area (see chapter 5). There is therefore limited scope for consultation comments to influence the detailed alignment of the Power Station Access Road.

Internal roads

6.139 A network of internal roads and pedestrian walkways would be provided to facilitate the efficient movement of staff and equipment around the Power Station Site. Certain roads would be designed to handle AILs associated with the replacement of large components or the transfer of spent fuel from the spent fuel ponds to the spent fuel storage facility.

Lighting

6.140 Power Station operational lighting has not been fully defined at this stage as the final design will relate specifically to the fully refined proposals for the Power Station Site layout and architectural detailing, which will be determined subsequent to this Stage Two Pre-Application Consultation. However, lighting would be designed to be appropriate to local needs and conditions. Excessive lighting levels would be avoided, LED and high efficiency bulb use would be promoted and, wherever practical, bulb dimming functions would be incorporated into lamps. Lamps would be chosen to balance energy efficiency

and colour rendering whilst considering the need to avoid or minimise potential adverse effects to the local environment, including visual impact. Lamp selection would therefore aim to prevent light spill and sky glow through the use of directional lighting and accessories such as barn door shields. Roadway lamps with a zero upward light component would be selected.

6.141 During operation it is likely that lighting would be required for permanent roadways and car parks, for office buildings and for perimeter lighting of the security fence, which is a statutory requirement for nuclear sites. In addition, there would be a low level of pedestrian amenity lighting required across the Power Station Site to aid safe pedestrian movement.

6.142 The earth mounding and woodland planting provided through the LEMP would also help to screen some lighting from external views.

Site landscape setting

6.143 The permanent Power Station development would be subject to a landscaping scheme, which would be an important element of settling the building and structures into their setting. The LEMP proposals, described and illustrated in chapter 7, provide the wider setting. In addition, there would be a need for localised landscape treatments within the Power Station Site, for example around the administration building, Training and Simulator Building and between footways and the perimeter fencing. Chapter 7 and the draft Main Site Masterplan document provide further information.

Radioactive waste facilities

6.144 The Power Station Site layout includes a number of radioactive waste buildings and structures, as summarised in table 6.3 with cross-reference to the buildings shown on figure 6.8. This section provides a summary description of the function of each of the radioactive waste facilities. These functions are an aspect of the Wylfa Newydd Project that is settled and the description is provided principally for information.

6.145 While the need for each of the facilities is settled, there are some options around the configuration and location of the facilities, including how many buildings will be needed and where they will be positioned, and this is set out later in the 'options being considered' part of this chapter. These decisions will be driven principally by technical design refinement and engagement with the nuclear regulators, so there is limited scope for consultation responses to influence the final proposals.

Table 6.2 Summary list of radioactive waste facilities

Building/structure
Main plant (unitised)
Radioactive waste building
Wet LLW processing facility
Wet ILW processing facility
Common plant
Solid LLW processing and temporary storage facility
ILW storage facility

Building/structure
Dry HLW decay storage facility
Spent fuel storage facility

Main Plant

Radioactive waste building

6.146 The purpose of the radioactive waste building is to house the Liquid Waste Management System (LWMS) and the wet ILW and low level waste (LLW) buffer storage tanks. There would be one radioactive waste building per Unit, which would be constructed during the Main Construction stage for the Wylfa Newydd Project and be available for use during commissioning, operations and decommissioning. This facility would vent gaseous discharges via the main stack, in accordance with the limits established through the relevant Environmental Permit that Horizon would need to hold. There would be liquid effluent discharges from the LWMS to the sea. Liquid effluent would be treated by the LWMS, if required, prior to discharge via the CW outfall (see chapter B14 of the PEI Report).

Wet LLW processing and wet ILW processing facilities

6.147 The wet LLW and wet ILW processing facilities would either be located in buildings adjacent to the radioactive waste building, or they would be housed within the radioactive waste building. The current assumption is that they will be housed in the radioactive waste building, which is sized accordingly. They would be used to process materials such as bead resins, evaporator concentrates, powder resins and granular activated carbon, together with sludge. Wet ILW and LLW stored in the buffer storage tanks would be discharged to the wet ILW processing facility and wet LLW processing facility via a short, shielded pipe.

6.148 The purpose of the wet ILW processing facility is to receive wet ILW from the radioactive waste building buffer storage tanks and process the waste by immobilising it in cement using in-drum mixing. There would be one wet ILW processing facility per Unit. This facility would vent gaseous discharges via the main stack in accordance with the limits established through the relevant Environmental Permit that Horizon would need to hold. There are no expected liquid radioactive discharges from the encapsulation process (see chapter B13 (Radiological Issues) of the PEI Report).

6.149 The purpose of the wet LLW processing facility is to receive wet LLW from the radioactive waste building buffer storage tanks and the laundry drain treatment system and process the waste by immobilising it in cement. There would be one wet LLW processing facility per Unit. This facility would vent gaseous discharges via the main stack in accordance with the limits established through the relevant Environmental Permit that Horizon would need to hold. There are no expected liquid radioactive discharges from the encapsulation process.

Common Plant

Solid LLW processing and temporary storage facility

6.150 Dry LLW generated across the Power Station Site would be taken to this dry LLW processing facility, where it would be processed and packaged for disposal. There would

be one shared dry LLW processing facility for the two Units and this would be constructed during the Main Construction stage of the Wylfa Newydd Project, and would be available for use at the start of operations. This facility would have a small stack, 3m above the highest point on the building roof, for aerial discharges. Liquid effluent from emergency showers and hand washing facilities would be transferred to the laundry drain system in the service building via a bowser for treatment if required.

Radioactive waste storage buildings

6.151 In addition to the radioactive waste building and the radioactive waste processing facilities, there are three radioactive waste storage buildings that would serve the whole Power Station, namely the ILW storage facility, the dry High Level Waste (HLW) decay storage facility and the spent fuel storage facility. There is work ongoing to optimise the storage of spent fuel and dry HLW, the outcome of which could result in co-locating dry HLW in the spent fuel storage facility. However, the current assumption is that there would be a separate dry HLW decay storage facility. In simple terms, this is a facility where HLW is stored until such time as the radioactive content has reduced ('decayed') sufficiently to be categorised as ILW.

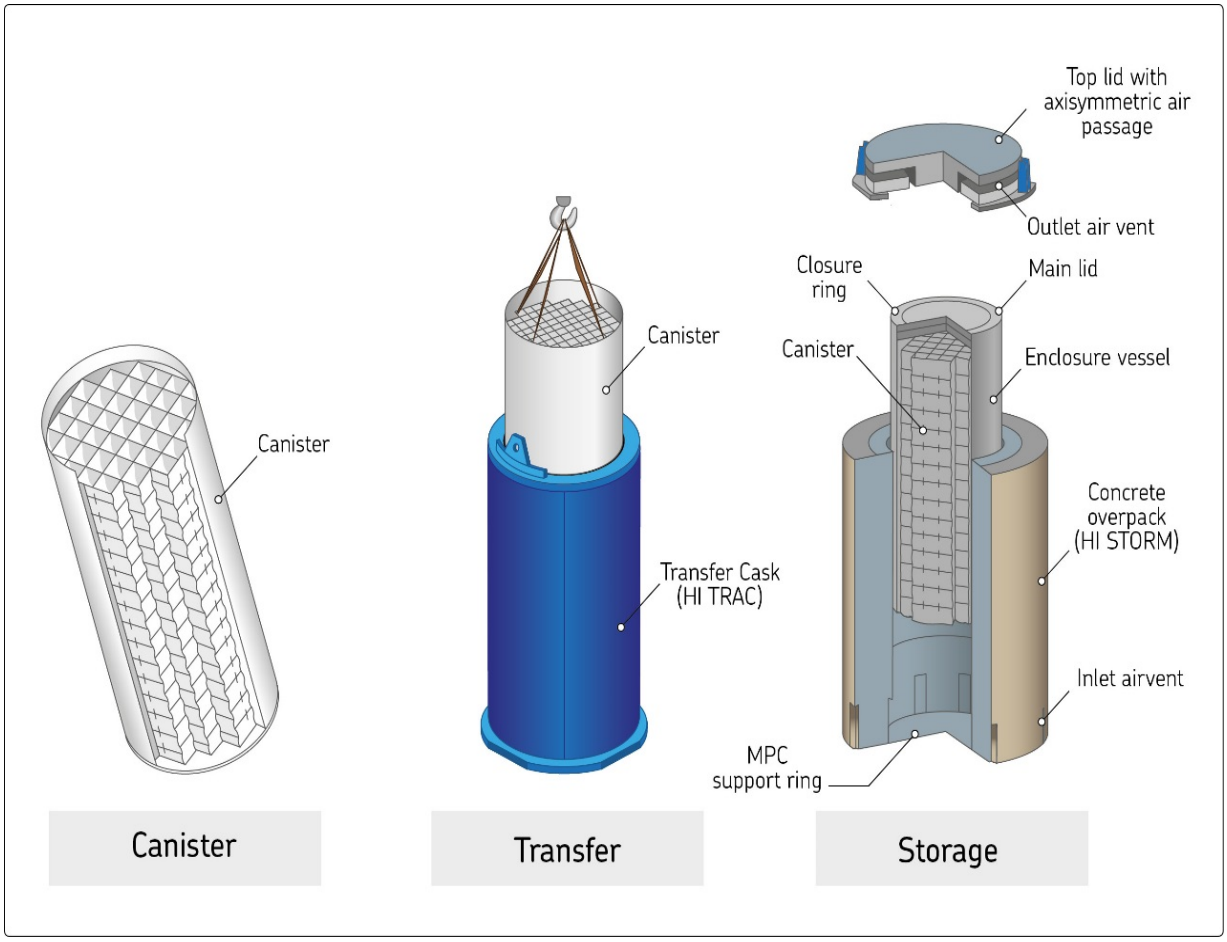
6.152 The ILW, dry HLW and spent fuel storage facilities would provide safe and secure facilities at the Wylfa Newydd Power Station for housing certain categories of radioactive wastes in the interim period prior to disposal to the UK Government's planned geological disposal facility (GDF). They would need to remain *in situ* beyond the end of power generation. Horizon therefore plans to position them together in a single location that could be operated independently to assist in the efficient future decommissioning of the majority of the Power Station.

6.153 The purpose of the ILW storage facility is to receive ILW packages from the wet ILW processing facility, for storage in the interim period prior to disposal to the GDF. There would be one shared ILW storage facility for the two Units. It would be required two to five years after the start of operations of Unit 1. There would be no aerial discharges from this facility, though a small stack is required 3m above the highest point on the building roof, to aid ventilation of the facility to control environmental conditions.

6.154 The dry HLW decay storage facility would receive specially designed protective HLW casks from the reactor building, for storage to allow decay of the radioactive content to ILW levels prior to disposal as ILW to the GDF. The waste would require repackaging prior to disposal and, as such, it is anticipated that a separate repackaging facility would be required adjacent to this facility, after 2080. There would be one shared dry HLW decay storage facility for the two Units. This would be required five to ten years after the start of operation of Unit 1. There would be no anticipated aerial or liquid discharges from this facility. However, a small stack may be required 3m above the highest point on the building roof, to aid ventilation of the facility to control environmental conditions.

6.155 The spent fuel storage facility would not be required until between five and ten years after the start of operations of Unit 1. The purpose of the spent fuel storage facility is to receive specially designed protective casks that would contain the spent fuel removed from the reactor buildings, for storage in the interim period prior to disposal to the GDF. Figure 6.10 provides an indicative image of a spent fuel cask.

Figure 6.10 Indicative image of spent fuel cask



6.156 The spent fuel would need to be repackaged prior to disposal because the storage methods that would be used at the GDF will be different from those that would be used to store the materials as they cool at the Power Station Site. As such, a separate repackaging facility is planned adjacent to this facility, to be available after 2080. There would be one shared spent fuel storage facility for the two Units. There would be no anticipated aerial or liquid discharges from this storage facility as the storage casks provide protection, should prevent any contents from leaking and are designed to be resilient to atmospheric conditions. However, a small stack may be required 3m above the highest point on the building roof, to aid ventilation of the facility to control environmental conditions, such as condensation.

6.157 The preferred location for the spent fuel storage facility, the ILW storage facility and the dry HLW decay storage facility is in the south-west corner of the Power Station Site. The following factors have influenced the preference for this location:

- availability and suitability of access routes for the transport of waste packages from the reactor building and ILW processing facility to the storage facilities;
- ensuring that the risk to workers and the public from exposure to ionising radiation is As Low As Reasonably Practicable;

- reduced feasibility of the location being incorporated into the existing Wylfa Newydd licensed site; and
- interim EIA findings, including possible effects on users of the Wales Coast Path.

6.158 The proposed use of these and other non-radioactive waste management facilities is set out in Horizon's Operational Waste Strategy. Chapter 5 of this document introduces the Integrated Waste Strategy, providing an overview and summary tables for the source and proposed management of different wastes expected to be generated once the Power Station is operational.

Cooling water system

6.159 The need for a CWS and each of its constituent parts is an aspect of the Wylfa Newydd Project that is settled. There are some options around the detailed design of the CWS and this is set out later in the 'options being considered' part of this chapter. These decisions will be driven principally by technical design refinement and engagement with the regulators, so there is limited scope for consultation responses to influence the final proposals.

6.160 CW is used to condense the steam leaving the steam turbine back to water, which is then recirculated to the reactor to be heated into steam again. This process generates the pressure drop that drives the turbine. The CW systems form part of the Main Plant and are unitised, whilst the structures form part of the Common Plant. The CWS for the Power Station as a whole requires the following:

- CW intake structure and pumphouse (to draw water in from the sea), including screening and fish protection and return systems;
- breakwater structures to offer necessary weather protection to the CW intakes, including calming the water to reduce wave heights during stormy conditions;
- underground CW pipes from the intake structure and pumphouse to the turbine buildings - there would be a set of these for each Unit;
- seal pits (to prevent vacuum conditions in the CWS during low tide periods) - one for each Unit;
- underground outfall tunnels, to transfer water from the seal pits to the outfall structure - there would be a set of these for each Unit; and
- CW outfall structure (to return water to the sea).

6.161 Horizon has elected for a once-through water cooling system, using seawater abstracted from the Irish Sea, and this is the option promoted in NPS EN-6. The CWS would draw water directly from the Irish Sea, passing it through coarse bar screens (to remove large debris), followed by fine meshed screens. The fine meshed screens would capture marine organisms and these would be washed off the screens into a recovery and return system that would send marine organisms back to the sea. The water would then pass through a series of drum screens before being pumped to the condenser. The screens, pumps and supporting systems would be located on and behind the Porth-y-pistyll foreshore, in the CW intake and pumphouse structure. On leaving the condensers of each Unit, CW would flow to a seal pit before discharging to the sea under gravity via the CW outlet tunnels and the outfall, which would be to south-west of Wylfa Head. At this stage, the precise locations, configurations and scale of the CWS outfall infrastructure

have not been fully determined and the options currently being considered by Horizon are set out later in this section (see 'options still under consideration').

6.162 Dredging would be required to create additional depth for the safe delivery of CW to the intakes. Preliminary estimates suggest that approximately 360,000m^3 of material would be dredged to form an approach channel, along with an additional 210,000m^3 excavated for the intake area itself. In addition, two breakwaters are required to provide a calm water environment for the CWS intake structure, to protect it from storm damage, reduce wave heights, and to provide a constant and low velocity flow of water to the Power Station.

6.163 In addition, there would be two smaller and separate seawater cooling water systems, the turbine building service water system and the reactor building service water system, which would extract seawater through separate inlets in Porth-y-pistyll. These systems would each use seawater flowing through heat exchangers to remove heat from closed-loop circuits, which cool turbine building components and the reactor building components (these systems are the turbine building cooling water system and the reactor building cooling water system, respectively, described earlier in this chapter). The seawater would pass through the heat exchangers in these two systems and then join the main CW outfall.

Reserve ultimate heat sink

6.164 The CWS removes the heat generated within equipment or rooms using CW abstracted from and later discharged to the Irish Sea. The Irish Sea is therefore the ultimate heat sink that provides sufficient CW flow to achieve essential reactor cooling.

6.165 Should CW flow become impaired to the extent that essential reactor cooling could not be achieved by abstraction of water from the Irish Sea, for example if the CWS intake screens were to become inundated with debris to the extent that flow through them was significantly reduced, a reserve ultimate heat sink would be required. Horizon is exploring the safety requirements and once these have been defined, a solution will be developed. It is currently assumed that a reserve ultimate heat sink is required, and that the chosen solution would be based around low profile, forced draft, wet cell cooling towers, arranged in two sets (one for each Unit). A worst case assumption for the size of one cooling tower installation would be 70m by 12m and approximately 7m tall. Figure 6.11 provides an indicative image of wet cell cooling towers.

Figure 6.11 Indicative image of wet cell cooling towers

Temporary development at the Power Station Site

6.166 In addition to the temporary laydown areas and structures required during construction and described in detail in chapter 5, there is a need for temporary accommodation for key workers at the Power Station Site.

6.167 The strategy for dealing with accommodation for construction workers is set out in detail in chapter 9. It includes a temporary construction campus that would be built on the Power Station Site for certain types of workers such as security personnel and contractors associated with continuous concrete pours. It is critical that such workers can reach the construction areas for work at very short notice and without the possible delays associated with travelling from off-site locations along public highways.

6.168 The on-site Temporary Workers' Accommodation would be a campus style development of approximately 500 modular, single-worker, *en suite* accommodation units, arranged in up to four blocks (each up to four storeys) that would each have communal facilities such as a kitchen, dining area and sitting room. The campus would also have an amenity building, an ancillary building, a cycle store, a security kiosk and an energy centre (see figure 6.12). The amenity building would include a kitchen, canteen, bar/café, gym, toilets, showers, changing rooms, and plant and storage areas.

6.169 The co-location of 500 or more construction workers in a single location forms a critical mass that would support the viability of a range of services and facilities, such as transport to the construction areas and to the main park and ride site (where workers' cars would be parked, see chapter 12), convenience shopping, catering, informal leisure facilities, healthcare and laundry. The combination of accommodation, transport provision and key services and facilities means that the on-site campus could be largely self-contained in terms of meeting the daily needs of the occupants, hence minimising adverse impacts on local services in Cemaes.

6.170 The preferred location for the on-site accommodation campus is to the south of Wylfa Head and to the east of the Existing Power Station, overlooking Cemaes Bay. Various locations were considered, but this was the only nearby site with sufficient area that would not interfere with long-term construction activities, and which was sufficiently distant from the main construction areas to ensure that noise, dust and other factors associated with a major construction site did not interfere significantly with the amenity of the occupants. The site would also benefit from being accessible from an existing access road. The site would be landscaped to soften views from key areas such as Cemaes, Wylfa Head and the Wales Coast Path (see figure 6.12).

6.171 Connections will be provided from the Power Station's main services, including:

- communication lines, telephones and IT networks (ICT);
- electricity supply;
- potable water supply; and
- foul connection (to adjacent treatment plant).

6.172 Sustainable drainage principles would be used in the design, based on a 1 in 30 year storm event. A surface water drainage system would direct run-off through a series of pipes, ditches, swales and attenuation ponds. Any surface water storage requirements would be provided within this system. Ultimate discharge would be to a local water

course, subject to obtaining a discharge consent and being sensitive to the characteristics and value of the nearby Tre'r Gof SSSI. Attenuation would ensure that discharge rates are less than or equal to site greenfield run-off rates. Oil interceptors would be incorporated into the system to protect water quality.

6.173 The campus would be provided for the duration of the construction period, then removed, and the site reinstated to its former condition. Table 6.4 sets out the development of the design of the on-site Temporary Workers' Accommodation since the January Project Update consultation.

Figure 6.12 Masterplan for the on-site Temporary Workers' Accommodation

Table 6.3 Key design changes since the Stage One Pre-Application Consultation

Change	Rationale
Determination of layout and likely maximum dimensions of the key buildings: Accommodation Block 1 (119 beds): 105 x 27 x 14m; Accommodation Block 2 (119 beds): 105 x 27 x 14m; Accommodation Block 3 (119 beds): 105 x 27 x 14m; Accommodation Block 4 (164 beds): 105 x 27 x 18m; Amenity and welfare building: 55 x 50 x 8m; Ancillary building: 40 x 24 x 6.5m; Cycle store: 17.5 x 11 x 5.5m; Security kiosk: 13.5 x 9.5 x 6m; and Energy centre: 30 x 15 x 6.5m.	Site masterplan developed; constraints characterised; and operational requirements (number of occupants) clarified.

Question – on-site worker's accommodation

6.174 The preferred site for the on-site Temporary Workers' Accommodation is largely settled, and there is limited opportunity to influence it through consultation; however Horizon would welcome views in relation to the detailed design and mitigation, including the external appearance of the buildings and landscaping. In answering the questions below, please also see information provided in the draft Main Site Masterplan document, which is also provided as part of this consultation and is available on out website.

Given the information provided on the On-Site Temporary Workers' Accommodation, do you have any views on:

- **how we can improve the preferred plans, including such issues as the layout of buildings and parking areas;**
- **how we can improve the external appearance of the buildings, landscaping and boundary treatment;**
- **our proposed legacy for the site.**

Off-Site Power Station Facilities

6.175 In order to provide resilience against extreme events with very low probabilities, such as severe flooding and seismic events, and in line with industry good practice and regulatory requirements, Horizon is required to develop a small suite of integral facilities that would be physically separate from, but local to, the Power Station Site. The need for these facilities is an aspect of the Wylfa Newydd Project that is settled and is determined through the requirements of the ONR in respect of emergency planning. Preferred options for the location of each facility have been determined by a series of siting criteria based on the operational requirements of the Power Station.

6.176 The Off-Site Power Station Facilities are an integral part of Horizon's emergency arrangements (see emergency arrangements in chapter 5). These facilities therefore form part of the Wylfa Newydd Power Station and will be included in the application for a DCO.

AECC and ESL

6.177 The Alternative Emergency Control Centre (AECC) would provide back-up command and communications facilities that would be used to remotely manage an incident at the Power Station Site in the extremely unlikely event that the primary facilities on the Power Station Site were unavailable. In this capacity, the AECC would be occupied by the emergency controller, technical support team and support staff who would be able to use the facility to continue to provide strategic control of the Power Station Site. The AECC would also facilitate liaison with the Local Authority and Emergency Services at their own emergency co-ordination facility, which is termed the Strategic Coordination Centre (SCC).

6.178 The Environmental Survey Laboratory (ESL) would perform a normal operating function for environmental monitoring and, as such, would contain facilities to manage radiological survey in the local area, including radiation monitoring equipment controls. There would be equipment for analysing samples and assessing the implications for the public and the environment both under normal operation and during an emergency situation. A small number of vehicles would need to be based at this facility and there would also be communication connections to the Power Station Site.

6.179 It is good practice for AECC and ESL functions to be co-located and this is the approach Magnox Limited has adopted for the Existing Power Station. Horizon also plans to co-locate the AECC and ESL for the new Power Station in a single building. As part of the operational and emergency arrangements for the Wylfa Newydd Power Station (see chapter 5), there are specific locational factors that must be met in selecting a site for the facilities. These include a need to be between approximately 1km and 5km from Units 1 and 2 within the Power Station Site, positioned outside the prevailing wind direction, on land at low risk of flooding, in a low seismic zone and offering access to strategic road infrastructure.

6.180 Further information about the AECC and ESL, including proposals for Horizon's preferred site, is set out in chapter 18.

Mobile Emergency Equipment Garage

6.181 The Mobile Emergency Equipment Garage (MEEG) would provide a facility to enable Horizon to retain a number of specialist vehicles at a location close to but separate from the Power Station Site, which would allow them to be rapidly deployed if needed to support an incident. The MEEG could also be used as a marshalling point for support arriving on Anglesey before onward dispatch to the Power Station Site in an emergency situation.

6.182 Similarly to the AECC and ESL, as part of the emergency arrangements for the Wylfa Newydd Power Station, there are certain locational criteria that must be met in selecting a site for the facilities. These include a need for the premises to be at least 1km away from the Units within the Power Station Site, positioned in a low seismic zone and on land that is at low risk of flooding, as well as offering access to strategic road infrastructure.

6.183 Further information about the MEEG, including the proposals for Horizon's preferred site, is set out in chapter 18.

Options still under consideration

6.184 This section provides information about the parts of the main Power Station Site design where options remain. Most are fully or largely settled and any design refinement will, to a large extent, be driven by the outputs of the GDA process and engagement with the nuclear regulators and other technical consultees, together with Horizon's ongoing processes of design optimisation. As such, there is limited scope for consultation comments to influence the decisions that need to be made. The description is provided principally for information to allow the way in which the design of the Power Station may evolve prior to the application for a DCO to be understood, although if you wish to make comments, you can do so by answering the general question on the feedback forms.

Cooling water system

6.185 Horizon has elected for a seawater, once-through CWS as the primary means to removing 'waste heat' produced as a by-product of power generation taking into account the coastal characteristics off north Anglesey, Best Available Technology (BAT) guidance provided by the European Commission for large coastal and estuarine power stations (BREF-cooling 2001), and guidance provided by EA (2010) regarding cooling water.

6.186 The coastal location offers the potential to access plentiful supplies of cold water from the Irish Sea. The sea currents around the Wylfa NPS Site (defined in chapter 4 of this document) provide very good mixing of water that would effectively disperse localised heating of the sea associated with discharged CW.

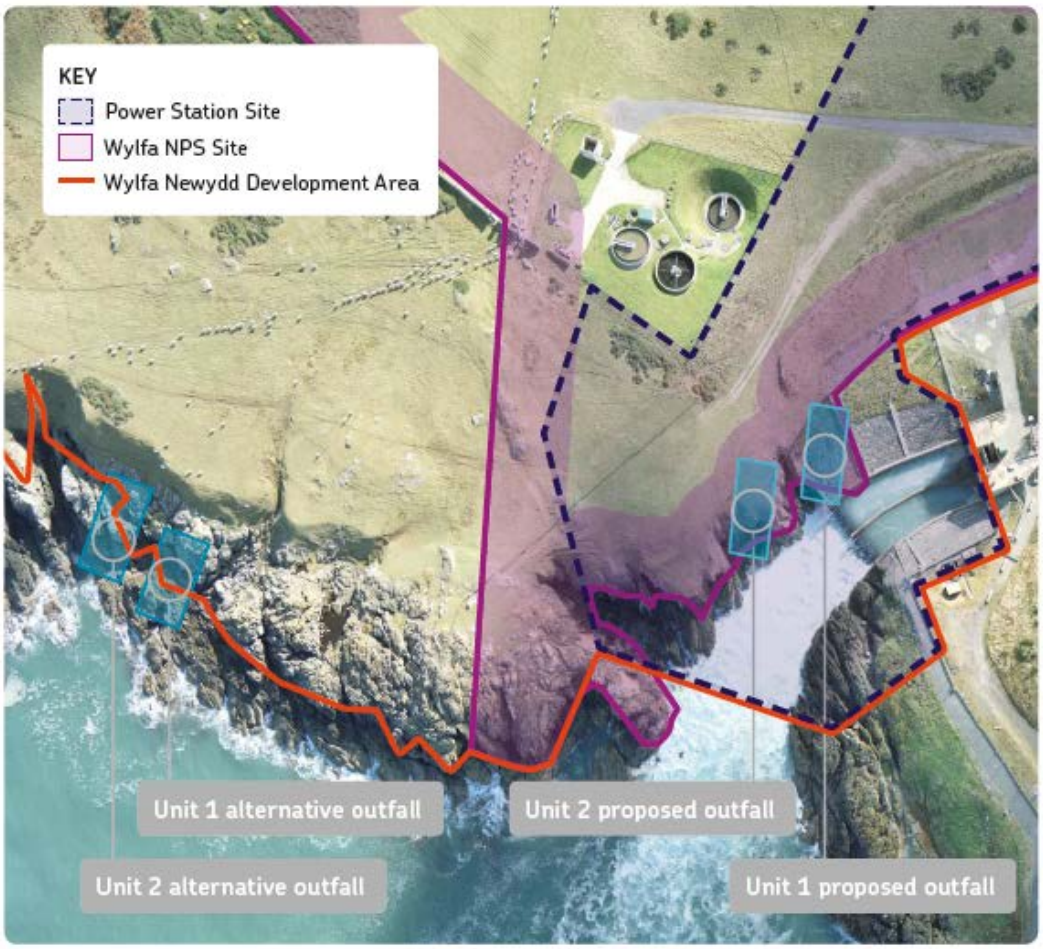
6.187 Following various engineering and environmental optioneering studies, as described in the Stage One Pre-Application Consultation, the preferred location for seawater abstraction is via an onshore intake located within Porth-y-pistyll and a discharge located onshore, to the west of Wylfa Head.

6.188 Based on the analysis undertaken to date, Horizon has confirmed a preferred option for the CW outfall structure. The position shown in figure 6.13 received general support within the Stage One Pre-Application Consultation responses. This would involve the construction of a new CW outfall structure that would discharge to the same location as the Existing Power Station outfall and would re-use the channel already cut into the sea bed. The precise location, configurations and scale of the CWS outfall infrastructure itself have not been fully determined and the options are being considered by Horizon from a technical perspective.

6.189 Horizon will continue discussions with the Nuclear Decommissioning Authority (NDA) to understand fully the potential opportunities and constraints associated with adapting the Existing Power Station outfall channel for use in Horizon's proposals. It is particularly important to understand the compatibility of Magnox Limited's decommissioning timescales for the Existing Power Station with Horizon's Wylfa Newydd Project programme. The outcome of these discussions will be the main influencing factor; however, if it is concluded that it would not be possible to construct at this location, Horizon has identified an alternative location a short distance to the north of the Existing Power Station outfall, also on the south-western coast of Wylfa Head – this is also shown in figure 6.13. At this location, the operating principles would be broadly the same and

water would discharge to the same bay as the preferred option, but in a different direction. However, the construction method for this location would differ and this is considered within the relevant topic chapters of the PEI Report.

Figure 6.13 Cooling water outfall options



Electricity substations and connection to grid

6.190 As referenced previously, options for connecting Horizon's transformers to the existing substation are currently being explored. The design of the 400kV connections has not yet been finalised, and the technology and route options continue to be studied in detail. Four circuits are required to connect to the 400kV substation:

- Unit 1 generator circuit: connecting the Unit 1 generator transformer to the 400kV substation;
- Unit 1 standby circuit: connecting Unit 1 auxiliary standby transformer to the 400kV substation;
- Unit 2 generator circuit: connecting the Unit 2 generator transformer to the 400kV substation; and

- Unit 2 standby circuit: connecting Unit 2 auxiliary standby transformer to the 400kV substation.

6.191 The work done so far has suggested that the use of overhead lines is unlikely to be practicable due to space constraints, and analysis suggests that fluid-filled cables offer no benefit over cross-linked polyethylene (XLPE) cable.

6.192 This leaves the XLPE cable and Gas Insulated Line (GIL) as the preferred technology options for the 400kV grid connection, with a number of potential installation methods. The XLPE cable can be directly buried, or placed in tunnels or ducts. The GIL can be directly buried or installed in tunnels, or installed above-ground either at ground level in a secure enclosure or on steelwork at height.

6.193 A number of routes are still under consideration, and the final choice of route and installation method will depend on space considerations and interactions with other services and features such as the 132kV cables owned by SP Manweb and National Grid, new and existing 400kV overhead lines, site roads, security fences, cooling water infrastructure, drains and telecommunications.

6.194 This is an area where the consideration of options offers limited scope for consultation comments to have any influence. The main factors that will drive the decision on which option to use are:

- the resilience offered, taking account of susceptibility of proposals to becoming unavailable during the operation of the Power Station;
- ease of maintenance;
- compatibility with other aspects of Power Station design in the vicinity of the electricity substation; and
- confirmation that the proposals are acceptable from an EIA perspective.

Standby power generation

6.195 The detailed locations and dimensions of the DAG building for each Unit are not fixed. The most likely locations are adjacent to the back-up buildings, or adjacent to the EDG situated to the west of each reactor building (see figure 6.8).

6.196 The decisions about which option to take forward for all aspects of standby power generation would be largely based on the output of further technical work, engagement with the nuclear regulators, and design refinement, particularly in relation to the GDA process. Consequently, there is limited scope for consultation comments to influence this aspect of the Wylfa Newydd Project.

Landscape setting

6.197 The proposed landscape setting for the Power Station has been developed as a masterplan for the Wylfa Newydd Development Area as a whole, called the Landscape and Environmental Masterplan (LEMP). The LEMP is described in chapter 7 of this document and a series of five reference points are illustrated. These are designed to show the way in which the construction and landscaping activities would work together progressively over time to deliver the final landscape setting for the Power Station.

6.198 This approach means that by the time the Power Station enters its first year of operation, the parts of the landscape closest to neighbouring communities would already have been

in place for a number of years and planting would be maturing, which should help address some of the concerns raised about visual intrusion in the Stage One Pre-Application Consultation feedback.

6.199 The figures in chapter 7 provide an indication of how the Power Station might look at each point in time, drawn from the landscape and visual assessment work undertaken as part of the EIA (see chapter B11 of the PEI Report). The figure projected to year 15 of operation of the Power Station shows that the spent fuel, ILW and dry HLW decay storage facilities would have been constructed and that the planting set out in the LEMP would have matured considerably, providing additional screening and a more naturalised setting.

Appearance of the Wylfa Newydd Project permanent buildings

6.200 The Power Station will become a significant feature within the local landscape. The basic form of the Power Station buildings and structures is largely settled, as illustrated in figure 6.8. However, some options remain in the architectural design and detailing for the buildings, most notably those that sit outside the Main Plant and Common Plant. The Main Plant buildings would be constructed from reinforced concrete due to their status as 'safety classified structures', and there is less flexibility over design and finish, though it is likely that a protective coating will be required.

6.201 During the Stage One Pre-Application Consultation, feedback was sought on preferences for the concepts that could be adopted for designing and detailing the structures and buildings at the Power Station Site. This is a matter of taste and personal preference and the feedback received expressed a broad range of views with little consensus on a particular architectural style, with comments tending to be more general in nature. However, many respondents referenced the need to consider sustainability in building design and the use of locally sourced materials and natural colours commonly apparent in and around north-west Anglesey. In addition, some comments recognised that the size of the largest buildings (namely the reactor buildings and turbine buildings) would make them prominent, but that the smaller buildings (for example, those on the perimeter and closest to the neighbouring communities) could be designed to provide interest and draw the eye away from large concrete structures.

6.202 Feedback on a specific question in the January Project Update consultation strongly supported a 'blend' approach for the public-facing buildings on the Power Station Site (more than 75% of respondents chose this over 'bold').

6.203 Horizon has considered this feedback and engaged with the Design Commission for Wales, the IACC and other stakeholders in developing guidance for architects working on designs for the Wylfa Newydd Project buildings. The aim is to promote sustainable design principles and consistency in the appearance and materials used across the whole set of permanent buildings that would form the Wylfa Newydd Project, whilst also retaining some flexibility for architects to introduce design distinctiveness and creativity.

6.204 The Power Station Site is in an exposed coastal position and subject to strong winds, adverse weather conditions and a salty, marine atmosphere. Buildings should be designed to be robust in this environment, capable of adapting to changing future requirements, ensure security through design, and to consider sustainability, for example in terms of the sourcing of materials, energy and water use. It is also important to

recognise that all of the Power Station buildings will have to be decommissioned when power generation ends.

6.205 In order to take the designs forward, and to help us understand further the sort of architectural detailing that local people may prefer, the draft Main Site Masterplan document includes three options for how the favoured blend style might be interpreted, including an indicative palette of materials.

Main Plant and Common Plant

6.206 The vast majority of buildings and structures within the Main Plant and some of the Common Plant fall into a category of 'safety classified structures'. The regulators place requirements on the functionality of such structures, with the onus on the Nuclear Site Licence holder to prove that the proposed materials meet the relevant safety functional requirements. In practice, these requirements tend to result in a preference for selecting tried and tested materials, and reinforced concrete will be the material of choice for many structures. However, cladding or pigmentation of such concrete, as has been undertaken at the Existing Power Station, is no longer considered the optimal approach for safety as there are specific engineering requirements to consider. Instead, Horizon is considering the application of a protective coating, which could potentially include a colouring, or casting striations on the surface of the concrete used for safety classified structures and leaving it uncoloured – this will create shadows, irregularity and the appearance of a pattern on the concrete surfaces, helping to break up the massing of what might otherwise be flat, monolithic surfaces.

6.207 Where concrete is to be used on structures that are not safety classified, there may be a greater potential for colour treatment. The final design would take account of the risk of using dark colours in finishes as this can contribute to thermal shock and structural stress because darker surfaces expand and contract differently from the lighter tones that are similar to the unfinished colour. Horizon would therefore support painting or pigmenting concrete with lighter tones that reflect natural tones in the surrounding landscape, perhaps similar to the greys, green, pinks and light browns used in the Existing Power Station.

Other Power Station Site buildings, within inner security fence

6.208 The remainder of the Common Plant would be neither safety classified structures, nor be constructed exclusively from concrete. Examples would be the garage buildings and workshops where additional materials such as steel and flat panel cladding may be used with some concrete. Patinated copper and Welsh stone could perhaps be used in these buildings, particularly to create feature entrances.

Power Station Site, outside inner security fence

6.209 Buildings outside the inner security fence, such as the administration building, can be constructed more traditionally, offering greater choice in the materials that could be used. Concrete and steel frames can be combined, and coloured concrete walling, engineering brickwork and cladding, including copper elements, might all be appropriate. Patinated copper and Welsh stone might be used in details and feature entrances, as well as glass curtain walling.

Preliminary Environmental Information

6.210 This consultation document is accompanied by a Preliminary Environmental Information Report (PEI Report), which sets out the information and analysis that is available from the Environmental Impact Assessment of the Project at this stage in time. Volume B of the PEI Report addresses the effects and mitigation proposals associated with the Wylfa Newydd Power Station main site described in this chapter.

General Comments

Do you have any general comments on our proposals for the main site as described in this consultation? If you do, please answer our general question.

7 Landscape and Environmental Masterplan

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7 Landscape and Environmental Masterplan

Introduction

7.1 A comprehensive Landscape and Environmental Masterplan (LEMP) is being developed for the Wylfa Newydd Development Area. The LEMP sets out our proposals for mitigating the effects of the Power Station on sensitive environmental receptors and integrating the development into the existing landscape setting. Seascape context is also considered, and for the purposes of this chapter, landscape should be taken to include seascape. The LEMP is structured around key project milestones (each representing a certain point in time or 'Reference Point'). These provide snapshots of how the landscape and environment within the Wylfa Newydd Development Area would change over time as a consequence of the construction of the Power Station, and how the long-term landscape setting would be progressively delivered.

7.2 The emerging LEMP has been informed by our current understanding of the likely environmental effects at each stage of construction. The final version will illustrate the way in which the relevant mitigation and enhancement proposals identified through the Environmental Impact Assessment (EIA) process will be implemented.

7.3 This chapter describes the LEMP and how it has been refined in response to evolving project requirements, consultation feedback provided at the Stage One Pre-Application Consultation, the Project Update consultation in January 2016 (January Project Update) and on-going consultation with stakeholders, including most recently in June 2016. The proposals for the LEMP will continue to be refined in response to feedback received from this Stage Two Pre-Application Consultation and on-going dialogue with stakeholders.

7.4 This chapter is structured as follows:

- LEMP aims and objectives;
- Evolution of the LEMP;
- Response to previous consultations and stakeholder engagement;
- Design development during 2016;
- Reference points of the LEMP; and
- Next steps.

LEMP aims and objectives

7.5 The overarching LEMP aims to deliver coordinated environmental mitigation and enhancement measures for the Power Station Site.

7.6 The key objectives of the LEMP are to:

- mitigate the likely adverse environmental effects of the Power Station;
- integrate the Power Station into the existing landscape context;
- deliver coordinated and multi-purpose environmental enhancements; and
- provide a high quality green infrastructure setting for operation of the Power Station.

LEMP principles

7.7 Horizon has developed the following core masterplan principles to achieve the key objectives for the new landscape setting for the Power Station. These take into account statutory designations and surrounding context, Project requirements, consultation with the public and stakeholders, and our initial environmental assessment findings:

- creation of a new landscape setting for the operational Power Station that reflects the existing open, rolling, drumlin landscape character, in conjunction with an appropriate architectural design;
- efficient use of natural resources, for example by, retention of excavated material on-site to create building platforms and construction laydown areas and to provide mitigation, through appropriate landscape mounding designed to soften views, reduce noise and help integrate the proposed Power Station into the surrounding landscape. This approach also avoids the effects that might otherwise be experienced from transporting excavated material Off-Site and the consequential effects on the A5025 and local road network;
- retention and enhancement of existing woodland, scrub, hedgerows and grassland habitats where possible, for example, perimeter hedgerows, part of the woodland designed by Dame Sylvia Crowe for the Existing Power Station, grassland at Wylfa Head, and vegetation within and adjacent to Tre'r Gof SSSI;
- restrained use of new woodland planting to supplement visual screening provided by landscape mounding and to provide local features, whilst respecting the relatively open nature of the existing landscape character;
- provision of a network of new footpaths to replace existing routes closed to facilitate construction and to serve the local communities and other footpath users, including tourists, and diversion of the Wales Coast Path, incorporating a variety of experiences for users;
- provision of a safe viewing area for visitors to view construction activities and a visitor centre on completion of construction;
- provision of buffer zones where necessary, for example, between Tre'r Gof SSSI and other sensitive receptors and the proposed landscape mounds, in order to help safeguard them from the effect of construction works;
- developing a phased construction sequence to provide early landscape mitigation on the outer parts of Wylfa Newydd Development Area, which would help to screen or soften views and provide noise attenuation for construction activities from the surrounding area; and
- consideration of opportunities to return land to agricultural use, with new field boundaries reflecting the surrounding landscape pattern. The most likely agricultural use is grazing by sheep or cattle.

Key environmental considerations

7.8 The LEMP has considered the potential effects of proposals on the following key human, environmental and cultural heritage receptors:

- European Designated Sites: Cemlyn Bay Special Area of Conservation (SAC) and Ynys Feurig, Cemlyn Bay and The Skerries Special Protection Area (SPA), a possible SAC for harbour porpoise (North Anglesey Marine pSAC) and a proposed extension to the Ynys Feurig, Cemlyn Bay and The Skerries SPA for terns;
- Sites of Special Scientific Interest SSSIs within and adjacent to the Wylfa Newydd Development Area: Tre'r Gof SSSI; Cae Gwyn SSSI; and Cemlyn Bay SSSI;
- Regionally Important Geographical Site (RIGS) east of Wylfa Head at Cemaes Bay;
- Isle of Anglesey Area of Outstanding Natural Beauty (AONB);
- North Anglesey Heritage Coast;
- Anglesey Special Landscape Area (SLA);
- Cestyll Garden, a garden of special historic interest (Grade II listed);
- Dame Sylvia Crowe's landscape design for the Existing Power Station, including the wooded mounds that soften views;
- Afon Cafnan watercourse and its tributary joining from the east;
- Drumlin landform, with classic 'basket of eggs' topography;
- Local communities, particularly at Tregele and Cemaes; and
- Public rights of way including the Wales Coast Path and access to Fisherman's Car Park.

7.9 Further information on the interaction between the LEMP and these receptors, including the mitigations it provides, is set out in the Preliminary Environmental Information (PEI) Report, which also forms part of this Stage Two Pre-Application Consultation.

Evolution of the LEMP

7.10 A version of the LEMP, (then known as the "Landscape and Biodiversity Masterplan" or "LMBP") was initially prepared in 2011. An initial focus was to consider the implications of the substantial excavations that would be required to form the level ground required to accommodate and construct the Power Station. The key considerations were the amount of excavated material generated, the scale of proposed Power Station buildings and the likely effect on landscape, views and environmental designations. In November 2012, Hitachi purchased Horizon. Previous work on the LBMP was reviewed in light of the proposal to use the Hitachi ABWR reactor for the Wylfa Newydd Project. This review concluded that many of the initial mitigation and enhancement proposals were still relevant but would require further design development in conjunction with the current Power Station design.

7.11 The LBMP was renamed the Landscape and Environmental Masterplan (LEMP), which was considered to better reflect the wider environmental issues covered. An initial review of the Hitachi scheme resulted in a refinement to the level for the main Power Station building platform to 14m above ordnance datum (AOD). This allowed the design of new landforms to be more in keeping with the surrounding landscape.

7.12 Further work was undertaken on the proposed realignment of the Afon Cafnan tributary in the southern part of the Wylfa Newydd Development Area. The current proposal is for a

more limited realignment than was originally proposed, close to the Wylfa Newydd Development Area boundary, with no alteration to the course of the main Afon Cafnan.

7.13 There are currently two options for the diversion of the Wales Coast Path, a section of which would need to be closed during construction of the Power Station; an inland route and a coastal route.

7.14 A review of access options to the Wylfa Newydd Development Area concluded that a new access road to the Power Station Site could be provided to the south-west of Tregele and that there was no need for an A5025 bypass for the village. It was also considered that Nanner Road would provide an acceptable alternative route to Cemaes Bay Road and that a diversion of Cemlyn Road was therefore not be required.

7.15 Further consultation meetings on the LEMP were held with key stakeholders in 2014, including representatives from the Isle of Anglesey County Council (IACC), Natural Resources Wales (NRW), North Wales Wildlife Trust (NWWT) and the National Trust (NT).

7.16 Key feedback on the LEMP received at consultation meetings and from the Stage One Pre-Application Consultation and the January Project Update included:

- the importance of adopting an integrated approach to ecology and the landscape, for example, incorpation of habitat creation in relation to proposed landscaping;
- the importance of mitigation for effects relating to views from Tregele;
- the importance of views from the Wales Coast Path;
- the importance of views from Cestyll Garden;
- the importance of interconnected habitats and of reinstating ecological permeability across the Wylfa Newydd Development Area following the completion of construction and maintaining a degree of ecological permeability during construction where feasible;
- the aspiration to create a range of semi-natural habitats, including coastal heath, wetlands, species. rich grassland, species rich hedges or clawddiau and seed-rich autumn/winter stubble;
- maximise the landscape and ecological value of sustainable drainage systems where possible;
- the design sensitivity of the proposed breakwater for the proposed Marine Off-Loading Facility (MOLF);
- the design sensitivity of the gradients of proposed landscape mounds;
- the importance of night-time views;
- the need to see how implementation of the LEMP could be phased to mitigate adverse environmental effects; and
- the importance of environmentally sensitive agricultural practices for the future management of any land returned to agricultural use.

Response to previous consultations and Stakeholder engagement

7.17 Feedback on Horizon's Stage One Pre-Application Consultation in 2014 and the January Project Update has influenced the evolving proposals for the LEMP, as summarised in the table below. Some of the feedback received was conflicting and therefore there has been a need to balance competing views, for example, on the extent of new woodland planting. Further detail on the comments received during the Stage One Pre-Application Consultation and the January Project Update consultation made can be found in the Consultation Summary Report.

7.18 Specific questions on the LEMP at the January Project Update were asked on the following topics:

- preferred types of trees or patterns of hedgerows;
- the way in which the footpath network links together;
- the gradient of the mounding. Different approaches to the shape of the mounding might suit different uses such as farming or recreation; and
- whether cycle routes should be included and if so, what places they should try to link to.

Table 7.1 Key issues arising from Stage One Pre-Application Consultation and Project Update Consultation

Feedback topic	Responses
Sequencing	In response to questions on how the Wylfa Newydd Development Area would change over time during construction, five design reference points have been developed for the LEMP, that represent key milestones in the construction period as follows: • reference point 1: existing baseline; • reference point 2: Site Preparation and Clearance works before grant of the Development Consent Order (DCO); • reference point 3: start of Unit 1 construction; • reference point 4: start of Unit 2 construction; and • reference point 5: completion of construction. In addition, we are ensuring that earthworks materials are placed in final location as soon as practicable. Slopes are also to be seeded at the earliest practical opportunity to reduce periods of exposed soil and to restore the landscape and associated habitats as soon as possible.
Landscape mounds	The steepness of mound slope gradients to be similar, where practical, to that of surrounding drumlin landforms, in order to address concerns that landscape mounding should be in keeping with existing landscape character.

Feedback topic	Responses
New planting	In order to respect the character of the existing landscape, planting utilising trees and hedgerows characteristic of the area would be undertaken wherever possible. Woodland planting would be designed to supplement screening provided by landscape mounds to address consultation requests, whilst at the same time balancing the extent of tree planting with the relatively open character of the surrounding landscape.
Ecology	In order to encourage wildlife, plant species to produce a diverse mix of habitat within the overall context of the existing environment are under consideration.
Visual appearance	Returning landscape to agriculture on the mounds, in order to help integrate with the surrounding landscape.
New footpaths and facilities	In order to suit different users, a mix of gentle and more challenging routes would be designed. Some seating and picnic areas would be provided in appropriate locations to address requests for facilities in conjunction with footpath provision.
Cycle routes	Consideration is being given to the provision of new cycle routes across the Wylfa Newydd Development Area in conjunction with final landscape restoration, as well as diversion of the Copper Trail.
Transport	Reduction of road transport would be achieved by use of the Marine Off-Loading Facility where practical and by re-using excavated material on site.

Design development since Project Update Consultation

7.19 Since the January Project Update, further design development has been carried out for technical and environmental reasons and has resulted in a refinement to platform levels of 20m to 22m AOD for administration and support buildings and the western laydown area and a level of 26m to 28m AOD for the main eastern laydown area. At the time of the January Project Update, a range of platforms levels were still being considered between 19 and 26m AOD. These design changes have been undertaken in conjunction with further refinement of the landscape mounding design, for example, to mitigate the effects on Tre'r Gof SSSI by maintaining a greater separation from the edge of the SSSI to the edge of earthworks. The main building platform level for the two Generating Units has not been changed and would remain at 14m AOD.

7.20 The resulting landscape mounding design incorporating the revised volume of excavated material means that the heights of new landforms would be likely to range from 30m AOD to 50m AOD which is within the range of previous options and in scale with the height of existing surrounding drumlins. General mound gradients would be likely to range from 1 in 6 to 1 in 10, with the exception of some specific areas of the landscape mounds such

as those adjacent to Tregele, which would be constructed at 1 in 2 and planted with native trees and shrubs to soften their appearance. The proposed landform is similar to the gradients of existing drumlin landforms on and adjacent to the Wylfa Newydd Development Area, which tend to range from 1:8 to 1:10. New footpaths would be constructed at an appropriate gradient for their intended use.

7.21 The preferred location for the Training and Simulator Building was also identified, to the east of the Power Station, accessed from the Existing Power Station access road.

7.22 The design of the on-site construction workers' accommodation to the north-east of the Existing Power Station has also been further refined to help integrate the temporary facility into the landscape.

7.23 A visitor centre is currently proposed, with the preferred location being in the southern part of the Wylfa Newydd Development Area, adjacent to the A5025, as part of the proposed provision for recreation and tourism. The current preferred location has the potential to provide views over the Power Station and sea views beyond. However, the design of the visitor centre is still at a very early stage.

7.24 The design of the breakwaters has been further developed, resulting in a crest height of up to 14m AOD for the western breakwater and 12.5m AOD for the eastern breakwater. However, the detailed design of the MOLF and associated breakwaters is yet to be finalised and will continue to be developed up to the finalisation of our DCO application. Two potential locations for the required Power Station Cooling Water Outfalls are under consideration. The current preferred location utilises the area adjacent to the Existing Power Station outfall location, thereby minimising additional disturbance to the coastline including the RIGS. The alternative location is a short distance to the north within the RIGS.

Reference Points of the LEMP

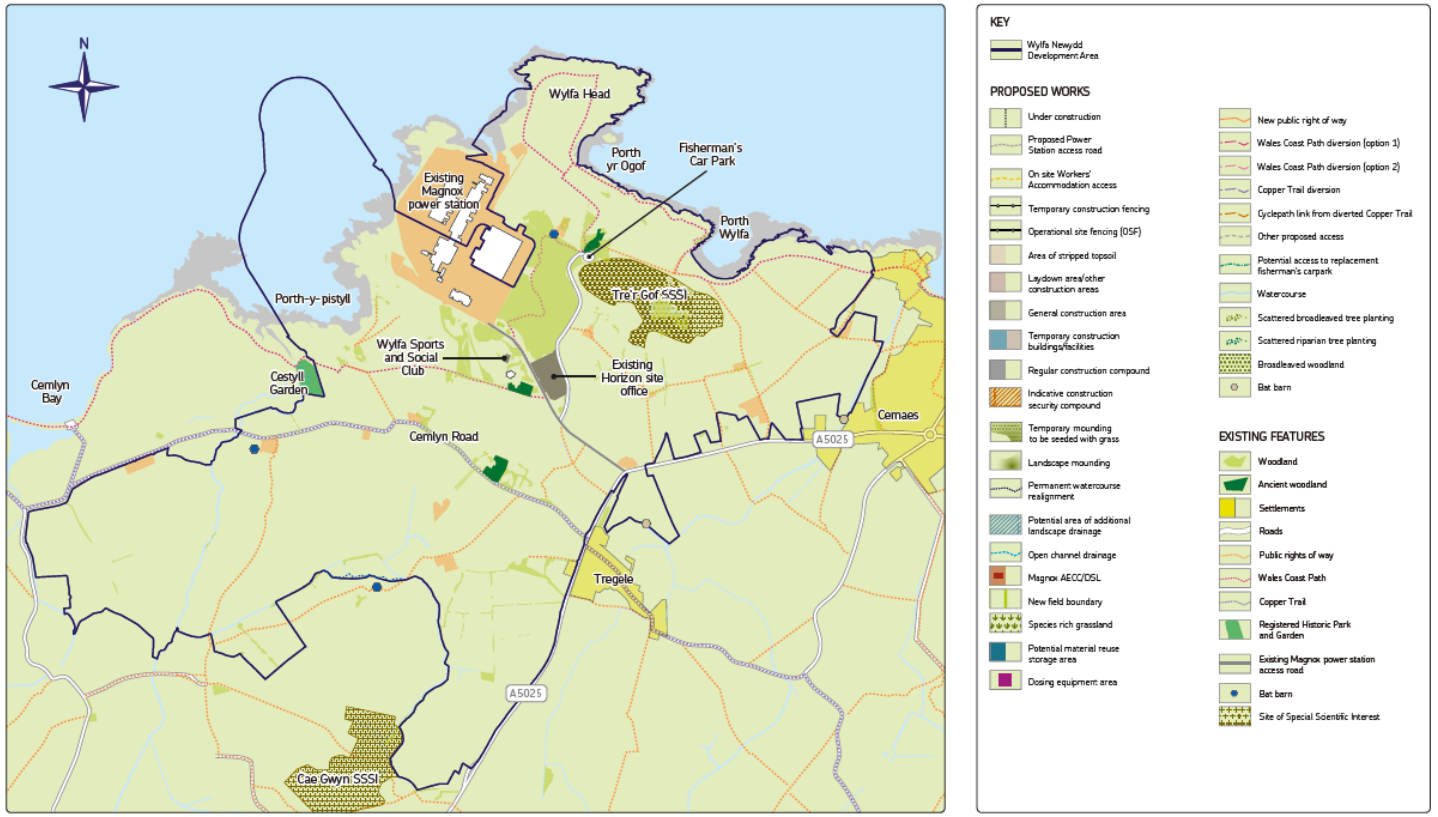
7.25 The extensive nature of the earthworks required to facilitate construction of the Power Station and scale of the Wylfa Newydd Development Area mean that implementation of the LEMP would need to be delivered in stages. In order to reduce environmental effects during construction, a preliminary sequence of earthworks and landscape mounding has been developed in response to stakeholder feedback.

7.26 A key function of the sequencing of landscape mounding works would be to provide mitigation as soon as practicable, for example, by early creation and planting of mounding on the perimeter of Main Construction works, in order to provide noise and visual mitigation for works taking place behind and to provide buffers to other sensitive environmental receptors. The main proposed reference points of the LEMP implementation are set out below, (see figures 7.1 to 7.5). The finer detail of these reference points will be developed further to respond to any feedback to this Stage Two Pre-Application Consultation. Additionally further detailed work on the construction programme and mitigation proposals will continue in consultation with technical stakeholders to achieve optimised solutions.

Reference point 1 – existing baseline

7.27 The existing baseline is presented in figure 7.1. This represents the Wylfa Newydd Development Area before the Site Preparation and Clearance (SPC) element of the Enabling Works is undertaken.

Figure 7.1 Reference Point 1 LEMP

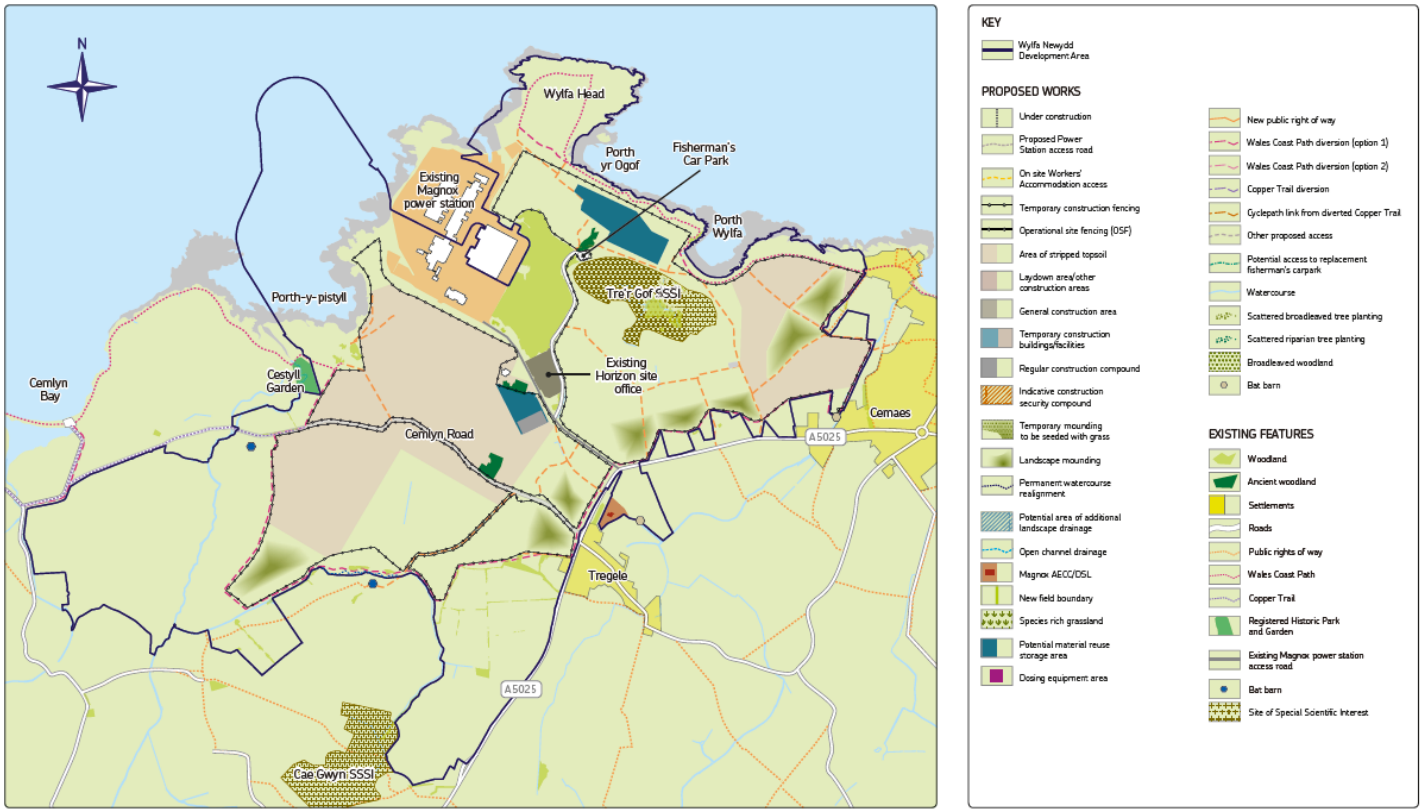


Reference point two: progression of SPC to DCO grant

7.28 Figure 7.2 presents an indicative snapshot of how the Wylfa Newydd Development Area would be expected to look once the first phase of SPC works were complete, prior to the grant of the DCO. This can be summarised as follows:

- the main ecological works would relate to addressing the presence of protected and notable species within the Wylfa Newydd Development Area. These would be carefully moved or relocated prior to Main Construction in accordance with legal and licence requirements and as agreed with NRW and other stakeholders. Tre'r Gof SSSI would be retained;
- erection of a temporary construction fence and clearance of vegetation within the fenced area. Existing vegetation and walls on the outer Wylfa Newydd Development Area boundary would, where possible, be retained and enhanced;
- realignment of a small stretch of the Afon Cafnan tributary with habitat restoration and enhancement such as tree planting and establishment of wet grassland using native species;
- temporary closure of Cemlyn Road, the access road to Fisherman's Car Park and footpaths to enable SPC works;
- minor temporary diversion of the Wales Coast Path to facilitate SPC works, temporary diversion to facilitate grant of nuclear site licence and provision made for the subsequent Wales Coast Path diversion to the perimeter of the Wylfa Newydd Development Area, following grant of DCO;
- internal field boundaries would be demolished and the stone stockpiled for future re-use in later phases of landscape restoration;
- settlement ponds and drainage channels would be formed to manage surface water run-off;
- above- and below-ground utilities would be removed; and
- topsoil stripped from selected areas and stored in low-level, temporary stockpiles, up to 2m high, in suitable locations for subsequent use in landscaping and mounding.

Figure 7.2 Reference Point 2 LEMP

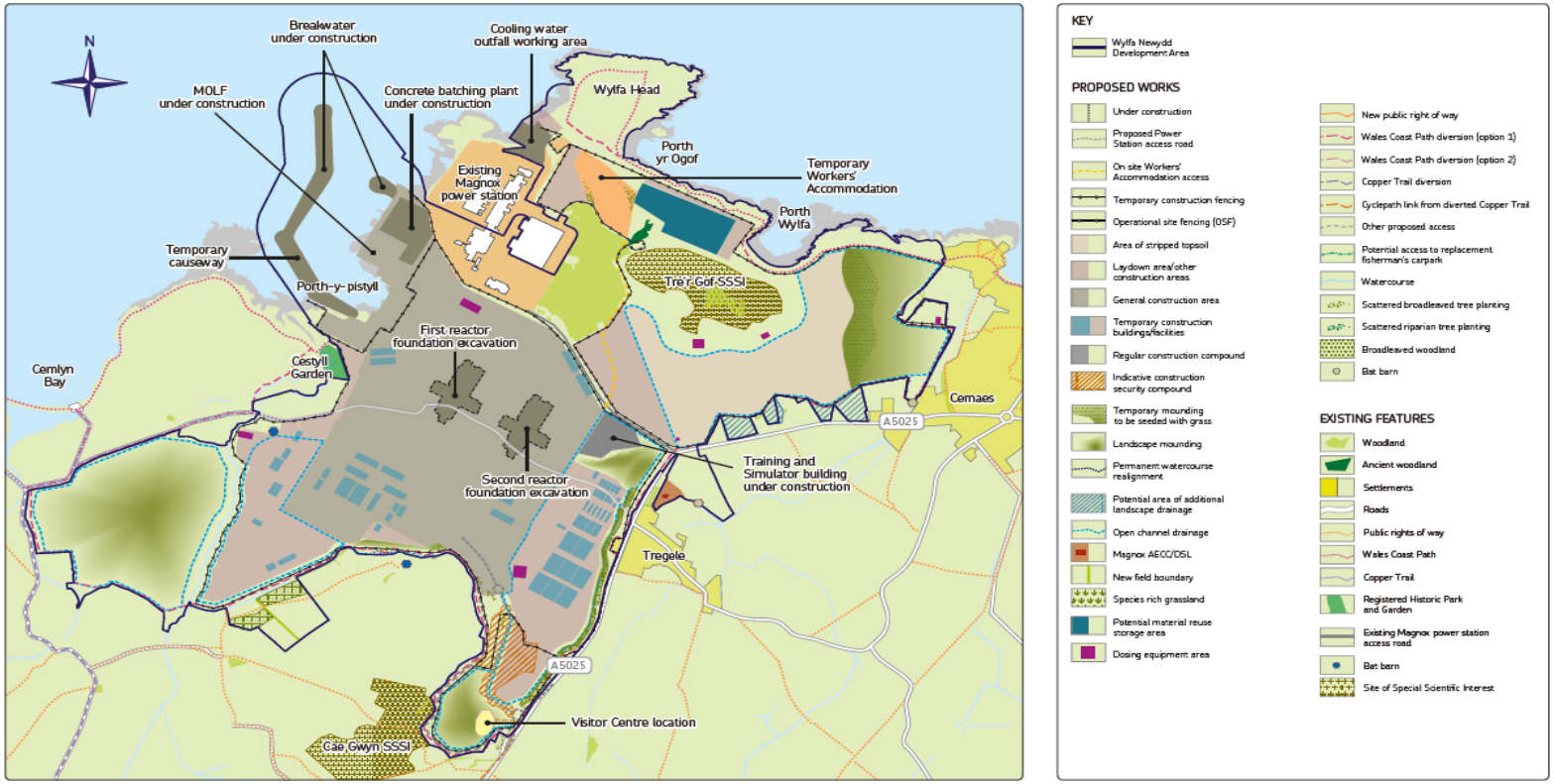


Reference point three: earthworks and completion of deep excavations for Unit 1

7.29 Following grant of the DCO, the level and intensity of construction activity would increase. Cemlyn Road and all footpaths inside the construction fence would be permanently closed. The access road to Fisherman's Car Park would also be closed to the public. Figure 7.3 presents a reference point for Main Construction activities, including the following:

- construction of mounds to provide screening from the visual, noise and vibration impacts during construction;
- construction of the breakwaters and MOLF at Porth-y-pistyll;
- levelling works and deep excavations to form working platforms and deep construction foundations;
- temporary fabrication and laydown areas, including offices, welfare facilities, car parking, cranes and temporary storage;
- construction of haul roads and access bridges to move excavated materials around the site;
- stripping of topsoil and permanent mound construction to the west of Cemaes, seeded with grass in preparation for the next phase of the LEMP;
- installation of haul route bridge spanning the Afon Cafnan;
- mound construction to the west of Afon Cafnan, shaped and seeded to reduce sediment run off ;
- mound construction between the Power Station Site eastern laydown area and the A5025, adjacent to Tregele. The mound adjoining the A5025 would be constructed in its final form and landscaped with tree and shrub planting to soften its visual appearance when seen from Tregele;
- construction compounds established in the vicinity of the proposed location of the replacement Magnox Alternative Emergency Control Centre to the east of the A5025 and within the footprint of the 400kV overhead power line corridor adjacent to the access road to the Existing Power Station;
- construction of On-site Temporary Workers' Accommodation in the north of the site;
- construction of the Power Station Access Road and its roundabout junction with the A5025 to the south of Tregele;
- potential construction of a viewing platform for members of the public to observe construction of the power station, which could later be used for a Visitor Centre; and
- construction of the Training and Simulator Building would begin.

Figure 7.3 Reference Point 3 LEMP

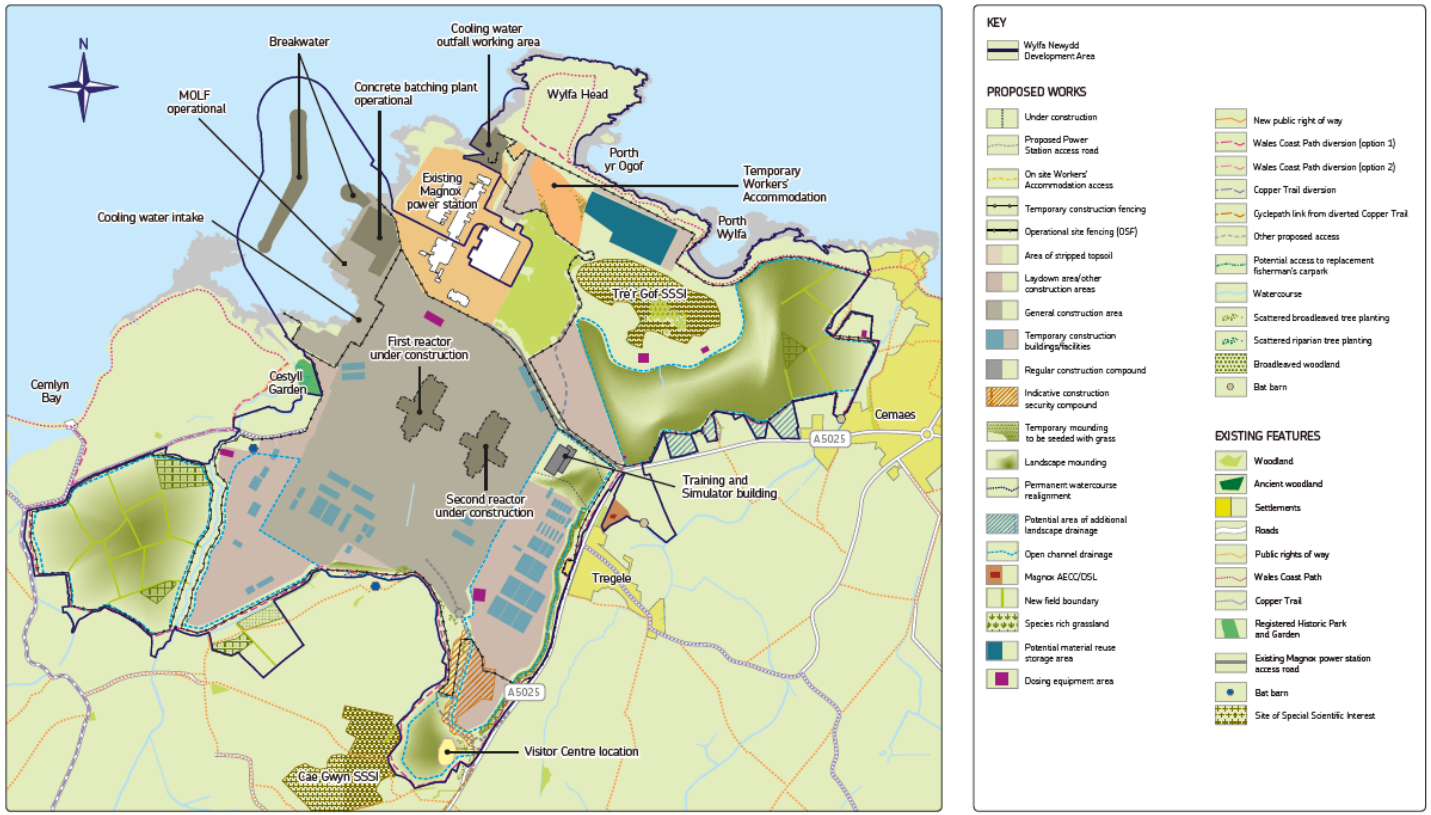


Reference point four: start of construction of Unit 2

7.30 At this point, there would be an increase in construction activity, with work progressing on both Units and an increased number of construction workers present on site. The deep excavation for Unit 2 may follow the deep excavation for Unit 1. This reference point would include the completion of the Unit 2 deep excavations, indicatively illustrated in figure 7.4, including:

- storage of excavated materials in temporary mounding, steeper than the final landform design, until material can be placed in its final design location to re-shape the east and west laydown platforms when vacated on completion of construction;
- installation of mobile, tower and large construction cranes (up to 110m AOD in height);
- concrete batching and placement;
- occupation of Temporary Workers' Accommodation by workers for essential construction roles and other key site staff;
- landscape mounding adjacent to Tre'r Gof SSSI, the Existing Power Station access road and Cemaes;
- landscaping of mound adjacent to Cemaes to progressively complete areas of landscaping and help mitigate community amenity;
- landscaping of mounding completed during Reference Point 3, to the west of Afon Cafnan;
- removal of the temporary causeway used to construct to the breakwater during reference point three;
- installation of the Cooling Water discharge tunnels and Cooling Water outfall works;
- majority of other buildings and structures within the Power Station Site would be under construction; and
- commissioning works would start at Unit 1, scheduled for continuation after reference point four.

Figure 7.4 Reference Point 4 LEMP



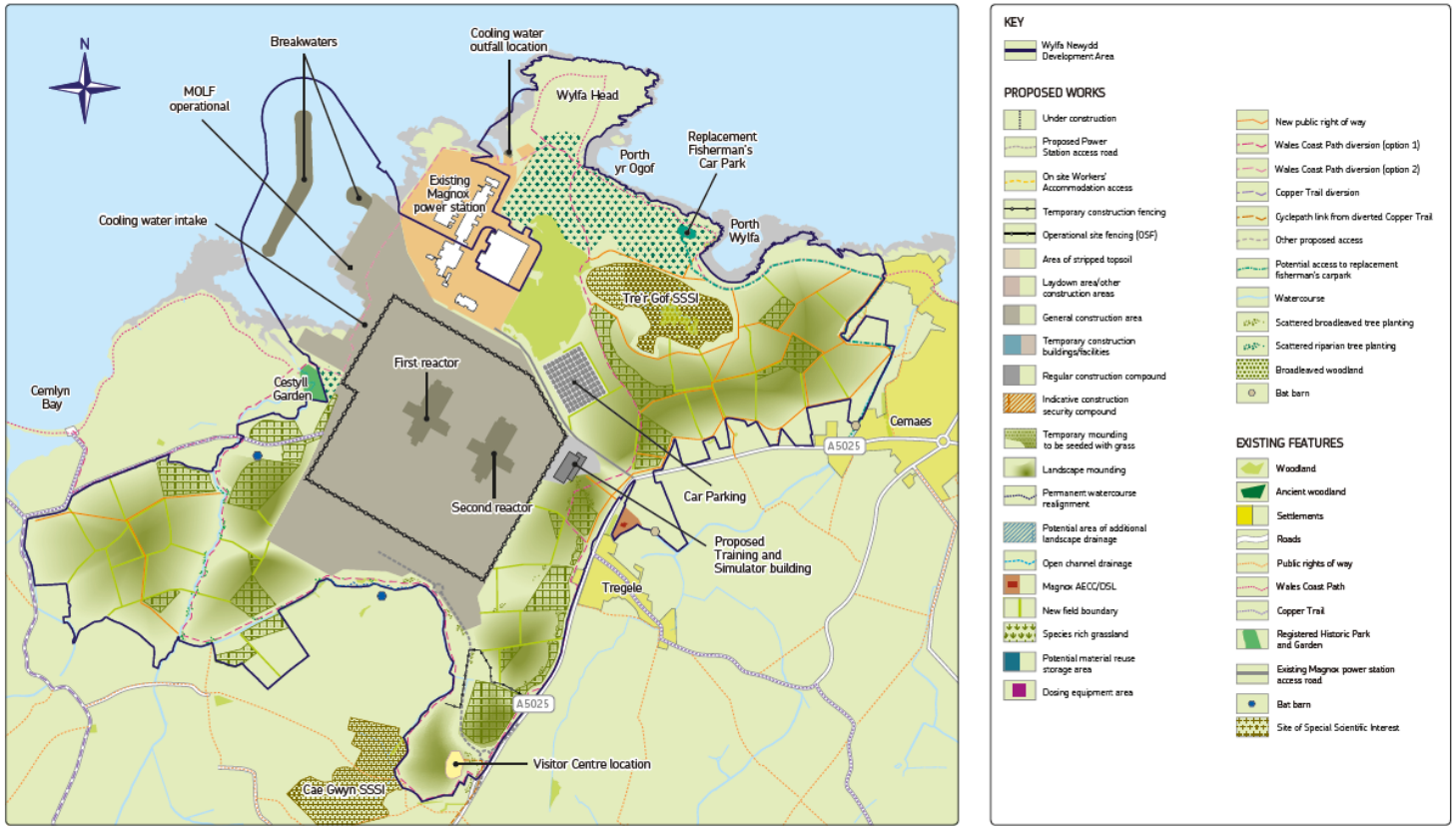
7.31 It is anticipated that the grid connection works by National Grid would be also be undertaken at this time, albeit that would be dependent on the progression of National Grid's own separate application for a DCO for its proposed works.

Reference point five: completion of construction for both Units

7.32 Figure 7.5 provides an indicative illustration of how the final landscaping proposals would appear on completion of construction and during early operation of the Power Station, including:

- removal of the construction compounds and plant, and the landscape reinstated. Re-use of the final stockpiles of topsoil ;
- remaining landscape mounding to the east of the Power Station and on the construction laydown areas to the south-east and south-west completed and landscaped;
- return of land not required for operation of the Power Station or other functions within the Wylfa Newydd Development Area outside the Power Station Site to agricultural use, most likely for grazing similar to current useage. New field boundaries created to reflect the existing character of the surrounding landscape. Suitable areas seeded and managed to create species rich grassland and managed for the benefit of the environment;
- further diversion of the Wales Coast Path to final route;
- new footpaths created across the restored landscape to provide linkages between Cemlyn Bay, the proposed Visitor Centre site, Wylfa Head, Porth yr Ogof and Porth Wylfa beach and Cemaes;
- a replacement for the existing Fisherman's Car Park to provide easy access to the beaches and Wylfa Head;
- new features to enhance visitor experience such as picnic tables, benches and interpretation boards;
- a car park, principally to accommodate outage workers, would be built to the east of the Power Station beneath the 400kV overhead power line;
- conversion and enhancement of selected sedimentation ponds and drainage channels to provide ecological habitats; and
- removal of sections of the perimeter construction fence, releasing substantial parts of the Wylfa Newydd Development Area for alternative uses including public access and recreation. The Power Station would be defined by its permanent operational and security fence, which would enclose a much smaller area than the temporary construction fence.

Figure 7.5 Reference Point 5 LEMP



Cross Sections

7.33 In order to assist in the understanding of our LEMP, and its relationship to existing properties, we have prepared some indicative cross sections of the proposed mounding from Tregele. We have chosen this location because it is closest to existing homes at this point.

Figure 7.6 Key for Cross Sections

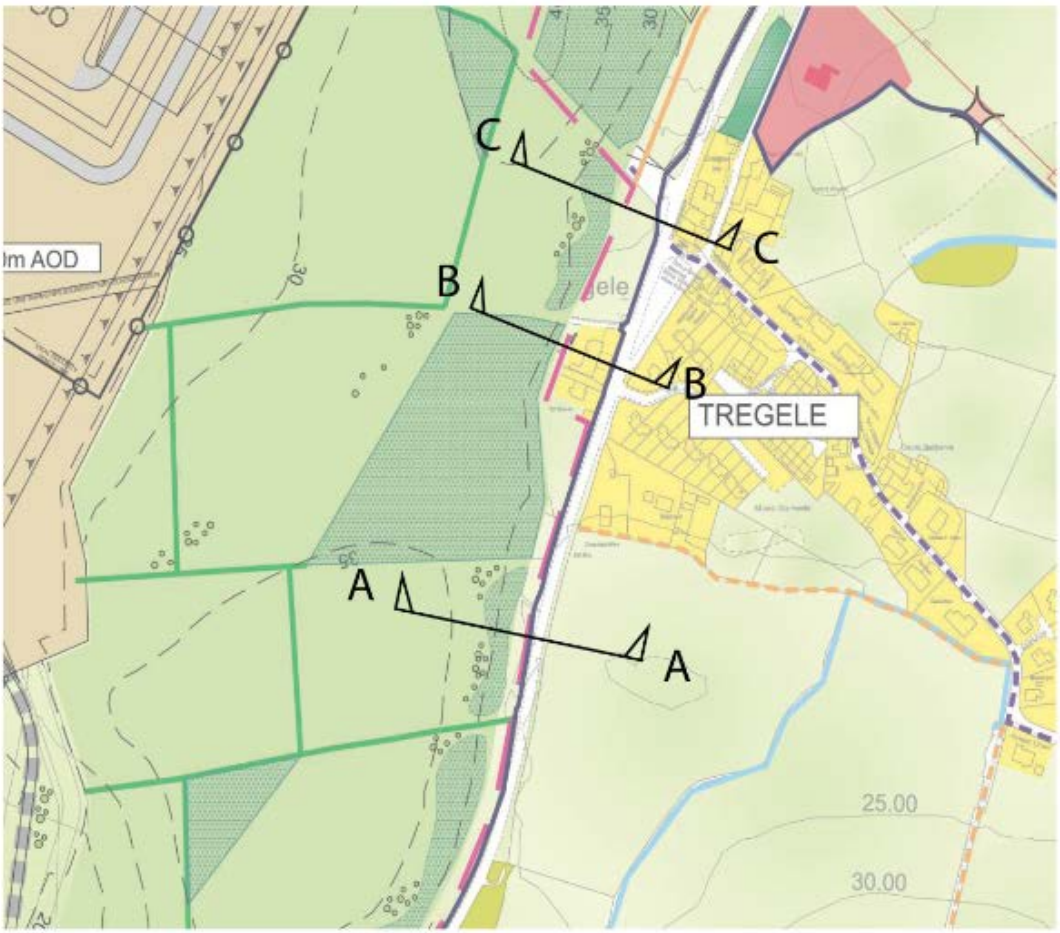


Figure 7.7 Indicative Cross Section AA of proposed mounding at Tregele

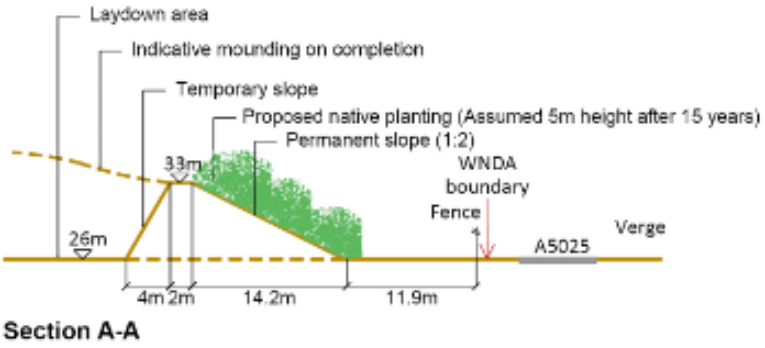


Figure 7.8 Indicative Cross Section BB of proposed mounding at Tregele

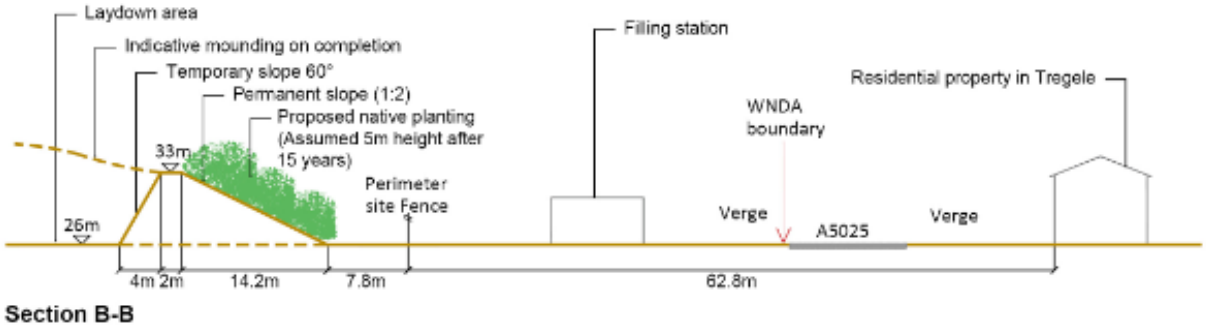
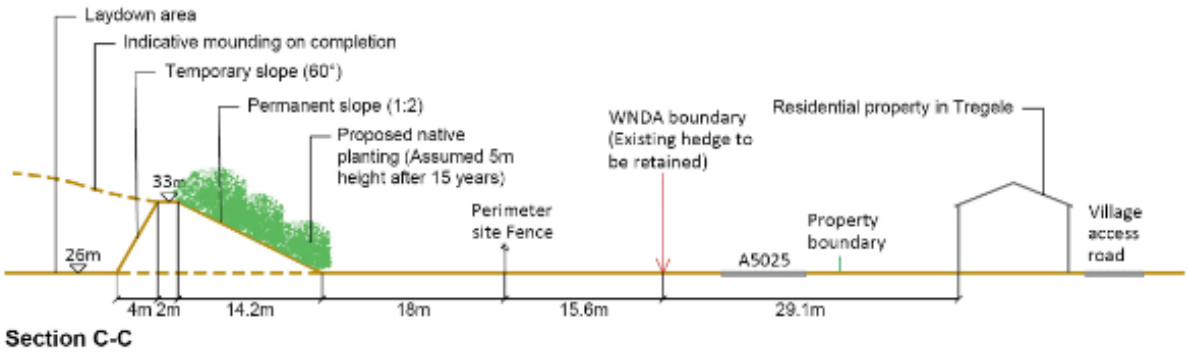


Figure 7.9 Indicative Cross Section CC of proposed mounding at Tregele



Question

7.34 In the Project Update January 2016 consultation, we taken on board feedback and progressed the design of the Landscape and Environmental Masterplan (LEMP). Examples of where we have made refinements to the LEMP include:

- the ground levels for the Power Station buildings, to reduce visual impacts to the areas south of the Power Station Site;
- the shape and height of mounding around the training and simulator building, to reduce visual impacts to the south of the Power Station Site;
- the on-site Temporary Workers' Accommodation to reflect the latest accommodation design and construction works in the area;
- areas of the Power Station Site adjacent to landowners to provide additional information on the effect of the LEMP.

Do you have any comments on the refinements that we have made to the LEMP, or these proposals in general?

Next steps

7.35 Following Stage Two Pre-Application Consultation feedback, the LEMP will be further refined and be subject to further safety, technical and security reviews to ensure the compatibility and deliverability of environmental proposals. The LEMP will also be developed in conjunction with and in response to further work on the architectural strategy for the Power Station Site.

7.36 In particular, further work will be undertaken to:

- develop the landscape design including selection of plant species, design of field boundaries and the detailed design of the mounds;
- develop the design of the MOLF and breakwaters, where possible having regard to seascape character and views from Cestyll Garden, whilst satisfying engineering requirements;

- ascertain whether the option for a Wales Coast Path diversion on the seaward side of the Existing Power Station and the proposed Power Station is feasible;
- develop the range and location of wildlife habitats to be provided and how these interconnect across the Wylfa Newydd Development Area, including provision for specific species;
- develop proposals for the potential return of land to agricultural use in conjunction with habitat creation measures; and
- develop the landscape design around the Visitor and Media Reception Centre.

8 Jobs, skills and business development

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8 Jobs, skills and business development

8.1 This chapter provides information about the types of jobs and investment that will be generated by the Wylfa Newydd Project, encompassing construction, operation and business development opportunities for the supply chain. It sets out the components of the Project in terms of the predicted workforce numbers, workforce profile and types of construction and operational activities likely to generate training, employment and business opportunities.

8.2 The chapter, covering both construction and operational phases, includes proposals for training and skills development and the measures that are set out in Horizon's emerging Jobs and Skills Strategy to support the delivery of relevant training courses within Anglesey and the wider north Wales region. The key elements of Horizon's Education Engagement Strategy are also set out, focusing on Horizon's work with children of school age and into further education. It then outlines the way in which Horizon intends to procure goods and services and work with potential suppliers to help people prepare to access suitable opportunities and for Horizon to make best use of the local supply chain, whilst helping establish solid foundations for future business development opportunities.

8.3 The emphasis of the chapter is to present the progress made on training and skills development, education and business development opportunities, in response to the key comments arising from the Stage One Pre-Application Consultation, the January 2016 Project Update consultation (January Project Update) and ongoing stakeholder engagement. The chapter also provides a summary of the principal effects of the Wylfa Newydd Project on current employment, skills, training and supply chain, drawn from the Preliminary Environmental Information, concluding with an outline of the benefits to Anglesey and the north Wales region as a result of actions and initiatives planned or underway as part of the Wylfa Newydd Project. It should therefore be read in conjunction with chapter 21 of this Main Consultation Document, which sets out key mitigation and benefits of the Project.

Wylfa Newydd Project workforce

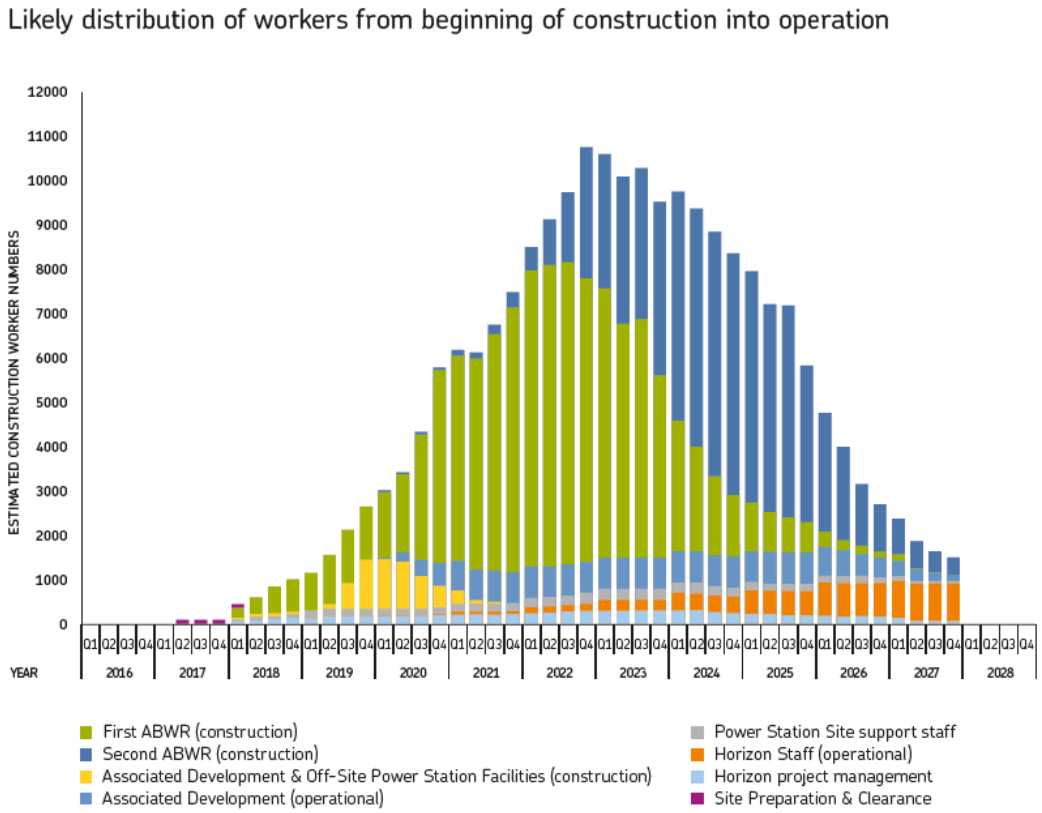
8.4 The construction workforce for the Wylfa Newydd Project has been estimated by quarter, based on 54 months between First Nuclear Concrete and Commercial Operation Date for Unit 1, with the Commercial Operation Date for Unit 2 following 24 months later. Figure 8.1 illustrates the projected construction and operational workforce for the totality of the Wylfa Newydd programme, differentiating between workers needed for the Wylfa Newydd Development Area and for the Off-Site Power Station Facilities and Associated Development. Table 8.1 summarises the breakdown of the peak construction and operational workforce for the Project.

Table 8.1 Breakdown of peak construction and operational workforce

Workforce type	Approximate number
Horizon Project Management	300
Horizon Operational Staff	150
Unit 1 Construction Workforce	6,370
Unit 2 Construction Workforce	2,950
Construction Support Staff	250
Associated Development Operational Workforce	700
Total	10,720

8.5 The figure encompasses the anticipated workers for Enabling Works, Main Construction, Commissioning and Operation of the Power Station and shows the breakdown of workers for the Enabling Works, Unit 1, Unit 2, site support workers and Horizon construction management and operational workforce. The figure also shows the construction and operational workforce for the Off-Site Power Station Facilities and the Associated Development.

Figure 8.1 Indicative projection of size of workforce



8.6 Figure 8.1 illustrates worker numbers gradually increasing from early 2016 to 2018, with numbers unlikely to go above 700 until the middle of 2018. By the end of 2018, there would be approximately 1,000 people at the Wylfa Newydd Development Area and Associated Development.

8.7 Throughout 2019, the number of construction workers at the Associated Development and Off-Site Power Station Facilities sites would expand to a peak of around 1,100 workers at the beginning of 2020. This would fall off steadily through the remainder of 2020 with all Associated Development and Off-Site Power Station Facilities construction activities completed by mid 2022.

8.8 The number of workers would rise rapidly from mid-2020 onwards towards the overall peak of 10,720 in 2022. The main activities at the Wylfa Newydd Development Area in this period would be related to the construction of Unit 1, peaking at around 6,400 workers towards the middle of 2022. At the same time, another part of the construction workforce, of around 3,000 workers, would be focused on Unit 2. When combined with Horizon project management and construction support staff, this leads to the combined peak workforce of around 10,000 construction workers in the latter half of 2022. The Associated Development operational workers are deployed as the Associated Developments become available, with steady growth from mid-2020, through to a sustained peak of around 700 workers by mid-2021. Combined construction workforce numbers are predicted to then remain at above 8,000 until early 2025.

8.9 Workforce numbers would then fall steadily through 2025 to 2027, falling below around 6,000 by the end of 2025, when the bulk of construction activities would be focused on the latter stages of building Unit 2. At this point, Unit 1 would have started operating. By the end of 2026, combined construction and operational workforce numbers would have fallen to around 3,000, with the remaining construction workforce focused on the commissioning of Unit 2 and the construction of the Intermediate Level Waste storage building (see chapter 5 for further information). Throughout 2027, construction worker numbers would decline considerably reaching less than 500 by the end of the year.

8.10 The operational workforce would build steadily through the construction programme reaching approximately 550 by the start of operations of Unit 1 at the end of 2025. The operational workforce would reach the full 850 complement during 2027 in preparation for commencement of operations of Unit 2 at the end of the year. This would likely be made up of 75% Horizon employees, and 25% from contractors. This number has been revised down since the Stage One Pre-Application Consultation, as identified in table 2.2 in chapter 2 of the Stage One Pre-Application Consultation document, through comparison with facilities around the UK and globally. Up to 1,000 extra temporary workers are anticipated to be needed for scheduled maintenance and re-fuelling outages each 18 months, for each Unit (where such works and outages on each Unit would be staggered).

8.11 Workforce numbers may vary from figure 8.1, although the peak is expected to be 10,720, and would be influenced by:

- the length of construction programme – shortening would likely increase peak numbers and may necessitate multiple shift working. A longer programme would decrease peak numbers and reduce multiple shift working; and

- the stagger between construction of Units 1 and 2. Figure 8.1 assumes 24 months but this could increase by up to 36 months if this were an investable proposal. This change would decrease the peak numbers indicated in the graph.

Construction workforce

8.12 Table 8.2 is an indication of main occupations and trades likely to be needed.

Table 8.1 Indicative breakdown of construction workforce requirements by skills and trades

Activity	Approximate date from	Approximate date to	Notes on occupations and trades
Enabling Works	Early 2016	Mid 2019	Planners; surveyors; ground investigation experts and geologists; marine and environmental experts; civil and built environment engineers, technicians and operatives; electrical (transmission) engineers; highways engineers; project managers and team; safety experts; security; support services (catering, drivers, etc.)
Site levelling and grading	Mid 2018	Mid 2021	As above, plus site supervisors, construction engineers, heavy plant technicians and operatives, maintenance staff.
Deep excavations	Mid 2019	Mid 2022	As above, plus significantly more civil engineering experts and heavy plant technicians and operatives, with related support services.
MOLF Construction	Mid 2018	Mid 2023	Civil and structural engineers; marine engineers; civil and construction engineers, technicians and operatives; safety experts; environmental experts.
Main Civil and Building Works	Last quarter 2019	Mid 2026	Main construction will involve all occupations and trades mentioned above with substantially more civil and building engineers, technicians and operatives. Specialist trades include steel fixing; form-makers; concrete engineers and technicians; welders, scaffolders. There will be a substantial increase in employment of staff Off-Site in support services (drivers, security, catering and accommodation).
Mechanical and Electrical Works	Early 2020	End 2026	Mechanical and electrical works will involve more mechanical and electrical engineers and technicians. It will also involve main and ancillary plant erection and in-situ

Activity	Approximate date from	Approximate date to	Notes on occupations and trades
			assembly, entailing substantial employment of welders, steel erectors, fitters and scaffolders.
Pre-operational testing	End 2023	End 2026	Commissioning engineers, plant operators. The majority of Horizon's operational workforce for Unit 1 would be working at the Power Station Site or in training at this time.
Start-up testing	Early 2025	End 2027 (Unit 2)	Commissioning engineers, plant operators. Horizon's operational workforce for Units would be substantially complete by this time.
Operation	Early 2026	Onwards (Unit 2 up to 24 months after Unit 1)	Horizon operational workforce. See table 8.2 for range of jobs and related skills involved.

Operational workforce

8.13 Horizon recruits all staff on merit. Horizon's experience to date demonstrates how there have been opportunities for well-qualified people to join the Wylfa Newydd Project from local (Anglesey and north Wales') communities.

8.14 The Power Station operational staffing structure is expected to comprise:

- **operations** – the teams that operate and control the Power Station;
- **maintenance** – the teams that maintain all systems and components on the Power Station Site;
- **engineering and technical support** (including chemistry, radiation protection, nuclear engineering and physics) – the teams that provide technical advice, assistance and direction of all systems on the Power Station Site;
- **business support** – administrative, financial and other business support to all staff at the Power Station Site;
- **facilities** – including, but not limited to, catering, cleaning (office and plant), grounds keeping, painting, lagging and scaffolding;
- **security** – responsible for the security of the Power Station Site; and
- **training** – responsible for providing training to the operational workforce.

8.15 Table 8.3 provides an indication of main occupations and trades during the operation of the Power Station, reflecting the staffing structure developed since the Stage One Pre-Application Consultation.

Table 8.2 Indicative breakdown of operational workforce requirements by skills and trades

Job area	Nature of work activity	Notes
Management	Leading and managing business units, operations shifts and teams; providing expert knowledge and guidance.	Typically requires a substantial amount of work experience, gained at various levels in the nuclear industry. Some jobs and functions will require more than 10 years' experience.
Operations – approximately 25% of operational workforce	Operating the reactors, turbines and ancillary plant.	Control Room Operators (CROs) typically have a degree in a relevant discipline (although this may be waived in certain circumstances) and will undertake rigorous training that may last up to two years. Senior CROs will also have substantial operating experience. Field Operators are technicians who may have progressed to this position via a level 3 or 4[1] technical apprenticeship. Graduates may also become Field Operators.
Maintenance – approximately 25% of operational workforce	Testing and maintaining plant equipment and systems.	Maintenance team personnel typically have engineering qualifications, which may range from a degree through to an apprenticeship. Engineering qualification disciplines will include mechanical, electrical, and control and instrumentation.
Engineering and technical support – approximately 25% of operational workforce	A wide range of jobs, which includes engineers in a range of disciplines, systems and computing engineers, and scientific specialists (including physics and chemistry). Also includes technician jobs in specialisms such as radiation protection.	A wide range of technical and scientific qualifications apply, from higher level degrees through to apprenticeships and levels 3 (for technicians). Engineering qualification disciplines will include mechanical, electrical, and control and instrumentation.
Business support – approximately 8% of operational workforce	A wide range of jobs in areas such as IT, Human resources and Finance.	A wide range of academic and professional or vocational qualifications apply.
Facilities – approximately 2% of operational workforce	Management and maintenance of the facilities**,** including, but not limited to, catering, cleaning (office and	A range of vocational qualifications, with some jobs being relatively low-skilled.

[1] Level 3 and 4 refer to the generally accepted level of qualifications for apprentices (craftspeople) and higher apprentices (engineering technicians).

Job area	Nature of work activity	Notes
	plant), grounds keeping, painting, lagging and scaffolding.	
Security – approximately 10% of operational workforce	Management of the physical, personnel and technical security of the Power Station Site.	A range of appropriate professional or vocational qualifications apply.
Training – approximately 7% of operational workforce	Training and qualifying all plant staff.	A wide range of academic and professional or vocational qualifications apply. Technical training managers and trainers will typically have substantial knowledge and experience of working in the nuclear industry and familiarity with nuclear technologies and systems.

8.16 Nuclear power stations are intended to remain at full power throughout their operating cycle. Operations staff would work on a shift system covering 24 hours per day, seven days per week and their schedule would usually include a week for ongoing training and requalification, delivered at Horizon training facilities, including the proposed Horizon Training and Simulator building (see chapter 6 of this report).

8.17 The rest of the operational workforce would work office hours, typically starting their day between 0700 and 0900, finishing between 1500 and 1700.

8.18 Each reactor at the Power Station would operate for a period of time known as a fuel cycle, before they were shut down for planned re-fuelling and periodic maintenance, tests and inspections – called an outage. Horizon expects the fuel cycle to be 18 months with outages lasting about a month. Outages are likely to be staggered so that one reactor would continue to generate power at all times.

8.19 During outages, depending on the type of maintenance activities, up to 1,000 extra temporary workers would be employed. The specialist nature of some outage activities usually requires additional skills to be deployed to complement the operational workforce or regional supply chain. Outage staffing tends to draw on a combination of regional and UK workforces, and roles and skills include:

- Original Equipment Manufacturer (OEM) engineers and maintenance technicians;
- specialist maintenance crews;
- trained ABWR refuellers;
- fitters;
- extra laggers;
- extra scaffolders;
- extra administrative staff;
- extra catering staff;

- extra cleaning and grounds keeping staff; and
- extra drivers.

Response to consultation feedback

8.20 As part of the Stage One Pre-Application Consultation and the January Project Update consultation, comments were received and have been taken into account in the ongoing development of the strategies described in this chapter.

8.21 The main themes of the comments received from members of the public, statutory consultees and other organisations, in response to both the Stage One Pre-Application Consultation and the January Project Update consultation, are outlined below. The consultation feedback and ongoing stakeholder and public engagement has been integral to the development of the strategies for jobs and skills, education engagement, and supply chain opportunities which are set out in brief in this chapter. In particular, Horizon has worked closely with the IACC, Gwynedd Council, Welsh Government, Grŵp Llandrillo Menai, Coleg Menai, Bangor University, Energy Island Partnership (EIP) and North Wales Economic Ambition Board (NWEAB). This ongoing engagement has ensured that the strategies reflect the key objectives of securing the right education, training and skills for local people to engage in the Wylfa Newydd Project, and to energise the supply chain for local and regional business opportunities. Further detail on the responses we have received to consultation can be found in the Consultation Summary Report.

Employment

- The IACC requested further baseline information on the labour market, housing and public services and recommended that Horizon should make commitments (targets) regarding local employment obligations; local labour plans; quota of local employment; purchasing of local materials; liaison with the local Trading Standards Service to obtain details of certified traders, all underpinned by a need to support the Welsh language. This Main Consultation Document and its accompanying PEI Report provide Horizon's latest position on these factors;
- Welsh Government and Mechell and Tref Alaw Community Councils supported the significant number of new jobs, both during the construction period and indirectly through supply chains, providing the opportunity to improve the quality of jobs available in the region that would be provided by the Wylfa Newydd Project;
- Gwynedd Council was concerned that demand for construction workforce would drive up demand in the local construction industry, affecting recruitment and retention of the local construction market, leading to a rise in costs and less availability for other building projects;
- the Welsh Ambulance Services NHS Trust indicated displacement within the local Anglesey workforce due to demand for employees at the Project, with potential to offer higher wages than local employers, potentially resulting in an increase in housing costs and the cost of living for local employees; concerns from the North Wales Fire and Rescue Service and the Welsh Ambulance Services NHS Trust about the ability to cope with the influx of population to the island as it relates to their resourcing, and the Anglesey Economic Regeneration Partnership noted impact on smaller companies to deal with staffing of essential services in the area, finding and recruiting staff,

retaining staff and the redeployment of skilled workforce after construction has completed (suggested by Llanbadrig Community Council);

- Gwynedd Council and Tref Alaw Community Council support employment opportunities for local people as a priority, including priority to Anglesey's high-skilled nuclear labour pool and those working/who worked on Wylfa A (Magnox) and Trawsfynydd. The provision of varied job opportunities across all sectors and skill levels in combination with long-term, high-quality jobs that offer a legacy (especially to young people on Anglesey, local schools and colleges), would provide for economic stability on Anglesey;
- general consensus from members of the public that the Project would bring a boost for jobs, local businesses and the economy on Anglesey, bringing opportunities for young people and families, but that this needed to be supported by training and skills development for local people;
- strong opinions expressed that the local employment aspiration of 25% of the construction workforce being home workers would be too low; and
- concerns regarding the effect of an influx of workers on the Welsh language, culture, community services and school education, noting that training for Welsh language for workers on-site should be considered by Horizon;

Skills and training

- Welsh Government, the IACC and Conwy County Borough Council suggested partnership working with appropriate agencies to further develop the Jobs and Skills Strategy and Supply Chain Charter. The Jobs and Skills Strategy and relevant training programs need to produce a legacy benefit, which could be the retention of a skilled workforce;
- early contractor involvement would allow for better understanding of existing skills and necessary training/up-skilling which could inform Horizon's training programs;
- Llanfairpwll Community Council suggested a training centre be built on Anglesey as part of the Project, which could then train other staff for new nuclear build projects across the UK;
- The IACC, Gwynedd Council and Conwy County Borough Council recommended that Horizon work with local schools and colleges to prepare young people for a job on the Project and continue the facilitation of education programmes with Coleg Menai and Bangor University, enhanced by local training professionals, such as an ABWR training element/centre of excellence developed for a nuclear skills programme at Coleg Menai;
- emphasis on engagement of those out of work, under skilled or long-term unemployed to ensure that they can capitalise on future employment opportunities of the Project. Comments suggested that Horizon should work with Construction Skills Training Centre (CSTC) training and test centre on Anglesey, including Jobcentre Plus, Careers Wales and local companies to maximise training resources within North Wales. North Wales Fire and Rescue Service suggested employment opportunities to be made available for those 'Not in Employment, Education or Training' (NEET) through measures such as employability programmes;

- the Welsh language should be considered as a vocational skill and promoted by Horizon, through an established programme for workers and families to learn Welsh; and
- members of the public expressed support for education services, training, apprenticeships and graduate schemes to increase opportunities for local people to engage in the Project, while emphasising the need to protect and support the Welsh language;

Supply chain

- Holyhead Town Council, Mechell and Llanbadrig Community Councils, North Wales Fire and Rescue Service and Gwynedd Council welcomed the establishment of a Supply Chain Charter and Horizon's supply chain proposals, together with the IACC commenting that Horizon can influence local suppliers and businesses through the procurement process;
- suggestions for the Supply Chain Charter to include a procurement policy regarding jobs for local, regional and UK residents; contract terms; policy for supplying locally; maximising long-term diverse employment; wider impacts in Gwynedd (such as entertainment opportunities for the workforce in Bangor and Caernarfon); initiatives for workforce recruitment and training, supply chain, community and education; coalition of small local companies; and protecting the Welsh language and culture;
- Tref Alaw Community Council, Mechell Community Council, North Wales Fire and Rescue Service, Holyhead Town Council, Amlwch Town Council and Conwy County Borough Council supported the principle of using local (and regional) suppliers and note that Horizon should make this a priority, maximising use of the local supply chain;
- Anglesey Tourism Association indicated that the local supply chain was insufficient to meet Project needs;
- several statutory consultees including Mechell Community Council suggested that Horizon should support, train and offer opportunities to local businesses and suppliers, to prevent a potential increase in local unemployment following the construction stage;
- Gwynedd Council and the IACC suggested that Horizon's contractors support local businesses and suppliers, and to encourage indirect services such as catering and accommodation, to employ the young, unemployed and those with few skills to boost local communities;
- Llanbadrig Community Council advised that local businesses should continue to be the major employers on Anglesey after construction of the Project;
- suggestions that the current framework precludes smaller companies from entering the market and participate in the supply chain, Mechell Community Council requested that Horizon's procurement policies favour local businesses and suppliers regardless of the potential for increased costs;
- public responses focussed on the need to prioritise the use of local suppliers particularly and local service-oriented businesses, especially with regard to tendering. This dovetailed into general support for Horizon's supply chain proposals;

- it was agreed across many of the responses that early involvement of contractors should be undertaken so that they can train and upskill accordingly to ready themselves and their workers for the timescales required of the Wylfa Newydd Project;
- suggestions were made regarding the Supply Chain Charter noting that it must:
  - establish procurement policy for jobs, particularly for local, regional and UK residents; contract terms must require local content; must identify requirements for main suppliers/contractors and subcontractors;
  - contain a long-term, active policy for supplying locally;
  - maximise long-term, diverse employment opportunities;
  - consider the wider impacts in Gwynedd (entertainment opportunities for the workforce in Bangor and Caernarfon);
  - include initiatives for workforce recruitment and training, supply chain, community and education that are clearly articulated;
  - promote the coalition of multiple, small, local companies to increase their buying power and ability to supply services; and
  - protect the Welsh language and culture
- members of the public stressed that local businesses should be given priority in supply chain opportunities, using existing businesses where possible and supporting new business ventures, such as cooperative working; and
- investment in small business and office units was encouraged, which could be a permanent legacy of the Project.

Main areas of change

8.22 The consultation responses and ongoing engagement with the local and regional business communities have influenced the development of education engagement activities and outreach programmes, initiatives for skills development and training, and encouraging businesses to be ready for the supply chain requirements and procurement opportunities. In addition there is very specific Welsh language mitigation work ongoing and this is provided in the Welsh Language Impact Assessment Interim Report that is part of the consultation material for this Stage Two Pre-Application Consultation. The main areas of change are outlined below and set out further in the strategy sections that follow:

- clarity on the measures proposed for investment in education, training and skills development, focusing on existing regional training providers and new provision linked to Coleg Menai as a complement to Horizon's bespoke training programmes. This includes a major new funding investment by Horizon to Coleg Menai;
- development of Horizon aspirations and expectations in respect of investment in training and skills development to be delivered through Menter Newydd and the supply chain, working with key stakeholders including the NWEAB and Welsh Government. Further information on such investment is given later in this chapter, and the role of Menter Newydd as the delivery partner for the Wylfa Newydd Project is given in chapter 1 of this document;

- progression and cementing of the relationships established between Horizon, Coleg Menai and Bangor University, resulting in increased confidence in the provision of education and training measures that can be delivered in partnership and targeted particularly at Anglesey residents and the wider north Wales region;
- influences from a combination of specialist advice procured by Horizon and benchmarking exercises with data from major construction organisations and projects to improve understanding of industry norms and confidence levels in Horizon's expectations for delivery through Menter Newydd and the procurement approach; and
- further utilisation of the local supply chain in ongoing site works. Examples are provided in the 'Supply Chain successes' section of this chapter and include a contract for Ground Investigation works where 15 local and regional companies were employed, and a further 10 local companies engaged in supporting archaeological investigations within the Power Station Site.

Definition of geographic areas

8.23 The proposals and measures set out in this chapter include differing approaches depending on proximity to the Wylfa Newydd Development Area. Figure 8.2 shows how Horizon describes geographies regarding the employment and supply chain.

Figure 8.2 Definition of geographic areas

Draft Jobs and Skills Strategy

8.24 Horizon has developed a draft Jobs and Skills Strategy for the Wylfa Newydd Project, which provides information on the recruitment, employment and training of workers for the pre-construction, main construction, commissioning and operational phases of the Project.

8.25 There is a clear distinction in the draft Jobs and Skills Strategy that Horizon is responsible for the training of people for the operational workforce and the Horizon project team itself. The contractors to be appointed for the main construction stage (known as the Tier 2 contractors) and their supply chain will be responsible for the employment and training of their own directly employed construction workforce personnel.

8.26 All staff across the Project will be recruited on the basis of selecting the most suitable candidate for each role. This strategic approach to recruitment and training will deliver the right number of workers to meet construction and operational needs. It also gives local people the opportunity to gain the skills and demonstrate the behaviours sought to become part of the workforce.

Key elements and guiding principles

8.27 The key elements and principles that underpin the Jobs and Skills Strategy are to:

- invest in the skills pipeline by sharing information about jobs, engaging with education and supporting education and training sectors in Anglesey and across north Wales;
- design and deliver training programmes appropriate to each phase and align with longer-term national and local economic objectives;
- focus on delivering long term employment opportunities for construction phases;
- use knowledge from ABWR reactor technology experts globally to inform design, construction and operation, and bring legacy benefit through technology and skills transfer, and
- provide ongoing recruitment and training once operational to create a pipeline of workers.

8.28 Horizon, Menter Newydd (the Delivery Team) and other strategic partners, will take great care to ensure all workers' qualifications and experience are gauged, recorded and monitored while employed on the Wylfa Newydd Project, including during construction, commissioning and operation. For the operational workforce, Horizon will commit to delivering continuous professional development.

Engagement

8.29 From engineers to operational staff, Horizon's recruitment policy is based on equal opportunities and individual merit, to select people with the right skills and talent to fill the new power station positions and operate to the highest industry standards.

8.30 It is also recognised that candidates for specialist posts for the nuclear energy business tend to be dispersed globally, to reflect the international nature of the industry.

8.31 Horizon's draft Jobs and Skills Strategy focuses on developing activities and opportunities in north Wales to ensure that local applicants have information about

training that could lead to employment to support each aspect of the Wyfla Newydd Project, such as within the Supply Chain, including the construction workforce, or a career with Horizon itself including the operational roles at the Power Station.

8.32 The draft Jobs and Skills Strategy emphasises training and employment opportunities linked with existing training providers and Horizon's strategic relationship with Grŵp Llandrillo Menai. Their catchment area (figure 8.3) broadly follows Horizon's definition of the north Wales region (see figure 8.2) and this is the main geographic focus of the measures in the draft Strategy.

Figure 8.3 Catchment area for Grŵp Llandrillo Menai

Used with permission from Grŵp Llandrillo Menai

8.33 The development of the draft Jobs and Skills Strategy has been informed by Horizon's relationships with Grŵp Llandrillo Menai (particularly Coleg Menai), Bangor University and other training providers on Anglesey. Horizon's proposals for ongoing engagement will establish and sustain the jobs and skills pipeline for the lifetime of the Wylfa Newydd Project.

Engaging with the future workforce

8.34 Horizon, supported as appropriate by Menter Newydd and its wider supply chain, will engage with potential and future construction and operational workers through:

- education engagement activities (with schools);

- engagement with Further Education and Higher Education;
- provision of sponsorships in relevant academic disciplines;
- a systematic approach to attraction and recruitment;
- engagement with careers and employment agencies in north Wales and further afield (described below):
  - engagement with local and regional business at events, forums and third party advocates; and
  - wider activities which raise the profile and public understanding of the nuclear industry across the UK and internationally.

Education Engagement Strategy

8.35 Horizon's Education Engagement Strategy complements the draft Jobs and Skills Strategy, developed with input from IACC officers and educational stakeholders representing Anglesey and north Wales. Horizon's Education Programme Coordinator, who is based in north Wales, and Horizon's Corporate Sustainability Manager are implementing this Education Engagement Strategy. The schools engagement and the training aspects of the engagement proposals are described later in this chapter.

8.36 Horizon has signed Memoranda of Understanding (MoU) with Grŵp Llandrillo Menai (particularly Coleg Menai) and Bangor University, which allow collaboration in areas including student and graduate employability, promoting science, technology, engineering and mathematics (STEM) subjects, sponsorships and sponsored research.

8.37 Some examples of the excellent work currently underway with Grŵp Llandrillo Menai include:

- help and support towards the construction of a new Engineering Centre at Coleg Menai, Llangefni. This involves monetary and consulting assistance;
- educating and upskilling lecturers at the Grŵp through presentations, lectures and invites to Horizon training courses;
- substantial donations of tools from Hitachi Power Tools to the Grŵp; (to be announced);
- launch of our apprentice programme (details are provided later in this chapter);
- continuing support of Cwmni Prentis Menai; and
- facilitation and continuing assistance with Hitachi Construction Machinery.

Construction workforce recruitment and training

8.38 Horizon analysed existing employment at a range of geographic scales as part of the socio-economic analysis contained in the PEI Report (see chapter B1). Horizon estimates that around 2,700 members of the construction workforce will be drawn from the key socio-economic study area (KSA) defined for the socio-economic aspects of the EIA (see figure 8.2), equating to approximately a quarter of the peak construction workforce; further details on this are given in chapter B1 of the PEI Report. Analysis of skills and qualifications suggests up to 40% of this number (1,080) could be specialists or employed in trades directly related to the Main Construction activities. The remaining number (1,620) would be engaged in work supporting the construction workforce in a

wide variety of roles. In addition to this, during peak construction, there will be operational and facilities management workers employed on the Project, most of whom will be recruited from the local population.

8.39 People with nuclear and construction skills from the wider north Wales region may seek work on the Wylfa Newydd Project, living in temporary housing nearby during shift cycles (see chapter 9). Based on consultation and engagement activities, Horizon expects to recruit a substantial number of the Wylfa Newydd Project site office team and construction workforce from the north Wales region.

8.40 Workforces for the construction phases and activities shown in table 8.2 will be recruited via:

- direct employees of main contractors employed for construction;
- local and north Wales construction worker recruitment dedicated to the Wylfa Newydd Project, and described later in this section;
- national and regional recruitment – typically Job Centre Plus network and contractor networks;
- specialist staff needed to undertake one-off specialist activities. These are generally mobile and international and tend to come from the UK or global workforce; and
- temporary staff, for short term requirements, who are also likely to be part of a mobile UK or global network.

8.41 Any potential displacement effects of workers moving from established local businesses into roles associated with the Wylfa Newydd Project would present an opportunity to draw new workers into existing businesses, widening the employment base in the area. Recruitment would be supported by Job Centre Plus and other bodies such as NWEAB and Welsh Government.

Construction skills and training for skilled trades

8.42 Many skilled trades required for the Project are also in demand in other major UK infrastructure construction projects, including steel fixers, form-workers and scaffolders. Training for these trades is lengthy and generally includes an apprenticeship of at least two years and substantial on-the-job experience. Horizon and its construction partners will assess the practicability of training people in skilled trades, which will inform the balance of trainee positions related to the Project.

8.43 Most construction workers involved in Wylfa Newydd Project would be mobile and engaged for a specific period during the phases requiring their specific skills. Afterwards, they would be likely to move onto another project, which may be outside the north Wales region. Very few directly-employed construction jobs are static. Supporting service-sector jobs and roles, which are generic to the whole of the Enabling Works and Main Construction stages, are more likely to be based in north Wales.

8.44 Notwithstanding the mobile nature of the construction workforce, Horizon will encourage Menter Newydd to provide opportunities for people across north Wales to train and learn a trade in relation to the Wylfa Newydd Project and to other Transformational Projects supported by the NWEAB. In some cases, this activity would be undertaken in recognition of the displacement effect that a construction project the scale of the Wylfa Newydd Project is likely to have (see PEI Report chapter B1). By providing training to

people in the region, including younger people, the overall numbers of people trained and employed in that trade or skills area would increase to the benefit of the construction industry more generally.

Apprenticeships and other structured training programmes

8.45 Horizon expects that its supply chain will generate apprenticeships in construction, built environment and related trades. Apprenticeships would typically be at levels 2 and 3, and learners could progress further. Given the Project scale and duration, apprenticeships and trainee positions will be available with the supply chain and with Horizon throughout the construction phase, and subsequently as part of the skills pipeline for the operational Power Station.

8.46 Horizon expects that by the time the first unit is operating, around 700 apprentices will have been taken on for Wylfa Newydd, principally for construction and related trades, including civil and other engineering disciplines. These numbers are across Horizon and the totality of its supply chain, with Horizon employing the operational, as opposed to construction, workforce. The first Horizon apprentices, who are all from Anglesey, Gwynedd and Conwy, started earlier in 2016 and supply chain apprenticeships are expected to start in late 2016.

8.47 Although Welsh Government funding for apprenticeships is limited to 16 to 25-year-olds, Horizon expects a high number of trainees to be adult and mature learners.

Employment and Skills Brokerage

8.48 Horizon plans to establish an employment brokerage, operated on its behalf by the Department of Work and Pensions through Job Centre Plus working with the NWEAB. Key partners are also likely to include existing education and skills providers – especially of vocational training. It would be established soon after the appointment of the appropriate contractors for the associated construction activities, as they can identify employment requirements for Site Preparation and Clearance, other Enabling Works and Main Construction.

8.49 The employment brokerage would incorporate best practice from similar models used in other UK construction projects, including the comparable Hinkley Point C project in Somerset. It would match people in north Wales to sustainable employment relating to the Wylfa Newydd Project and with this remit. We are currently anticipating that this could include:

- an easily accessible point for employment opportunities for people living in north Wales;
- coordinating pre-employment training including suitable and pre-assessed unemployed people;
- working with contractors to provide apprenticeship and other structured-programme opportunities;
- helping to promote diversity in employment opportunities, with a work force that represents and is reflective of the local community; and
- maximising support from funding agencies, sector skills councils and related organisations, including assistance in filling job vacancies within existing local

businesses, potentially displaced by employment associated with the Wylfa Newydd Project.

8.50 The employment brokerage would also help Horizon identify and mitigate displacement issues linked to skills shortages, such as by recruiting trainees, which would boost worker availability and increase fully trained workers in specific trades.

Construction Skills and Employment Working Group

8.51 Horizon plans to establish a Construction Skills and Employment Working Group to direct and make decisions, and Horizon aims to involve representatives of the main stakeholder bodies:

- Careers Wales;
- IACC and Energy Island Partnership (EIP);
- NWEAB; and
- employment agencies and others who represent specific socio-economic groups.

Operational workforce recruitment and training

8.52 Horizon would be the principal employer for the permanent operational staff and the majority of employees would be in place for the commissioning of Unit 1. This workforce would probably be recruited from:

- the existing UK nuclear workforce, including Magnox Limited (the Existing Power Station at Wylfa and other sites such as Trawsfynydd);
- related industries and organisations, including Her Majesty's Armed Services;
- qualified graduates;
- qualified apprentices;
- qualified trainees from other schemes; and
- members of Horizon's existing staff wishing to transfer to the operational workforce.

8.53 Also, a small number of individuals would be recruited from the nuclear industry internationally, with operating knowledge of the ABWR plant based on their experience at similar plant elsewhere.

8.54 Opportunities for people from north Wales to enter the operational workforce exist in most categories above. Horizon is developing proposals in accordance with the draft Jobs and Skills Strategy to maximise accessibility to residents in the region, particularly:

- Horizon is talking with Magnox Limited about the transition of staff from north Wales sites to the Horizon workforce;
- staff recruited to the Wylfa Newydd Project site project management team, who are likely to already be resident in north Wales, may be able to transition to the operational workforce if they have the appropriate qualifications and experience;
- Horizon's graduate intake is likely to include individuals who have grown up in the north Wales region, recruited through the Horizon graduate programme. Some of these would be individuals with a Horizon university sponsorship;

- Horizon is recruiting engineering apprentices, particularly targeting residents of north Wales, with a first intake of 10 recruits in September 2016. Trained apprentices, many of whom will have gained further training and experience after their apprenticeship would also feed into Horizon's skills pipeline for the Power Station. The apprentice route is likely to be important for technician roles in the operations and maintenance workforce and as field operators in the plant. Technicians supporting specialist technical functions may also come through the apprenticeship programme;
- trainees from other schemes who are likely to access similar opportunities to Horizon apprentices; and
- secondees from other areas of the Horizon workforce who wish to take the opportunity to experience operations for a period of time.

8.55 To safely and securely operate and maintain the Power Station, all Horizon staff and contract partners would need to be suitably trained and experienced. Each member of the operational workforce must satisfy knowledge and experience entry requirements and pass required security vetting and medical checks.

8.56 Typically, engineers and scientists will be educated to degree level or equivalent in their respective field. Technicians require the equivalent of an apprenticeship or higher qualification and other roles would require more bespoke qualifications. Horizon intends to bring people into its operational workforce via established educational and vocational training programmes. This solid foundation of academic or practical training (or a combination of the two) would be the basis for further job-specific training and development with Horizon, a company committed to the long term professional development of its staff.

North Wales apprenticeships

8.57 In July 2014, Horizon signed a Memorandum of Understanding (MoU) with Grŵp Llandrillo Menai to support the future provision of skills and training programmes across Anglesey and north Wales, and announced a further £90,000 of funding for the successful Cwmni Prentis Menai apprenticeship scheme.

8.58 The agreement with Grŵp Llandrillo Menai, comprising Coleg Menai, Coleg Llandrillo and Coleg Meirion-Dwyfor, marked the beginning of a formal commitment between the Grŵp and Horizon to develop training programmes to equip the future Wylfa Newydd workforce with the skills required.

8.59 Under the new agreement, Horizon consults with Grŵp Llandrillo Menai on its training and skills requirements. This includes the development of joint skills training initiatives to provide development to the local and regional workforce. As outlined in the Education Engagement Strategy section below, the initiative also provides the platform for outreach programmes with primary and secondary schools across Anglesey, encouraging students to take up STEM subjects and access careers or training opportunities in the energy industry.

8.60 In June 2015, Horizon confirmed that students who complete the one-year Enhanced Learning Programme would have the opportunity to apply for a place on Horizon's Level 3 engineering apprenticeship scheme. The programme, which is delivered across north Wales by Grŵp Llandrillo Menai, builds on the existing support Horizon has given to Coleg Menai's Cwmni Prentis Menai training scheme over the past four years.

8.61 Officially launched in February 2016, the scheme will commence in September 2016, with an in-take of 10 engineering apprentices selected to join the scheme. The apprentices are from Anglesey, Gwynedd and Conwy, and were chosen following a competitive selection programme run by Horizon earlier in 2016. Launched in partnership with Coleg Menai, Horizon's Technical Apprenticeship Scheme is a three year programme which represents the start of Horizon's long term commitment to recruiting driven, talented young people to work on the Wylfa Newydd Project.

8.62 Horizon has recruited an Apprenticeships Schemes Manager based in north Wales, to develop the various apprenticeship schemes to train the future operational workforce as the Project moves forward, in collaboration with strategic training partners.

Horizon and Hitachi graduate programmes

8.63 Horizon introduced a formal graduate recruitment and development programme in January 2015. Lasting 21 months, graduates train in engineering, technical, scientific and business support disciplines. Graduates work at Horizon's premises in Gloucester, but in many cases will also spend time at the Wylfa Newydd Project site office as part of a structured placement rotation within the programme. In the future, Horizon expects to recruit graduates specifically for the Wylfa Newydd Project team and future operational workforce.

8.64 Horizon is also developing plans to launch a scheme to sponsor young people from the region wishing to study a relevant academic subject at a UK university. Undergraduates would be offered financial support and good employment prospects with Horizon (or its partners or north Wales supply chain) on graduation.

8.65 Our technology provider Hitachi-GE is offering internships to graduates, including the opportunity of a 3-month period of work experience attending their offices in Japan. These internships are already underway and graduates, including those from Anglesey and North Wales, have undertaken work experience in Japan.

Sponsorships in specific academic disciplines

8.66 As an element of its strategic relationship with Further and Higher Education in north Wales, Horizon plans to provide sponsorships for students who are studying, or planning to study, in specific disciplines relevant to the Project and future potential employment. Examples of sponsorships include:

- for study of STEM vocational subjects at Coleg Menai and other centres of further education; and
- for study of electronic and control engineering, such as the courses at Bangor University.

8.67 Sponsorships would be allocated jointly between the institution in question and include Horizon or Menter Newydd, as appropriate. It is expected that, for vocational (Further Education) sponsorships in particular, individuals living and studying in north Wales would benefit.

Horizon operational and Power Station Site-based training facilities

8.68 Once appointed, Horizon's operational staff would embark on a structured training programme so they become highly skilled and focus on the safe operation of the reactors and associated plant at the Wylfa Newydd Power Station. This structured training

programme would operate from bespoke training facilities on or near the Power Station Site. These would be combined in the Horizon Training building and include:

- a simulator suite big enough to accommodate full-scope ABWR simulators;
- a technical training facility with sufficient space and equipment to provide the venue for the bulk of the technical training needs of the permanent Horizon operations and maintenance workforce;
- other flexible training and meeting rooms; and
- office accommodation for training personnel.

8.69 The proposed location for the Horizon Training and Simulator building at the Power Station Site (see chapter 6 of this document) reflects the bespoke and specialist nature of the training that would be delivered at the venue, which offers little cross-over or synergy with other types of training associated with the Wylfa Newydd Project. Positioning the building on or near the main Power Station Site campus would also assist in securing the undisturbed operation necessary to allow trainers and learners to focus on the precise and complex procedures involved in the safe operation and maintenance of the Wylfa Newydd Power Station.

8.70 In respect of the training with a more transferable outcome, Horizon is currently analysing the areas that may have cross-over and synergy with a wider audience and the possibility of co-location of facilities. Horizon is working with partners and potential providers, including Coleg Menai, to explore this area further. The aim would be to deliver first class training in a way that would provide a lasting legacy for the north Wales region – further information is provided in the next sub-section.

Partner facilities

8.71 In addition to the new facilities that are described above, Horizon will continue to work with its key training partners to explore making use of existing facilities in north Wales. This use would be for specific purposes and would be subject to commercial agreements with respective partners. An example is the possible future use of parts of the existing Energy Skills centre at Coleg Menai's Llangefni site to provide a base and training venue for Horizon engineering apprentices in proposed new engineering facilities on site.

8.72 Horizon will also continue to discuss prospects for joint involvement (including possible joint investment) in the following:

- new facilities at Coleg Menai sites;
- potential for use or development of facilities at Bangor University; and
- opportunities in relation to the proposed North West Wales Science Park development.

Construction Skills Training Centre

8.73 It is anticipated that a Construction Skills Training Centre (CSTC) would be a key training facility for the Enabling Works and Main Construction workforces for the Wylfa Newydd Project. The CSTC would provide the venue for a variety of training including inductions, safety training, supervisory and management training, and specific technical courses.

8.74 The CSTC would need to be established close to but not on the Wylfa Newydd Development Area. Horizon is discussing opportunities for the CSTC to link with existing facilities operated at Coleg Menai's campus at Llangefni, notably the existing Construction (Built Environment) Training Centre, and the Heavy Plant Training facility and these discussions would influence where a CSTC might be located.

8.75 A key player in the establishment of the CSTC would be Menter Newydd. The finalisation of any proposals for development of the CSTC would need to follow further engagement with the Menter Newydd team, to better understand and plan for how such a facility could support key aspects of the Enabling Works and Main Construction activities.

Decommissioning workforce

8.76 The Wylfa Newydd Power Station is being designed for an operational lifetime of 60 years. Following the end of power generation, it would undergo a period of de-fuelling and decommissioning, as described in chapter 5 of this document. During decommissioning activities, there would be a requirement for maintenance and engineering personnel for several decades, albeit at lower staffing levels than during operation. Given the lengthy timescales before the decommissioning workforce would be required, the draft Jobs and Skills Strategy does not cover this aspect of the Wylfa Newydd Project.

Education Engagement Strategy

8.77 Horizon recognises the need to engage with school aged children because the Project timescales mean some of them could be in Horizon's future workforce. An Education Engagement Strategy has been developed in collaboration with the IACC, the Energy Island Partnership (EIP), Coleg Menai, Anglesey head teachers and education agencies, which seeks to:

- inspire young people to take STEM subjects at school and in their exam subject choices;
- engage young people, key stakeholders and the local community with a view to future employment opportunities with Horizon; and
- equip young people with key employability skills applicable to a range of job roles.

8.78 The Education Engagement Strategy has been informed by the findings of an audit of STEM provision on Anglesey (2014), funded by EIP, Reaching Wider, NDA, NWEAB and Careers Wales. It is designed to focus on schools, as a pipeline approach leading into the measures that are contained in Horizon's draft Jobs and Skills Strategy that, as described in the previous section, covers Higher and Further Education sectors, including apprenticeship programmes. In addition, the Education Engagement Strategy includes proposals for outreach engagement and identifies Horizon's proposed Visitor Centre as a potential opportunity to deliver a combination of formal classroom based teaching and informal learning – this is described later in this chapter.

Education Engagement Strategy for schools

8.79 Horizon's Education Engagement Strategy has a particular emphasis on engagement with schools on Anglesey and across north Wales. Horizon has already invested in schools engagement, for example through donations to support existing programmes, such as Reaching Wider's STEM Family Challenge; and the involvement of Horizon team

members in careers events, delivering talks and visual presentations to schools and supporting other organisations in education focus events such as the 'North Wales Big Bang' event and Grŵp Llandrillo Menai's Codi STEM events. The aim has been to raise awareness of Horizon in a general sense, as well as building the relationship with key partners and schools on Anglesey.

8.80 Horizon's Education Engagement Strategy sets out plans to increase our involvement in and funding of activities targeting schools on Anglesey, which will be implemented as the Project starts to gather greater momentum. This is already underway, led by the Education Programme Co-ordinator based at the Project site office, who has worked to identify potential opportunities and develop more enduring partnerships and activities. In the current financial year 2016-17, the main focus is on increasing awareness of the Project, the importance of STEM subjects and the choices children must make in school to access relevant career paths through Higher and Further Education. As a result, there are two overarching objectives for the Education Engagement Strategy:

- **supporting long term recruitment (mainly for commissioning and operations)** – Horizon will need well-educated and skilled individuals for the operational workforce, either as trainees, or as more experienced staff with strong educational backgrounds. The Project timeframes are likely to coincide with a general increase in demand for this type of worker. Horizon plans to engage with the education sector to raise the profile of STEM subjects and increase awareness of jobs and careers in specific industry sectors; and
- **enhancing regional stakeholder support** – Horizon is aware of expectations from local communities and key stakeholders. The Education Engagement Strategy proposes active engagement with education to create real opportunities for Horizon and Menter Newydd to solidify and build long term relationships and collaboration with the local community and stakeholders locally, regionally (NWEAB) and within Welsh Government.

8.81 Horizon will engage with all secondary and primary schools on Anglesey and selected other schools in the nearby north Wales mainland.

8.82 The engagement programme will be designed so children engage with Horizon at different stages in their education, which should reinforce awareness and interest in the Project and STEM subjects. This will be achieved by targeting each of the following activities at different times to different age groups:

- **outreach** – resources for teachers and Horizon employees to deliver education activities in schools with a focus on promoting interest in STEM subjects. The STEM Ambassador Programme Development is planned to be launched in autumn 2016. Activities would include online resources, self-led teacher packs and Horizon-led sessions in schools. For instance the Key Stage 2 Programme is being developed with support from Anglesey teachers and is focused on low carbon energy and will be launched in September 2016. A Work Insight Week was piloted in July 2016 with 11 students from Anglesey schools and Coleg Menai. Following feedback from the young people involved this programme will be developed to increase young people's access to this programme. The Education Engagement Strategy proposes a staged approach to developing outreach activities;

- **partnerships** – third parties (not for profits, Government-funded, charities and businesses) delivering education activities in partnership with Horizon. The Education Engagement Strategy advocates working with partners experienced in working with schools in areas of particular interest to Horizon which complement other established activities and programmes. Activities include a research project with Bangor University focused on Anglesey schools of varying age groups (Year 7, 9, 11 and 12) from September 2016 to March 2017, and funding Menter Môn to deliver a programme that supports development of employability skills, the significance of STEM in the history of Anglesey and the Welsh language. Horizon is particularly keen to form partnerships with organisations and projects that involve Horizon employees. Horizon have continued to work with and support Bangor University on its 'Profi Project' and 'Reaching Wider with the STEM Family Challenge Programme'; and
- **events** – attending educational events such as science festivals and local careers events. Events offer engagement opportunities with higher numbers of primary and secondary children as well as parents, teachers and stakeholders in the local community. Events also provide an opportunity to promote interest in STEM subjects and a chance to engage with pupils about the range of career opportunities related to Horizon's Wylfa Newydd Project. A schedule of events that Horizon has already committed to attend from September 2016 to spring 2017 is outlined in table 8.3 below, in addition, Horizon has committed to attend Career events at all the Anglesey Secondary Schools.

Table 8.3 Education Engagement events from 2016 to 2017

Event	School / Year Group	Dates
Big Bang event	Colwyn Bay	October 2016
SKILLS Cymru event	Secondary, Post 16	October 2016
STEM Family Challenge (KS3)	Anglesey Secondary schools – Key Stage 3	October and November 2016
Profi Programme	Secondary, Year 12	November 2016 (Launch)
STEM Family Challenge (KS3)	1 school per month	January to March 2017
Schools Careers events	Year 9, 11 and Post 16	January to March 2017
Profi Programme	Secondary, Year 12	January 2017 (Employer Week)
Profi Programme	Secondary, Year 12	February 2017 (Final)
Codi STEM event	Key Stage 3 (Conwy)	February 2017
Big Bang Cymru @ EESW	Key Stage 2, 3, 4 and Post 16	March 2017
Codi STEM Parent event	(Anglesey, North Gwynedd)	March 2017
Codi STEM event	Key Stage 3 (South Gwynedd)	June 2017

8.83 Horizon is exploring the potential of providing additional support in the form of initiatives such as offering scholarships to A-level and BTEC students; potential funding to support the Cwmni Prentis Menai apprenticeship scheme; and co-funding the Menter Môn project officer, this year focussed on local people who have had a significant impact on STEM. The colleges and universities in the region have provided equal support in terms of education and training, for instance Coleg Menai will be providing a module course in university readiness with an emphasis on nuclear energy, supported by Horizon; re-training in relevant skills for adults; drop-in construction courses to encourage an increased interest in engineering; and funding for research and development initiatives.

8.84 Bangor University runs the Profi Programme, a learning and mentoring programme for year 12 and post-16s from secondary schools in Anglesey and Gwynedd. For instance, the most recent Profi Challenge in early 2016 culminated in a Dragon's Den style event held at Pontio, Bangor University's Arts and Innovation Centre, where victory was claimed by students of Ysgol Tryfan who developed a project in response to a brief set by Menter Iaith Môn, challenging them to promote the use of the Welsh language socially amongst young people by using digital and/or social media. The students' idea was to create podcasts in Welsh aimed at young people. Horizon has provided financial support as well as employee time to the programme.

Question – jobs and skills opportunities

8.85 We have continued to develop our proposals around employment opportunities, skills training and supply chain engagement, particularly during the construction period. We have also recently appointed Menter Newydd, our partner who will help to deliver construction of the Wylfa Newydd Project.

Do you have any specific suggestions that we can consider to maximise uptake of these jobs and skills opportunities by local people?

Visitor and Media Reception Centre – educational resource and informal learning

8.86 The Wylfa Information Centre education programme was considered by stakeholders and the local community as an important facility to provide learning outside the normal classroom setting. Developing a similar Horizon offering would bring substantial community benefit. Because of this, Horizon's Education Engagement Strategy incorporates the concept of a new Visitor and Media Reception Centre becoming an education hub, where activities could be delivered by Horizon staff and also partner organisations. This proposal is based on the assumption that a Visitor Centre, with interactive exhibition, classrooms targeting primary school children and a multi-purpose area suitable for Further Education and Higher Education teaching would be developed for operation around 2019/2020.

At this stage, we have not yet carried out any detailed design on the Visitor and Media Reception Centre and anticipate that we could open this up to local architects. As part of this Stage Two Pre-Application Consultation we are therefore presenting our preferred option for the broad location of the Visitor and Media Reception Centre. Figure 8.4 below shows Horizon's preferred location for the Visitor and Media Reception Centre. If you have views on this, you can let us know by responding to our general question.

Figure 8.4 Preferred location for Visitor and Media Reception Centre

8.87 The teaching space in the Visitor and Media Reception Centre would provide Horizon with facilities to run dedicated 'out of classroom' programmes for primary aged children. It is envisaged that these would be led by Horizon Education Officers within the vicinity of the Power Station. It is proposed that the education hub would also have the capability to deliver secondary and Higher Education activities on request, using a multi-functional area. The interactive nature of the proposed exhibition at the Visitor and Media Reception Centre would provide opportunity for both the local community and tourist population to engage in informal learning on subjects linked to the Wylfa Newydd Project.

8.88 Depending on the timing of the Visitor and Media Reception Centre opening, it is proposed there is an interim increase in schools outreach activity to bridge any gap in provision of a dedicated facility. Such activities would predominantly, but not solely, be aimed at primary-aged children.

Wylfa Newydd supply chain opportunities

8.89 This section provides an update on Horizon's activities in raising awareness of the Wylfa Newydd Project and the business development opportunities it presents amongst the potential supply chain since the Stage One Pre-Application Consultation, with a particular focus on local (Anglesey) and regional (north Wales) businesses. It reiterates the platforms available for companies to make their interests in the Wylfa Newydd Project known to Horizon and provides an overview of the expectations Horizon has of its supply chain in terms of skills, experience, quality and competitiveness. The Supply Chain Charter for the Wylfa Newydd Project is provided, supported by details of aspects of procurement considered to be of interest to potential suppliers.

8.90 The appointment of Menter Newydd in May of this year, marked a change of phase in the development, and an escalation of construction planning. Over approximately the next three years, Horizon will work with Menter Newydd to finalise plans for the engineering, procurement and construction of on-site developments. As part of this process Horizon and Menter Newydd will significantly clarify a range of areas, building additional detail upon the information included in the documents provided for this Stage Two Pre-Application Consultation.

Our Goals

8.91 Horizon's principal goal is to deliver the Wylfa Newydd Project safely, on time and on budget. This is necessary to provide the UK with secure, affordable, low carbon electricity in support of UK and Welsh Government policy.

8.92 Horizon is committed to an aspiration of spending 60% of the Project value in the UK throughout the lifecycle of the project. Key factors in this ambition are:

- consideration of the appropriate maximisation and sustainable use of the local, regional and UK supply chain;
- a vision to be part of a public-private sector collaboration that acts as a catalyst for economic growth and prosperity for the local business community on the island of Anglesey and across north Wales; and
- to create direct and indirect opportunities for business to maintain and grow skills and employment opportunities.

Supply Chain strategy

8.93 Horizon recognises that the Supply Chain is a key element in delivering the Wylfa Newydd Project as well as in delivering the benefits of the Project locally. This includes the different phases of the Project from design, site preparation and clearance, manufacture, construction, commissioning, maintenance and operation and finally decommissioning.

8.94 At each of these phases different sections of the supply chain would be required to support the delivery of the Project, for example, the design and manufacture phase for

long lead items for nuclear safety components will be specialist manufacturers from the global supply chain, whereas the site preparation and clearance and construction phases will be more UK based organisations utilising local content.

8.95 Horizon will be a highly regulated organisation as a Nuclear Site Licensee and Environmental Permit holder, particularly with regards to ensuring that all statutory and regulatory requirements are met in terms of health and safety, nuclear safety, environment, quality, export controls and security. Our suppliers must meet these requirements that will be cascaded to them and they will also be required to meet our expectations in terms of meeting the Project delivery schedule and competitive pricing. Horizon is a private company and therefore is not subject to EU Procurement rules and directives, however Horizon is an ethical company that operates to the highest professional standards and therefore will behave in an open and transparent manner with its supply chain whilst securing their services and support.

8.96 Horizon is keen to promote UK and local opportunities throughout the supply chain from the Tier 1 contractors to all levels of the supply chain. This will include consideration of local suppliers where they have met Horizon's requirements as described earlier. To enable this Horizon has, through its Commercial Policy and Supply Chain Charter, established the principles, expectations and behaviours that are necessary for Horizon and the Supply Chain to interact together.

Supply Chain Charter

8.97 Horizon's Supply Chain Charter sets out the key principles, expectations and behaviours required to support construction and operation of the Project, as described below:

- key principles:
  - to be open and transparent;
  - supply chain development;
  - performance;
- key expectations:
  - clear requirements;
  - sensitive to local social, language and cultural surroundings;
  - opportunities for local supplier contributions;
- key behaviours:
  - open communication;
  - learning culture; and
  - high performing.

8.98 The Supply Chain Charter was developed originally by Horizon and Hitachi-GE jointly and it takes into account of consultation feedback and reflects UK and Welsh Government supply chain policies. Menter Newydd have also agreed to the Supply Chain Charter. Figure 8.5 shows the Supply Chain Charter.

8.99 Horizon will be engaging with their Tier 1 suppliers to sign up to the Supply Chain Charter and then cascade through their supply chains. Horizon will be implementing a Supplier Recruitment programme to agree to the Charter with existing and potential new suppliers. It is envisaged that the identification of Charter signatories will be a tool to indicate to the wider supply chain that a supplier is an approved supplier to the Wylfa Newydd project.

Figure 8.5 Supply Chain Charter (Part 1 of 2)

Supply Chain Charter

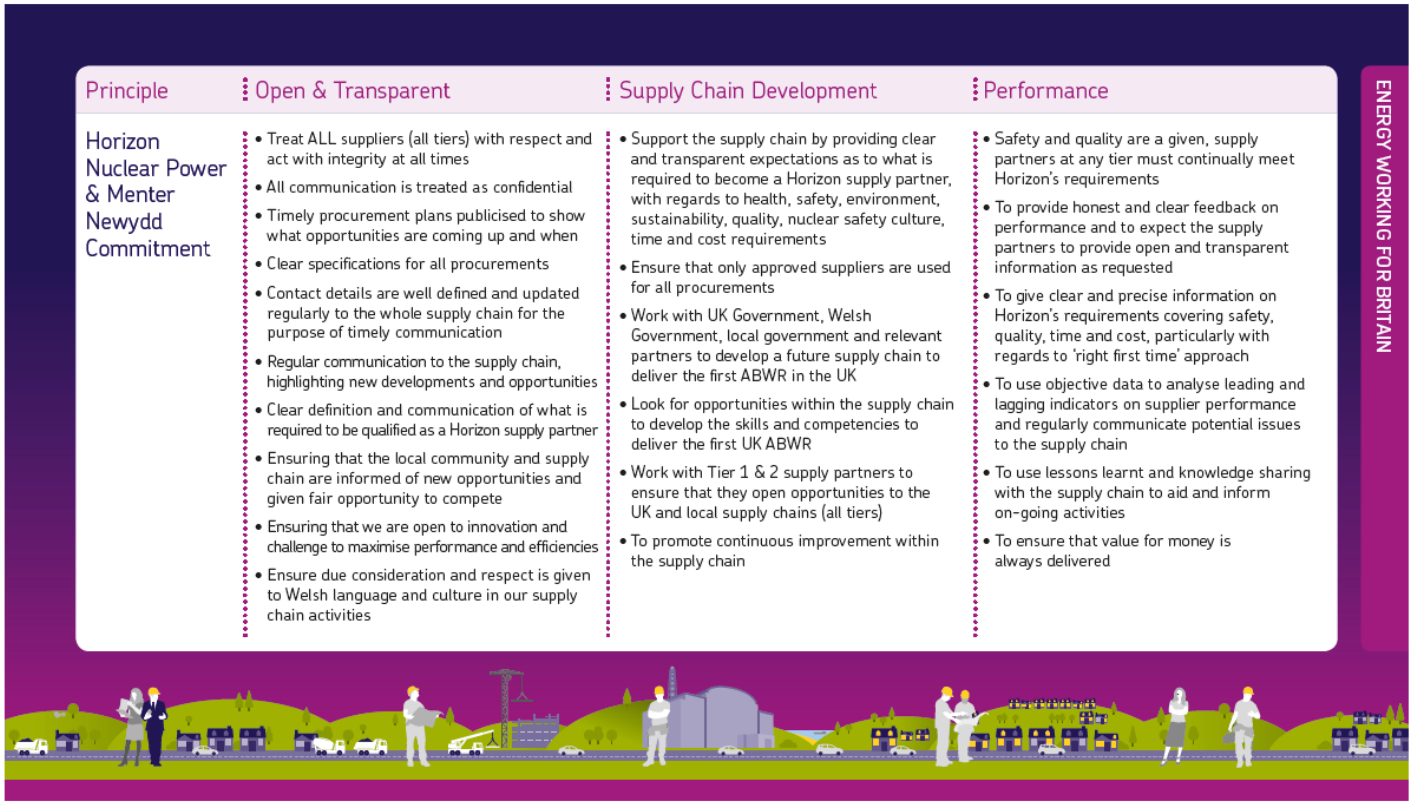
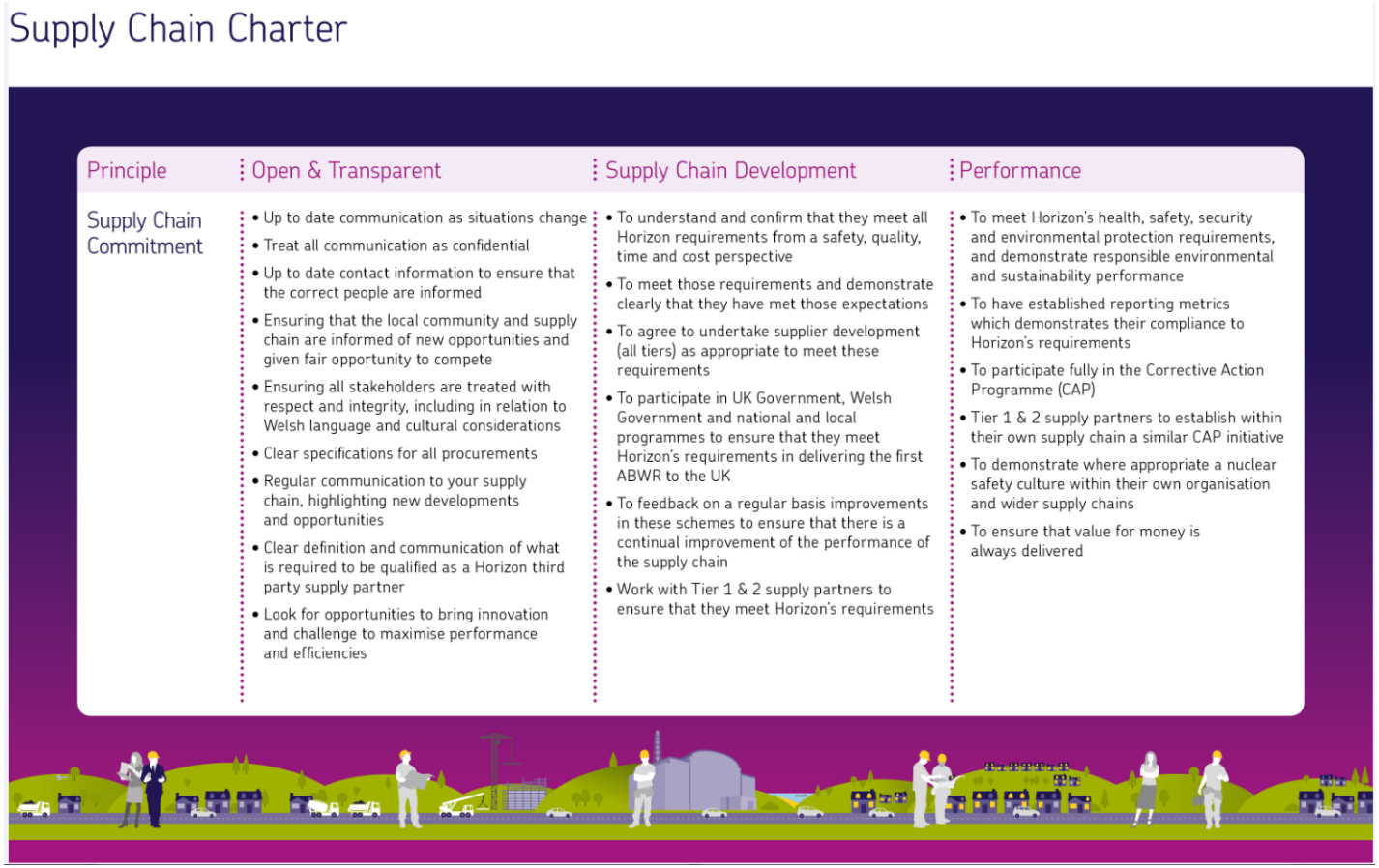


Figure 8.6 Supply Chain Charter (Part 2 of 2)



Engagement with local and regional businesses

8.100 As set out in more detail in the supply chain section below, Menter Newydd is the primary contractor to Horizon and will carry out all activities relating to the construction of the Wylfa Newydd Power Station, including design, procurement and construction of the intended reactor technology – the UK ABWR. As it develops and expands its UK operations, Menter Newydd will generate a substantial requirement for goods, services and works and will be directly responsible for managing procurement activity relating to the Power Station Site construction.

8.101 Horizon established a set of webpages on the Horizon website specifically for potential suppliers to the Wylfa Newydd Project in mid-2013 and these were included in the Stage One Pre-Application Consultation. Businesses interested in becoming part of the Wylfa Newydd Project supply chain, including Horizon's own supply chain relating to its Associated Development and Enabling Works scope, continue to be encouraged to register at www.horizonnuclearpower.com/supplier-registration.

8.102 In June 2016, the NWEAB launched its second regional business directory focusing on the Energy and Environment capability within north Wales (sponsored by Horizon), continuing its work to promote the regional economy since the NWEAB's first regional Directory of Manufacturing Capability across the region. With over 150 companies currently listed, the directory acts as a tool and reference point for businesses and providers to introduce the range and scope of excellence that exists within the Energy and Environment Sector across north Wales.

8.103 This second directory's primary functions are to:

- raise the profile of north Wales as an excellent location for energy and environment sector businesses to prosper;
- facilitate greater business to business contracting and supply chain activities;
- encourage regional networking and collaboration between the private and public sectors; and
- provide a source of information and for education and training to inform the skills pipeline.

8.104 The NWEAB worked with employers across the region via representation from each of the six Local Authorities in north Wales who collaboratively sourced the business information and provided links with, and details from, specialist and key employers from this sector for inclusion in the directory.

8.105 We also promote engagement with recognised public sector partners and third party business/trade associations. For those seeking to establish links with targeted local business services, skills and training providers, education programmes, Welsh language and culture, inward investment opportunities, people strategies, the following links are provided:

- Energy Island Programme http://www.anglesey.gov.uk/business/energy-island/ ;
- North Wales Economic Ambition Board http://www.northwaleseab.co.uk/ ; and
- Sell2Wales https://www.sell2wales.gov.wales/ .

8.106 Hitachi Nuclear Energy Europe, in its role as the lead contractor to Horizon Nuclear Power as part of Menter Newydd, has a new independent supplier registration website. This process is aimed specifically at those companies with an interest in working in the supply chain for Menter Newydd. Registration requires basic company details and is quick to complete. It is not pre-qualification, but offers a way of bringing companies to Hitachi Nuclear Energy Europe's attention. More information is available at: www.hitachi-hgne.co.uk/suppliers. Planning is underway to also strengthen online contract advertisements and registration systems.

8.107 Interest in the potential business opportunities associated with the Wylfa Newydd Project has steadily increased since the Stage One Pre-Application Consultation at the end of 2014 and the January Project Update consultation. Horizon continues to work with the Welsh Government, NWEAB and the EIP to strategically consider opportunities to support local and regional businesses to take full advantage of the opportunities that should be realised over the lifetime of the Wylfa Newydd Project.

8.108 Horizon participates in programmes and mechanisms set up by the Welsh and UK Governments to identify, engage and develop potential suppliers across the whole UK supply chain to support the Wylfa Newydd Project. Based on engagement with key representatives from the IACC and NWEAB, Horizon intends to continue to focus on local and regional engagement through the NWEAB and EIP. It is also anticipated that the NWEAB would play a key role in gathering market intelligence regarding business capability across the region and would play a major role in providing support to those businesses to position them to compete for opportunities.

8.109 Horizon has been developing its supplier engagement activities since its acquisition by Hitachi in November 2012, with a series of events, initiatives and programmes including:

- sponsorship, exhibiting, attendance and provision of speakers at several conferences, seminars and other appropriate business networking platforms. This includes engagement activities programmed by the Anglesey Energy Island Programme and Welsh Government;
- ongoing dialogue with speculative suppliers;
- specialist Horizon input to briefings with recognised key industry and political stakeholders;
- hosting supplier communication days in Llandudno on 21 May 2013 and in Gloucester on 23 May 2013, which attracted over 400 business representatives from across Wales and the UK, to learn more about the proposals for Wylfa Newydd and potential business opportunities;
- launching a pilot programme of interactive learning and engagement sessions in September 2014, targeted at local and regional businesses to engage early about likely business requirements for Horizon's supply chain, which was developed in partnership between the IACC's EIP, Horizon Nuclear Power and Welsh Government;
- hosting a national supply chain event at Venue Cymru in Llandudno on 23 July 2015, attended by over 300 delegates from across Anglesey and north Wales. Representatives of Horizon and Hitachi-GE explained to delegates their approach to procurement, including introductions to future scopes of work and their expectations in relation to quality, codes and standards. They were joined on stage by speakers from

the IACC as well as UK and Welsh Government, discussing the support available for local businesses. Over 98% of those who provided feedback indicated it was valuable and would attend similar events; and

- continuing to engage with businesses at Horizon's monthly open surgeries hosted in Cemaes, where individuals can drop in to meet with staff without making an appointment.

8.110 Planning is now underway for future business development events and activities, which include:

- August 2016 to March 2017 - a second Local and Regional Business Readiness programme in partnership with Welsh Government and NWEAB, EIP – IACC, targeted at those businesses with manufacturing, fabrication and supply capabilities, to be launched in August 2016;
- September 2016 – a meet the buyer event working with partners to deliver information to local and regional businesses about opportunities such as the proposed highways improvements with IACC Highways Framework contractors and Site Preparation and Clearance activities; and
- January 2017 - a national supply chain event is likely to be held in Bangor or Venue Cymru, Llandudno, in the New Year, with Menter Newydd and other key players in attendance.

8.111 Horizon also participates collaboratively in programmes and mechanisms set up by the Welsh and UK Governments to identify, engage and develop potential suppliers across the whole UK supply chain. Based on engagement with key representatives from the IACC and NWEAB, Horizon intends to continue to focus on local and regional engagement through the NWEAB and EIP. It is also anticipated that the NWEAB would play a key role in gathering market intelligence regarding business capability across the region and would play a major role in providing support to those businesses to position them to compete for opportunities.

8.112 Horizon also continues to work collaboratively with agencies such as Construction Future Wales, North Wales Business Council, Enterprise Zones, the local branch of the Federation of Small Businesses and the Confederation of British Industry North Wales.

8.113 Horizon plans to embed a supply chain development officer at the local Horizon offices to provide a point of contact on Anglesey, and develop a team as the Project gathers momentum. This development officer would continue to drive engagement with local and regional businesses.

Supply chain opportunities

8.114 On the 20th May 2016, Horizon announced the appointment of Menter Newydd, through an Early Contractor Engagement contract. This marked a significant step forward on our journey to delivering the Wylfa Newydd Project. Menter Newydd has the responsibility to deliver the Power Station Main Construction activities described in chapter 5 of this document. Menter Newydd is based on a common model for large scale infrastructure and energy development projects, bringing together the skills needed to manage complex construction projects and allowing the establishment of a structured contractual finance arrangement based on certainty in cost, performance, schedule and risk management.

8.115 Horizon would agree a division of responsibility with the Menter Newydd team, with Horizon responsible for completing necessary preparation works to create a clear area for Main Construction activities, as well as delivering the Associated Development facilities to support construction and operation of the Power Station. The construction of the Power Station itself and all facilities needed within the Power Station Site for Main Construction would be the responsibility of the Menter Newydd team, as would the operation of the Associated Development facilities.

8.116 Menter Newydd is responsible for putting its own supply chain in place. This would be overseen by Horizon and the Menter Newydd team would be required to follow the principles and behaviours established in the Supply Chain Charter (see figure 8.5).

8.117 In certain areas, notably internal components of the ABWR itself, the UK has no current manufacturing capability. In these cases, Menter Newydd's capability and that of its supply chain would play a leading role. Other areas, such as bulk construction materials, would probably be procured in the UK. Key opportunities exist in the intermediate areas where local, regional and UK suppliers would have the opportunity to provide goods and services across a broad range of sectors, subject to meeting relevant requirements.

8.118 Hitachi-GE, which will now be a Tier 2 supplier to Menter Newydd, has been working alongside Horizon since 2012 to promote awareness of and look to maximise opportunities in a number of key areas. Some examples include:

- civils and associated materials;
- equipment installation;
- construction support services;
- non safety critical systems and equipment;
- piping;
- radioactive waste management facilities;
- HVAC; and
- emergency diesel generators.

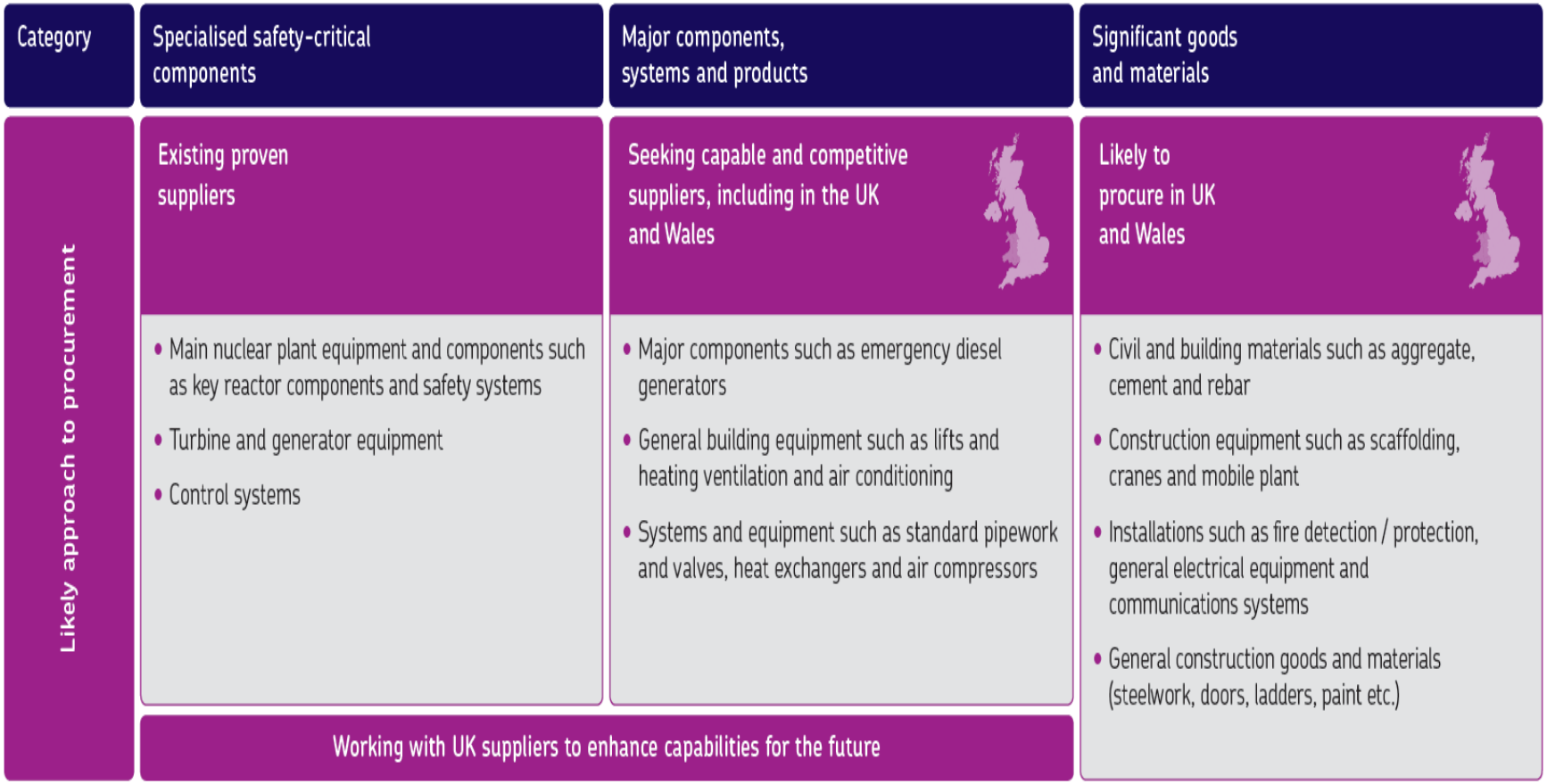
8.119 Figure 8.7 provides further examples of this breakdown, highlighting a sample of opportunities in the Menter Newydd Main Construction activity scope. This list is by no means exhaustive as the full procurement list for works on the scale of the Wylfa Newydd Project would include many thousands of items, but has been provided to give an overview and illustrate the breadth and type of scope where supply chain involvement could result in positive business development opportunities.

8.120 The construction workforce would generate demand for a number of services, for example, healthcare, private accommodation and leisure. There would also be opportunities for sizeable support services with proven experience and resilience to be employed to support the Power Station Main Construction activities such as food provision, catering, general personnel management and cleansing businesses. Beyond the Wylfa Newydd Development Area, Horizon's responsibilities would relate to a number of conventional build projects at a range of locations on Anglesey, as outlined in chapter 4 of this document. Consequently, supply chain opportunities are likely to include general building trades, landscaping and highways construction businesses. They may

also include facilities management opportunities at locations such as the Temporary Workers' Accommodation sites.

8.121 The staffing requirements of the operational Wylfa Newydd Power Station during both standard operation and in periods of outage for maintenance are described earlier in this chapter. It is highly likely that a substantial proportion of outage staffing would be drawn from the supply chain due to its temporary and cyclical nature. Horizon also plans to establish long term service agreements with providers of key equipment to provide maintenance and associated services on a regular or demand responsive basis, as appropriate. These would be secured in a similar timeframe to the appointment of the Menter Newydd team and suppliers would be required to adhere to the Supply Chain Charter.

Figure 8.7 Supply chain opportunities for businesses within the Menter Newydd team scope of activities



Procurement approach

8.122 At Stage One Pre-Application Consultation, Horizon sought feedback on emerging proposals for buying services to deliver the Wylfa Newydd Project. Horizon has made a broader commitment to maximise opportunities for local businesses to bid for all relevant aspects of the Project. Tenderers will be obliged to identify the extent to which local resources can deliver or support future works, with engagement being a criterion in assessing tenders. Suppliers will also have to report on the use of local and regional businesses as part of contract monitoring, auditable by Horizon.

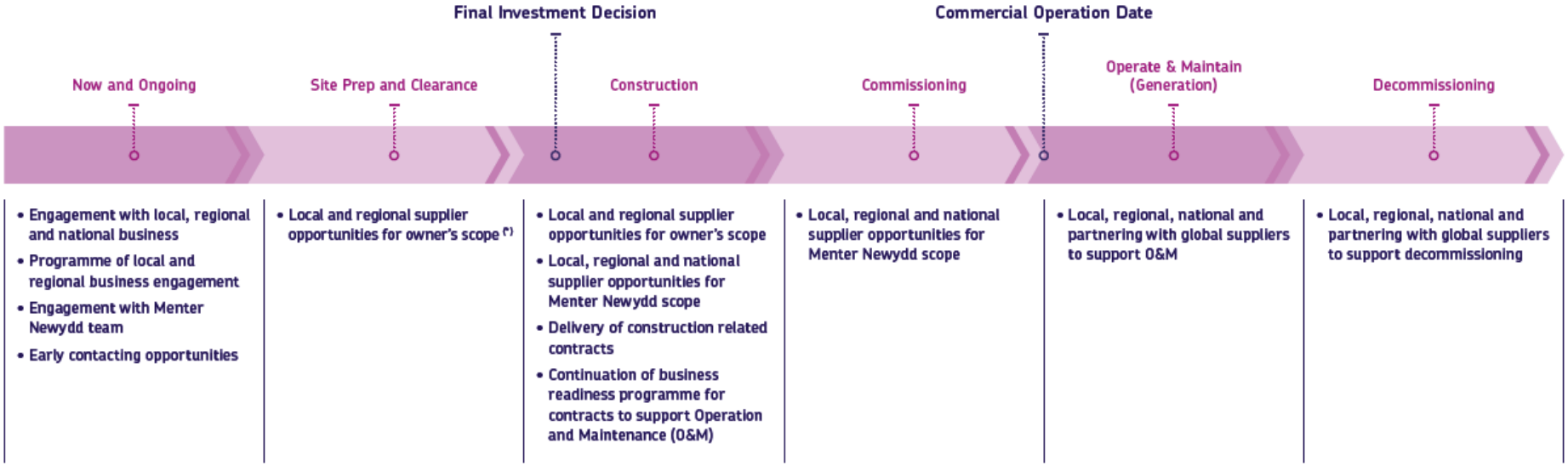
8.123 Horizon's policies and strategic approach to procurement favours local and regional businesses. However, responsibility lies with businesses to secure contracts competitively while meeting Horizon's standards for safety, quality, timely delivery and cost. Recent examples of Horizon supporting local contract opportunities include:

- working with the IACC for a notice in the Official Journal of the European Union for suppliers to deliver the A5025 highway improvement proposals allowing accessibility to Anglesey and north Wales suppliers. These framework contracts have now been awarded, with eight of the 11 companies selected coming from North Wales, and Tier One contractors will facilitate sub-contracting opportunities targeted to the north Wales region. Commercial and quantity surveying support would also be provided by a locally-based company;
- Horizon has encouraged Tier One contractors to use the local supply chain. Recent examples include subcontractors for archaeological studies and environmental surveys. Horizon also uses local contractors for communications and public relations activity; and
- Horizon has worked closely with local suppliers including construction companies to ensure quality standards are achieved, enabling access to tender opportunities.

8.124 Suppliers registered with Horizon will be offered access to materials through events, online resources and engagement with selected partners, designed to prepare their businesses to meet standards required to respond to tendering opportunities.

8.125 Figure 8.8 is an indicative timeline of step changes in the main types of business opportunities that Horizon expects as the Wylfa Newydd Project progresses.

Figure 8.8 Indicative timeline for procurement activities



(*) Works that will be managed by Horizon separately than those works delivered for Horizon by Menter Newydd

Supplier engagement and development

8.126 Horizon has engaged with numerous stakeholders such as UK, Welsh Government, NWEAB, IACC and the EIP to identify potential opportunities for engagement with the local, regional and national supply chains to promote the Project and identify the areas where the supply chain can be developed against the whole scope of the Project.

8.127 As introduced above, one such event was the UK Supply Chain Event held on the 25th of July 2015 at Llandudno. This was a National Event, where suppliers at every level of the supply chain could hear from Horizon and Hitachi-GE about the progress and future plans for the Project. Notably, this was a completely open event that all tiers of the supply chain could attend and network with each other; by making the presentations available online we were also able to reach those who were unable to attend, further sharing our developing approach to procurement. Over 98% of those who attended the previous event provided feedback indicated it was valuable and that they would attend similar events in the future. Horizon is planning a similar event with Menter Newydd early in 2017 along similar lines.

8.128 Horizon, along with the stakeholders, are engaging with other Non-Government Organisations such as the Nuclear Advanced Manufacturing Research Centre, Nuclear Skills Academies, 'Fit 4 Nuclear' programme and other organisations to establish development programmes for suppliers who want to support this project. These organisations have the necessary skills and experience to support these suppliers as they develop their capabilities. The 'Fit 4 Nuclear' programme is now included in the Welsh Government's Business Wales programme, that allows relevant manufacturing, equipment and fabrication suppliers in Wales to identify market opportunities and support available to them. This intervention will see 20 companies supported in 2016 with a firm target to grow this by 50 in 2017 subject to funding. Whilst we recognise that not all suppliers will be supplying the Nuclear Safety related components, Horizon is committed to supporting suppliers in preparing themselves to work on a Nuclear site and therefore what these expectations are.

8.129 Horizon also works with the UK and Welsh Government stakeholders to identify opportunities where national, regional and local suppliers can receive this development and target their funding accordingly. Horizon also engages with the regional development organisation (the NWEAB), Welsh Government, the IACC and the EIP to establish a joint supplier development strategy based around identifying opportunities for suppliers within the region and locally, where either development or direct contracting opportunities are shared with local and regional businesses.

Supply chain successes

8.130 As outlined above, the supply chain and procurement programme has already been successful in securing contracts with businesses on Anglesey and across north Wales, to support contracts such as environmental surveys, ground investigation studies and Enabling Works within the Wylfa Newydd Development Area.

8.131 For instance, DU Construction Ltd from Holyhead was awarded a major contract with Horizon in March 2013, for demolition activities and associated ecological works. This involved building alternative roosting sites for protected wildlife, such as bats and barn owls, followed by the removal of around fifteen unsafe and uninhabitable buildings on the Wylfa Newydd Development Area.

8.132 Structural Soils Ltd, a specialist ground investigations contractor which previously carried out work for Horizon between 2009 and 2010, and again in 2011, was awarded a further contract in March 2014, to carry out one of the largest detailed ground investigation studies in the UK, triggering new opportunities for local businesses. The project required the drilling of around 400 boreholes and trial pits across the Power Station Site. The material removed was then analysed to give Horizon a detailed understanding of the ground conditions to inform more detailed planning of the preferred layout for the Power Station Site. The focus then moved onto the detailed off-shore investigations, which started later in 2015. Structural Soils again sought to engage Anglesey services and local suppliers to support the work, recruiting 14 local firms to join the contract. The project later won Project of the Year at the prestigious Ground Engineering Awards in June 2015, a joint submission with Atkins and Structural Soils.

8.133 In August 2014, Bangor-based Corvus Security Ltd was awarded the contract to manage and maintain Horizon's Wylfa Newydd site office. Under the contract, Corvus provides total facilities management support at the Anglesey site office, working with other local suppliers, including Anglesey-based Grays Waste Management Ltd, who provides waste management and recycling services.

8.134 The IACC Highways department, in collaboration with Horizon, established a Framework Contract in June 2015, to engage suitably experienced Highway Construction and Civil Engineering Contractors to procure and implement the highway improvement works as part of the Wylfa Newydd Project. The Framework will be used to deliver new highways, highways improvements and other associated civil works required by the IACC and Horizon. The Framework was divided into 3 lots, with the expected value range being: works less than £1M in value; £1M and £5M in value; and Works over £5M in value. The first set of successful bids were awarded to 11 companies in June 2016. Eight of the companies are based in north Wales, a positive reflection on local companies and their ability to compete in a regional and national market.

8.135 Archaeology evaluation survey work was carried out across the Wylfa Newydd site from September 2015 to April 2016, in one of the largest digs of its kind in the UK. This involved a programme of trial pitting (around 12% of the Power Station Site) to mitigate the risk of finding something of archaeological significance during the Power Station build. The contract was awarded to Wessex Archaeology, who recruited 10 businesses based locally on Anglesey and across North Wales, to provide sub-contracting work and services or sourced materials. Additional local business benefits included long term lets at 14 local bed and breakfast establishments and holiday cottages; such benefit is typical of a number of these contract successes.

8.136 In December 2015, a north Wales company, Caulmert, was appointed to investigate weather conditions by recording meteorological data at the Power Station Site and to check airborne salt concentrations to assess the effects it may have on a range of materials and coatings to be used at the site. Caulmert's research, carried out in partnership with consultancy Amec Foster Wheeler, will help to ensure the construction machinery and equipment is suitably protected from the local environment.

9 Construction Worker Accommodation Strategy

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9 Construction Worker Accommodation Strategy

9.1 Horizon is working with the councils in Anglesey and Gwynedd and the Welsh Government to develop a Construction Worker Accommodation Strategy (CWAS) for Wylfa Newydd construction workers that do not already live within a commuting distance of the site. This work is ongoing and this chapter sets out the strategy as it currently stands.

9.2 In order to construct the Wylfa Newydd Project, Horizon estimates that it will need between 8,000 and 10,000 construction workers at the peak of the construction phase. Many of these workers will not already live in and around Anglesey and will therefore require temporary accommodation for the period of their work near the site. In addition, Horizon operational staff and facilities management staff for the Associated Development will be engaged on the Project, taking the overall workforce to a peak of 10,720 which will occur towards the end of 2022.

9.3 Further work is underway to agree the amount of existing accommodation that can be used and how workers can be matched with accommodation so that adverse impacts on local communities are avoided or managed and/or mitigated.

9.4 A key part of Horizon's CWAS approach is the provision of Temporary Workers' Accommodation. This serves two purposes – it will ensure excess demand is not placed on existing accommodation and businesses and it will provide a form and location of accommodation that is attractive to workers and required for the efficient construction of the Project.

9.5 The CWAS therefore seeks a balanced approach that ensures the Project can attract a productive workforce and offers economic benefits to local accommodation providers (through use of under-used capacity), but avoids excess demand being placed on existing provision and other disruption to local communities.

9.6 This chapter provides an update on our current position. It sets out the background to our assumptions about the demand for accommodation from our workers, the types of accommodation and associated facilities we think they will need, and where we think the demand can reasonably be met. It also sets out the feedback we have received during previous consultations and how we have responded to it.

9.7 More detail on the preferred layout, design and operation of our proposals for each of the Temporary Workers' Accommodation sites is set out in chapters 6 (Main Site) and 14-17 (Rhosgoch, Kingsland and Cae Glas, Amlwch and Madyn Farm) of this document.

Consultation context for this chapter

9.8 Our proposals for construction worker accommodation were the subject of a substantial number of responses at previous rounds of consultation.

9.9 The Stage One Pre-Application Consultation set out the draft principles for the CWAS covering a Broad Search Area[1] within a reasonable distance from the Wylfa Newydd Development Area. The Stage One Pre-Application Consultation documents identified the assessment criteria, including accessibility, socio-economic and cultural factors that would be used to evaluate the suitability of each site.

9.10 The key themes from the Stage One Pre-Application Consultation feedback on worker accommodation were:

- agreement from the majority of respondents that Temporary Workers' Accommodation sites were essential for the Project;
- the need to develop a CWAS that ensures the impacts on the local communities have been fully considered and appropriate mitigation measures implemented to address potential worker accommodation impacts;
- the need to consider the socio-economic impact of the development of the proposed Temporary Workers' Accommodation including the impact workers could have on local communities, and identify measures to minimise the impact on the local housing market to an acceptable level;
- the need to ensure that the CWAS fully considers the potential legacy uses/benefits of Temporary Workers' Accommodation sites;
- the need to provide Temporary Workers' Accommodation sites to ensure there is sufficient accommodation within the local travel to work area to minimise any impact on the local tourist industry and local housing market;
- concerns regarding the siting of Temporary Workers' Accommodation sites, with conflicting views on sites:
  - the option to locate workers at Kingsland and Cae Glas received significant support however there was also significant opposition;
  - the scale of the development at Kingsland and Cae Glas was also challenged;
  - alternative locations for the Temporary Workers' Accommodation developments were proposed and included Amlwch, Rhosgoch and Llangefni. Particular support was recorded for the use of the old Shell site at Rhosgoch including a 150+ signature petition seeking Horizon to consider carefully the use of this area, although there was also some opposition to proposals to use Rhosgoch;
- recognition (including from residents close to the Wylfa Newydd Development Area) that there may be benefit in locating part of the workers accommodation facility at Wylfa Newydd Development Area;
- general concerns regarding the impact of the transportation of the workforce from the accommodation locations to the site would potentially have along the A5025 from Holyhead to Wylfa;
- suggestions that more dispersed worker accommodation solutions with two or three campus style accommodation facilities be considered rather than one large facility;

[1] The Broad Area of Search was defined in the Stage One Pre-Application Consultation to represent preferred areas for evaluating potential development sites. It included: land within 30 minutes drive time of the centre of the Power Station Site and land within 10 minutes drive time of a junction on the A55 and the A5025 between Valley and Amlwch.

- concerns regarding the impact that the stated increase in worker numbers from 6,000 to circa 8,500 would have on the previously advised workers accommodation strategy; and
- the need to engage with key local stakeholders, including police, ambulance services, housing associations etc. to develop strategic plans necessary to support the overall development of the CWAS.

9.11 Respondents had mixed views with regard to legacy benefits associated with Temporary Workers' Accommodation with many supporting the need to retain these for future use and others considering they should be removed at the end of the Project to detract the workforce from seeking to settle in the area at Project completion.

9.12 Horizon also undertook consultation in January 2016 (the January Project Update consultation). The key themes arising from feedback were as follows:

- support for the Temporary Workers' Accommodation proposals at Kingsland and Cae Glas in Holyhead, and the potential to boost local employment and business opportunities arising from that development;
- support for some construction worker accommodation at Amlwch, particularly the permanent houses at Madyn Farm, but resistance to potential temporary accommodation at Amlwch Sites A and B, to the west and east of the B5111; and
- mixed views regarding the Temporary Workers' Accommodation at Rhosgoch, with some support for holiday units as legacy development.

9.13 This chapter sets out how Horizon's proposals have responded to the previous consultation and invites further comments on the revised CWAS. Further information on the justification for the selection of preferred sites, including the broad areas of search for sites for Temporary Workers' Accommodation is provided within the report entitled Horizon's Approach to Siting Associated Development, which is also provided as part of this consultation and is available on our website.

Context

9.14 This section highlights the main assumptions that have informed Horizon in developing its approach for accommodating the construction and operational workforces, based on the workforce sizes and profiles introduced in chapter 8 of this document, and the detailed analysis set out in chapter B1 (Socio Economics) of the Preliminary Environmental Information (PEI) Report.

Construction workforce

9.15 Figure 9.1 of this chapter sets out the workforce profile for the Wylfa Newydd Project. It is anticipated that the construction workforce will peak at between 8,000 and 10,000 and in addition to this, at the time of the peak, there will be a number of workers employed at the Associated Development, together with operations staff at the Power Station Site, although most of these will be recruited from amongst the existing population and therefore will not require additional accommodation. The overall workforce is anticipated to peak at 10,720. Refer also to table 8.1 in chapter 8.

9.16 In order to estimate the number of workers requiring accommodation, it is necessary firstly to identify the expected contribution of the local labour force on the Project. The term 'local' in the context of workers refers to the Daily Construction Commuting Zone

(DCCZ) and equates to a travel time of approximately 90 minutes from the Wylfa Newydd Development Area.

9.17 Chapter B1 of the PEI Report sets out the socio-economic assessment of the Project. This estimates that at the peak of construction, just under 2,700 workers would be drawn from existing residents of the DCCZ, leaving just over 8,000 requiring temporary and/or part-time accommodation.

9.18 This is based on a detailed analysis and assessment of the number and type of workers required for each phase of the Project and how many people with those skills already live within the DCCZ. For some phases and occupations there is a relatively large supply of local labour compared to demand, but for the more specialist mechanical and electrical work that dominates at the construction peak the proportion will be lower.

9.19 There are also a lot of jobs throughout the construction phase that would not attract many people from further afield (for example because there are no travel or subsistence allowances). For these jobs, it is likely that wages would adjust until the jobs were filled by local residents rather than attracting more workers from elsewhere.

9.20 Applying this analysis we can determine with a degree of certainty the minimum number of jobs that are likely to be filled by existing local residents from within the DCCZ. This then allows us to understand the potential number of workers who may require accommodation.

9.21 Table 9.1 provides an indicative division of the proportions of the Power Station construction workforce expected to be associated with different roles. It also highlights assumptions that have been made in the preparation of the CWAS in relation to each role type.

Table 9.1 Power Station construction workforce indicative ranges by type and assumptions

Construction disciplines	Assumptions
Site services, security and clerical	• Required from outset of construction activities, totalling between 500 and 1,000 for the majority of the Main Construction stage; • High proportion home-based.
Civil operatives	• Required in greatest numbers once Main Construction activities start, ranging between 2,000 and 4,000 for the majority of the Main Construction stage; • Medium proportion home-based; • Principal demand for single worker living accommodation.
Mechanical and Electrical (M&E) operatives	• Required in greatest numbers approximately two years into the Main Construction stage, ranging between 1,500 and 2,000 for the majority of this period; • Low proportion home-based; • Principal demand for single worker living accommodation.
Professional staff	• Required in greatest numbers approximately one year into the Main Construction stage, ranging between 1,500 and 3,000 for the majority of this period;

Construction disciplines	Assumptions
	• Low proportion home-based; • Demand divided between single worker living accommodation and family accommodation, the latter is likely to be sought by those relocating to the area.

9.22 As set out above, based on the labour force analysis, the CWAS assumes a Central Case with a 10,720 peak workforce and assumes that around 2,700 of them would commute daily from home and therefore would not require specific accommodation provision. It is therefore assumed that just over 8,000 construction workers would need to seek new or existing accommodation to allow them to be based closer to the Power Station Site.

9.23 However, there is a degree of uncertainty about the precise number of workers who will require accommodation. To manage this, the CWAS includes space for up to 5,700 workers in Temporary Workers' Accommodation; this is around 1,000 more bed spaces than would be needed under the Central Case (which is explained in paragraph 9.69 and table 9.3 below).

9.24 This ensures our CWAS is robust and can respond effectively if, for example, fewer local residents were able to fill jobs meaning that more workers required accommodation, or that fewer than anticipated private rental beds were available. Making provision for the additional 1,000 spaces is considered sufficient to cope with the various uncertainties.

9.25 Whilst the majority of workers will seek only part-time or temporary accommodation, we expect that some of the 8,020 workers may actually choose to move their permanent base to Anglesey or the north-west Wales mainland. Again, drawing on the socio-economic analysis in the PEI Report (chapter B1), around 730 construction workers are anticipated to purchase their own property within commuting distance of the Power Station Site. Horizon expects that this demand would particularly be evident amongst those employed in construction management roles (included in the 'professional staff' category in table 9.1) that would endure for several years.

Operational workforce

9.26 The operational workforce for the Power Station would be appointed either from individuals already living locally (within approximately 60 minutes), or expected to relocate permanently to an acceptable commuting distance to the Power Station Site. The operational workforce is expected to total up to around 850 people when fully operational, comprising a combination of Horizon staff and contractors, the vast majority of whom Horizon would expect to be in either owner occupied or long term private rental accommodation, and 45% are forecast to be already living in the area. On this basis, we do not plan to develop a strategy for accommodating permanent operational workers. We do however have a Jobs and Skills Strategy that aims to boost the number of jobs going to local people, as set out in chapter 8 of this document.

9.27 During outages, up to 1,000 additional workers would be needed temporarily for periods up to three months. The workforce that services outages at the Existing Power Station are either based locally or are accommodated within existing tourist and private rental accommodation, predominantly on Anglesey. Horizon plans to adopt the same approach, encouraging outage workers to make use of available tourist and rental accommodation for the duration of their contracts. Horizon would draw on the experience gained in

managing the construction workforce to determine whether any future mechanisms may be required or be beneficial to manage the distribution of the temporary outage workforce for the operational stage.

Construction Worker Accommodation Strategy

9.28 As set out above, around 2,700 workers are anticipated to be drawn from the existing local community on Anglesey and the mainland. This means just over 8,000 are likely to seek new or existing accommodation to allow them to be based closer to the Wylfa Newydd Development Area. They will make a variety of choices based on factors such as the length of time they are on the Project, their family circumstances and their preferences for serviced or unserviced accommodation. The CWAS focuses on the likely distribution and provision of accommodation for these individuals.

9.29 The CWAS seeks to strike a balance between its three over-arching aims:

- delivering Horizon's commercial and productivity requirements;
- avoiding negative effects on Anglesey's residents and accommodation markets; and
- providing a positive legacy where possible.

9.30 Achieving these aims requires a balanced strategy that ensures an adequate supply of accommodation that is attractive and affordable for workers and reduces travel to site. Alongside this, Horizon wishes to provide opportunities for local economic benefits from workers using existing accommodation where there is spare capacity but which avoids displacing existing residents or tourists during the peak season and avoids, where possible, other significant effects on communities and the transport network. We are continuing to work with the local councils to understand exactly how much spare capacity there is and how best to avoid any adverse impacts.

9.31 The CWAS therefore seeks to facilitate opportunities for landlords and homeowners to accommodate members of the construction workforce, while providing a mechanism to ensure available tourist and rental accommodation would not be saturated through the provision of Temporary Workers' Accommodation and the use of the Construction Workers Accommodation Management Portal (CWAMP).

Construction worker accommodation types

9.32 In seeking to deliver a balanced accommodation strategy, the Project will need to provide purpose-built accommodation for some workers. This will have two main advantages – it will help avoid some effects on the existing supply of accommodation and it will deliver a number of benefits to the Project, including making it easier to attract the highly skilled workers it needs and helping Horizon to manage its workers (and their behavior), their transport to and from the site and their effects on existing communities.

9.33 The CWAS focuses on the delivery, facilitation or use of five main types of accommodation, as listed below. A description of the defining characteristics of these different stock types is included later in this section:

- occupation of private rental accommodation;
- occupation of existing tourist accommodation;

- introduction of new stock as Temporary Workers' Accommodation:
  - new build permanent housing;
- specially provided campus-style accommodation; facilitation of the re-use of empty homes; and,
- stimulating new supply (called "latent accommodation")[2].

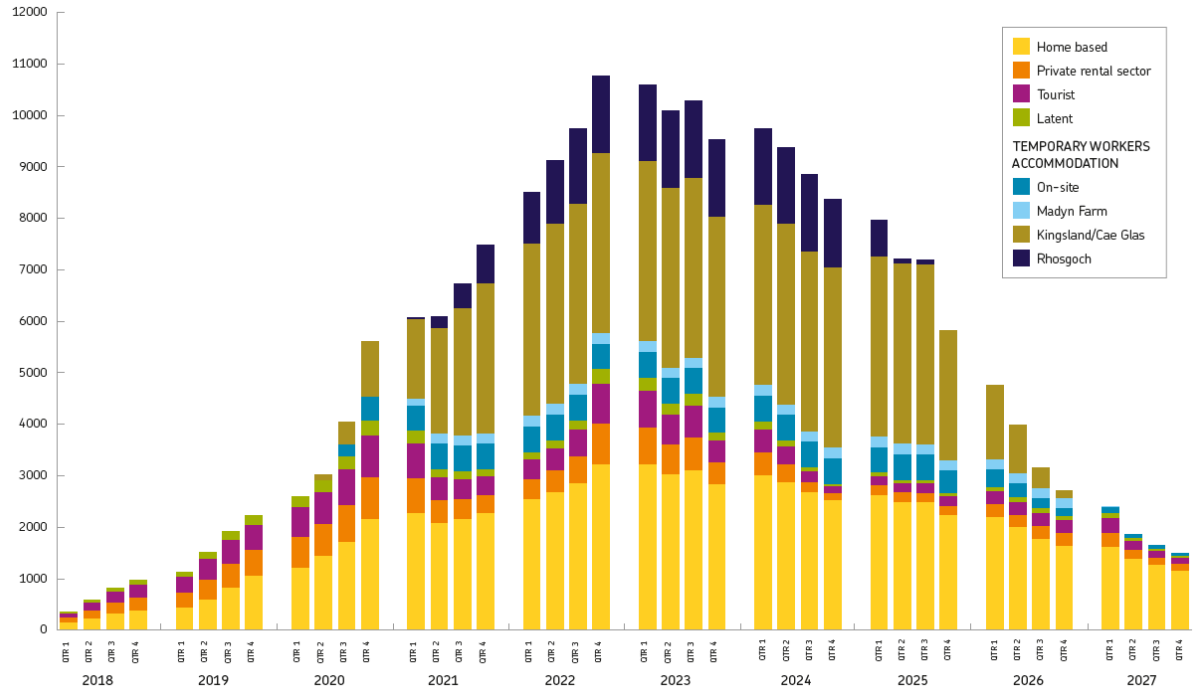
9.34 Table 9.2 identifies the estimate of the likely distribution of the construction workforce across the different accommodation types at the time of the assumed peak construction workforce of 10,720. This is based on the analysis underpinning the socio-economic EIA work (see chapter B1 of the PEI Report). The CWAS has been designed to deliver these stock levels. As a supplement to table 9.2, figure 9.1 illustrates Horizon's indicative projection of the likely distribution of the construction workforce across the different accommodation types, including home-based individuals, mapped across the complete duration of construction activities.

Table 9.2 Likely distribution across accommodation types at the assumed peak of 10,720 construction workers

Accommodation Type	Bed Space Estimate
Home based (1)	2,690[3]
Purchase own property (2)	730
Private rental (3)	1,100
Latent accommodation (4)	400
Tourism (5)	1,100
Total existing stock (6),	3,330 *((2)+(3)+(4)+(5))*
Peak workforce requirement (7)	10,720
New stock required	4,700 *((7)-(1)-(6))*

[2] Latent accommodation mainly comprises empty rooms within private rental stock that could be made available by owners within their homes to contribute bed spaces to the construction workers' accommodation market.
[3] This figure is rounded up to 2,700 where it is referred to elsewhere in this document and other consultation documents

Figure 9.1 Likely distribution of construction workforce across accommodation types



New stock – defining characteristics

9.35 Two of the different types of stock the CWAS proposes are new stock – new permanent build housing and specially provided Temporary Workers' Accommodation. These types of new stock are described in general terms in this section.

New build permanent housing

9.36 Feedback from previous consultations included comments that challenged the scope of Horizon's emerging proposals for the CWAS, requesting that Horizon seeks to address areas of housing need on Anglesey. The CWAS therefore now includes an element of new build permanent housing. The concept is that this type of stock would be designed as self-contained dwellings that would be sub-divided for initial use as worker accommodation during the Main Construction stage of the Wylfa Newydd Project, then converted back to self-contained dwellings to create a legacy of permanent housing.

9.37 The siting of this type of stock has been influenced by the expected needs of the permanent occupants. Further details are set out below.

9.38 We think the proposed approach to providing permanent accommodation would ensure a positive legacy by providing new dwellings in a sustainable location, reducing the need to travel, with a mix of dwellings and an amount of affordable housing in line with local needs.

Campus-style Temporary Accommodation

9.39 The concept of this type of accommodation was introduced at our Stage One Pre-Application Consultation and described further at Horizon's engagement events on Anglesey held in July 2015. In essence, it refers to campus style development of a minimum of 500 modular single worker *en suite* accommodation units, arranged in blocks that would each be served by a number of communal rooms such as a kitchen, dining area and sitting room.

9.40 The large scale of this type of new stock offers opportunities to deliver efficiency in transporting construction workers to and from the Power Station Site, with single pick up and drop off points for bus services, therefore contributing to a reduction in overall trip generation. The co-location of 500 or more construction workers in a single location also forms a critical mass that would support the viability of a range of services and facilities within a Temporary Workers' Accommodation site, such as convenience shopping, catering facilities or restaurant, informal leisure facilities, healthcare and laundry facilities. The combination of accommodation, transport provision and key services and facilities mean that Temporary Workers' Accommodation sites could be largely self-contained in terms of meeting the daily needs of the occupants, hence reducing effects on local communities. However, there would be public transport provided so that workers can access shops and services off-site when required.

9.41 Other large UK complex engineering projects such as Hinkley Point C and major oil and gas construction projects have all needed to adopt this approach to help manage the efficient construction of projects, but also to manage worker behaviour within the boundary of the Temporary Workers' Accommodation sites and effects on existing accommodation and other impacts in the wider area.

9.42 Our approach to siting this type of Temporary Workers' Accommodation has more criteria than for permanent housing and is set out below.

9.43 As with permanent housing, the purpose built accommodation will have a number of legacy benefits, including the infrastructure and servicing of some of the sites that have been used, where this is consistent with the IACC's planning policies for their future use. This will make them easier, cheaper and faster to re-develop for other uses and provide a significant boost to the aims of the Welsh Government and the IACC to attract inward investment. In the case of two of the proposed sites (Kingsland and Cae Glas near Holyhead), this could facilitate the delivery of a major holiday destination that will provide a long-term boost to the island's tourist economy.

Private rental – defining characteristics

9.44 The availability of private rental stock is currently largely market led. The socio-economic analysis in the PEI Report (chapter B1) has reviewed the availability of existing private rental stock and applied assumptions on the level of occupancy by construction workers that could be tolerated without substantially affecting the current market values and usage patterns. This is currently being discussed and agreed with IACC.

9.45 Consideration has also been given to the likelihood that some private rental landlords would look to increase their stock to meet rising demand as the Wylfa Newydd Project progresses through the Main Construction stage. The resultant conclusions are that around 1,300 bed spaces may be available in this sector, although more may become available as "latent accommodation" (see below).

Tourist accommodation – defining characteristics

9.46 Anglesey has a substantial stock of tourist bed spaces appealing to a range of people and budgets, including caravan parks, bed and breakfasts, hotels and self-catering, short-term lets. Across the Key Study Area (KSA, see chapter B1 of the PEI Report) there are just under 55,000 bedspaces in total, with an average existing occupancy of 53% and significant variation in occupancy rates at different times of the year (see chapter B1 of the PEI Report) and with relatively high levels of occupancy in the sector during the summer months in particular. Nevertheless, given the size of the sector, there remains significant spare capacity even in the summer peak season. This is estimated at just under 7,000 bedspaces, although around 3,000 of these are for caravans, which have been excluded from the analysis.

9.47 It is recognised that tourist accommodation stock in proximity to the Wylfa Newydd Development Area may experience a reduction in tourists and that Horizon's approach to encouraging construction workers to use accommodation close to the Power Station Site may contribute to maintaining the viability of such businesses.

9.48 In exploring the potential for construction workers to seek accommodation in this sector more broadly across Anglesey, Horizon has made conservative estimates and assumptions about the amount of spare capacity. This is to ensure that the CWAS does not unduly rely on this sector as a means of minimising the potential for competition between tourists and construction workers for bed spaces. The resultant assumption is that the tourist accommodation sector could meet the demand from workers for around 1,100 bed spaces during the greatest periods of demand.

Re-use of empty homes and 'latent' accommodation

9.49 Horizon has been working with the IACC since the Stage One Pre-Application Consultation and recognises there is an opportunity for the Wylfa Newydd Project to facilitate bringing empty properties back into use. A total of 855 properties were identified as being empty in Anglesey at April 2014, including 85 in Amlwch and 130 in Holyhead. The IACC already has an officer working in this area and has established the Empty Property Initiative (Houses into Homes)[4] to provide support to owners seeking to renovate empty properties.

9.50 Horizon believes it should be possible to achieve a reduction in these numbers of empty homes. We are working with the IACC officers to explore a range of options to facilitate this, which may include grants or loans for property owners who are committed to renting accommodation to Horizon's construction workforce. The use of long-term empty properties following their upgrade to an appropriate standard would increase the supply of housing for use by construction workers. The upgrade of these properties would also enhance their potential for continued use by communities following their use by construction workers.

9.51 This would provide a positive housing legacy, as well as helping to bring vacant housing stock back into use. Horizon would work with the IACC to develop an appropriate approach for this to be realised.

9.52 The private rental stock may also be increased by owners bringing forward empty rooms within their homes to introduce additional bed spaces to the market. This type of stock is

[4] http://www.anglesey.gov.uk/housing/empty-homes/empty-property-initiative-houses-into-homes/ accessed 30/20/2015

termed 'latent accommodation'. Horizon is already aware through its engagement activities and work with stakeholders there is a considerable appetite amongst some Anglesey residents to understand what sort of requirements would need to be met to provide latent accommodation. We have undertaken a survey to allow prospective landlords to register interest and provide a means for information to be issued about requirements. This has identified around 400 bed spaces that could become available. This forms part of the central case assumptions for the CWAS but is likely to be a very conservative estimate. As the Project obtains funding and construction commences, it is likely more potential landlords will come forward, especially given that the Government has increased the allowance for tax-free renting out of spare rooms. The allowance under the Rent a Room Scheme has increased from £4,250 in 2015/16 to £7,500 from 6th April 2016.

Leisure provision for construction workforce

9.53 As stated previously, the CWAS has been developed on the basis of just over 8,000 workers who would need to seek new or existing accommodation to allow them to be based closer to the Wylfa Newydd Development Area. The spatial distribution assumes at peak, up to 4,700 of these construction workers would be within Temporary Workers' Accommodation (see table 9.2) within a maximum half an hour drive of the Power Station Site, with the remainder dispersed across a range of accommodation types within the broader KSA.

9.54 Shift patterns are expected to be 11 working days on and 3 days off over a rolling 14 day period that would be staggered to enable seven day working. On work days, members of the construction workforce are likely to be away from their chosen accommodation for between 12 and 14 hours (allowing for travel and breaks). Construction welfare facilities on the Wylfa Newydd Development Area would include catering for hot meals and snacks for the construction workforce during their working day or night. Consequently, it is expected that demands on community facilities and services during construction workers' active shift cycle would be limited to purchasing basic supplies and something for their evening meal either to cook or eat at their accommodation, or dining in a local pub or restaurant. It is possible some individuals would also wish to participate in sports or leisure activities, but given the shift patterns, this demand is likely to be limited.

9.55 During rest days in the shift cycle, personal choice would drive worker preferences and it is difficult to predict what community services and facilities might be subject to additional demand. Experience from other major UK construction projects suggests that a proportion of workers would choose to commute home to their permanent UK address. Other members of the workforce may look to spend leisure time in and around Anglesey and the wider north Wales region, undertaking tourist activities, relaxing in local pubs or eateries and pursuing sports and hobbies.

9.56 As part of Horizon's engagement events in July 2015, attendees were asked to complete a brief survey that included the following question:

'Our workers will need recreational facilities near their accommodation. Would you prefer that we make this happen at:

- *the local leisure centre;*
- *a bespoke facility at each worker accommodation site;*

- *the local swimming pool; or*
- *other'.*

9.57 The survey results showed that almost 54% of respondents preferred the local leisure centre, while just over 24% preferred a bespoke facility at each worker accommodation site. 13% did not answer the question, with a further 4% selecting the local swimming pool and 5% entering something in the 'other' category.

9.58 In addition to demands for recreational facilities, during the course of their employment, members of the construction workforce are likely to spend money at local food shops, pubs and restaurants. There could also be an increased demand for public services. These have been assessed as part of the socio-chapter of the PEI Report in chapter B1.

Development of Temporary Workers' Accommodation – siting proposals

9.59 At the Stage One Pre-Application Consultation, a broad area of search was presented for a range of Associated Development, including Temporary Workers' Accommodation, which was defined as supporting a minimum of 500 people on any one location. The search area was defined in the Stage One Pre-Application Consultation to represent preferred areas for evaluating potential development sites. It included land within 30 minutes' drive time of the centre of the Power Station Site and land within 10 minutes' drive time of a junction on the A55 and the A5025 between Valley and Amlwch.

9.60 Since the Stage One Pre-Application Consultation, Horizon has undertaken site selection. This involved a review of over 500 sites falling within the Area of Search published in the Stage One Pre-Application Consultation, sourced from the following:

- sites contained within the Anglesey and Gwynedd Joint Local Development Plan (JLDP) candidate sites register;
- sites with extant but unimplemented planning permission;
- sites known to the Anglesey and Gwynedd Joint Planning Policy Unit (JPPU) presented by landowners as potentially suitable for development; and
- sites identified by local land agents.

9.61 We have also considered a range of scenarios for purpose-built accommodation for up to 5,700 workers across a number of locations. The selection process is set out in detail in the document, "Horizon's Approach to Siting Associated Development," that forms part of this consultation.

9.62 A four-stage site selection process, informed by initial pre-application consultation, was followed to identify suitable sites for the Temporary Workers' Accommodation. The first stage was a desk-based exercise which identified potentially suitable sites. This included an initial screening exercise to discount sites which were protected by nationally important designations. Stage Two then considered the extent to which sites comply with the locational guidance in the SPG. Where sites were available in settlement, they then moved to Stage Three, to determine the extent to which they would be suitable sites based on Horizon's operational prerequisites. If no sites were suitable within the main settlements, consideration then moved to smaller settlements and sites on the edge of settlements and then to sites outside of settlements. The fourth stage then applied a

number of finer-grain criteria to enable the sites to be compared and contrasted consistently.

9.63 Following this process, the sites that we are still considering and consulting upon for the siting of Temporary Workers' Accommodation are:

- the two sites with outline planning permission at Holyhead at Cae Glas and Kingsland (which form part of the development site known as Land and Lakes);
- the two sites near Madyn Farm, Amlwch (Site A and Site B to the west and east of the B5111 respectively);
- the site known as Madyn Farm, which benefits from existing consent for housing development; and
- Rhosgoch, owing to its brownfield status and public support at previous consultation events.

Scenarios for the development of new stock for construction worker accommodation

9.64 Feedback from the Stage One Pre-Application Consultation included requests for more information to be provided on the location, size and characteristics of Temporary Workers' Accommodation. Horizon held a series of information events in July 2015 to share our latest thinking on the general locations on Anglesey being considered for specially provided Temporary Workers' Accommodation and other types of Associated Development. A special edition newsletter was delivered to all Anglesey residents in advance of the events and the centre-spread is reproduced in figure 9.3 – this sets the context for how the siting options evolved through 2015.

9.65 We identified the Power Station Site, Holyhead and Amlwch as the general locations under consideration for the delivery of bed spaces through Temporary Workers' Accommodation, potentially including an element of permanent housing.

Figure 9.2 Geographic limits for the siting of Temporary Workers' Accommodation, and new permanent housing stock

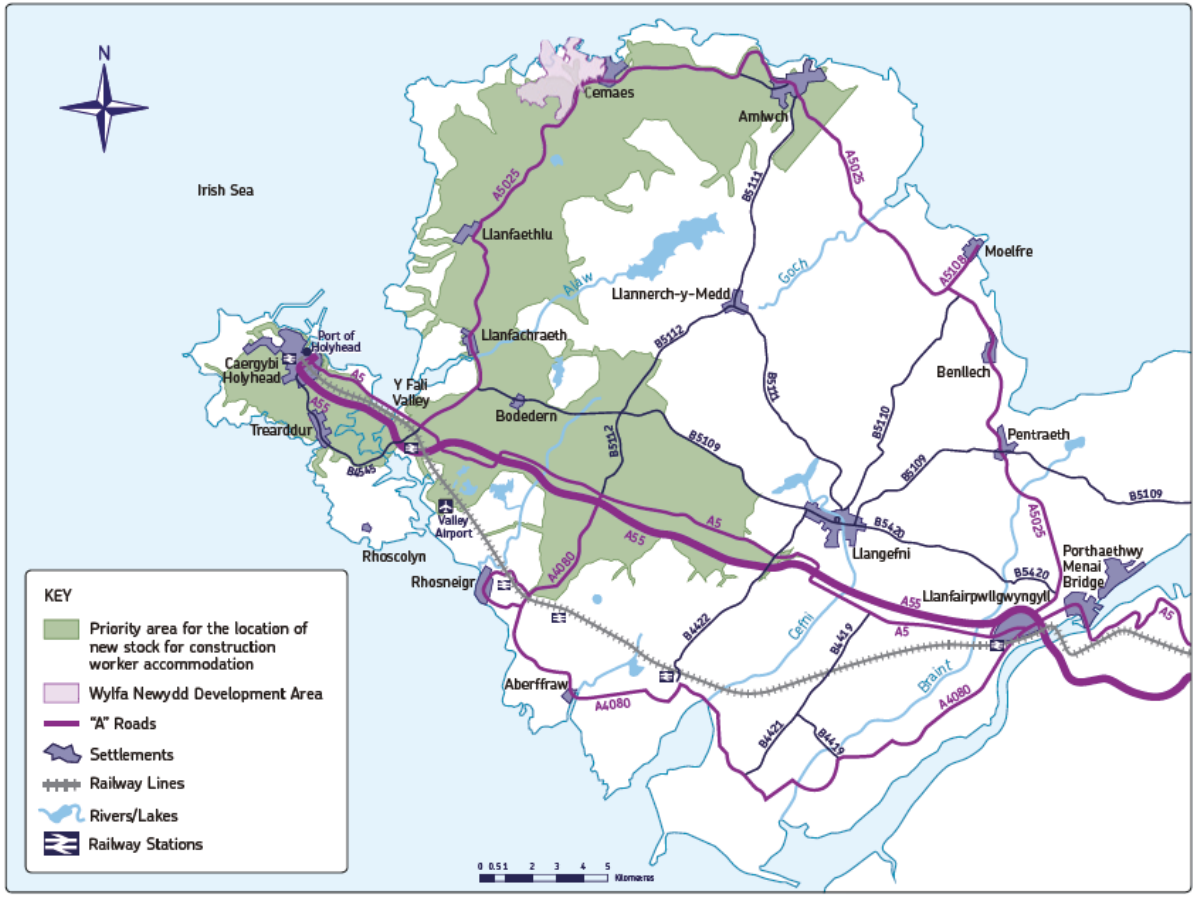
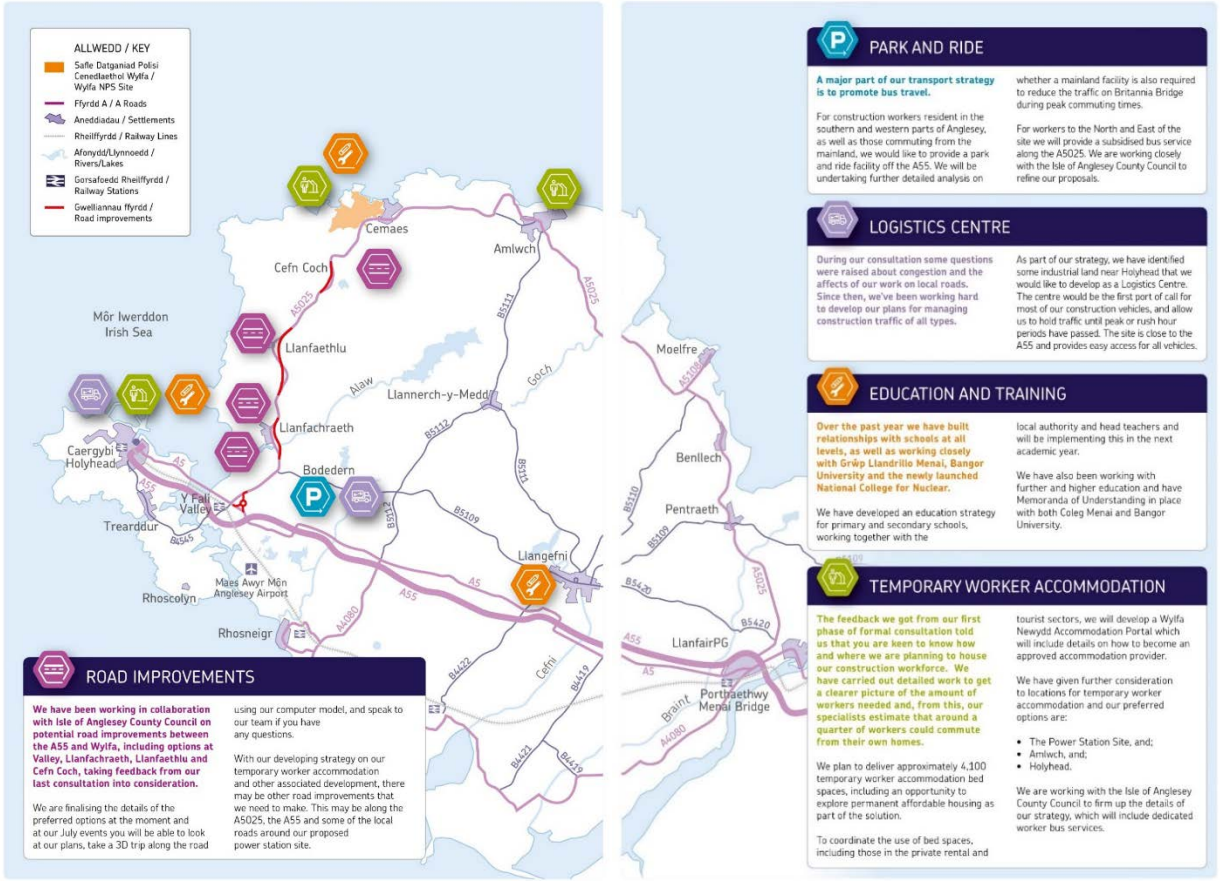


Figure 9.3 Reproduction of centre spread from Horizon's July 2015 information events



9.66 The January 2016 Project Update consultation set out a further refinement of the plans. This included:

- Up to 500 bed spaces on-site within the Wylfa Newydd Development Area;
- 500 to 800 bed spaces in Amlwch;
- 150-200 bed spaces through permanent housing at Amlwch (Madyn Farm);
- 1,000 to 4,000 bed spaces at Rhosgoch;
- 1,000 to 4,000 bed spaces at Kingsland and Cae Glas, Holyhead; and
- The re-use of empty homes to provide up to 250 beds.

9.67 The feedback from the January Project Update consultation provided support for the proposals at Kingsland and Cae Glas in Holyhead, and for some accommodation at Amlwch, particularly the permanent houses at Madyn Farm, but resistance to potential temporary accommodation. There were mixed views about the proposals for Rhosgoch, with some support for holiday units as legacy development.

9.68 In response to this feedback, Horizon has since refined its proposals and identified a Central Case on which it is now consulting. In addition to the Central Case, there remain some options that have not been ruled out.

9.69 The Central Case, providing 4,700 bed spaces in Temporary Workers' Accommodation, is now as follows:

- 500 beds on-site;
- 3,500 at Kingsland and Cae Glas, Holyhead;
- 500 at Rhosgoch;
- 200 beds at Madyn Farm;
- The re-use of empty homes and latent accommodation to provide up to 400 beds.

9.70 In addition, there remains the option of a further 1,000 beds at Rhosgoch (taking the total there to 1,500) and an alternative of up to 800 on two sites in Amlwch (Sites A and B, to the west and east of the B5111).

9.71 It is important to recognise that the final number of bed spaces required to support the Power Station construction may only be known once the Wylfa Newydd Project commences. Horizon would only wish to deploy bed spaces where a demand exists, but must ensure there is both the capacity and ability to deploy temporary bed spaces quickly up to the maximum requirement. Horizon is keen to ensure appropriate arrangements are put in place to record, monitor and react to the presence of its construction workforce in all types of accommodation across the KSA.

9.72 Horizon believes this represents a balanced approach that meets the aims of its CWAS – the safe and efficient construction of the Power Station, preventing adverse effects on local areas and deliver significant legacy including serviced sites, new tourist accommodation and housing at Madyn Farm.

9.73 Horizon will meet some of the workers' needs through purpose-built accommodation both on site and elsewhere across Anglesey. The on-site Temporary Workers' Accommodation is particularly important for operational reasons, but all the purpose-built accommodation will be important in attracting workers to the Project when they will have options elsewhere. It will also help manage worker behaviour and travel patterns and therefore reduce the effects on existing communities across Anglesey.

9.74 The CWAS is in part based on the ability of existing accommodation to meet the needs of workers whilst avoiding the risk of displacing local residents or tourists. Horizon has assessed the capacity of that accommodation to be just under 9,000 bedspaces. However, the vast majority of these are in tourist accommodation that will not be suitable for all workers, especially those who are on the Project for a reasonable length of time and are therefore likely to want accommodation in the Private Rented Sector (PRS).

9.75 Whilst in aggregate there is enough spare PRS accommodation within the KSA, there is a risk that the demand from workers in some local areas could exceed supply and lead to displacement. The CWAS therefore includes a Construction Worker Accommodation Management Portal (CWAMP) to help match workers with accommodation providers (see below) as well as other options to boost supply, including the option sites and boosting supply more generally through advertising for new ('latent') accommodation and bringing empty homes back into use.

9.76 Our preferred locations for Temporary Workers' Accommodation are shown on Figure 4.3 in chapter 4 of this document.

Question – Temporary Workers' Accommodation site options

9.77 In the January 2016 Project Update consultation, Horizon presented proposals for a range of sites for Temporary Workers' Accommodation and the strategic approach to housing workers and asked for views on the extent to which support would be received for each. The responses received to this consultation have been considered and the proposals have been refined, with a preferred choice of sites and the number of worker bedspaces proposed at each presented as part of this Stage Two Pre-Application Consultation. However, there is further consideration that can be given to the final proposals for Temporary Workers' Accommodation in the Amlwch area (including Rhosgoch and land adjacent to Madyn Farm, east and west of the B5111).

Our preferred proposal is to provide accommodation for up to 3,500 workers at Holyhead (Cae Glas and Kingsland), 1,500 workers at Rhosgoch, 500 workers on-site for critical construction workers and 200 workers at Madyn Farm. However, we are considering an alternative site to accommodate up to 800 workers at Amlwch (adjacent to the permanent housing at Madyn Farm, east and west of the B5111).

Now that we have developed more detailed proposals for both Rhosgoch and Amlwch (adjacent to Madyn Farm, east and west of the B5111) we welcome your views on the choice of sites, and the reasons for your preferences.

Construction Worker Accommodation Management Portal

9.78 Horizon has used the socio-economic assessment (see PEI Report B1) to inform the estimated levels of construction worker accommodation across the various types of stock. As stated previously, assumptions for the availability of types of accommodation (excluding construction workers who may already reside locally or choose to buy a home) are as follows:

Table 9.3 Summary of supply and demand

Accommodation Type	Estimated Demand	Estimated Supply
Home based workers	2,690[5]	
Temporary workers' accommodation comprising:	5,700	
• On-site provision of Temporary Workers' Accommodation for essential workers	500	
• Madyn Farm	200	
• Kingsland and Cae Glas	3,500	
• Rhosgoch	Up to 1,500	
• Amlwch Sites A and B	800 (Possible alternative provision)	
Existing accommodation comprising:	3,330	
• Rented Existing Tourist Sector Stock	1,100	7,000
• New Owner Occupier	730	9,500
• Rented Existing Private Sector Stock	1,100	1,300
• Latent Accommodation	400	400
TOTAL	Up to 11,700	

[5] This figure is rounded up to 2,700 where it is referred to elsewhere in this document and other consultation documents

9.79 Whilst we estimate that there is more accommodation available than is likely to be demanded, it is possible that at local levels this may not be the case and that there may be spikes in demand which cannot be matched with supply.

9.80 We have therefore been working with the IACC to agree the principles for how a Construction Worker Accommodation Management Portal (CWAMP) could be used to help match workers with suitable available accommodation and further reduce the risk of adverse effects on housing and tourist accommodation markets. This was previously called the "Housing Hub".

9.81 It is envisaged that this will be a web-based portal and would be designed to achieve the following:

- provide a central location for providers to register, including "latent" providers (i.e. those that have not previously provided accommodation);
- encourage the release of empty homes or under-used stock to the market, for example those with second homes or a spare room, by offering a straightforward listing service;
- provide information to providers on their statutory obligations (e.g. fire regulations);
- match workers with providers and enhance the accommodation booking service offering a 'one-stop shop' in order to attract and retain contractors;
- guide workers to locations that better meet their needs (e.g. in terms of access to facilities) and ensure that the location of temporary accommodation used appropriately prioritises opportunities close to the Wylfa Newydd Development Area;
- guide workers away from locations that are not suitable and/or where there is excess demand;
- seek to expand the level of provision in popular locations through localised advertising;
- provide real time reports regarding accommodation usage; and
- be easy to use, offering an equal or better service that existing web portals.

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10 Meeting the Transport Requirements of the Wylfa Newydd Project

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10 Meeting the Transport Requirements of the Wylfa Newydd Project

10.1 This chapter provides an overview of the existing transport context of Anglesey and wider area and sets out the transport issues that have been considered by Horizon in developing the transport proposals for the Wylfa Newydd Project. It draws on information from the Traffic and Transport Technical Note which is also provided as part of this Stage Two Pre-Application Consultation and is available on our website.

10.2 The transport strategy for the Wylfa Newydd Project has been informed by a detailed review of relevant planning policy at both national and local level – further details are provided in chapter 3 of this document and the Planning Statement Framework.

10.3 The Wylfa Newydd Project has significant transport requirements both in terms of construction logistics (e.g. transport of materials), travel patterns of construction workers and operational requirements. This chapter therefore introduces Horizon's emerging Integrated Traffic and Transport Strategy (ITTS) and describes the evolving transport proposals associated with the Wylfa Newydd Project.

10.4 Proposed transport measures are described and the chapter concludes with a summary of how these support and deliver against the stated ITTS objectives.

10.5 This chapter is structured as follows:

- a summary of the key consultation feedback received to date;
- guidance on key issues set out in this chapter and identification of the particular areas where consultation feedback is likely to be most influential;
- a description of the existing transport context of the Wylfa Newydd Project;
- an introduction to Horizon's evolving ITTS and key objectives;
- the proposed transport measures emerging from the ITTS, including, but not limited to our preferred plans in relation to:
  - construction workforce;
  - construction materials (including freight and logistics);
  - operational workforce; and
  - operational deliveries.

10.6 Importantly, a number of Associated Developments also specifically form part of the overarching transport strategy and are described in detail elsewhere within this Stage Two Pre-Application Consultation documentation. Of particular relevance are:

- Workforce Accommodation Strategy (see chapter 9);
- Park and Ride at Dalar Hir (see chapter 12);
- Logistics Centre at Parc Cybi (see chapter 13); and
- Highway Improvements to the A5025 (Off-Line and On-Line Highway Improvements) (see chapter 11).

10.7 This chapter should also be read in conjunction with chapters 14, 15, 16 and 17 of this document that relate to purpose built temporary worker accommodation; chapters B1 (socio-economic), B2 (public access and recreation) and B3 (traffic and transport) of the Stage Two Preliminary Environmental Information (PEI) Report; and the Traffic and Transport Technical Note.

10.8 The emerging proposals to meet the transport needs of the Wylfa Newydd Project have been refined in response to evolving project requirements, consultation feedback provided as part of the Stage One Pre-Application Consultation in 2014 and the January Project Update consultation in 2016 and on-going consultation with stakeholders. The proposals will continue to be refined and evolve in response to this Stage Two Pre-Application Consultation and continued engagement with stakeholders.

Consultation input

10.9 The following sub-section provides a summary of the key feedback received on transport matters through consultation to date, at both Stage One Pre-Application Consultation and the January Project Update consultation. Further details are provided within the Consultation Summary Report.

Stage One Pre-Application Consultation

10.10 The Stage One Pre-Application Consultation was undertaken in Autumn 2014 through a series of events. The main Consultation Document included a transport-specific chapter; "Chapter 10 Meeting Transport and Construction Workforce Requirements". The PEI Report submitted in support of Stage One Pre-Application Consultation provided a description of the On-line Highway Improvements and outlined ten draft principles that the Wylfa Newydd Project would seek to achieve as it evolves.

10.11 A summary of the key issues raised through the consultation exercise that relate to transport is set out under the following sub-headings. Each provides a summary of the consultation responses with an explanation on how they have been, and/or are being, addressed.

Highway improvements

10.12 The key concern associated with the proposed road improvement schemes related to the need for justification for the works, particularly in relation to safety and environmental effects. Comments stated that this should also include the potential for improvements between the Power Station Site and Amlwch, subject to siting of Temporary Workers' Accommodation. There was also concern raised over the volume of traffic increasing along the A55 and A5025, leading to drivers using rural lanes as alternative routes.

10.13 The Stage Two PEI Report (chapter B3) and the Traffic and Transport Technical Note provide further environmental information and the proposed approach to traffic modelling analysis and capacity assessments. A summary of proposed highway improvements is provided in this chapter, whilst chapter 11 provides more detailed information on each of the specific improvement measures on the A5025 and the need for them (supported by Volume C of the Stage Two PEI Report).

10.14 The Development Consent Order (DCO) application and separate planning applications for the various Associated Developments (including that for highway improvements along the A5025) will be supported by traffic modelling analysis and capacity assessments.

These will identify where capacity constraints may occur and the proposed mitigation. This will encompass an extensive study area, including the A5025, A55 and some of the lower category roads around the Island.

10.15 Chapter 11 also explains the work that has been carried out with regard to the A5025 between Amlwch and the Power Station and why we do not consider that road widening is appropriate in this location.

10.16 The Traffic and Transport Technical Note summarises in more detail the technical work that has been undertaken since the Stage One Pre-Application Consultation. It explains the methodology to be used for transport analyses, including the traffic model to be used, its extent, hours, scenarios and years to be modelled as part of the Transport Assessments (TA) that will accompany the DCO application and applications for Associated Developments.

10.17 This will be the subject of on-going consultation with stakeholders.

Public transport and shuttle bus services

10.18 There was general support for additional bus services, including the potential for use by local communities and as a legacy benefit. It was also suggested that this should include consideration of links to, and enhancement of, existing services. Further detail on the proposed Park and Ride facilities was requested. A frequently raised issued related to whether rail would be used for passenger transport, including enhanced services to benefit communities, use of Valley railway station and the potential for multi-modal transport hubs. The potential for air travel was acknowledged to be limited, though should be considered as a potential option for travel to and from Anglesey.

10.19 This Stage Two Pre-Application Consultation document provides a greater level of detail on the Park and Ride facilities (see chapter 12 and Volume F of the Stage Two PEI Report); it also describes a range of bus services that will be provided for construction workers and how these may provide a legacy benefit, as well as identifying the potential for enhanced bus services for operational purposes. Further detail on the preferred bus routes are provided at figure 10.6 in this chapter.

10.20 Some comments were raised in the Stage One Pre-Application Consultation and January 2016 Project Update consultation on the need for, and potential benefits of, a mainland Park and Ride facility. We have considered the need for such a facility and our transport assessment work to date concludes that there is no justification for such a facility for highway safety or capacity reasons. On this basis, a mainland Park and Ride is not part of our proposals for this Stage Two Pre-Application Consultation. We are however proposing a series of measures (including bus based measures) to provide more sustainable modes of travel for those workers travelling from the mainland.

10.21 The potential for rail passenger travel has been assessed further and will be promoted predominantly for travel between a worker's permanent home and their temporary accommodation. We are also proposing improvements at Holyhead station, such as improvements to waiting facilities, which would remain as a legacy benefit.

Freight and logistics

10.22 Questions were raised relating to the delivery of abnormal indivisible loads (AILs) via road and the likely routes to be used. Recommendations included consideration for transfer to other modes, including air and rail, with potential for greater use of multi-modal

infrastructure. Further consideration of rail freight was requested, particularly with reference to the disused Gaerwen to Amlwch corridor. Support was given to the proposed Marine Off-loading Facility (MOLF), while it was recommended that further consideration be given to improvements at Holyhead to enable multi-modal transfer of freight and the potential use of Amlwch Port. Minor concerns were also raised over the management of freight, such as timing of deliveries to avoid ferry and commuting peaks, contingency arrangements should routes be disrupted and the need to consider transport of excavated and waste material.

10.23 This chapter sets out the proposals for movement of freight and the opportunities that exist to transport a large proportion of goods by sea, including all AILs. It also highlights the limitations for rail freight, both in terms of the opportunities and existing network constraints. Our proposals also include a Logistics Centre, which will enable control of HGV movements to the Power Station Site during construction (see chapter 13).

10.24 Details of the proposed HGV routing is also included at figure 10.7.

Public Rights of Way (PRoW) and Cycling

10.25 Further details on the potential effects on existing PRoW were requested, including routing, connectivity and management of diverted routes during the construction phase. A number of comments related to the provision of cycling, including provision of new and improved routes to the Power Station Site and Off-Site facilities, avoiding HGV routes.

10.26 Further details of the effects on PRoW and provisions for cycling are included within the Public Access and Recreation Strategy summarised in this chapter, which has been developed specifically to address these travel choices. This chapter provides some information on PRoW effected by our proposals at the Power Station Site. Chapters 11-18 of this document explain the effect of our Associated Development and Off-Site Power Station Facilities on PRoW, where relevant. Further information is also provided in Volume B2 of the Stage Two PEI Report, Public Access and Recreation.

Sustainability

10.27 It was highlighted that off-site developments should be located in areas of good accessibility to maximise use of existing facilities and connectivity. A common issue related to the consideration of legacy uses for Associated Development, in particular the Park and Ride facilities. Consultation comments also suggested consideration should be given to potential enhancements beyond the Power Station Site, such as improvements to the Port of Holyhead terminus and PRoW.

10.28 The future use of off-site developments has been carefully considered, while taking into account the importance of proximity to the Power Station Site in order to deliver an efficient construction programme. A wide range of factors, not just transport-related, needs to be taken into account when considering the location of off-site developments. Further information is provided within the Associated Development Siting Report, also provided with this consultation, and available on our website.

Assessment methodology

10.29 Recommendations included that the assessment of traffic should take into account the seasonality of traffic volumes on Anglesey, while the socio-economic study area was noted as potentially being too restrictive to take account of effects on traffic movements

on road crossings to Anglesey (via Britannia Bridge and Menai Bridge). Further information was requested on the volume of goods and worker number profile.

10.30 The Stage Two PEI Report (chapters B1 and B3) and chapters 11 – 17 of this document collectively provide further environmental information on socio-economics and traffic and transport respectively. A Traffic and Transport Technical Note sets out the current proposed approach to traffic modelling and assessments and outlines the extent of work undertaken since the Stage One Pre-Application Consultation.

10.31 The DCO application and planning applications for the various Associated Developments (including that for highway improvements along the A5025) will be supported by a comprehensive Transport Assessment(s) or Transport Statement, as appropriate, which will consider an extensive study area and assess the traffic impacts of the construction and operation of the Wylfa Newydd Project. The Traffic and Transport Technical Note summarises in more detail the technical work that has been undertaken since the Stage One Pre-Application Consultation and explains the methodology to be used for transport analyses, including the traffic model to be used, its extent, hours, scenarios and years to be modelled as part of the Transport Assessments that will accompany the DCO and Associated Developments applications.

January Project Update Consultation, 2016

10.32 Further consultation was undertaken in the January Project Update, demonstrating how the Wylfa Newydd Project has evolved since the Stage One Pre-Application Consultation and outlining the progress made in assessing its effects.

10.33 A summary of the key issues raised through the January Project Update is set out below.

Integrated Traffic and Transport Strategy (ITTS)

10.34 There was general support for the preparation of the ITTS but there was concern that the information presented at that time was very high level and did not provide sufficient detail to make meaningful comments. Since the January Project Update, Horizon has significantly advanced the ITTS, the detail of which is introduced in this chapter. The draft ITTS will evolve as part of on-going discussions with stakeholders and further transport modelling.

Britannia Bridge

10.35 Concerns were raised over the potential impact on the A55 across the Britannia Bridge, in terms of congestion at peak periods and resilience issues due to its closure during periods of adverse weather conditions (e.g. high winds). It was recommended that Horizon work closely with stakeholders to fully assess potential impacts and develop appropriate mitigation. As part of the January Project Update, it was confirmed that modelling of traffic flows along the A55 across the Britannia Bridge would be undertaken, which was welcomed. In response, Horizon has further advanced the scope and methodology of the modelling with stakeholders (which has been refined accordingly). A microsimulation model, the scope and geographical extent of which has been agreed with stakeholders, is currently being finalised, the results of this are expected shortly and will be the subject of on-going consultation.

Mainland facilities

10.36 Consultation responses recommended that Horizon considers facilities on the mainland further. These include facilities such as a logistics centre and a Park and Ride facility. It was suggested that such facilities could ease pressure on the A55 Britannia Bridge. As explained in response to the Stage One Pre-Application Consultation above, Horizon has considered the need for such facilities further, but transport assessment work to date concludes that there is no justification for those facilities based on highway safety or capacity reasons. On this basis, a mainland logistics centre and mainland Park and Ride is not part of our preferred proposals. We are however proposing a series of measures (including bus based and intelligent transport systems).

Freight and logistics

10.37 There was strong support for Horizon's commitment to maximise the delivery of construction materials and equipment direct to the Power Station by sea through the use of the MOLF. It was recognised that this would significantly reduce the impacts on Anglesey's road network and its residents and communities, and urged the use of the Port of Holyhead wherever possible to support this sea-based approach. Since the January Project Update Horizon has sought to refine the extent of freight deliveries by sea. It is currently estimated that between 60% and 80% of all materials associated with the construction of the Power Station could be transported by sea. Further information on those assumptions are set out in this chapter. The quantities of main construction materials will be required for this to be refined further, the details of which will be shared with stakeholders during on-going consultation. It was also suggested that Horizon revisit the issue of rail freight. No further proposals are contained within this Stage Two Pre-Application Consultation on rail freight for reasons set out later in this chapter. Chapter B3 of the Stage Two PEI Report confirms however that a further review of freight requirements will be undertaken to assess if there is any opportunity to transfer road-based freight to rail.

10.38 Further stakeholder engagement will lead to continued refinement of these measures and ensure that they meet the objectives of the Wylfa Newydd Project, those of the local planning authorities and other stakeholders, as far as possible.

Existing transport context

10.39 Anglesey is served by a number of strategic transport modes ranging from road, rail, sea and air. Strategically, the A55 forms part of the E22 Euroroute that stretches between Holyhead Port on Anglesey and Ishim in Russia, and is also considered part of the Trans European Road Network (TEN) route, crossing to mainland Wales via the Britannia Bridge. There is a mainline railway serving Holyhead and the Port of Holyhead serves as a key entry point for freight and passengers crossing the Irish Sea and the Atlantic. Anglesey is also served by a small airport (Anglesey Airport) situated at Llanfair yn Neubwll. The existing transport context of Anglesey is illustrated in figure 10.1.

10.40 This section provides a brief outline of the key features of Anglesey's existing transport network and, where appropriate, highlights key considerations for Horizon. For some modes, strategic transport planning policy objectives already establish improvement or modernisation aspirations. Some of these are committed projects to be delivered by others via a range of transport funds and partners. Where these are considered relevant as context for Horizon's evolving ITTS, reference is included. The description provided in

this section is principally for information only and supplementary details can also be found in chapter B3 of the Stage Two PEI Report.

Air

10.41 Anglesey benefits from a small airport. Anglesey Airport is located at Llanfair-yn-Neubwll around 22km south of the Power Station Site and connects to the A55 at junction 3, which is about 2.5km to the north of the airport, via a number of rural roads. It currently offers domestic weekday return flights to Cardiff (year round). Flights to Cardiff Airport are about one hour in duration and from Cardiff, connections can be made with flights to western European and Mediterranean destinations, as well as domestic routes.

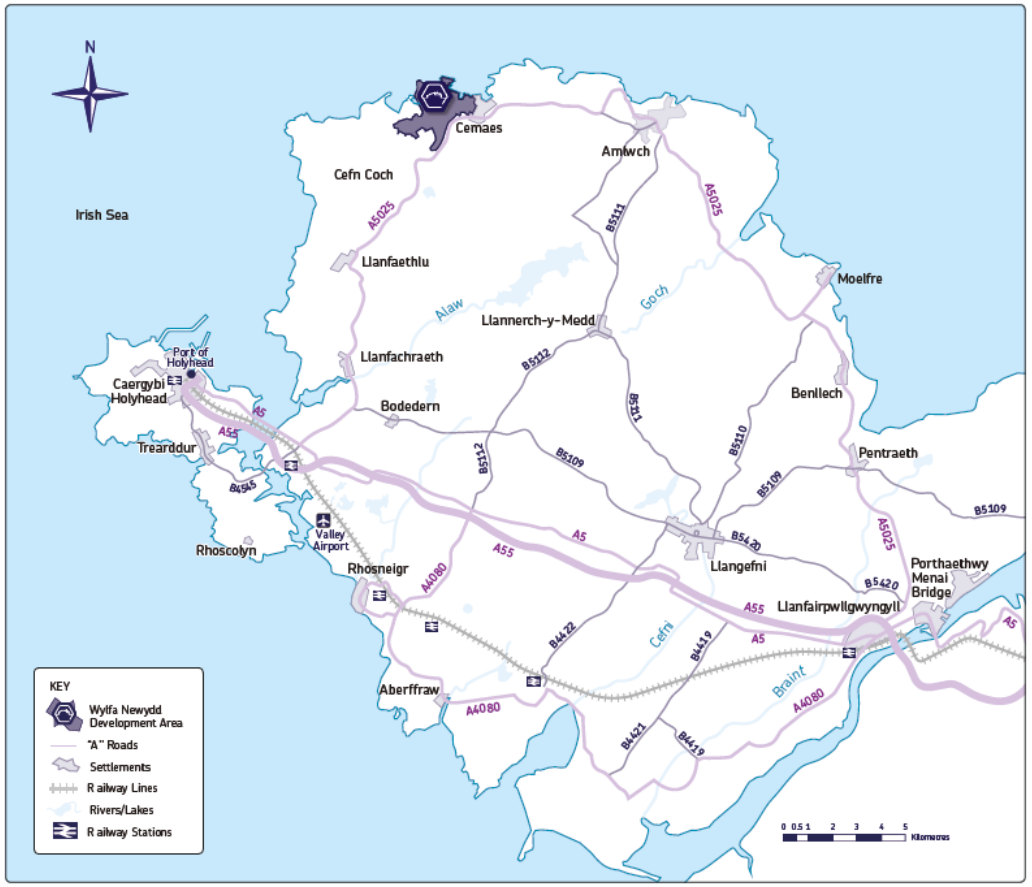
10.42 For other domestic and international flights, the nearest airport facilities are located at Liverpool John Lennon Airport, Manchester Airport and Birmingham Airport. Car and rail transport connections to these airports are available. For access by car, the A55 and the wider strategic road network allow connections between the Power Station Site and Liverpool John Lennon Airport (2 hours), Manchester Airport (2 hours), Birmingham Airport (3 hours) and Heathrow Airport (4.5 hours). Rail connections are also available from Holyhead to Liverpool South Parkway railway station (3 hours and three trains required), Manchester Airport station (3 hours and two trains required), Birmingham International railway station (3.5 hours and three trains required) and Heathrow Airport (5 hours and three trains required).

10.43 The public airport forms part of the RAF Valley teaching station and comprises a single storey building with a single check in desk and limited facilities. Access to the runways is shared with the RAF training centre. This results in restricted time periods for use of the runway for non-RAF activities and therefore limits the potential to significantly increase the number and frequency of civilian flights in and out of the airport.

10.44 RAF Mona is located immediately north of the A5 and to the south of the settlement of Bodffordd on Anglesey. Access to the A55 is via junctions 5 and 6 some 5km to the west and 4km to the east of the airstrip respectively. The airstrip is primarily used as a relief landing ground for RAF Valley and also accommodates a civilian flying club as well as the 2474 (Cefni) Air Training Corps. There are limited opportunities to introduce domestic flights at this airport without investment in facilities and no such flights currently take place.

10.45 The number of both construction and operational staff who could travel to the Power Station via Anglesey Airport is likely to be very low. The Construction Workforce Accommodation Strategy (see chapter 9) indicates that construction workers would be encouraged to base themselves as close to the Power Station Site as reasonably practicable. This would limit the potential for air use to those with a permanent address convenient to Cardiff and connected domestic destinations. It could also provide an opportunity for occasional travel between north and south Wales, for example, for meetings. It could also be used by workers at the shift cycle changeover.

Figure 10.1 Existing transport context of Anglesey



Sea

10.46 The nearest commercial port for ferry passengers and for the delivery of commercial freight is the Port of Holyhead. The port is located some 25km south of the Power Station Site on the northern side of Holy Island. The port is operated by Stena Line Ports Ltd and provides passenger services to Dublin in Ireland. There are four Stena Line Ferries and six operated by Irish Ferries arriving at the port each day. Of which the services comprise of commercial freight, foot passengers and vehicle passengers. Additionally, the Port of Holyhead has the capacity to provide facilities for commercial fishing vessels and cruise ships. The port forms the principal surface transport link to Ireland from north Wales and the north-west of England. Historically, Holyhead also provided passenger services to Dun Laoghaire just to the south of Dublin. These services ceased in 2015.

10.47 The port also has commercial and recreational fishing activity, plus a notable recreational sailing community. The Port of Holyhead also has a Marina facility providing permanent and visitor moorings.

10.48 An assessment of the port's capacity was undertaken in May 2010. The conclusions indicated that there was some spare capacity in terms of freight that could be delivered to Holyhead Port. A further review indicated that AIL and bulk products could be delivered to the port; however, additional infrastructure may need to be provided at the port to accommodate these movements.

10.49 Vehicle access to and from the port is via the A55.

10.50 The draft North Wales Joint Local Transport Plan (LTP) sets out highway improvement works that are proposed to provide better links between the port and the A55. These works will improve access for those using the port to both the strategic road network and Holyhead town centre. The proposals include the provision of new dual carriageway link roads as well as landscaping to provide an efficient and attractive gateway to Anglesey.

10.51 Although there are additional smaller port facilities at Cemaes and Amlwch, these are primarily used for recreational craft and are only suitable for small craft and vessels. Vehicular accesses to these ports are also not suitable for accommodating significant numbers of construction vehicles.

10.52 The coastal area surrounding Wylfa Head is used for recreational craft and sea fishing. Additionally, there are a number of cargo, tanker and passenger vessels, high speed craft, port service craft, non-port service craft, utility vessels, military and law enforcement vessels that use the waters in the vicinity. The majority of these vessels are believed to pass the Port of Holyhead and other smaller ports only, on transit to larger ports such as Liverpool and Dublin.

10.53 The vessel transit in this area is noticeably more substantial in the summer period due to the increase in recreational activities.

10.54 There is a clear policy preference (including in National Policy Statements) for freight to be transported either by sea or rail, supported by recommendations to promote freight transfer facilities as part of strategic multi-modal hubs. Department for Transport policies indicate that the UK Government's preferred mode for AIL transport is by sea. In addition, the North and Mid Wales Trunk Road Agency and Highways England will only authorise road transport of AILs if the use of water-based transport has been explored and discounted due to practicality, excessive cost or environmental reasons.

Rail

10.55 Anglesey benefits from a principal railway route that extends along the north Wales coast, across the Britannia Bridge, terminating in Holyhead. The key railway stations are at Holyhead and Valley (and provide connections to other modes of transport), which form part of the North Wales Coast Line and are operated by Arriva Trains Wales. Long distance rail services from Holyhead, with connections to London and elsewhere, are operated by Virgin Trains. Figure 10.2 indicates the extent of north Wales rail network.

10.56 Transport policy and programmes target the railway network for improvements to increase its attractiveness to potential users through reductions in journey times and increased connectivity, both across the network and with other modes.

Holyhead railway station

10.57 Holyhead railway station is some 25km south of the Power Station Site and immediately south of Holyhead Port. A number of interchange options are available including taxi pick up points and bus stops.

10.58 Holyhead railway station is served by hourly services along the North Wales Coast Line, connecting directly to Chester and Crewe to the east and with on-going services and connections continuing to Birmingham and Cardiff. In addition, five services per weekday are provided by Virgin Trains to London Euston. The railway station attracted around 235,000 passengers in 2014-15.

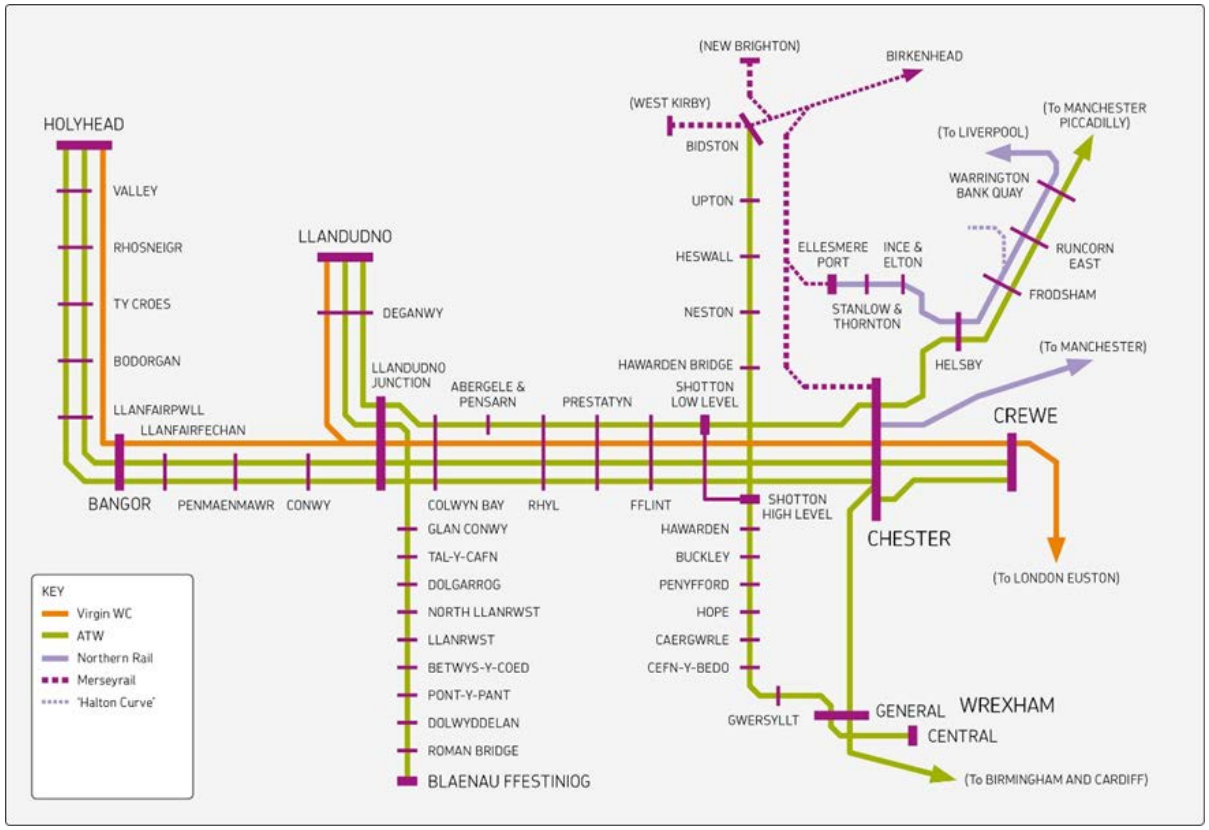
Valley railway station

10.59 The closest railway station to the Power Station Site is located at Valley. Trains only stop at Valley railway station upon request (a 'request stop') and it is served by around half of the services that operate between Bangor and Holyhead. An increase in passengers using this railway station would be required to justify removal of the 'request stop' status and increase the frequency of stopping trains, which would also need to be balanced with journey times and the impact on overall patronage along the line. The railway station was used by around 16,600 passengers in 2014-15.

10.60 Passenger facilities at Valley railway station are limited and the nearest bus stops to the railway station are located around 100m away.

10.61 The platform at Valley Station is only some 40m to 50m in length. This restricts the number of passenger carriages that the railway station could accommodate. However, in practice, stopping trains could provide access and egress from a limited number of carriages known as 'selective door opening'. This would remove the need to lengthen the existing platform and is a practice that occurs at other rural railway stations.

Figure 10.2 North Wales rail network



Bangor

10.62 Bangor railway station is some 35km south-east of the Power Station Site, on the mainland, and is located on the North Wales Coast Line. This station provides a range of passenger facilities and interchange options, including local bus services and taxi pick up points directly outside the station.

10.63 As a mainline station, it provides the same level of service as Holyhead railway station for regional services. Six services per weekday are provided by Virgin Trains to London Euston, one additional service per day compared to Holyhead. Bangor station was the busiest station in North Wales in 2014-15, attracting over 670,000 passengers.

Llandudno Junction

10.64 Llandudno Junction railway station is around 30km further east from Bangor, alongside the River Conwy Estuary and within a short distance of Llandudno and Conwy. This station provides a range of passenger facilities and offers an interchange with a branch line to Llandudno.

10.65 As a mainline station, it provides the same level of service as Holyhead and Bangor railway stations for regional and national services. From May 2016, additional trains have been introduced to provide a direct service to Manchester Airport on an hourly basis during daytime hours, Monday to Saturday. Llandudno Junction attracted 341,000 passengers in 2014-15.

Chester

10.66 Chester railway station is a major hub for connecting services. Located in the city centre, it provides a range of passenger facilities. The station serves all of the services that pass through Holyhead and Bangor stations and provides connections to higher frequency services to Manchester and Liverpool, as well as routes along the West Coast Main Line. It is therefore an attractive hub for workers travelling to Anglesey. Chester attracted 4.52 million passengers in 2014-15, representing the eight busiest station in the north-west of England.

Gaerwen – Amlwch disused railway

10.67 The Amlwch Line is a 28km (17.5 miles) long, standard-gauge, disused railway corridor that connected the port of Amlwch and the county town of Llangefni with the North Wales Coast Line at Gaerwen.

10.68 The line stopped carrying passengers in 1964 and all railway stations and goods yards, passing loops and sidings were removed, except the marshalling yard used to serve the now closed Octel industrial plant, located around 3km south-west of Amlwch. All trains including freight ceased operating in 1993. However, the track remains in place.

10.69 In 2012, Network Rail published a study (dated 2010) that was prepared on behalf of the Welsh Government to assess the potential to re-open a 7.2km stretch of the line between Gaerwen and Llangefni in central Anglesey. Whilst the study concluded that it would be possible to return this section of track to operational use, it estimated that the cost of the work could be over £25million. The study did not assess the overall cost implications of re-opening the 19km section of line between Llangefni and Amlwch.

Rail freight

10.70 The North Wales Coast Line carries a limited volume of freight with occasional trains from Penmaenmawr quarry and the Valley railhead (which is also used for the dispatch of spent fuel from Wylfa). Although there are available train paths for freight, the current gauge of this line prevents the most common containers, used in the majority of European and deep sea shipping ports, being transported along this route to Holyhead. Furthermore, there are no intermodal facilities at Holyhead, which would allow transfer of containers between rail and sea.

Strategic rail plans

10.71 The draft LTP sets out a range of aspirations for the short (2015-2020), medium and longer term (2020-2030), several of which relate to rail. The Network Rail report '*Delivering a Better Railway for a Better Wales*' sets out the spending proposals for 2014-2019, which broadly align with the LTP short term period. The collective proposals relevant to the Wylfa Newydd Project comprise:

Short Term

- provision of a Park and Ride at Abergele railway station, (which is 80km to the east of Holyhead) to encourage transfer from road to rail for longer distance work trips (noted to potentially serve the "Wylfa nuclear new build"); and
- modernisation of the North Wales Coast Line (Phase 1) – scheme includes new signalling and track infrastructure between Flint and Llandudno to improve line speeds.

Medium and longer term

- modernisation of the North Wales Coast Line (Phase 2) – scheme includes new signalling and track infrastructure between Llandudno and Holyhead to improve line speeds.

10.72 The rail modernisation proposals already form part of Network Rail's plans for the North Wales Coast Line and are significantly advanced in planning, with Phase 1 due to be implemented in 2017 and Phase 2 in 2021. The Park and Ride aspiration at Abergele is yet to be costed or confirmed as a committed scheme. Trains currently take just over an hour to reach Valley from Abergele.

10.73 Electrification of the North Wales Coast Line is currently being considered as a future possibility, though no feasibility studies have been undertaken yet to establish the requirements, costs or timescales.

10.74 Proposals for Holyhead Port, including a masterplan for providing intermodal facilities, are at an early stage with limited information available. The timescales therefore mean that such proposals are unlikely to provide a significant opportunity to the Wylfa Newydd Project.

Road

10.75 The following sub-sections provide a summary of the key road networks (see figure 10.1). A summary of the existing traffic flows along key parts of the road networks set out below are contained within the Traffic and Transport Technical Note.

Strategic road network – Anglesey

10.76 The Anglesey stretch of the A55 extends to approximately 36km and stretches south-east to north-west across the Island. It is a dual carriageway with grade-separated junctions until it reaches Holyhead, where it terminates at Holyhead Port.

Strategic road network – links to mainland Wales

10.77 There are two bridges that link Anglesey to mainland Wales. The Britannia Bridge provides the strategic route onto the Island carrying the A55. The Menai Bridge provides an alternative link to the Island. It carries the A487 and is located to the north of the Britannia Bridge. Both bridges can suffer from congestion during peak periods, which include the main holiday season as well as typical commuting peaks.

10.78 The Britannia Bridge is a double deck structure, providing a single carriageway with one lane in each direction on the upper deck and a single track railway line on the lower deck. The dual carriageway approaches of the A55 on either side of the bridge narrow down to the single lane for the crossing, which inevitably reduces the capacity for this short section of the A55.

10.79 The A487 provides an alternative route between the mainland and Anglesey via the Menai Bridge. Vehicles using the Menai Bridge can access the A55 via the B5420 and the A5025 at junction 8, around 2.5km west of the crossing. The Menai Bridge again provides a single carriageway with one lane in each direction and is not appropriate for HGV use given the limited overhead clearance between the carriageway and the bridge structure. This bridge also experiences congestion during peak times.

Strategic road network – north west Wales

10.80 To the east of the Britannia Bridge, the A55 provides access to the Parc Menai business park, which is a large area of research and development and employment land south of Bangor. The A55 extends eastwards along the north Wales coast and into north west England, with connections to the national motorway network.

10.81 The A55 connects to the A5 at junction 11 some 8km to the east of the Britannia Bridge. The A5 continues south-east from this junction and provides a strategic route to Shrewsbury and Telford, connecting onwards to Wolverhampton and Birmingham via the M54.

10.82 To the east of the Menai Bridge, the A487 continues some 2km north to Bangor. To the south, the A487 provides a north-south route through Wales that runs close to the coast between Anglesey and Fishguard.

Road network - Anglesey

A55

10.83 Stretching south-east to north-west across Anglesey, the A55 provides a dual carriageway standard with grad-separated junctions as far as Holyhead, terminating at the Port of Holyhead. These junctions provide connections to key routes and destinations as follows:

- A55 terminus (Port of Holyhead);
- Junction 1 B4545 (Holyhead);

- Junction 2 A5153 (Parc Cybi);
- Junction 3 A5025 (Valley / Wylfa);
- Junction 4: A5 (Bodedern);
- Junction 5: A4080 (Rhosneigr);
- Junction 6: A5114 (Llengefni);
- Junction 7: A5152 (Gaerwen);
- Junction 8 (Llanfairpwll); and
- Junction 8A (Llanfairpwll / Menai Bridge).

A5

10.84 Across Anglesey, the A5 is a single carriageway road that connects Holyhead with the Menai Bridge. The A5 was formerly the principal route crossing the Island until the A55 opened, and it runs broadly parallel to the new route. The A5 is subject to various speed limits: predominantly derestricted between settlements and reducing to 30mph when it passes through the villages along it.

10.85 Observations show that this route carries local traffic and is generally lightly trafficked. While parts of the route are suitable for carrying construction traffic, including the section between Holyhead and Valley, the majority of the route runs parallel to the higher standard A55 and therefore use by construction and operational freight traffic associated with the Wylfa Newydd Project should be discouraged. Between the Britannia Bridge (junction 8A) and junction 3, it would be considered inappropriate to transport AILs along the A5.

A5025 / A4080

10.86 The A5025 is the main circulatory road around the Island, north of the A55, providing the primary connection between the Power Station Site and the strategic road network. The A4080 provides a similar circulatory route to the south of the A55, though it would not be used to reach the Power Station Site other than by workers who would reside along it.

A5025 Valley to Tregele (Power Station Site)

10.87 The A5025 connects to the A5 at a crossroads in Valley, a small village east of Holyhead. Between Valley and Tregele, the A5025 is a single-carriageway road that passes through a number of residential areas including Llanfachraeth and Llanfaethlu. The road is subject to various speed limits and is predominantly derestricted between settlements, reducing to between 50mph and 30mph within settlements themselves. Typically footways are only provided when the road passes through built-up areas.

10.88 This section of the A5025 is classified as a 'Heavy Load Route' (HR35) for transport between Holyhead Port and the Existing Power Station and, as such, has been deemed appropriate to accommodate AILs.

10.89 This section of the A5025 carries a daily average of around 5,400 vehicles at the southern end, reducing to around 2,900 vehicles at Tregele.

A5025 Tregele to Llanfairpwll

10.90 The A5025 between Tregele and Llanfairpwll is a single-carriageway road that runs parallel to the coast and provides links to the north Anglesey towns of Cemaes and Amlwch, as well as the east coast town of Benllech. The route is subject to various speed limits and is predominantly derestricted between settlements reducing to 30mph within the settlements themselves. Typically footways are only provided when the road passes through built-up areas.

10.91 There are a number of width constraints that have the potential to restrict two-way HGV traffic, predominantly in built-up areas. Therefore, the use of this section of the A5025 will be discouraged in favour of directing Wylfa Newydd Project traffic along the A55 to Valley, thus reducing the distance travelled on single carriageway roads and avoiding pinch-points.

10.92 The access road to the Existing Power Station connects to the A5025 at a priority junction to the west of Cemaes.

10.93 This section of the A5025 carries around 3,300 vehicles per day.

A4080

10.94 In broad terms, the A4080 runs around the southern coast of Anglesey and provides links to a number of villages and small towns. The road is single-carriageway and subject to various speed limits; it is predominantly derestricted between settlements reducing to 30mph within the settlements themselves. Typically footways are only provided when the road passes through built-up areas and they can be narrow in places.

10.95 This road is not expected to carry significant volumes of traffic associated with the Wylfa Newydd Project as it only serves minor settlements. Therefore no traffic data have been collected for this road. This road would be unsuitable for carrying HGV construction traffic.

Cemlyn Road

10.96 Cemlyn Road is a single track side road that runs from Tregele to Cemlyn Bay to the west of the Power Station Site.

Other roads

10.97 It is considered that the majority of traffic travelling directly to the Power Station Site, including all HGVs, will travel across Anglesey on the A55 before transferring to the A5025 (via the proposed Logistics Centre). Some traffic may utilise other local roads, especially workers residing in the north eastern quarter of Anglesey. Those local roads include:

- B5109 that runs broadly parallel to the north of the A5 and links to the A5025 at each end. The road is predominantly derestricted but speed limits are reduced to 30mph within settlements; and
- B5111 linking Llangefni in the south with Amlwch and the A5025 in the north. The road is single carriageway in nature with speed limits mainly derestricted.

Strategic road plans

10.98 The draft LTP sets out a range of aspirations for the short (2015-2020), medium and longer term (2020-2030), several of which relate to road. The proposals relevant to the Wylfa Newydd Project comprise:

Short term

- A55 resilience proposals;
- A487 Caernarfon – Bontnewydd scheme;
- A55 Britannia Bridge study; and
- Llangefni Link Road study.

Medium and longer term

- A55 New Menai Crossing;
- improvements to Holyhead Port access;
- A55 Junctions 15 (Llanfairfechan) and 16 (Penmaenmawr) – grade separated junctions; and
- A470 – access to A55 – capacity improvements.

10.99 Proposals by the Welsh Government would result in the construction of a bypass (the Caernarfon and Bontnewydd bypass scheme) from the Goat roundabout on the A499/A487 junction to the Plas Menai roundabout, around Llanwnda, Dinas, Bontnewydd and Caernarfon, thereby avoiding the town centres The scheme is due to commence construction in 2017 with completion by 2019. The scheme will therefore provide benefits to the workforce associated the Wylfa Newydd Project by (amongst other things) improving the resilience of the network by increasing the amount and/or capacity of alternative routes and by avoiding town centres.

10.100 The Welsh Government is currently preparing a business case for a third crossing of the Menai Strait in order to secure funding. However, route options and detailed engineering design have yet to be progressed through any stakeholder consultation.

10.101 Construction of the proposed improvements to junctions 15 and 16 of the A55 is expected to start in late 2016 or early 2017 and is due to be completed within 18 months.

10.102 Policy states that new road infrastructure should only be considered where effects on the built and natural environment are reduced to acceptable levels and that a range of solutions has been considered that clearly result in the road scheme being the optimal solution to support developments such as Wylfa Newydd. Policy also states that new and existing vehicular access to the highway network should not be compromised by the introduction of new development and its associated traffic flows.

Bus services

10.103 Bus services across Anglesey are typical of levels of service in a rural area, offering frequencies of less than an hour, and are heavily subsidised by the IACC. A network of existing bus routes provides access to both local and Island-wide facilities and services, as illustrated in figure 10.3. Transport policy requires the maintenance and improvement of bus networks as part of new developments, including improved interchange with other modes.

10.104 Park and Ride facilities are supported in local policies, identified as a measure that should be considered as part of the development of strategic transport hubs.

Existing service provision

10.105 Three services either pass directly or close to the Power Station Site; they are summarised below. These services operate Monday to Saturday with no Sunday services:

- service number 60 provides a circular local route to and from Amlwch via Cemaes, three times a day;
- service number 61 connects Amlwch to Holyhead with a two hourly frequency; and
- service number 62 connects Cemaes to Bangor with four services per day.

10.106 The bus journey time between Amlwch and Tregele is approximately 10 to 15 minutes, from Holyhead to Tregele is approximately 35 minutes and from Bangor to Cemaes is approximately one hour and 10 minutes.

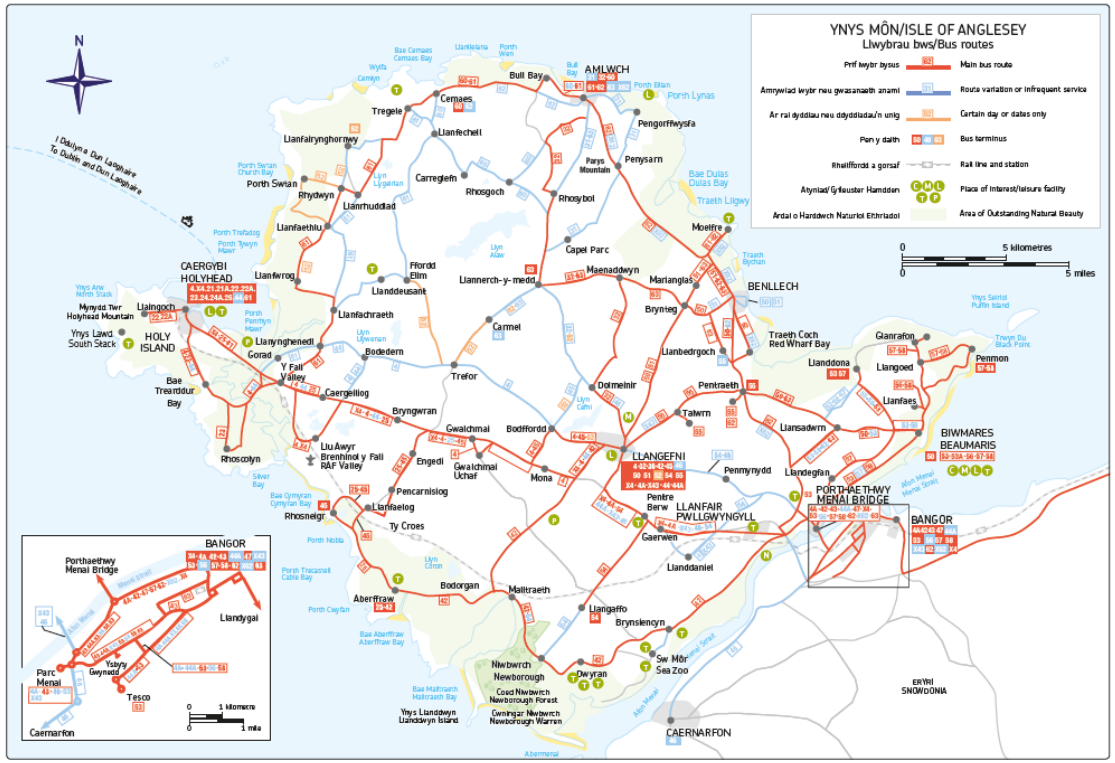
10.107 The IACC provides free school transport for full-time pupils aged 4 to 16 years across the 47 primary schools, five secondary schools and one special school on Anglesey. Free travel is generally provided for pupils living more than two miles from their primary school or three miles from their secondary school.

10.108 Given the rural character of the majority of Anglesey, a comprehensive network of school bus services is provided to collect children from designated points and to transport them to and from school. These operate during traditional school drop-off and pick-up times during the day.

10.109 There are two community bus services that operate a demand responsive service, catering for passengers who have pre-booked their journeys:

- 'Car Linc Môn' is a voluntary community transport scheme based at Medrwn Môn, Llangefni. The scheme provides transport for people who are otherwise unable to make essential journeys such as to medical facilities or food shopping. This volunteer-run service requires pre-booking and is charged on a 'per mile' basis, operating Monday to Friday 0900 – 1700; and
- Môn Community Transport provides transport for people with disabilities on Anglesey. The service is primarily aimed at wheelchair users and others with mobility problems, who wish to visit shops, friends, attend social clubs, health clinics, or other accessible events. This service operates Monday to Friday, 0800 – 1800, with evening or weekend travel by special arrangement.

Figure 10.3 Existing bus routes on Anglesey



Cyclists and pedestrians

10.110 In terms of walking and cycling, the Power Station Site is relatively remote from significant population centres, with only limited infrastructure to enable journeys to be safely made by foot or bicycle. The Walking and Cycling Strategy for Wales highlights that walking is a likely mode of travel for commuting journeys up to one mile, which encompasses the settlements of Cemaes and Tregele. Cycling is considered an appropriate mode for commuting journeys of up to five miles, which encompasses Cemaes and Amlwch to the east and Llanfechell to the south-east.

10.111 Applying the one mile walking distance for commuting journeys mentioned above, on the A5025, there are continuous footways between Tregele to the south and Cemaes to the north. There are no segregated on-road cycle routes in the vicinity of the Power Station Site. However, there is an extensive rural network of roads that links to local population centres and is currently only lightly trafficked. Figure 10.4 provides a map of the existing signed cycling network on Anglesey and connections to the mainland.

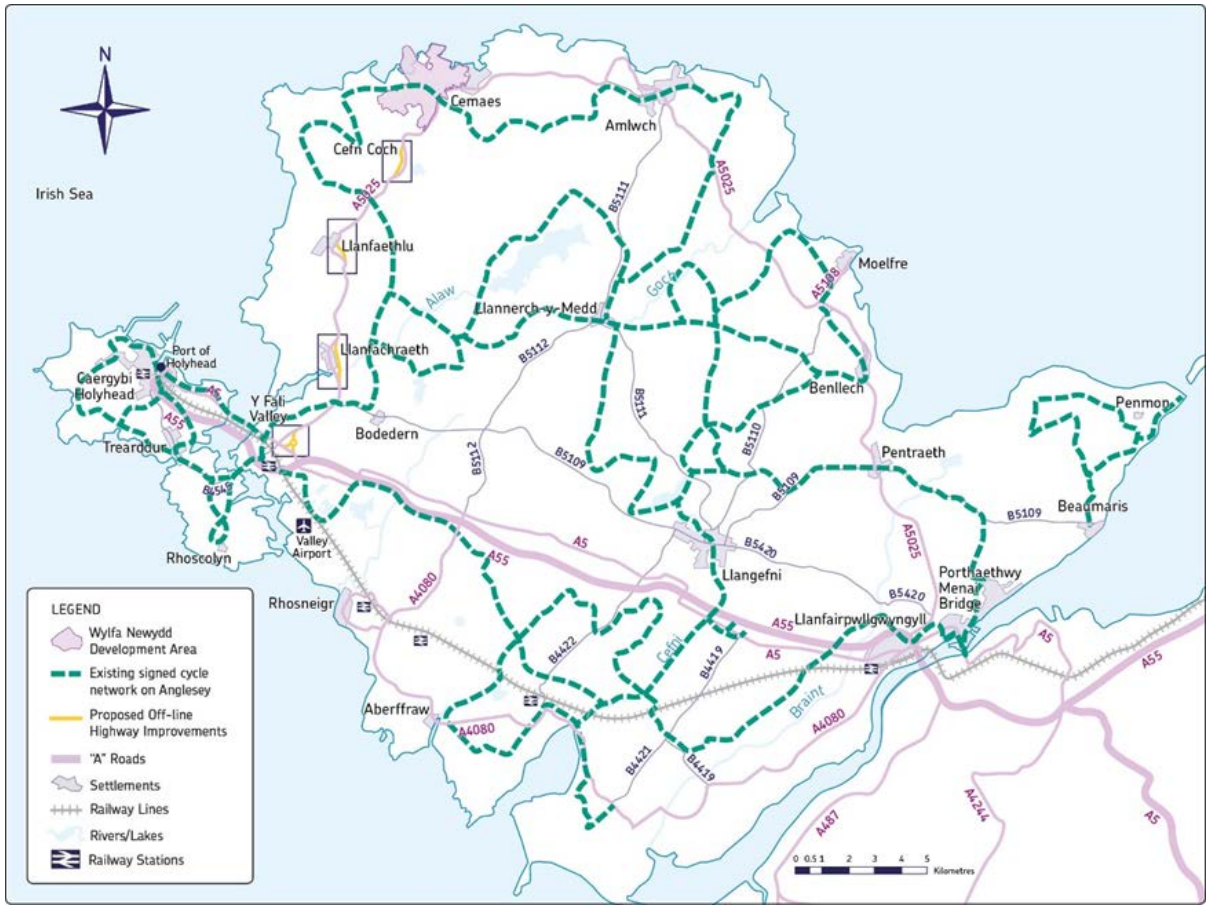
10.112 The Power Station Site is connected to and crossed by a number of recreational routes that would be affected by construction activities and the completed Power Station, including the Wales Coast Path and the Copper Trail. Chapter B2 of the Stage Two PEI Report sets out potential effects on public access and recreation and the proposals to mitigate these effects. Chapter 7, which deals with the Landscape and Environmental Management Plan (LEMP), also set out emerging proposals for the diversion of some walking and cycle routes.

10.113 National Route 566 of the National Cycle Network (NCN), locally known as ‘Lôn Las Copr’ or the ‘Copper Trail’, provides a predominantly on-road route around the northern coast of Anglesey. The route passes along Cemlyn Road to the south of the Existing Power Station, falling within the proposed Power Station Site. This route will therefore require diversion as part of the Wylfa Newydd Project.

10.114 The Active Travel (Wales) Act 2013 is an Act of the National Assembly for Wales “to make provision for the mapping of active travel routes and related facilities and for and in connection with integrated network maps; for securing that there are new and improved active travel routes and related facilities; for requiring the Welsh Ministers and local authorities to take reasonable steps to enhance the provision made for, and to have regard to the needs of, walkers and cyclists; for requiring functions under the Act to be exercised so as to promote active travel journeys and secure new and improved active travel routes and related facilities; and for connected purposes”.

10.115 A design guide to accompany the Active Travel (Wales) Act 2013 was published in May 2014. This provides advice on the planning, design, construction and maintenance of active travel networks and infrastructure throughout Wales. Safety is one of the key aspects of the guide as the perception of poor safety is considered to be the most significant factor in discouraging ‘active travel’ modes. This is an important consideration for Horizon in developing transport proposals.

Figure 10.4 Existing signed cycling network on Anglesey



Integrated Traffic and Transport Strategy

10.116 To ensure a comprehensive approach to meeting the transport requirements of the Project, Horizon has developed an ITTS which has been significantly advanced since, and in response to, the Stage One Pre-Application Consultation and the January Project Update consultation. It is designed to draw together the various transport measures into a coherent package that demonstrably conforms with and contributes to the achievement of prevailing transport policy objectives. This section introduces the ITTS, setting out the outcomes and objectives that Horizon has developed, followed by details of specific measures proposed within the draft ITTS.

10.117 The ITTS will help deliver sustainable transport modes, wherever practical, which will minimise the effects of the Wylfa Newydd Project on the environment during construction and seek to provide long term benefits for residents and businesses on Anglesey. The range of measures seeks to minimise road-based transport for construction materials and private car use by construction workers.

Outcomes

10.118 The Stage One Pre-Application Consultation outlined ten draft transport principles that the Wylfa Newydd Project would strive to achieve. Following feedback from the consultation, the emerging proposals have been refined to develop a set of primary transport-related outcomes and objectives. These are based on general policy themes and have been developed to establish principles that can be applied flexibly across transport proposals associated with all areas of the Wylfa Newydd Project.

10.119 These themes also align with policy objectives at national, regional and local level and provide a set of definitive outcomes, against which the performance of the Wylfa Newydd Project can be measured. These outcomes comprise:

- improve the transport network to positively affect the local and global natural and built environment while reducing adverse effects; and
- provide an effective and efficient transport system with greater use of more sustainable forms of travel and reducing the need to travel.

Objectives

10.120 The emerging ITTS asserts that the above outcomes can be achieved through a number of objectives that help define the direction of the Wylfa Newydd Project's transport proposals. This ensures that transport is considered as an integrated part of each aspect of the Wylfa Newydd Project, from the location of worker accommodation to the method of transporting specific loads. The objectives have been developed with reference to the strategic transport policy context. These objectives are:

- enhanced highway capacity and safety;
- integration with strategic public transport services;
- improved transport links to the Wylfa Newydd Power Station;
- encouraging sustainable travel; and
- reduced need to travel.

10.121 A selection of key references are included in the description of each objective, with further transport and planning policy context provided in the accompanying Planning Statement Framework.

Enhanced highway capacity and safety

10.122 The objectives seeks to include schemes that can increase network capacity or remove pinch points and constraints or address particular road safety issues. This should ensure that the safety of roads for all types of users, including pedestrians and cyclists, is not adversely affected by the Wylfa Newydd Project. Schemes should also seek to manage disruption to existing communities from additional road traffic, introduce measures to enable control of traffic to avoid exacerbating peak hour congestion on the existing highway network, and be designed to minimise land take.

10.123 This accords particularly with the priorities of the *Wales Transport Strategy (May 2008)* (WTS) in terms of increasing safety and security. Technical Advice Note 18: Transport (TAN18) promotes Park and Ride as a way to reduce the number of longer commuting journeys being made in single occupancy vehicles, representing a way of maintaining highway capacity.

Integration with strategic public transport services

10.124 The objective seeks to include schemes to improve access to railway stations, bus services and multi-modal interchange facilities, and provision of Park and Ride facilities at strategic locations. This should ensure that workers have the opportunity to travel via efficient, flexible, reliable and sustainable modes of transport.

10.125 The WTS prioritises proposals that help to integrate local transport. Furthermore improving connections to key destinations is one of a number of key outcomes identified in the draft LTP, whilst the draft Anglesey and Gwynedd Joint Local Development Plan, composite version, June 2016 (2011-2026) (JLDP), identifies support for schemes that will improve transport, including Park and Ride facilities supported by attractive, frequent and reliable bus services.

Improved transport links to the Wylfa Newydd Power Station

10.126 The objective seeks to include schemes that provide improved access to the operational Power Station Site and Off-Site developments, such as a car share website, bus services and active travel measures.

10.127 The WTS emphasises the need to get the most out of the existing transport system whilst the draft Anglesey and Gwynedd Joint Local Development Plan (2011-2026) (JLDP) also specifically provides general support for improvements to transport links to Wylfa Newydd.

Encouraging sustainable travel

10.128 The objective seeks infrastructure improvements and promotional initiatives to increase levels of public transport, walking and cycling. It seeks to ensure that schemes offer efficient, flexible, reliable and sustainable modes of transport to the workforce. This accords particularly with the NPS EN-1 statements that applicants should prepare travel plans to include demand management measures, referencing improving access by public transport, walking and cycling and reducing the need for parking.

10.129 NPS EN-1 also cites a preference for water-borne or rail transport over road transport, where this is cost-effective[1]. The WTS, *Planning Policy Wales, edition 7 (July 2014)* and its supplementary TAN18 support this approach, as well as recognising that road-based freight should be directed to appropriate routes and that freight interchanges should be encouraged.

Reduced need to travel

10.130 The objective seeks to include infrastructure and efficiency improvements in the supply chain to reduce and control the movement of freight by road, minimise car parking at the Power Station Site, integrate leisure facilities at Temporary Workers' Accommodation sites, and maximise use of technology to improve the efficiency of transport provision.

10.131 The WTS includes defined outcomes targeting the sustainability of transport infrastructure, reductions in air pollution and other harmful emissions and measures to improve the positive impact of transport on the local environment, which aligns with this ITTS objective. *Planning Policy Wales, edition 7 (July 2014)* and its supplementary TAN18 both encourage minimising the overall need to travel, including through the careful siting of developments.

10.132 The way in which the ITTS seeks to address these key objectives is set out at the end of this chapter.

Proposed transport measures

10.133 Horizon views the ITTS as key to helping to deliver the Wylfa Newydd Power Station. It seeks to do so in a manner that provides, wherever practicable, sustainable transport measures to minimise the potential for adverse effects on the environment, particularly during construction.

10.134 This approach focuses particularly on reducing private car usage by construction workers and the movement of construction materials along Anglesey's highway network, by enabling sea-based transport (and others where practicable) and facilitating attractive group transport options for the workforce. The proposed transport measures have also been developed with a view to providing long-term benefits for residents, businesses and visitors to Anglesey. The range of multi-modal infrastructure proposed offers a lasting legacy, including new sections of road, and highway improvements along the existing network and improvements to transport interchanges.

Wylfa Newydd Project requirements

10.135 A detailed description of the Wylfa Newydd Project is set out in chapters 4, 5 and 6 of this document.

10.136 A significant amount of resources will be required to construct and operate the Power Station, both in terms of construction logistics, transportation of construction workers and operational requirements.

10.137 The ITTS has been developed in the context of the following relevant components and represent the principal assumptions upon which the ITTS is based. These assumptions

[1] NPS EN-1, paragraph nos. 5.13.7, 5.13.9 and 5.13.10.

will evolve and will continue to be discussed with stakeholders as part of continued collaborative working:

- construction workforce;
- construction working hours;
- construction material deliveries;
- operational workforce; and
- operational deliveries.

10.138 A summary of the relevant assumptions listed above are set out under the following sub-headings.

Construction workforce

10.139 The Construction Worker Accommodation Strategy takes a 10,720 peak workforce and we anticipate that between 4,700 and 5,700 will need to be accommodated in Temporary Workers' Accommodation, including flexibility to allow for uncertainties in the availability of accommodation, including the private rental and tourism sector.

10.140 The Construction Worker Accommodation Strategy assumes that 25% of the peak workforce, equating to around 2,700 people, would commute daily from their existing homes.

10.141 It is assumed that the remaining construction workers would need to seek new or existing accommodation to allow them to be based closer to the Power Station Site. A set of assumptions about the distribution of construction workers across different types of accommodation has been made to help inform the draft ITTS, as detailed in chapter B1 of the Stage Two PEI Report.

10.142 The ITTS has been developed on the conservative assumption that Horizon provide the maximum proposed number of 5,700 Temporary Workers' Accommodation bed spaces and that the existing accommodation is also utilised to the full extent assumed (up to around 3,300 bedspaces). Together with the daily commuting workforce of around 2,700, the ITTS (and the assessment in the PEI Report) has been developed based on a bounding case of vehicle movements associated with a theoretical 11,700 workers. This ensures that arrangements and assessments take full account of the uncertainty which still exists between the different types of accommodation which may be utilised by the total workforce of 10,720 at peak.

10.143 Chapter B1 explains that the Daily Construction Commuter Zone (DCCZ) defines the limits of regular commuting patterns (equivalent to a 90 minute journey time from the Power Station Site). This represents the maximum journey time for home-based workers, whilst non-home-based workers are expected to choose temporary accommodation within a 60 minute journey time. The proposed transport solutions have been developed based on the information presented in chapter B1 of the Stage Two PEI Report.

Construction work shift patterns

10.144 During the peak of construction, it is anticipated that activities will take place 24/7 and workers will be split across two shifts, each lasting 10.5 hours (excluding breaks).

10.145 Shift start times would be staggered, at 0700, 0730 and 0800 (day shift) and 1630, 1700 and 1730 (night shift). The ratio of workers on the day and night shifts is likely to vary

through the construction phase from between 70% day: 30% night to 90% day: 10 % night.

10.146 Construction workers will work on a fortnightly cycle, working shifts for 11 days followed by 3 days leave with staggered shift rotations to ensure that work would continue each weekend.

Construction materials

10.147 Approximately 5.3 million tonnes of materials would be transported to and from the Wylfa Newydd Development Area during the construction phase:

- MOLF construction is anticipated to require around 570,000 tonnes of material (ranging from, but not limited to, pre-cast concrete, concrete for marine works and rebar) delivered by road, with the remainder arriving by sea and unloaded directly to the north-eastern breakwater;
- construction of the power blocks are estimated to require around 4 million tonnes of materials, comprising aggregates, sand and cement (bulk materials, largely for concrete batching), electrical equipment, reactor components, ducting, cabling and steelwork (non-bulk materials); and
- materials required to support the construction activities, including food, post, equipment spares, fuel and a wide range of other consumables are estimated to be around 360,000 tonnes.

10.148 The majority of bulk materials, such as aggregates for concrete production, would be delivered by sea.

10.149 For the purposes of assessment, a maximum of 80 HGV deliveries per hour has been assumed to be travelling along the A5025, although it is anticipated that this could be reduced to a maximum of 40 HGVs per hour with consolidation. It is currently proposed that deliveries would predominantly be in a ten hour window (Monday to Sunday), avoiding weekday AM and PM peak periods and school arrival and departure times. HGV movements to and from site shall generally be restricted to 0700 to 1900.

10.150 It is proposed that a Transport Management Plan (TMP) covering the construction phase deliveries shall be developed to include normal HGV deliveries, LGV deliveries and construction staff/labour.

10.151 The TMP shall specifically identify controls that will be implemented to mitigate the impact that HGV vehicle deliveries may have on peak traffic flows associated with school transportation and peak commuter traffic periods, which would likely include restricting HGV deliveries to the Power Station site along the A5025 during these times (e.g. 08.30-09.00 and 15.30-17:00) until such time as the offline road improvements have been completed.

10.152 Deliveries outside of these hours may be required in exceptional circumstances however these would be subject to the issue of advance public notice.

10.153 The Wylfa Newydd Project would require the delivery of some extremely large plant and equipment termed AILs, which exceed the dimensions of standard road traffic[2]. Horizon

[2] Horizon has adopted the following as a definition for AILS: length exceeds 18.75m metres, excluding the transporting vehicle; width exceeds 3.0 metres; height exceeds 4.5 metres; and/or weight exceeds 80 tonnes, including the transporting vehicle.

aspire that these would be delivered by sea, with road transport in exceptional circumstances. Around 800 AILs would be delivered by sea during the Main Construction stage.

10.154 Approximately 125,000 tonnes of construction waste materials for transport off-site are estimated to be produced, based on practices that follow the Horizon waste hierarchy of disposal as last resort.

Operational workforce

10.155 The operational Power Station is expected to employ a total of around 850 full time staff, of whom around 75% would be Horizon employees with the balance formed of long-term contract staff as confirmed in chapter B1 of the PEI Report.

10.156 There would be two main shift cycles during the operational phase – those workers involved directly in roles linked to power generation would be on a two, twelve hour shift rotation providing 24 hours 7 days a week cover. Administrative and support function workers would be on a single day shift with core hours from 0800 to 1600 Monday to Friday.

10.157 Based on 2011 census data relating to the Existing Power Station, the socio-economic analysis estimates that around 87% of the full time operational workforce would reside on Anglesey (see chapter B1, socio-economics, of the Stage Two PEI Report) with the remaining 13% on the mainland in north Wales.

10.158 In addition, up to around 1,000 workers would be needed for scheduled maintenance and re-fuelling outages (working 12 hour shifts spread over 24 hours per day), lasting approximately one month in duration on each occasion.

10.159 Outages would be programmed on approximately 17 to 18 month cycle (per unit), staggered for each of the Units for a period of around 25 to 30 days on each occasion (see chapter 5 of this Document). Every 10 years, this would be extended to a 45 day shutdown (see chapter B1 of the Stage Two PEI Report).

Operational deliveries

10.160 The Power Station would require daily deliveries of post, food, equipment, spares and other consumables. These are expected to total up to 34 deliveries or exports per day.

10.161 During outage periods, up to 10 additional HGV deliveries per day are estimated.

10.162 There may be occasional AIL deliveries required during the operational stage, most likely linked to the delivery of replacement components of plant, estimated to be one per year.

10.163 The proposed transport measures are described in the following sub-sections, dealing first with people movement, then with the movement of freight and logistics.

Construction workers – travel planning

10.164 The ITTS includes proposals for Horizon to adopt sustainable travel planning principles and implement a combination of proposed, monitoring and awareness raising activities. These are designed to encourage both the construction and operational workforces for the Wylfa Newydd Project to make informed and sustainable travel choices. The proposals currently include:

- provision of travel information;

- encouragement of rail use;
- management of parking arrangements, to reduce the number of private vehicles on the road;
- Park and Ride facilities;
- shuttle buses; and
- walking and cycling provision.

10.165 An overarching Travel Plan will be prepared to encourage travel via more sustainable means than private car. This would target both the construction and operational workforce. The key measures currently under consideration for inclusion within this document are:

- appointment of an overall Travel Plan Coordinator (TPC) who would be based at the Power Station Site;
- appointment of Travel Plan Representatives (TPRs) who would be based at each of the Temporary Workers' Accommodation sites during the construction period;
- commitment to hold regular steering group meetings, which could include the TPC, senior management, union representatives and potentially a member of the IACC's sustainable transport team to discuss the use and operation of shuttle bus services, including their effectiveness and potential identification of additional or revised services;
- provision of an internet-based accommodation booking portal; as one of its many functions, promote the sustainable travel options available to construction workers travelling to north Wales. Once the Power Station is operational, this would be replaced with sustainable travel information on the Horizon intranet system specifically promoting sustainable travel for those working at the Power Station;
- provision of a Travel Information Pack to be included as part of the workers' contract documents prior to commencement of work. This would include, but not be limited to, details of area-wide and Horizon-specific sustainable travel options, contact details for the relevant TPRs and overall TPC, information on pedestrian and cycle routes to local facilities, and details of the accommodation portal. The construction worker pack would also include details of the internet-based accommodation booking portal (see chapter 9), while the operational workforce pack would contain information about sustainable travel measures at the Power Station. These may include:
  - cycle parking and provision of maintenance equipment and tools;
  - showers and changing facilities;
  - cycle proficiency training – promotion and possible funding;
  - subsidised bus season tickets for staff; and
  - provision of electric vehicle charging points within the car park.
- commitment to restrict parking at the Power Station Site, including introduction of a car parking permit allocation system. This would limit the number of single occupancy vehicles travelling to the Power Station Site during both the construction and operational phases;

- commitment to undertake video conferencing wherever possible to limit the amount of travel required for attendance at meetings and training;
- provision of an internet-based worker 'car share scheme' to limit the number of single occupancy vehicle trips. Dedicated, preferential car share spaces would also be provided at the Power Station Site, Park and Ride facilities, and at each of the Temporary Workers' Accommodation sites;
- for the operational workforce, commitment to introduce a 'cycle to work' scheme or other comparable incentive to purchase cycles and cycling equipment at a discount. This would be complemented by a Bicycle User Group (BUG) to encourage group discussions amongst cyclists, for example, to share ideas about routes and jointly develop and promote improvements to the benefit of each other;
- commitment to stagger shift start and finish times to avoid peak times and mitigate the impact of worker traffic;
- commitment for Horizon to undertake annual travel surveys throughout the construction and operation of the Power Station, to include questions as to what could improve the sustainable travel infrastructure already provided;
- preparation of travel mode split targets based on the results of the initial staff surveys. These could be reviewed on an annual basis with the IACC to assess if the level of sustainable travel achieved is in line with that proposed; and
- a commitment from Horizon to implement additional sustainable travel measures if the mode split targets are not achieved.

Provision of travel information

10.166 The draft ITTS incorporates details of a construction travel plan to encourage the use of non-car modes, such as rail, ferry or air, particularly for non-home based workers travelling to Anglesey from their permanent homes at shift changeovers. This would contribute to the delivery of a range of transport options for members of the construction workforce.

10.167 The internet-based accommodation booking portal which will, as one of its many functions, promote the sustainable travel options available to workers.

10.168 The travel information pack and the internet-based accommodation booking portal could be used to inform the workforce of codes of conduct on driving between their accommodation and the Power Station Site or Park and Ride locations, particularly at shift changeover when a peak of vehicles would occur. Construction workers would be encouraged to use the strategic road network wherever possible and only using minor roads where unavoidable.

Rail use

10.169 Consultation responses received following the Stage One Pre-Application Consultation encouraged Horizon to further review the potential for rail use (see chapter B3 of the Stage Two PEI Report for further technical background data).

10.170 As explained in chapter B3 of the Stage Two PEI Report a rail capacity assessment has been undertaken along the North Wales Coast Line including Anglesey to determine the current rail passenger usage and the potential capacity for additional rail passengers (i.e.

workers) generated by activities associated with the enabling works, construction, operation, and decommissioning of the Power Station.

10.171 Rail can provide a realistic choice to some workers and those travelling from across the UK and from airport with International connections. The key towns along the North Wales Coast Line route are Holyhead and Bangor, where a significant proportion of workers are predicted to live. Existing accommodation within these towns is a short walk, bus or taxi journey away. For those living in the various Temporary Workers' Accommodation sites, Horizon shuttle buses will transport them from Holyhead terminus with a transfer time of around 10 minutes to Kingsland and Cae Glas and 25 minutes to Rhosgoch and Amlwch.

10.172 The number of workers likely to use rail as a mode of transport as part of their fortnightly commute will depend on their permanent base and the ease of travelling to Holyhead by train. Based on the National Travel Survey, 2009-2013 (Department for Transport) for all journeys over 50 miles, it is anticipated that rail could provide an attractive mode of travel for up to 15% of the non home-based workforce.

10.173 The attractiveness of rail travel for workers will be influenced by the location of their temporary accommodation. It is estimated that up to 10% of the non home-based workforce associated with the Wylfa Newydd Project will travel to north Wales by train.

10.174 For daily commuting purposes, rail is only likely to be an attractive mode for home-based construction workers travelling from beyond Bangor given the travel time to Holyhead.

10.175 There is a direct rail link between Chester, Crewe, Bangor and Holyhead and it is considered that this could prove an attractive alternative to travelling by car for the proportion of the construction workforce commuting from the mainland. A shuttle bus could be provided to the Power Station from either Valley or Holyhead railway station, depending on demand.

10.176 Chapter B3 of the Stage Two PEI Report explains that an analysis of rail passenger data from 2015 has identified that existing rail services between Chester and Holyhead are most likely to be utilised by workers travelling to and from the Power Station Site and suggests that:

- there is sufficient capacity to accommodate rail passengers associated with the Power Station Site throughout most of the assessed periods; and
- afternoon inbound rail travel on a Sunday and afternoon Thursday outbound rail travel could be approximately 90% and 95% over capacity respectively.

10.177 Further studies will be undertaken to establish potential rail passenger numbers associated with the Wylfa Newydd Project and the consequential demand for shuttle bus services. Consultation will be undertaken with train operating companies to identify the effect of these additional passengers on existing headroom on services and on facilities at stations. If usage by the construction workforce were to result in investment in railway infrastructure, then this would continue through operation of the Wylfa Newydd Power Station, offering a legacy benefit.

Ferry

10.178 In relation to the 'weekend effect' (weekend travel for those workers wishing to travel back to their permanent homes), the ferry services to the Port of Holyhead provide an ideal transport option, sharing passenger facilities with the railway station.

10.179 For those living in the various Temporary Workers' Accommodation sites, Horizon shuttle buses would transport them from the Holyhead terminus. Based on current estimates, around 3% of the migrant workforce associated with the Wylfa Newydd Project would travel to Anglesey by ferry as foot passengers.

Air

10.180 Anglesey Airport could be used occasionally by construction workers, via connecting flights from Cardiff Airport, although it is anticipated that this is likely to comprise a limited number of specialist workers coming from locations elsewhere in the UK, Europe and beyond.

10.181 It could also facilitate occasional travel between north and south Wales, for example for meetings or as part of longer distance travel.

Management of parking arrangements

10.182 In the Enabling Works and early parts of the Main Construction stage, Horizon proposes to provide parking spaces for construction workers at the Power Station Site, as a temporary measure, until Associated Development facilities are operational.

10.183 Parking at the Power Station Site during construction would be reduced once Park and Ride facilities, shuttle buses and other transport measures were in place, releasing additional space for construction compounds and laydown areas, as necessary within the Power Station site.

10.184 Car parking spaces would be provided for an appropriate proportion of those working or travelling to the Power Station during the operational period (currently estimated to be around 200 spaces), taking account of workforce numbers and potential for sustainable travel planning measures. Provision would also be made to park and turn larger HGVs, public services vehicles and buses. Dedicated spaces for car sharers and electric vehicle charging will also be provided in preferential locations close to the Power Station entrance to encourage staff to travel by multi occupancy vehicle.

10.185 Subject to future demand, Horizon may choose to develop and implement a parking permit allocation process as part of implementing a Travel Plan for the operational workforce, to ensure that only those who are unable to access the Power Station Site by more sustainable means are allocated a parking permit. In addition, a number of car parking spaces would be allocated for car sharers. Signed designated pedestrian routes would also be provided throughout the Power Station Site.

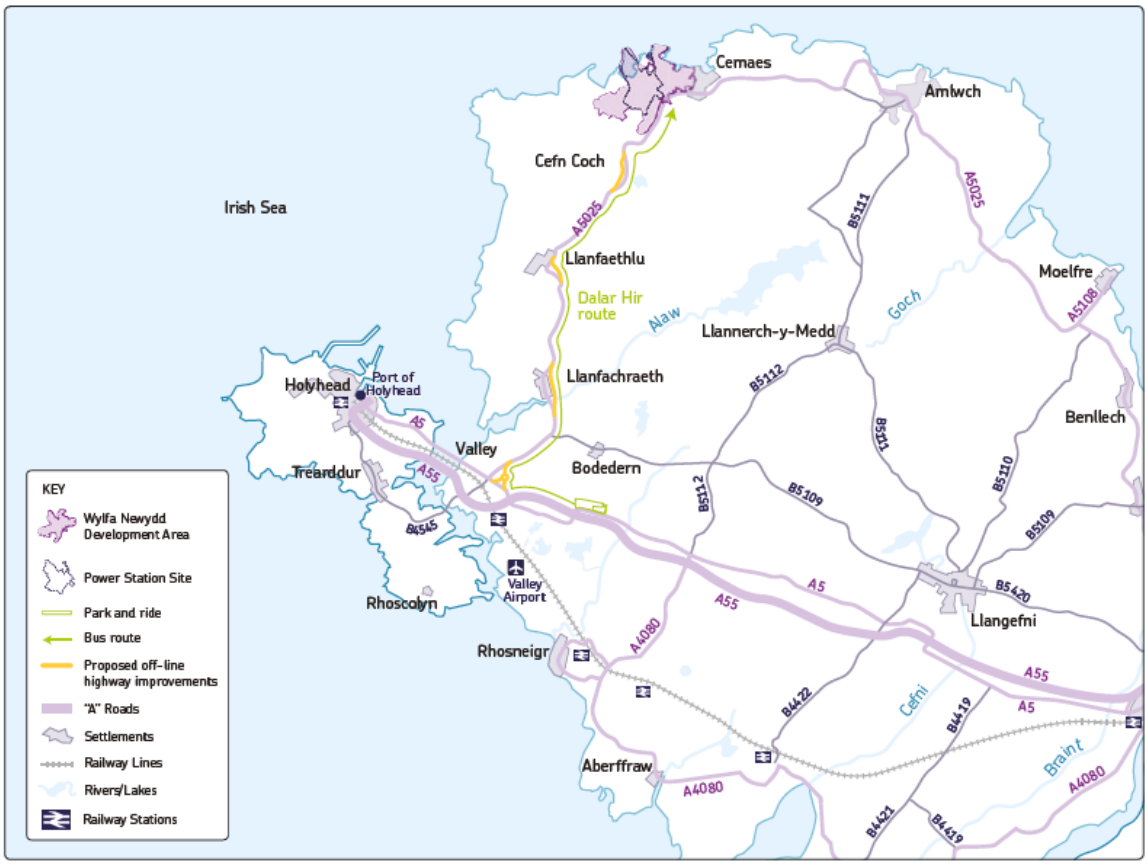
10.186 During outage periods, additional parking areas will be available adjacent to the Power Station to accommodate the increased demand. These car parks would only be made available for outage periods and therefore could be constructed using materials that would better complement visual amenity of the area surrounding the Power Station Site.

Park and Ride facilities

10.187 Horizon is proposing a Park and Ride facility to allow transfer of workers from private vehicles to buses before travelling on the A5025. Our preferred site is at Dalar Hir and chapter 12 of this document provides further details of the preferred proposals and how they have been developed as a result of feedback received through consultation.

10.188 Figure 10.5 below shows the proposed Dalar Hir shuttle bus route (all bus routes are shown at figure 10.6).

Figure 10.5 Dalar Hir Bus Shuttle Service



10.189 Some comments were raised in the Stage One Pre-Application Consultation and January Project Update Consultation on the need and potential benefits of a mainland Park and Ride facility. We have considered the need for such a facility and our transport assessment work to date concludes that there is no justification at this stage for such a facility for highway safety or capacity reasons. On this basis, a mainland Park and Ride is not part of our preferred proposals. We are however proposing a series of measures to provide more sustainable modes of travel for those workers travelling from the mainland, which include:

- direct bus services from major towns such as Bangor train station and Caernarfon;
- encouragement of car sharing;
- small scale traffic management;
- minibuses collecting from multiple locations on routes throughout the mainland;
- crew buses from multiple locations; and
- intelligent transport systems (such as information and communication technology).

Shuttle buses

10.190 A network of Horizon shuttle bus routes will be provided, transporting the vast majority of workers to the Power Station Site for part or the whole of their journey. The majority of these services will be a single fixed pick up point, such as an accommodation site or Park and Ride, while services around the north and east of Anglesey are likely to be 'multi-stop' services.

10.191 Shuttle buses are also one of the proposed measures to transport workers from the mainland to the Power Station Site.

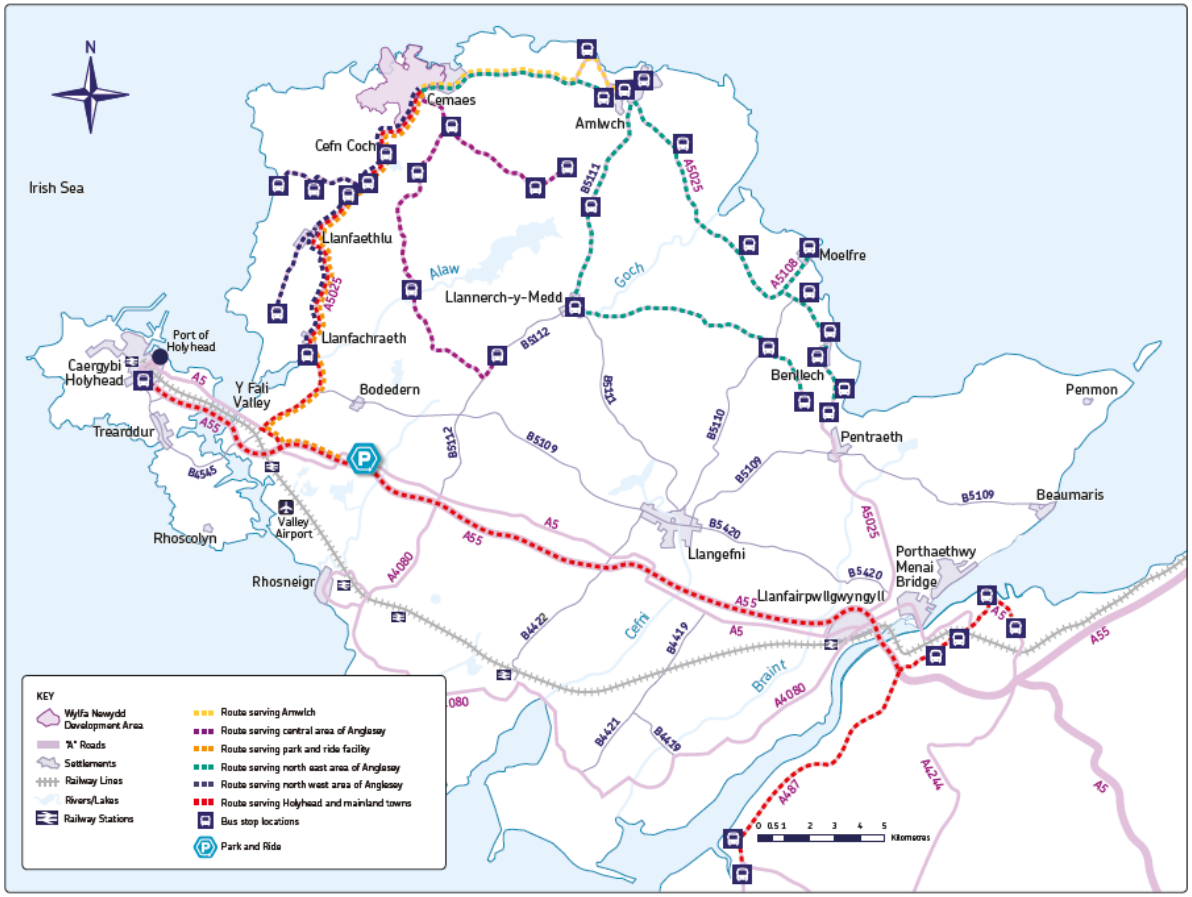
10.192 Shuttle buses would be provided to pick up workers from key transport interchanges or designated stops to ensure that these modes are as attractive as travelling by private car. Existing areas specifically provided for buses along the eastern side of Holyhead railway station could be used to pick up workers travelling by train and ferry. Similarly, bus areas at Anglesey Airport could be used to transfer workers travelling by air. These shuttle services would operate to coincide with train, ferry and flight timetables for daily commuting purposes, as well as the start and end of a fortnightly shift period.

10.193 The overarching Travel Plan will include measures and advise workers on car parking options on the mainland. Regular steering group meetings will also be held to oversee the implementation of the Travel Plan so that it can evolve accordingly.

10.194 A proportion of the buses procured to operate the shuttle services could utilise 'low emission' technology in line with the overall sustainability aspirations of the Wylfa Newydd Project. Once construction has been completed it is likely that there would be a surplus of vehicles that could supplement or replace the existing stock of buses that operate on Anglesey, including for school transportation, if appropriate. Opportunities for these vehicles to provide improved or more frequent services that could be used by both operational workers and the general public could also be explored. Horizon also intends to assess the potential to provide a 'slimmed down' version of the shuttle bus service to meet the needs of members of the operational workforce, particularly in respect of those who may reside in the north and east areas of Anglesey. Consideration is being given to how potential legacy and environmental benefits in respect of the bus fleet and service provision could be most effectively delivered to the local community.

10.195 Figure 10.6 below provides indicative details of the bus services currently under consideration.

Figure 10.6 Indicative Bus Services



10.196 For the purposes of the above figure, the off-line highway improvements on the A5025 from Valley to the Power Station Site are not shown, however, it is anticipated that the buses would use these routes, once they were constructed.

Question – bus routes and stops

We have improved our proposals for transporting workers around the island to minimise the impact on local roads and this now includes detail of our proposed bus routes and our preferred locations for bus stops. Do you any views on the bus routes and stops that we have identified?

Transport services from existing accommodation

10.197 Chapter B1 of the Stage Two PEI Report explains that a large proportion of existing accommodation available for rent is located within Anglesey North and Anglesey South. A network of worker bus routes would therefore be provided to transport members of the construction workforce from a number of existing accommodation locations, operating on set routes with fixed, signed pick up points.

10.198 It is anticipated that both 'multi-stop' and direct, express services would be provided to ensure the efficient transport of workers to the Power Station Site. The services would primarily operate during the morning and evening shift changeover times. Their locations would be informed by data provided through the Construction Worker Accommodation Management Portal (see chapter 9 of this document) with stops selected from the existing network or stop infrastructure, or sited to maximise the potential for workers to walk or cycle, to reduce the need to travel by car.

Temporary Workers' Accommodation

10.199 Bus services would also be provided to transport members of the construction workforce from the Temporary Workers' Accommodation locations at, for example Amlwch and Rhosgoch to the Power Station Site construction areas. Integrated car parking facilities would be provided at the Temporary Workers' Accommodation sites. Further information is provided in chapters 14 to 17 of this document.

Walking and cycling

10.200 Improving levels of walking and cycling is one of a number of key outcomes identified in the LTP. This includes a proposed off-road cycle route alongside the A5025, a cycle route adjacent to the A5 between Holyhead and Menai Bridge and improvements to the A5025 Valley to Amlwch. The draft JLDP includes a draft policy aiming to work with partners to improve and enhance the public footpath and cycleway network in the interests of safety and accessibility by these modes of transport.

10.201 Covered and secure cycle parking would be provided at each of the Temporary Workers' Accommodation sites to encourage more sustainable travel options for leisure purposes and commuting to the Power Station Site. These Temporary Workers' Accommodation sites would also be developed with pedestrian facilities and connections to link with the existing wider footway network.

10.202 Covered and secure cycle parking would also be provided at the Park and Ride facility to encourage those living within a short distance to cycle to these facilities for onward transfer by bus.

10.203 Once the Power Station is operational, secure and covered cycle storage would be provided at the Power Station Site in a well-lit and overlooked area close to the main entrance. In addition, changing facilities including showers and lockers would also be provided to ensure that walking and cycling were attractive alternatives to the private car for those living within a comfortable distance of the Power Station.

Freight and logistics movement

Table 10.1 provides an approximation of the construction material, tonnage and likely method of transport to the Wylfa Newydd Development Area. The core assumption is that Horizon would maximise the potential to deliver construction materials and freight by sea (it is currently estimated that between 60% and 80% of all materials associated with the construction of the Power Station could be transported by sea), which offers the opportunity to minimise road freight and associated impacts on the road network. The delivery of construction materials by road is therefore a secondary option (estimated to be some 40% of construction materials, however through the preparation of a Freight Management Plan, the volume being transported by road will be minimised as far as possible).

10.204 Consideration will also be given to opportunities for using rail through engagement with suppliers – the decision on whether to bring specific materials or consumables by rail will depend on efficiencies at either end of the journey, considering also the proximity of suppliers to rail freight facilities at point of origin. Assumptions on construction material requirements for off-site development (such as Temporary Workers' Accommodation, Park and Ride Facility and Logistics Centre) are still being assessed.

Table 10.1 Transportation of construction materials – Approximate tonnages and assumed modes of transport

Material	Estimated tonnage	Transport by sea	Transport by road
Pre-Main Construction			
Site mobilisation and access	155,000	34%	66%
MOLF	569,000	87%	13%
Power Blocks			
Concrete	3,170,000	Min 80%	Max 20%
Rebar	305,000	Min 20%	Max 80%
AILs	42,000	100%	0%
Scaffold and formwork	85,000	Up to 100%	Up to 100%
Structural steelwork	44,000	Up to 100%	Up to 100%
Equipment	34,000	Up to 100%	Up to 100%
Pipework and support	14,000	Up to 100%	Up to 100%

Material	Estimated tonnage	Transport by sea	Transport by road
Electrical and instrumentation	14,000	Up to 100%	Up to 100%
H&V ducting	6,000	Up to 100%	Up to 100%
Building fixtures and other misc	6,000	Up to 100%	Up to 100%
Consumables and waste	360,000	0%	100%
Waste	125,000	0%	100%
A5025 Highway Improvements			
On-line schemes	12,700	0%	100%
Off-line schemes	122,000	0%	100%
TOTAL FOR WYLFA NEWYDD PROJECT INCLUDING CONTINGENCIES	**5,356,800**	**60-80%**	**20-40%**

10.205 During peak periods of construction, materials would be required 24 hours 7 days a week. However, timing of deliveries would be dependent on suppliers, many of which would not deliver at a weekend or at night. A large proportion of materials associated with the Project would be stockpiled within the Power Station Site. This would prevent disruption to the construction programme if events beyond Horizon's control occur, such as extreme weather or traffic accidents prevent deliveries.

10.206 Construction-related deliveries by road would be controlled to ensure that vehicles avoid travelling at sensitive times of the day. This would be controlled through the Logistics Centre (see chapter 13).

10.207 Once operational and as with the Existing Power Station, low level nuclear waste would periodically be transported in protective flasks via truck to suitable off-site LLW disposal facilities.

MOLF

10.208 A major consideration of freight handling for the Wylfa Newydd Project has been the transportation of large modular reactor components from Japan. In addition, the majority of materials associated with the Project will be stockpiled within the Power Station Site, avoiding the need for 'just in time' deliveries. Based on current estimates (see table 10.2), the large volume of bulk material for concrete production will represent around two-thirds of all construction materials for the Power Station. The Wylfa Newydd Project therefore proposes the construction of a MOLF which will handle the majority of bulk materials, the materials for concrete production and large components. The MOLF is proposed to be constructed at Porth-y-Pistyll and is discussed at chapter 5.

10.209 The construction of the MOLF would commence shortly after the DCO was granted, to allow it to be completed in time for the first delivery of bulk materials for construction of the Power Station. The majority of materials required for the construction of the MOLF

would either be excavated from the Power Station Site or be delivered through sea-based transportation.

10.210 Once completed, it is likely that the MOLF would allow the delivery of between 60% and 80% of bulk materials required to construct the Power Station through its bulk unloading berth. It would accommodate all of the largest AILs and all of the components that would be transported from Japan, via a major port in Europe to allow downsizing to appropriately sized vessels for the MOLF.

10.211 Other materials could also arrive through the MOLF, including large sections of steelwork, ducting and other large equipment. Whilst the choice of transport mode for some materials would be dependent on the suppliers and contractors, Horizon aspires to secure delivery of at least three quarters of the materials through the MOLF.

10.212 The MOLF would significantly reduce the number of HGVs travelling along the A55 and A5025 to deliver materials. The potentially high traffic and environmental impact of these HGVs would therefore be avoided. Furthermore, the MOLF would avoid significant disruption to traffic travelling along the A55 and A5025 as a result of transporting a significant number of AILs by road.

10.213 The MOLF could also play an important role in the eventual decommissioning of the Power Station as a significant amount of large structural items including steel, and reinforced concrete may need to be transported away from the Power Station Site during this period.

Rail

10.214 The remaining materials are expected to comprise deliveries from suppliers across the UK and Europe. The most efficient mode of transport for the majority of these deliveries will be by road and will avoid the need to double handle goods. Furthermore, a large number of deliveries will comprise loads that are not easily transferable from one mode of transport to another and cannot be containerised.

10.215 Rail is only therefore likely to be an option for deliveries where goods can be containerised at the point of origin.

10.216 A heavy route strategy study was undertaken in 2010 to assess the available options for transporting construction materials to the Wylfa Newydd Development Area. The study concluded that significant infrastructure would have to be constructed to utilise any of the existing rail heads on Anglesey and still would require road-based methods to reach the Wylfa Newydd Development Area.

10.217 Furthermore, the North Wales Coast Line has been identified as requiring major improvements in order to accommodate the “W10” standard gauge for transporting common freight containers.

10.218 Policy dictates a preference for sea-based movement of freight over rail and therefore rail is only a realistic option for some of those materials not already being delivered via the MOLF. Based on the types of deliveries, which are expected to arrive from a wide variety of suppliers and destinations across the UK, the point of entry to the rail network would be where the largest proportion of deliveries could be intercepted, balanced against the potential road mileage saving achieved. This will inevitably exclude a proportion of deliveries where their origin is closer to Anglesey than the chosen rail head.

10.219 Chapter B3 of the Stage Two PEI Report explains however that a further review of freight requirements will be undertaken to assess if there is an opportunity for road-based freight to be transferred to rail.

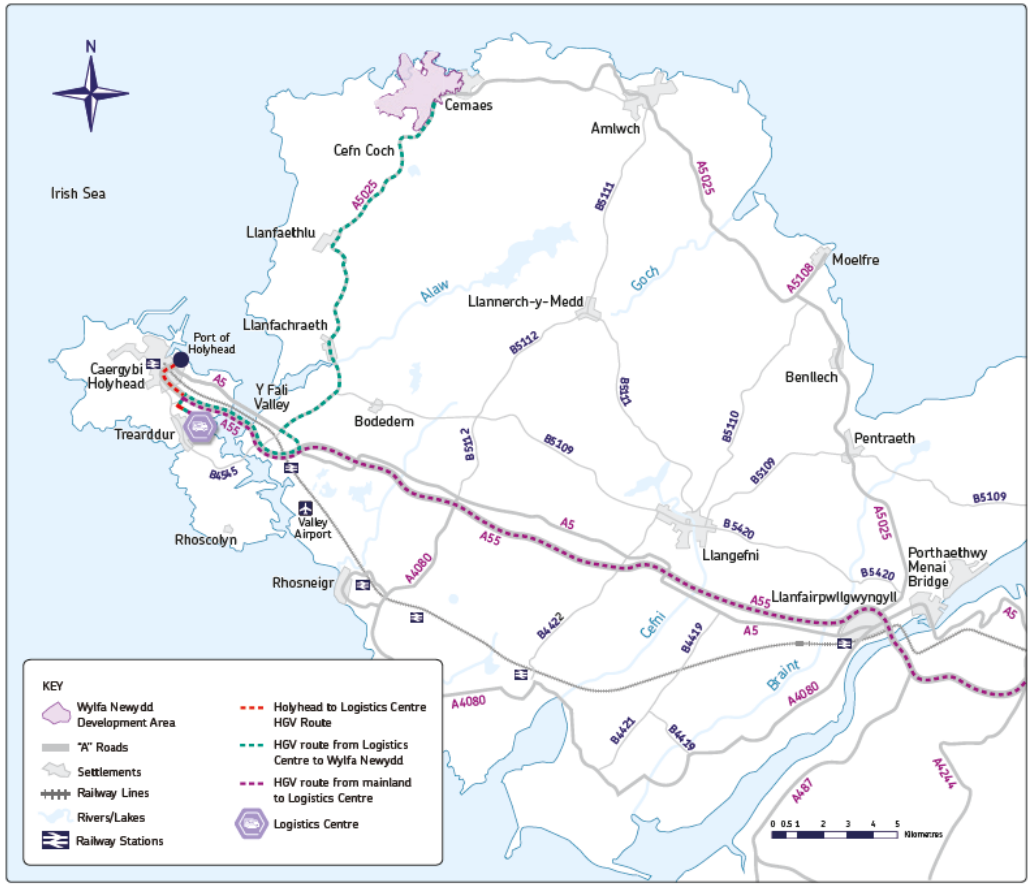
Logistics Centre

10.220 Horizon is proposing a Logistics Centre to ensure that deliveries to the Power Station Site are appropriately managed to reduce impacts on the local road network, in particular the A5025. It will be used to consolidate deliveries into fewer loads and to control the timing of traffic to the Power Station Site.

10.221 The preferred location for the Logistics Centre is at Parc Cybi, on the southern edge of Holyhead at junction 2 of the A55. It has been strategically located here to maximise its effectiveness and to reduce effects on sensitive locations on the surrounding highway network. This is discussed in more detail at chapter 13 of this document.

10.222 The vast majority of incoming road-based deliveries would arrive at the Logistics Centre for checking, with a small number of exceptions (such as AILs) that would route directly to the Power Station Site. Onward movement would be controlled to ensure that vehicles journeys were staggered, avoid sensitive times of the day and to restrict all movement where an incident may have occurred along the A5025. Once released, vehicles would travel along the A55 to junction 4 and along the A5025. Vehicles leaving the Power Station would naturally be controlled by the timing of their entry and unloading time. Only a small area would be available to withhold vehicles within the Power Station if there were an event along the A5025. Figure 10.7 below shows the current routing for HGVs travelling to the Logistics Centre, and then onto the Wylfa Newydd Development Area.

Figure 10.7 Indicative dedicated HGV Routes



Improvement and enhancement measures

10.223 Highway improvement and enhancement measures would be delivered in time to support the peak of Main Construction activities at the Power Station Site and to mitigate the effects of construction traffic.

10.224 The route to the Power Station Site crosses over the Britannia Bridge and follows the A55 to junction 3, joining the A5 to Valley crossroads and heading north on the A5025 to the site.

10.225 A scheme of Off-line Highway Improvements (improvements that involve the construction of new sections of road) and On-Line Highway Improvements (improvements that are made to the existing road, generally within the existing highway corridor and localised widening) has been developed and consulted upon to mitigate potential adverse impacts of construction traffic on both those travelling on and living adjacent to the A5025. The improvements focus on the section of the A5025 between Valley and the Power Station Site and include a number of by-passes and sections of carriageway widening to improve the geometry for HGVs to pass and also to deliver environmental improvements as part of the Wylfa Newydd Project. These measures and information on how consultation has informed detailed option selection and design refinement are discussed in detail at chapter 11 of this document.

10.226 The resurfacing of the entire length of the A5025 between Valley and the Power Station Site, including surface improvements to the parts of the existing road that would be bypassed as a result of Horizon's proposals, would also provide a lasting legacy for all users along this route. In addition, the improvements would provide enhanced overtaking opportunities at Llanfachraeth bypass, improving the flow of traffic along the principal north to south route on the western side of Anglesey. Further details are provided in chapter 11 of this document.

A5025 Power Station Site to Menai Bridge

10.227 The emerging proposals and Construction Workers Accommodation Strategy set out in chapter B1 of the Stage Two PEI Report indicate that a proportion of the construction workforce are likely to reside to the east of the Power Station Site, particularly in the Amlwch and Benllech areas. The transport of these workers to the Power Station Site would result in an increase in the number of buses travelling along the eastern section of the A5025, with the section between Amlwch and the Power Station Site, experiencing the highest increase in vehicular movements.

10.228 On-going consultation with stakeholders has suggested some improvement works may be required to this stretch of the A5025. The concerns are related to specific areas where accidents have been recorded near Llanbadrig, near Burwen, and in Amlwch, although the causes are related to driver actions rather than the road alignment.

10.229 An assessment of the effects of this additional traffic undertaken to date concludes that the timing of these bus movements will occur outside of the traditional peak periods. In addition, as explained in chapter 11, the predominant cause of accidents on this stretch of road was excessive speed and therefore improvements would be best focussed on speed restrictions and road marking, rather than highway widening or realignment. We are therefore investigating such improvements that would be made within the existing highway boundary. Further information is provided within chapter 11 of this document.

Port of Holyhead Terminus

10.230 Horizon will provide support to improvements at the existing Port of Holyhead terminus adjacent to the railway station and ferry passenger terminal, including upgraded waiting facilities. The terminus will be used for daily shuttle bus services for those living in the Holyhead area in existing accommodation.

Public Access and Recreation Strategy

10.231 Horizon has been working with a number of technical stakeholders, including the IACC, Sustrans Cymru, Ramblers Cymru, Ynys Môn Ramblers, the Local Access Forum and NRW to consider the potential effects and possible opportunities in respect of public access and recreation. This is assessed in chapter B1 of the Stage Two PEI Report which considers the likely effects of the Wylfa Newydd Project on existing walking and cycling provision, and possible approaches to mitigation and enhancement.

10.232 We have developed an initial strategy for public access and recreation, which is summarised here. The approach considers the Wylfa Newydd Project in the round, recognising that different parts of the existing recreational routes network would be affected through works consented via a range of different legislative regimes. The strategic approach therefore proposes potential measures compatible with the Road Traffic Regulations Act 1984, the TCPA 1990, the Highways Act 1980 and the Planning Act 2008, providing a framework for detailed design to be completed subsequent to consultation.

10.233 In general terms, we proposed to ensure that existing routes remain available for as long as reasonably practicable, taking account of the Wylfa Newydd Project needs in terms of progressing construction activities, as well as the safety and security requirements of restricting public access to areas of construction. Where replacement routes would be needed, Horizon's strategy is to maintain continuity of use; retain connections between key destinations (for example, Cemlyn Bay, Porth Wylfa and Wylfa Head); incorporate enhancements through improved surfacing, accessibility, locations and facilities for users to pause and rest; and introducing interpretation of the environment, as appropriate.

10.234 It is envisaged that a network of footpaths and recreational routes (including diverted/realigned routes) would be provided around the Power Station Site, through incorporation into the Landscape and Environmental Masterplan (LEMP) proposals for the Wylfa Newydd Development Area (see chapter 7). In broad terms, Horizon would seek to provide a similar overall total length of routes to replace those that would need to be permanently closed as a result of the Wylfa Newydd Project.

10.235 We current approach in relation to public access and recreation is set out below and will be developed further as part of the detailed design of the landscaping works within and around the Wylfa Newydd Development Area. These aspects of the Wylfa Newydd Project are largely settled in principle, but there is scope for their detailed development to be influenced by consultation comments.

Wales Coast Path

10.236 The Wales Coast Path would route along the coast of Porth-y-Pistyll and, subject to agreement with Magnox Limited and the NDA, along the coastline in front of the Existing Power Station during the early stages of Enabling Works activities, before continuing

around the coastline of Wylfa Head. This will be diverted twice, firstly as part of the Site Preparation and Clearance works and secondly during Main Construction.

10.237 In advance of Main Construction, the Wales Coast Path would need to be re-routed to avoid the Power Station Site construction activities. This would involve moving the route inland to skirt along the construction boundary fencing between Cemlyn Bay and Cemaes, before linking back to the coastal route to Wylfa Head. This would maintain continuity of the route, connections to key destinations and also allow users views over some of the construction activities for the Power Station.

10.238 Horizon is working with the Nuclear Decommissioning Authority (NDA), Magnox Limited and the relevant regulators for the Power Station to explore the potential to reinstate the Wales Coast Path along the coastline of Porth-y-pistyll once the Power Station was operational. This is an aspiration of consultees that has been recognised by Horizon during the analysis of the Stage One Pre-Application Consultation responses.

Copper Trail

10.239 The Copper Trail cycle route includes a section along Cemlyn Road that would require permanent closure to facilitate construction of the Power Station. The Public Access and Recreation strategy envisages that this would be re-routed from Cemlyn Bay along Nanner Road, then via a new off-road cycle link to the west of the A5025, before crossing the road and progressing to Llanfechell along rural routes to avoid Tregele.

10.240 The suitability of this route as the permanent realignment for the Copper Trail would be evaluated as the design is refined, following this Stage Two Pre-Application Consultation.

General approaches

10.241 Horizon's proposed Visitor and Media Reception Centre would be connected into the recreational network and offer facilities for users, including restrooms, picnic areas and cycle parking.

10.242 Dual use routes would be supported between Horizon's proposed Visitor and Media Reception Centre and Wylfa Head. These would allow for both cycle and walker access.

10.243 Investment is proposed around Wylfa Head, for example, Horizon is exploring the potential to convert the existing coastguard lookout to provide a shelter for bird and marine mammal watching; together with providing picnic areas, benches, possible recreational cycle parking and interpretation boards at viewpoints.

10.244 Improvements would be supported to the connections between the Wales Coast Path and Porth Wylfa, via cliff side paths.

10.245 The overall network would be designed to include a selection of key viewpoints, supported by picnic areas, benches and new interpretation boards to enhance the user enjoyment of the routes.

10.246 The principal focus of the initial Public Access and Recreation Strategy has been works in the Wylfa Newydd Development Area. Horizon plans to include consideration of opportunities for new routes from existing communities to connect into the wider recreational network, as well as recognising the Sustrans Cymru view expressed in consultation that 5km is a realistic commuting distance for cyclists. These will be considered as part of our work leading up to the DCO application and Associated Development applications.

Summary of relationship between proposed measures and ITTS objectives

10.247 Table 10.2 provides a cross-tabulation summarising the way in which the preferred transport measures relate to the ITTS objectives. This demonstrates the use of the objectives as a means of checking that the measures deliver an effective balance when collated as a package.

Table 10.2 Interaction between proposed transport measures and ITTS objectives

ITTS Objectives	Key principles	Key transport measures
Enhanced highway capacity and safety	Ensure the safety of highways for all users Control private vehicle and freight movements along the A5025 corridor Reduce land take in delivery of transport infrastructure	A5025 On-line and Off-line Highway Improvements Logistics Centre to control traffic movements along A5025
Integration with strategic public transport services	Offer efficient, flexible, reliable and sustainable modes of transport to the workforce Reduce the number of trips by all modes through transport efficiency	Anglesey Park and Ride facilities Develop improvements at key transport interchanges (rail, air and sea)
Improved transport links to the Wylfa Newydd Power Station	Reduce the number of trips by all modes through transport efficiency Provide, where possible, a legacy benefit for Anglesey	A5025 On-line and Off-line Highway Improvements Shuttle bus services from accommodation to the Power Station Site Investigate Power Station Site to Amlwch cycle link Potential to enhance future local bus services
Encouraging sustainable travel	Promote the use of non-road modes for the movement of freight Offer efficient, flexible, reliable and sustainable modes of transport to the workforce	Shuttle bus services to accommodation from key transport interchanges Shuttle bus services from accommodation to the Power Station Site Travel Plan for construction and operational workers Construction Worker Accommodation Management Portal, car share website and travel information packs
Reduced need to travel	Reduce the need to travel, including through demand	Marine Off-Loading Facility (MOLF)

ITTS Objectives	Key principles	Key transport measures
	restraint to limit traffic growth Avoid where possible and mitigate against adverse environmental effects arising from transport	Logistics Centre to consolidate deliveries and control journey times along the A5025 Restricted car parking at the Power Station Site

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11 Highway improvements

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11 Highway improvements

11.1 This chapter provides an overview of the highway improvements included in the Wylfa Newydd Project. It also explains the options considered, summarises how environmental considerations have been taken into account and describes how proposals have changed following consultation.

11.2 The A5025 Highway Improvements form an important component of the Wylfa Newydd Project, and are required as part of the wider transport strategy.

11.3 Construction traffic would have to use the A5025 from the A55 Junction 3 to the north of Valley to get to the Wylfa Newydd Development Area. The condition of this section of road is already an issue with transport surveys and studies indicating that it does not meet current highway standards.

11.4 Improvements therefore need to be made to accommodate the current and future flows of traffic, without the Wylfa Newydd Project, but also to address the impacts associated with the early stages of construction at the Wylfa Newydd Development Area.

11.5 Our preferred package of improvements seek to address issues such as width, alignment and overtaking opportunities to prevent further deterioration of the existing standard of the road and to accommodate additional traffic associated with the delivery of plant, bulk materials, heavy goods vehicles and construction workers related to the construction works at the Wylfa Newydd Development Area. This will assist in mitigating the risk of road deterioration, increased delays for road users, potentially increased accident risk and nuisance for local communities along the route.

11.6 Table 11.1 below provides estimates of existing daily traffic flows at various points on the A5025, together with the anticipated change in traffic flows as a result of the Project based on traffic modelling undertaken to date. These are known as Annual Average Daily Traffic (AADT) and are an industry-standard traffic statistic representing the total volume of vehicle traffic on a section of road over a year, divided by 365 days. The Traffic and Transport Technical Note provided as part of this Stage Two Pre-Application Consultation provides further information and is available on our website.

Table 11.1 Summary of Existing Flows for A5025 and estimated change during Main Construction

Locations	Existing Daily Flows (Estimated 2014 AADT[1])	Estimated Change in Daily Traffic Flows during Main Construction (2023)
A5025, east of Amlwch	3,300	+3%
A5025, Amlwch	2,700	+7%
A5025, Cemaes	2,500	+7%
A5025, Tregele	2,900	+6%

[1] AADT = Annual Average Daily Traffic (two-way flows)

Locations	Existing Daily Flows (Estimated 2014 AADT[1])	Estimated Change in Daily Traffic Flows during Main Construction (2023)
A5025, Cefn Coch (without off-line improvements)	2,800	+87%
A5025, Llanfaethlu (without off-line improvements)	3,800	+64%
A5025, Llanfachraeth (without off-line improvements)	4,700	+51%
A5025, Valley	5,400	+43%

11.7 In light of the above, Horizon is proposing a package of highways improvements. These comprise improvements to Nanner Road and the A5025. These improvements are proposed to include both on-line solutions, comprising the replacement of the existing carriageway and minor widening, and off-line solutions, which comprise sections of bypass.

11.8 The aim of these improvements is to address potential highway safety and capacity issues caused by an increase in traffic movements as a result of the Project. In addition, the A5025 Off-line Highway Improvements, which include new bypasses from the A5025, seek to address potential environmental effects on communities, including noise from increased road traffic and severance, and to allow two HGVs to pass each other safety at the same time in opposite directions.

11.9 In formulating these proposals, consideration has been given to safety, capacity, impact on local communities, life span of the existing carriageway and to meeting the required design standard for the duration of the construction programme (and potentially beyond). The schemes have been designed to provide a lasting benefit to both residents and visitors to Anglesey. In particular, residents who live in Llanfachraeth and Llanfaethlu would benefit from reduced traffic movements passing their homes, as by-passes would be provided to route through traffic away from these settlements. Residents in Cefn Coch and Valley would also benefit from realignment of the through route, in many cases increasing the distance between properties and moving traffic. The existing crossroads at Valley would be bypassed with an off-line roundabout to the east of the crossroads.

11.10 Resurfacing of the entire length of the A5025 between Valley and the Power Station Site would be undertaken along parts of the existing road that would be bypassed as a result of our proposals. In addition, the improvements would provide enhanced overtaking opportunities at the Llanfachraeth bypass, improving the flow of traffic along the principal north to south route on the western side of Anglesey.

11.11 In addition to the above, this chapter also explains the work that has been done in relation to the potential need for improvements to the A5025 between Amlwch and the Power Station Site, although it should be recognised from table 11.1 that the increases in traffic flows along these roads of the result of the Project is much lower than for the A5025 between Valley and the Power Station Site.

Site and Key Characteristics

11.12 There are three sections of road affected by Horizon's proposals for highways improvements: Nanner Road; the A5025 North Coast Section between Cemaes and Amlwch; and the A5025 between Valley and the Power Station Site. In this section, the key characteristics of each of those sections of road are described.

Nanner Road

11.13 Nanner Road is a winding road approximately 2.2km in length which stretches from a junction with the A5025 to Cemlyn Bay. The road is in a very rural location and has a national speed limit. It is flanked on both sides by agricultural land, with a small number residential and agricultural properties at the road side. For substantial lengths of this road, electricity and telegraph poles are present at the back of the verge on both the eastern and western sides of the carriageway.

11.14 The existing carriageway cross section for this link varies considerably along its length. At the widest point, adjacent to passing points, the carriageway is 4.0m wide, with the narrowest sections approximately 2.5m wide. The average carriageway width is 2.9m, though much of the route is less than 2.8m in width.

A5025 North Coast Section: Cemaes to Amlwch

11.15 The existing stretch of road running east of the Power Station Site to Amlwch is approximately 10km in length and has a national speed limit and 30mph sections, with some sections of constrained carriageway width. Feedback received from consultation has suggested that there is concern about the number of accidents on this road. There has been a total of 9 injury collisions resulting in 13 casualties (one fatal, two serious and 10 slight casualties) between 01/01/2009 and 31/12/2013 with a concentration of incidents near Llanadrig, near Burwen, and in Amlwch.

11.16 The section of A5025 east of the Power Station Site could be used for transportation of workers to the Power Station Site if workers are located in the Amlwch area, consistent with our preferred proposals.

A5025 Valley to the Power Station Site

11.17 The A5025 between Valley and the Power Station Site, as can be seen in figure 11.1 below, is approximately 18km in length and can broadly be explained as 8 sections. Sections 1, 3, 5 and 7 relate to the sections where we are proposing A5025 Off-line Highway Improvements and 2, 4, 6 and 8 relate to the sections where we are proposing A5025 On-line Highway Improvements.

11.18 The sections comprise:

- section 1 – A55 Junction 3 to north of Valley Junction (A5/A5025);
- section 2 – north of Valley Junction (A5/A5025) to north of Llanynghenedl;
- section 3 – north of Llanynghenedl to north of Llanfachraeth;
- section 4 – north of Llanfacheaeth to south of Llanfaethlu;
- section 5 – south of Llanfaethlu to north of Llanfaethlu;
- section 6 – north of Llanfaethlu to north of Llanrhyddlad;

- section 7 – north of Llanrhyddlad to north of Cefn Coch; and
- section 8 – north of Cefn Coch to Power Station Site Access.

11.19 This route is approximately 19.5km in length from Cemaes to Valley within the county of Anglesey. This is a rural road and is governed by a 30mph, 40mph, 50mph and 60mph speed limits. The A5025 predated modern design standards and is considered substandard in many locations due to its tight bends, narrow sections and poor sight lines for stopping distances. During the period of review there have been a total of 24 injury collisions resulting in 44 casualties (two fatal, four serious and 38 slight casualties).

11.20 Testing and analysis has confirmed that the carriageway has no residual life and therefore requires replacement/resurfacing to accommodate future traffic volumes and any increase in use associated with the construction of the Power Station.

Description of the proposals

Nanner Road improvements

11.21 The development of the Power Station Site will require the closure of Cemlyn Road, which runs from Tregele to Cemlyn Bay to the west of the Power Station Site. As a consequence, traffic levels on Nanner Road are predicted to increase and it is therefore necessary to ensure that the road is suitable to accommodate this. Vehicular access to the properties that remain will be via Nanner Road.

11.22 A number of improvements are proposed by Horizon to Nanner Road, following collaborative working with the IACC highway engineers. These will consist of additional and formalised vehicle passing places that will be spaced such that, where possible, there will be visibility to the next passing place, preventing the need for vehicles to reverse. The carriageway will be widened within the existing highway boundary and the road surface will be reconstructed. The passing bays will be suitably sized to allow the passing of vehicles which have been indicated to use the road such farm machinery, HGVs, goods vehicles and school buses and private cars.

11.23 The works would be completed prior to the stopping up of Cemlyn Road to ensure that a route to properties and amenities remains open. The works will be phased such that access to residences, farms and businesses is available from one direction throughout the duration of the works.

11.24 The improvements would be delivered by the IACC as highways authority using its permitted development rights, and a contractor appointed following competitive tender from its existing contractor framework. The Nanner Road improvements are scheduled to commence in October 2016 and are anticipated to be complete by April 2017.

11.25 The Nanner Road route is identified as offering the potential for diverting the Copper Trail, which is part of the national cycle network. Proposals for this are incorporated in the Landscape and Environmental Masterplan described in chapter 7 of this document.

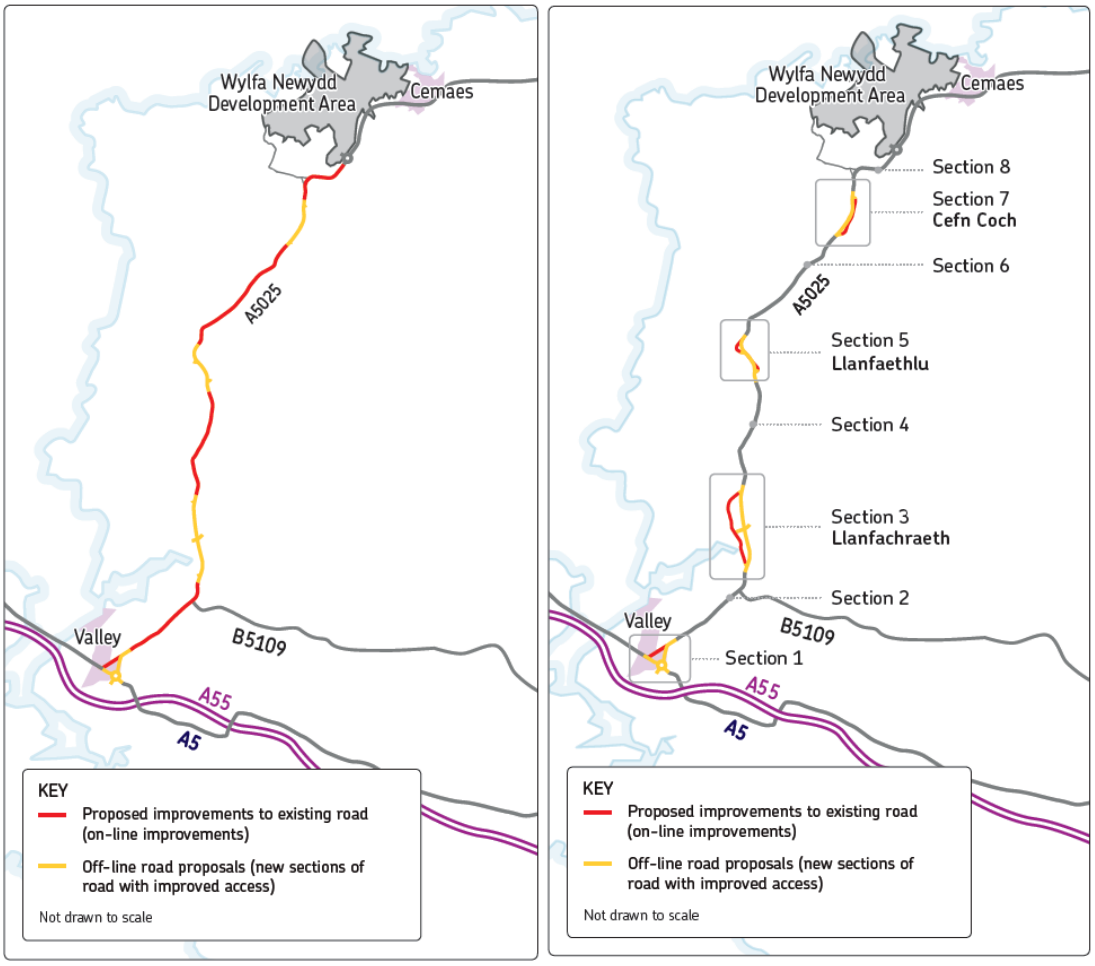
Proposed A5025 Highway Improvements – A5025 Valley to Power Station Site

11.26 The existing A5025 would be used as the main highway route for transporting the construction materials that are not delivered to the site via the Marine Off-Loading

Facility and by workers travelling to and from the Power Station Site (either directly, or via the proposed park and ride facility).

11.27 Figure 11.1 provides an overview of the location of the proposed A5025 Highway Improvements. Permission for the works will be sought pursuant to applications made to the IACC under the Town and Country Planning Act (1990) as amended. Further details on the consenting strategy for the Project are provided in chapter 1 of this document.

Figure 11.1 Proposed A5025 Highway Improvements – Overview Plan



On-line highway proposals to the A5025

Off-line highway works in conjunction with existing road segments

A5025 On-line Highway Improvements

11.28 As set out in the description of the A5025 above, sections of the carriageway are in poor condition and are narrow in places. This would be likely to pose problems when the construction of the Project is underway, when the number of vehicles (and in particular HGVs) using the road is expected to increase. In order to increase safety, allow free and easy passing of HGVs and to improve the lifespan of the highway, it is proposed to:

- widen sections along the 18km between A55 Junction 3 to the north of Valley junction (A5/A5025) and the Power Station Site;

- carry out widening at bends to meet current standards;
- resurface the existing road surface;
- accommodate National Cycle Network, Public Rights of Way and Private Means of Access, including some improvements;
- reconstruct parts of the existing highway pavement; and
- provide a temporary pavement recycling compound and temporary construction compound to facilitate works.

11.29 Localised widening would increase safety, allow free and easy passing of HGV's and improve the life span of the highway. It is proposed to widen the existing A5025 to a standard minimum carriageway width of 6.7m with two 0.3m hardstrips on either side of the carriageway to provide a minimum paved width of 7.3m, wherever possible. Either side of the paved area, a minimum of 450mm verge width would remain within the existing highway boundary, wherever possible. The improvements would provide additional widening on existing bends with a radius less than 400m. Depending on the radius of the curve, the required widths are significantly greater than for straight sections of highway, due to the increased clearances required for long vehicles (particularly HGVs) to negotiate curves. The requirements set out in Design Manual for Roads and Bridges (DMRB) have been applied to all bends along the route corridor. Several locations on straighter alignments that do not meet these standards have also been identified and alignment designs have been developed to rectify these.

11.30 Very few existing bends meet even the 'narrowest' recommended carriageway width and, as such, sections of on-line widening would be required at a number of locations on the A5025 between Valley and the Power Station Site.

11.31 Resurfacing would involve surface dressing the existing road by spraying hot bitumen onto the road and then applying and rolling in chippings. This ensures better quality road surfaces and helps the existing roads cope with a temporary increase in traffic levels while the A5025 Off-line Highway Improvements would be built.

11.32 The National Cycle Network intersects the A5025 in a number of locations and new crossing points and sections of surfaced cycleways would be provided as part of the improvement works.

11.33 The carrying out of the improvement works has the potential to affect the use of Public Rights of Way (PRoW) and Private Means of Access (PMA). Both of these have been considered by Horizon.

11.34 Where PRoW intersect or terminate at the A5025, the improvements have been designed so as not to affect their operation. Several PRoWs are crossed by the A5025 and during construction works there may be a need to temporarily divert footpath users to other appropriate and well-used ProWs. However, the vast majority terminate at the A5025 and require users to travel alongside the A5025 to continue and make a connection with another PRoW. Sufficient verge width at the intersections with the A5025 would be provided to keep pedestrians away from the carriageway edge.

11.35 All Private Means of Access (PMA) along the A5025 have been assessed to enable Horizon to incorporate appropriate designs. A PMA is typically an access to premises that is not part of the highway network itself. In the case of the A5025, these are mostly

driveways (they do not include agricultural accesses). Where appropriate, we have considered improvements and written to landowners who would be affected.

11.36 Those existing sections of the A5025 that would be improved for use by construction traffic would benefit from reconstruction of the carriageway to ensure that the lifespan of the road is improved, while those sections that would be bypassed by the Off-line Highway Improvements and be de-classified would also benefit from surface improvements.

11.37 Reconstruction involves removing and replacing the layers which make up the highway surface. The depth to which the road would be reconstructed depends on the condition of the road at a particular point. We have undertaken tests to assess the condition of the different layers of the road to help us understand this.

11.38 In order to handle the materials removed from the existing highway and recycle them into a new road surface, a temporary pavement recycling compound along with a construction compound would be provided. We are carrying out a site selection exercise to determine the most appropriate site for the compound, but it would be located on or close to the A5025. Both the pavement recycling compound and construction compound would be removed following construction of the A5025 On-line Highway Improvements.

11.39 The temporary pavement recycling compound would be likely to include:

- plant: crusher, screener, mixer, silo for storing materials, excavator, loading shovel, tractor (individually comparable to the size of an articulated lorry); and
- an area of hard standing in the form of a porous hard surface to accommodate between 4,000-6,000m² for plant and associated activity.

11.40 A temporary construction compound for the workers would be likely include:

- site offices;
- welfare facilities;
- construction staff parking;
- potential short-term parking of plant when not in use or awaiting transport off-site; and
- an area of hardstanding in the form of a porous hard surface.

11.41 We are working with the IACC who would undertake the A5025 On-line Highway Improvements, including setting up a framework for construction contractors, to commence in summer 2017, with works continuing for a period up to 24 months.

Off-line Highway Improvements

11.42 The following sections provide an explanation of the need for the A5025 Off-line Highway Improvements, which includes new sections of highway bypassing villages along the A5025. A description of these proposals are presented in the sections below. The Off-line improvements are proposed to be completed in time for the start of major construction activities at the Wylfa Newydd development site.

A5/A5025 Valley Junction

11.43 The proposed Valley Bypass would be a four-arm roundabout connecting the A5 with the A5025 to the east of the existing signalised junction that connects the A5 with the A5025

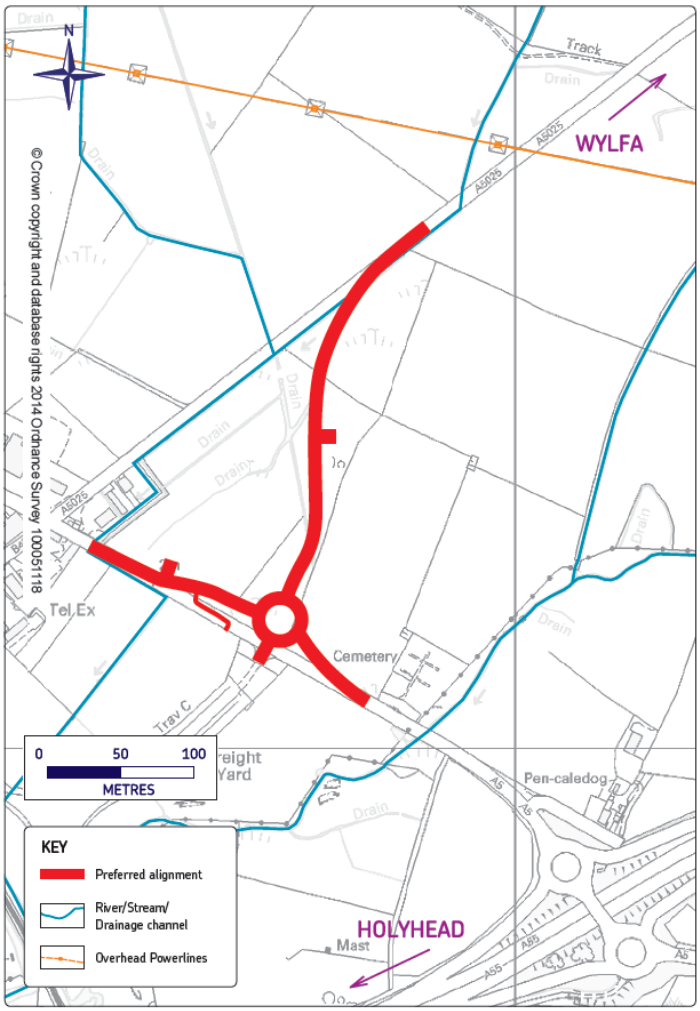
and B4545, as shown in figure 11.2. The purpose of the bypass is to avoid the increased traffic using the existing signalised junction, which may not be geometrically suitable to accommodate large HGVs, recognising that there is little scope for local improvements due to the proximity of existing buildings.

11.44 The roundabout is proposed to be located away from the village of Valley in order to minimise the impacts of noise, vibration and air quality. Furthermore the possible impact of street lighting pollution would be minimised due to the alignment being located away from the village.

11.45 The roundabout would be situated offline of (i.e. away from) the existing A5. Constructing the roundabout off the existing highway reduces construction impact on the highway network and allows the fourth arm of the roundabout to provide direct access to the existing Valley freight railhead.

11.46 The inclusion of cycling and pedestrian provisions to the south of the roundabout and away from the carriageway edge is proposed, and this would provide safe routes around the bypass for such users.

Figure 11.2 A5025 Off-line Highway Improvements – Valley junction



Llanfachraeth bypass

11.47 It is proposed to provide a new 2km highway to provide a bypass to the east of Llanfachraeth village. The bypass is proposed to avoid an increase in vehicles passing through the village, and to provide increased safe overtaking opportunities by creating improved visibility along the A5205, in order to reduce driver frustration.

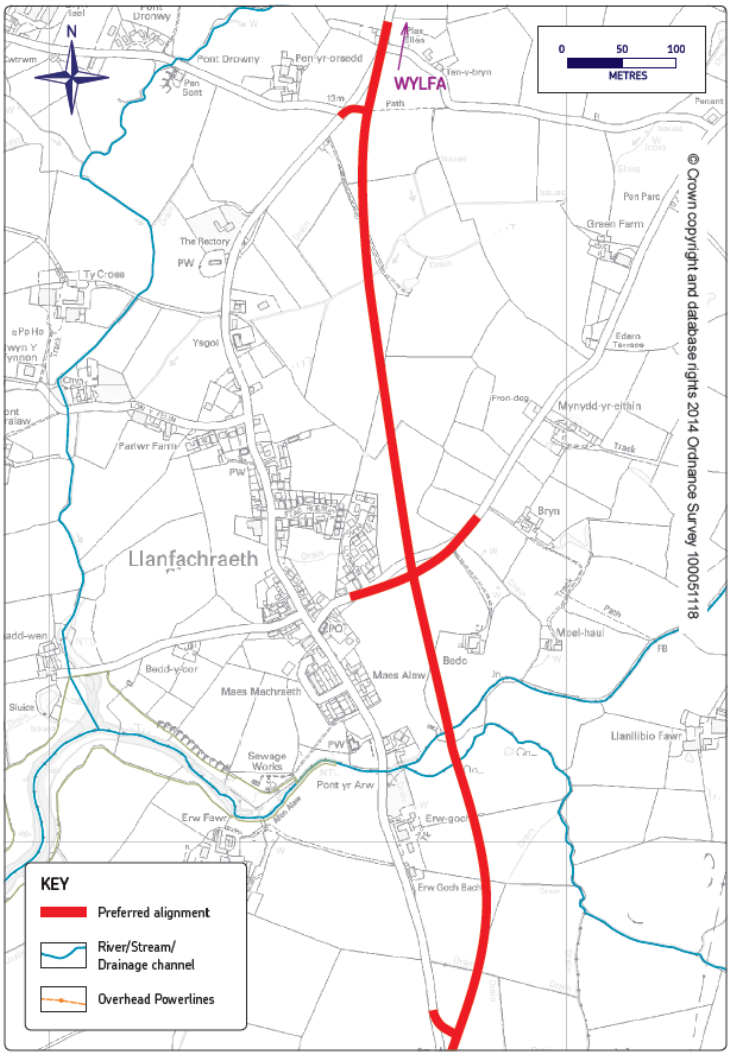
11.48 The bypass is to be located away from the village to minimise the impact of noise and vibration post construction. The northern section of the bypass would be constructed in a cutting to minimise noise pollution and vibration levels.

11.49 The design includes an overbridge to accommodate the side road that intersects the route, as shown in figure 11.3. Providing an overbridge instead of an at-grade junction means that vehicles using the side road avoid a potential conflict with bypass traffic, while maximising the overtaking opportunities for those using the bypass. The side road overbridge would be constructed offline of the existing side road to minimise disruption to the local highway network throughout the construction period.

11.50 The design also includes an elevated viaduct allowing traffic to cross the Afon Alaw. The design allows cattle to cross underneath the structure adjacent to the River Alaw as well as allowing space for a footpath.

11.51 The overall design results in an economical approach to earthworks due to the reduced need for fill material to be imported and excavation material exported therefore minimising the number of the HGVs delivering material for the construction of the scheme.

Figure 11.3 A5025 Off-line Highway Improvements – Llanfachraeth

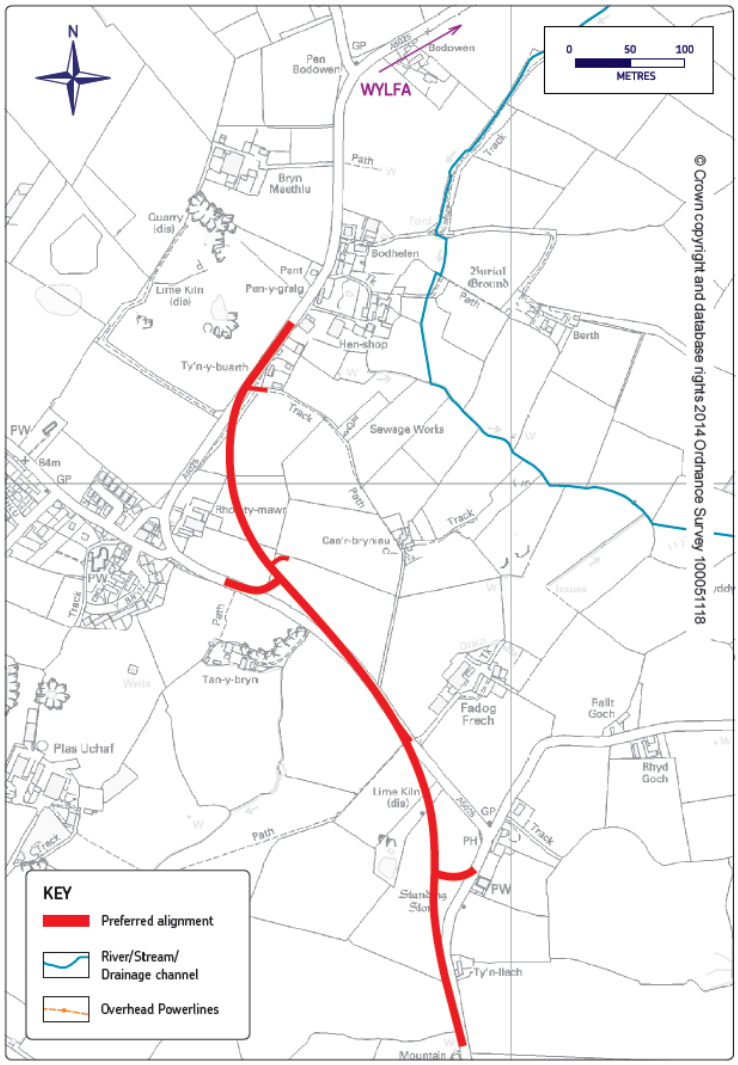


Llanfaethlu improvements

11.52 At Llanfaethlu, a bypass is proposed to eliminate two existing substandard bends near the Black Lion pub and through Llanfaethlu village. Providing this Off-line improvement would also reduce the number of vehicles passing through Llanfaethlu village. The proposed alignment is shown in figure 11.4.

11.53 A new footpath would be provided to the west of the highway to allow pedestrians to access Llanfaethlu village from the properties to the north of the bypass. A safe crossing point would be provided across the A5025, which is an improvement on the existing conditions which currently provide no provisions for pedestrians.

Figure 11.4 A5025 Off-line Highway Improvements – Llanfaethlu



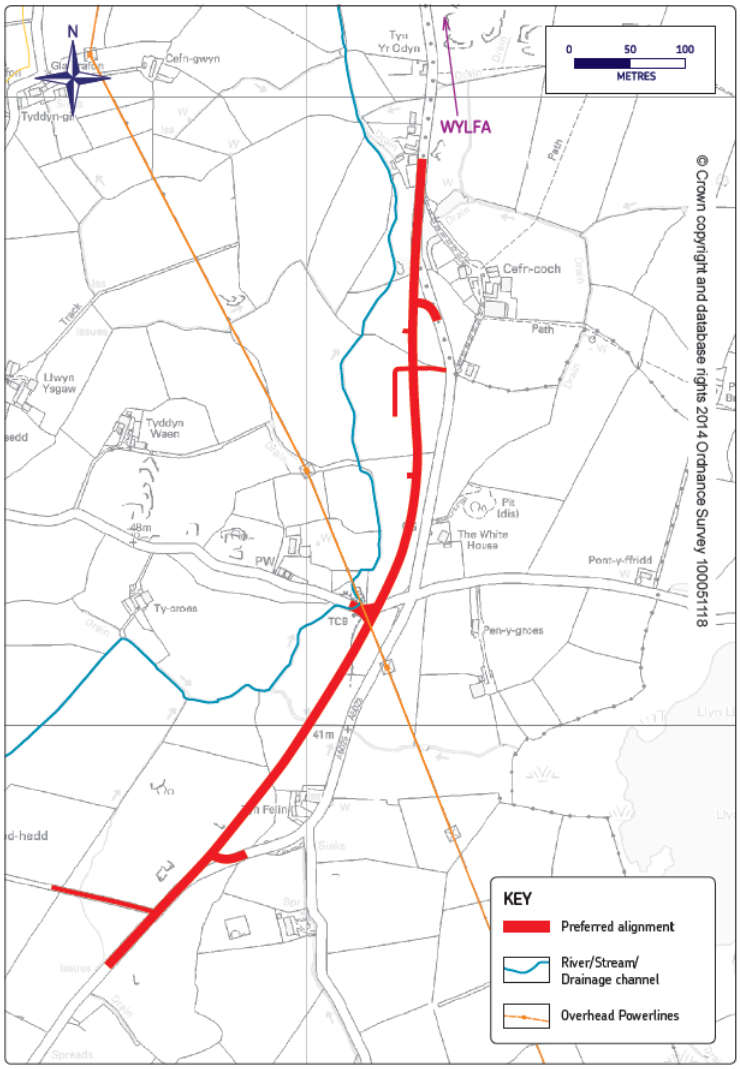
Cefn Coch improvements

11.54 The Cefn Coch bypass is proposed to eliminate two existing substandard radius bends in Llanrhwydrus, as shown in figure 11.5.

11.55 Constructing a bypass at Cefn Coch stops up the road leading to Llanfechell to the east of the proposed bypass and removes the existing staggered cross-roads along the A5025 between Llanrhwydrus and Llanfechell, reducing the risk of slow moving vehicles manoeuvring between the two junctions. A staggered cross-roads increases the risk of vehicles on the main road having to slow down quickly to allow vehicles to cross the bypass between the two junctions on either side of the highway.

11.56 The design includes an accommodation overbridge approximately half way along the bypass to facilitate the safe movement of cattle.

Figure 11.5 A5025 Off-line Highway Improvements – Cefn Coch



A5025 North Coast Section: Cemaes to Amlwch

11.57 The emerging proposals and socio-economic modelling data indicate that a proportion of the construction workforce are likely to reside to the east of the Power Station Site, particularly in the Amlwch and Benllech areas (see chapter B1 of the Preliminary Environmental Information (PEI) Report). Transporting these workers to the Power Station Site would result in an increase in the number of buses travelling along the eastern section of the A5025, with the section between Amlwch and the Power Station Site, experiencing the highest increase in vehicular movements. Horizon has therefore considered whether or not any highway improvement works are likely to be required to

the A5025 North Coast Section, in order to accommodate these increased vehicle movements.

11.58 As set out in table 11.1, our modelling work to date shows that these roads would experience around a 7% increase in daily traffic flows as a result of the Project, compared to between 43% and 87% on the A5025 between Valley and the Power Station Site.

11.59 As a result of the analysis explained below, which took into account highway capacity and road safety, as well as accident data, Horizon has concluded that highway widening works and improvements to road geometry (which could lead to increased traffic speeds) may not be appropriate and are unlikely to be required. However, we are undertaking a review of the existing traffic signs and road markings to determine whether further modifications can be made to help reduce traffic speeds and make the road safer.

Highway capacity

11.60 The existing A5025 is operating well within capacity (in terms of volume of traffic) and there is no congestion during the weekday peak hours. The overall number of vehicles forecast to use the road during Main Construction would still be well within the road's theoretical capacity. Further information is provided within the Traffic and Transport Technical Note and will be provided within the Transport Assessment accompanying the Development Consent Order application and Associated Development applications.

Road Safety

11.61 A study of accident data for the previous 10 years revealed two cluster sites on the section of the A5025 between Cemaes and Amlwch. A common feature in the most serious accidents is excessive speed.

11.62 A comparison has been made between the data collected by North Wales Police and national statistics to determine how the accident record on this section of road compared to national averages.

11.63 Table 11.2 below gives the accident rate per billion vehicle miles using figures extracted from the North Wales Summary Report.

Table 11.2 Accident rates – A5025 North Coast section

No. of Accidents	9
No. of Years	5
Traffic Flow (24Hr)	2,700
Road Length (miles)	5.25
Accident Rate per billion vehicle miles	348

11.64 The below national accident rates in table 11.3 have been extracted from table RAS10002 Reported accidents and accident rates by road class and severity, Great Britain, 2005-09 average, 2006 – 2013.

Table 11.3 National accident rates – A5025 North Coast section

	Accident Rate per billion vehicle miles (2013 Figures)
Rural Roads (A Roads)	276
All Rural Roads	342
A Roads	472

11.65 As can be seen from the above tables, the accident rate per billion vehicle miles for Amlwch to Cemaes of the A5025 is better than the national figure for all 'A' roads and comparable to the national figures for all rural roads.

11.66 Table 11.4 below gives the predicted number of collisions using the latest COBA manual (Table 4/1 (2009 Base) accident rate for Older S2 'A' Road, 50/60/70mph, for link/junction combined, the default accident rate of 0.244 PIAs per MVKM).

Table 11.4 Predicted numbers of collisions – A5025 North Coast section

Length	8.4
Years data	5
ADDT	2700
COBA Coll Rate	0.244
Predicted Number of Collisions	9.9
Actual Number of Collisions	9

11.67 The predicted number of collisions is comparable to the actual number of collisions recorded over the 5 year period which suggests that the road is performing roughly as expected.

Speed limit

11.68 The A5025 Cemaes to Amlwch has a national speed limit, although an advisory 50mph speed limit was recently introduced by the IACC in November 2015. The impact of the advisory speed limit is currently being monitored by the IACC.

Traffic signs and road markings

11.69 We are undertaking a review of the existing traffic signs and road markings to determine whether further modifications can be made to help reduce traffic speeds and make the road safer.

Response to previous consultation

11.70 We have carried out a number of public and stakeholder consultations on the A5025 Highway Improvements since Stage One Pre-Application Consultation in 2014. A description of what was consulted on in relation to the A5025 Highway Improvements during each consultation is presented below.

11.71 Broad support was received following consultation for the need for road improvements, noting that the identified road proposals were a step towards this. There was strong support for bypasses that avoided the centre of settlements and schools. However, this was tempered by an overarching concern regarding existing road congestion and safety.

11.72 Further details of consultation feedback received in relation to the highway improvements is provided in the Consultation Summary Report.

11.73 At Stage One Pre-Application Consultation we consulted on proposed options for the A5025 Highway Improvements, including a combination of bypasses and straightening of bends at the four preferred locations and improvements to the existing A5025. Feedback from that consultation expressed general support for the principle of A5025 Highway Improvements and comments informed a process of more detailed option selection and design refinement work. This helped us select the preferred Off-line Highway Improvements options and progress various changes to the preferred On-line improvements. In particular, the following amendments were made to the highways improvement proposals:

- existing carriageway on the Online Improvements sections of the A5025 between the proposed site entrance and Valley will now be subject to full reconstruction;
- detailed design of the Online proposals will widen existing bends;
- improvements to the junctions of the National Cycle Network Routes and the A5025 will be provided at Llanynghenedl and Tregele;
- footpath diversions will be included in the design of the highways improvements to minimise the impacts of severance or road realignment; and
- preferred options for the bypasses were chosen and further design changes made following public comments.

11.74 We undertook this work in conjunction with the relevant IACC technical officers, which led to a further series of public information and engagement activities in July 2015, to update the public on how the preferred options for the A5025 Highway Improvements had been arrived at to be taken forward.

11.75 The January Project Update Consultation in 2016 provided a further update on what the A5025 Highway Improvements would include.

11.76 On-line roads consultation in May 2016 went on to share our proposals for the on-line improvements in more detail, including sharing detailed drawings.

11.77 In addition, a series of meetings and workshops with landowners, statutory stakeholders, the IACC members, community councils along the route, the police, and other technical services within the IACC have been held during the preparation of the design of the scheme. Comments received also informed design changes.

11.78 We have analysed feedback from members of the public and stakeholders and intend to submit applications for planning consent for the proposed A5025 Highway Improvements later in 2016/early 2017.

11.79 The following table provides an overview of the key design changes that have been made as a result of the consultation described above.

Table 11.5 Key design changes following consultation

Change	Rationale
Pre-Application Consultation Stage 1 September-December 2014	
Off-line – The bypass has now been designed to link in further away from the Llanfwrog/caravan site junction and this junction would then be on a quieter road.	This change has been made in part due to responses received to the public consultation.
Off-line – Option 1 (as presented at Stage One Pre-Application Consultation) for the Llanfachraeth proposals was chosen as the preferred option.	This was in part due to the positive responses received by the public during Stage One Pre-application Consultation.
Off-line – Illumination of the Valley Roundabout due to safety. The remainder of the A5205 highway improvements would be unlit and would not therefore contribute to night-time light pollution.	This was in part due to the public consultation comments received.
Public Information events July 2015	
On-line - Signage for local services to be included as part of the proposals.	This has been included as a response to comments received from Valley Community Council.
Off-line – The design has now incorporated an over-bridge in Llanfachraeth as opposed to a T-Junction.	This change was in response to public consultation.
Off-line – Landscaping in the form of earthworks and planting treatments will be incorporated into the final design of the A5025 Highway Improvements to improve integration of the scheme within the existing landscape pattern, and to provide visual screening of elements that could potentially feature in established views and/or those available to residential occupants.	This has been further considered due to public consultation comments received.
Off-line – The design has evolved to incorporate access to the Valley railway sidings to provide direct access to the existing Valley freight railhead.	This change has been made in response to public consultation comments received.
Off-line – Movement of Llanfachraeth improvements further away from residential properties.	This change was made in response to public consultation comments received and also allows for better overtaking.

Change	Rationale
Cycle provision	Horizon is looking at appropriate mitigation for cycle provision to be incorporated within the design.
Project Update Consultation January 2016	
In places where the highway improvements require that dry stone walling is removed, Horizon has committed to replacing the wall.	This is to maintain the character of the road, and therefore the wider area, based on consultation comments.
May 2016 On-line Consultation	
Design of Private Means of Access	Comments received from property owners where access to properties, for example, is immediately adjacent to the A5025, have informed the detailed designs.

Justification for preferred options and consideration of alternatives

11.80 The emerging Joint Local Development Plan for Anglesey and Gwynedd includes a draft policy that supports improvements to the highway network, subject to a number of criteria. These include that the choice of route has been informed by a desire to minimise the impact on the built and natural environment, landscapes and property, including by minimising land take to the amount consistent with good design and high quality landscaping. In specific reference to road schemes, the draft policy cites the need to be able to demonstrate that road enhancement provides the optimum solution and that the scheme(s) would help to improve road safety.

11.81 Draft policy TRA1 also makes specific reference to the following four locations between Valley and the Power Station Site as requiring significant improvements in respect of proposed NSIP development at the Wylfa NPS Site:

- A5/A5025 (Valley);
- A5025 (Llanfachraeth);
- A5025 (Llanfaethlu); and
- A5025 (Cefn Coch).

11.82 Existing transport and planning policy also supports highway improvements specifically relating to the A5025, including the North Wales Joint Local Transport Plan (2015).

11.83 Specific environmental considerations that have influenced the design-development of the options to date have centred on the following design-related measures and solutions:

- modification and refinement of horizontal alignments to avoid sensitive environmental interests and achieve an appropriate fit with existing land contours, where achievable;

- minimisation of the physical footprint to reduce land take;
- sensitive siting of prominent engineering features or vertical structures (e.g. embankments) to reduce visual intrusion within local landscapes, and on the setting of the built heritage;
- retention of existing features to improve environmental integration;
- use of available highways land to accommodate design features and improvements;
- inclusion of facilities to ensure continued accessibility to existing rights of way, private means of access and landholdings;
- inclusion of engineering solutions to retain existing hydrological features and mitigate potential effects on drainage regimes from landtake and road runoff;
- optimisation of protection for nearby private dwellings through the use of existing features, earthwork cutting slopes and increasing the distance between the A5205 proposals and properties; and
- earthworks balance to minimise the import of construction materials or the export of surplus excavated materials.

11.84 The following sections of this report explain the options that have been considered for the various highway improvement works and justification for the preferred option for each site. The options and alternatives are explained through Scheme Assessment Reports (SAR) Stage One, Two and Three (SAR 1, 2 and 3), the relevant conclusions of which are explained below.

11.85 The objective of SAR1 is to identify the environmental, engineering, economic and traffic advantages, disadvantages and constraints associated with broadly defined improvement strategies. The aims at SAR1 were to make it safe to travel to Wylfa along the A5025 during construction and operation of Wylfa Newydd giving consideration to an increased number of HGVs and to minimise negative impacts this may have on local people and the environment.

11.86 The purpose of SAR2 is to identify the factors to be taken into account in choosing alternative routes or improvement schemes and to identify the environmental, engineering, economic and traffic advantages, disadvantages and constraints associated with those routes or schemes.

11.87 The purpose of SAR3 is to identify clearly the advantages and disadvantages, in environmental, engineering, economic and traffic terms, of the preferred route/ works. This will capture the design for the final proposals to be submitted with the planning application.

A5/A5025 Junction Improvements

11.88 During the initial design stages (SAR1), a new link road between junction 3 of the A55 and the A5025 was proposed to directly bypass the Valley area and the existing signalised junction. This bypass would have created a 4th arm from the existing A55 roundabout and tie in to the A5025 to the north of Valley. Early stakeholder engagement indicated that this was not a preferable option due to potential constraints and difficulties associated with connecting in to the existing roundabout.

11.89 Stakeholder workshops were then held, during which it was suggested that a new roundabout to the east of the existing junction may be a preferable option. This led to consideration of three alternative roundabout options which would bypass the existing A5/A5025 junction.

11.90 Option 1 was a 3-arm roundabout to the east of the existing signalised junction in Valley. It was proposed to locate the roundabout close to the existing to reduce land take and severed land to the west of the bypass. The roundabout was to be constructed offline of the A5 in order to maintain vehicular usage of the highway throughout the majority of the works.

11.91 Option 2 was a 4-arm roundabout to the east of the existing signalised junction in Valley. The roundabout was to be located further east of the existing junction than proposed for Option 1. It would be constructed on the line of the A5 to reduce land take and visual impact. The additional fourth arm of the roundabout is a direct access to the freight yard to the south of the A5.

11.92 Option 3 was also a 4-arm roundabout to the east of the existing signalised junction. The roundabout was to be situated offline of the existing A5 in order to reduce the construction impact on the highway network and the fourth arm of the roundabout provides direct access to the freight yard south of the A5.

11.93 The next stage of design (SAR2) involved analysis, comparison and evaluation of the above options against the following topic areas: air quality, noise and vibration, landscape and visual effects, cultural heritage terrestrial and freshwater ecology, traffic and transport, the water environment, geology and soils, socio-economic effects, public access and recreation.

11.94 As a result of this assessment, Option 3 was selected as the preferred option, and now represents the proposed works for the A5/A205 Valley junction.

11.95 Some of the criteria assessed indicated that the differences between the various options were very minor and the reasons for the selection of Option 3 were as follows:

- Proximity to the village – The roundabout being located further from the village means that noise, vibration and air quality impact is reduced when compared with Option 1. Furthermore the possible impact of street lighting pollution would be decreased due to the alignment being located further from the village.
- Construction impact – Option 3 being constructed offline of the existing A5 means that it would be less to the highway network during construction when compared with Option 2. In comparison with Option 1, where would be less noise impact during construction as the majority of the works would take place further from the village.
- Flooding – The majority of the site is contained within an existing plain and the location of Option 1 would have been through some of the worst affected areas. The alignment location for Option 3 is further from the area of flooding. The design has been developed in discussion with NRW to ensure the bypass doesn't increase flooding in the area.
- Transport safety – The length of the western roundabout arm of Option 3 is significantly longer than Option 1 giving more time for westbound vehicles approaching Valley to slow down on the approach to the village in advance of the

signalised junction. The inclusion of a fourth arm to the roundabout for the freight yard terminal means that an additional access close to the roundabout is not required.

- Non-Motorised Users (NMUs) – Inclusion of cycling and pedestrian provisions to the south of the roundabout and away from the carriageway edge provides safer NMU routes around the bypass.

Llanfachraeth Bypass

11.96 Stakeholder engagement workshops, which were held during the production of SAR1, looked at alternatives for bypassing Llanfachraeth village. Attendees of the workshop agreed that bypassing to the west of the village should not be explored as it could impact on the Anglesey Area of Outstanding Natural Beauty (AONB) and a Site of Special Scientific interest (SSSI). It was therefore decided that a number of options to bypass to the east of the village should be developed and taken forward for appraisal.

11.97 The following sections of this report outline the options considered for providing an eastern bypass to Llanfachraeth village.

11.98 Option 1 proposed an alignment that took the bypass further from the village on a large radius curve. The alignment is initially on an embankment to cross 2 existing watercourses and then goes into cutting as it passes Llanfachraeth village. The existing road crossing would be stopped up to the west and connected to the mainline via a simple T junction to the east.

11.99 Option 2 was a mainline alignment that remained closer to the village on a straighter alignment than Option 1 for the first 400m of the bypass. From this point it was a very similar horizontal alignment to Option 1. Option 2 was then divided into two sub-options. Option 2A followed a similar vertical alignment to Option 1 however Option 2B followed a slightly different vertical alignment due to the exclusion of an underpass approximately a quarter of the way along the bypass. The removal of the underpass allowed the height of the embankment to be reduced at the southern end of the bypass. The purpose of the underpass was to facilitate the safe movement of cattle between the severed fields and to maintain operation of the farm post-construction. As an alternative it was proposed that an elevated viaduct could accommodate the safe movement of cattle, as well as traffic over the Afon Alaw and designs were amended to incorporate this.

11.100 Option 3 was a variation of Option 1 with the inclusion of as side road overbridge to replace the side road junction approximately midway along the bypass. The mainline alignment is as proposed for Option 1. There were 2 different options for the overbridge which were referred to as Option 3A and 3B. Option 3A provided an overbridge on the existing side road alignment and Option 3B was a realignment of the existing road to the south of its current position.

11.101 The SAR2 assessment involved analysis, comparison and evaluation of the above options against the following topic areas: air quality, noise and vibration, landscape and visual effects, cultural heritage, terrestrial and freshwater ecology, traffic and transport, the water environment, geology and soils, socio-economic effects, public access and recreation.

11.102 As a result of this assessment, Option 3B was selected as the preferred option, and now represents the proposed works for the Llanfachraeth bypass.

11.103 Some of the criteria assessed indicated that the differences between various options were very minor and reasons for the selection of Option 3B were as follows:

- Proximity to the village – The southern end of the bypass being located further from the village as proposed by Option 3B reduces the impact of noise and vibration post construction when compared with Option 1. The location of the junction connecting to the southern end of the village would also be located further from residential properties. From approximately halfway northwards the mainline alignment for all options were very similar. Construction impact – The southern end of the bypass in Option 3B is located further from the existing A5025 meaning that construction noise and dust is reduce when compared with Option 2. Furthermore the larger area of land created between the existing A5025 and proposed bypass presents an opportunity for a site compound area that is bounded by the two roads and does not extend further than the east side of the bypass. The Option 3B side road overbridge is proposed to be constructed offline of the existing side road to minimise disruption to the highway network throughout the construction period. The overbridge proposed for Option 3A was to be built online of the existing side road requiring closure of this road for a longer period during construction. The side road overbridge is to be constructed on the south side of existing road and therefore further from the residential estate Parc Llynnon to reduce noise impact for the local residents.
- Transport safety – One of the objectives of the Llanfachraeth bypass is that it would provide increased opportunity for safe vehicle overtaking to reduce driver frustration. Both mainline Options 1 and 2 provide a similar amount of overtaking opportunity. Providing a simple T-junction connection to the bypass approximately midway along the bypass, as proposed by Options 1 and 2, permits overtaking to be carried out although may cause visibility issues for vehicles emerging from the junction whilst vehicles are overtaking on the mainline. Providing an overbridge, as proposed for Option 3B, eliminates the risk of reduced visibility for vehicles emerging from the side road.
- Design standards and traffic counts – Traffic counts were taken in August and November 2014 and indicated that a larger number of vehicle were using the side road junction approximately midway along the bypass than originally assumed. Guidance states that a simple T-junction may not be a suitable arrangement at this location to facilitate this amount of vehicles and a ghost island junction may be required. Providing a ghost island junction would severely reduce the amount of safe overtaking opportunities along the bypass and therefore reduces the benefits of the bypass. For this reason the overbridge proposed in Option 3B to connect to the side road is the preferred option as it facilitates overtaking on the mainline and removes the need for a ghost island junction at this location.
- Non-Motorised Users (NMUs) – Both mainline alignments have a similar impact on NMUs and would facilitate PRoW crossings in similar ways. The inclusion of the overbridge in Option 3B avoids severing NMU routes to access Llanfachraeth village and provides opportunities for improved access to the village and linking two existing PRoW.

Llanfaethlu Bypass

11.104 There are two bends in the vicinity of Llanfaethlu that do not conform to current carriageway width and radii design standards. To provide a design that meets these

standards it is not possible to only provide widening to the existing carriageway within the highway boundary and to widen outside this boundary is difficult due to constraints imposed by properties close to it. Consequently, it was considered necessary to investigate options for bypassing these bends.

11.105 However, early stakeholder engagement showed that providing a bypass directly to either the east or the west of the existing alignment would not be a preferable option. It is for this reason that options would bisect the two existing bends and cross the existing highway between the bends have been identified and discussed in the following sections.

11.106 Option 1 straightened out the Black Lion bend to the west of the existing bend and tied back into the existing alignment of the A5025 for a 200m stretch. The alignment then bypassed Llanfaethlu village to the west on a standard radius curve before tying back in to the existing A5025 to the north of the village. Severance of two landowners' agricultural land was addressed by the inclusion of two cattle underpasses approximately half way and three quarters of the way along the bypass.

11.107 Option 2 follow the same alignment as Option 1 but severance of two landowners' agricultural land was addressed by the inclusion of a cattle underpass approximately a quarter of the way along the bypass and an accommodation overbridge approximately half way along the bypass.

11.108 Option 3 followed a similar initial alignment to both Option 1 and 2 around the Black Lion bend and tied back into the existing A5025. From this point it bypassed Llanfaethlu and crossed the existing A5025 to the north of the village on a desirable minimum radius curve. The alignment then straightened out, running almost parallel to the existing road. A four-arm roundabout junction was provided to connect the existing A5025 to the new alignment and Chapel Street, providing access to Rhyd-wyn.

11.109 The SAR2 assessment involved analysis, comparison and evaluation of the above options against the following topic areas: air quality, noise and vibration, landscape and visual effects, cultural heritage, terrestrial and freshwater ecology, traffic and transport, the water environment, geology and soils, socio-economic effects, public access and recreation.

11.110 Some of the criteria assessed indicated that the differences between Options 1 and 2 were very minor and the main difference being the way severance was addressed. Option 3 provided an alignment that was almost twice the length of the other options and would require the existing A5025 to be crossed by the proposed alignment to the north of the village. The outcome of workshops showed that the preferred option was Option 2.

11.111 The main reasons for the selection of Option 2 as the preferred option were as follows:

- Construction impact – Options 1 and 2 would have a similar construction impact due to the alignments being very similar. The removal of the accommodation overbridge from Option 2 means that the construction process is simplified and therefore shortened as a result. The overall length of Option 3 is approximately twice of Options 1 and 2 and therefore a much longer construction period would be needed to complete the works. All options tie back into the existing A5025 for a short stretch between the Black Lion pub and Llanfaethlu village and would therefore have a similar impact on the highway network during construction in this area. However, Option 3 also crosses the existing A5025 twice to the north of the village and this would require temporary diversions during construction of these areas.

One of these crossings would require construction of a new 4-arm roundabout online of the existing junction to Rhyd-wyn.

- Environmental impact – The proposed alignment for Option 3 passes through a designated Area of Outstanding Natural Beauty (AONB). Option 2 ties back in to the existing A5025 before the AONB and therefore would significantly reduce the environmental impact on this area.
- Visual impact and severance – The visual impact of Option 3 would be much more significant than Options 1 and 2. The alignment would be in a deep cutting as it bypasses the village for Options 1 and 2 to reduce the visual and noise impact of the road. Option 3 would also be in cutting at this point however would need to be on embankment as the alignment heads north of the village to provide a suitable cut-fill balance. This embankment would be clearly visible from the village and from the properties located along the bypassed section of the A5025. Option 3 would also sever additional land to the west of the existing A5025, within the AONB.
- Transport safety – The inclusion of a roundabout at the northern extent of the bypass in Option 3 introduces an additional major junction to the A5025. The majority of accidents occur in proximity of junctions and therefore by removing this, as proposed for Option 2, it would reduce the risk of accidents occurring in this area. Due to the layout and configuration of a roundabout, traffic on the A5025 would not have priority and this may lead to driver frustration.

11.112 Further discussions with the landowner to the north of the bypass subsequently identified a minor amendment to this design. Discussions with the landowner suggested that the accommodation overbridge would not be required to continue the operation of the agricultural land on both sides of the highway and it would be preferable to provide a new field access to the east of the bypass and a cattle handling facility close to the access gate.

Cefn Coch Bypass

11.113 The settlement of Cefn Coch is bounded by two small radius curves which do not comply with current design standards. There is currently signage in place to warn motorists of the onerous road alignment and overtaking road markings prohibit any overtaking around the bends. Though this does encourage vehicles to drive more safely there have been several accidents in this area and increased HGV traffic may cause further problems in the future.

11.114 Local widening of the carriageway would help to smooth out these bends but they would still not conform to current design standards. The amount of widening that could take place is limited due to a junction with a side road being located on the apex of the first bend and a Private Means of Access on the second.

11.115 An alternative alignment proposed to stakeholders during SAR1 was developed to provide a straight section which cuts across the two bends and realigns the A5025 to the west of its current position. In doing this it would bypass the two onerous bends and remove construction (and future operational) traffic from the settlement of Cefn Coch.

11.116 Attendees at a stakeholder workshop however requested that an offline solution should be taken forward for a more detailed appraisal and therefore the following sections look at these alternative alignments. All the proposed options in this report have a similar

horizontal alignment but with variations on how each tie into the existing highway network.

11.117 Option 1 proposed to stop up the ends of the existing A5025 with access to the bypass maintained via a staggered T-junction onto the bypass. A vehicle underpass was proposed just under half way along the bypass to facilitate the safe movement of cattle between the severed fields and maintain operation of the farm post construction.

11.118 Option 2 followed a different vertical alignment to all the other options to provide a more economical cut-fill balance. This vertical alignment requires an existing side road to be stopped up to the east of the proposed bypass due to the alignment being in deep cutting at this point. A simple T-junctions are provided at both ends of the bypass to connect the existing A5025 to the proposed alignment. Due to the alignment being in cutting towards the northern extents, an accommodation overbridge was proposed approximately half way along the bypass to facilitate the safe movement of cattle between the severed fields and to maintain operation of the farm post-construction.

11.119 Option 3 followed the same vertical alignment as Option 1 but provides both a staggered T-junction at the centre of the bypass and two simple T-junctions at either end of the bypass. A vehicle underpass was proposed just under half way along the bypass to facilitate the safe movement of cattle between the severed fields and maintain operation of the farm post construction.

11.120 Option 4 was similar to Option 3 in that it provides a T-junction to the south of the bypass and a staggered T-junction at the centre however it removes the junction at the north end of the bypass. This is in order to stop up the existing A5025 along this section and allow safe movement of cattle from a nearby farm across this section of the existing A5025. A vehicle underpass is proposed just under half way along the bypass to facilitate the safe movement of cattle between the severed fields and maintain operation of the farm post construction.

11.121 The SAR2 assessment involved analysis, comparison and evaluation of the above options against the following topic areas: air quality, noise and vibration, landscape and visual effects, cultural heritage, terrestrial and freshwater ecology, traffic and transport, the water environment, geology and soils, socio-economic effects, public access and recreation.

11.122 Some of the criteria assessed indicated that the differences between Options 1, 3 and 4 were very minor and the main difference being the ways the existing A5025 connects to the proposed bypass. Option 2 has a significantly different vertical alignment to all other options to provide a better cut-fill balance as a result. The outcome of workshops was that the preferred option was Option 2. The main reasons for the selection of Option 2 as the preferred option were as follows:

- Visual impact – The majority of the alignment for Options 1, 3 and 4 would be on embankment and therefore would have a significant visual impact on the existing landscape. Option 2 would be in cutting along the northern end of the bypass and would not be visible from the existing A5025 and residential properties in the area.
- Transport safety – Option 2 stops up the road to the east of the proposed road and removes the staggered T-junction reducing the risk of slow moving vehicles manoeuvring between the two junctions. A staggered T-junction increases the risk of vehicles on the mainline having to slow down quickly to allow vehicles to cross

the bypass between the two junctions on either side of the highway. Traffic counts taken in August and November 2014 indicate that there are very few vehicle movements on this road daily and therefore it is unfeasible to provide a vehicle overbridge.

- Noise and vibration – The introduction of a cutting in the northern section of the bypass reduces noise and vibration levels for Option 2. All other options are on embankment through this section and would therefore have an increased level of noise in comparison to Option 2.
- Construction impact – The more economical cut-fill balance of Option 2 means that less fill material is required to be imported to the site, leading to a significant reduction in the number of HGVs delivering material to the site when compared to all other options.

11.123 Further discussions with the landowner to the south of the bypass identified a minor amendment to this design. To allow for the safe movement of cattle between both sides of the severed agricultural land a cattle underpass is to be provided beneath the proposed embankment towards the southern end of the bypass.

Preliminary Environmental Information

11.124 This consultation document is accompanied by a Preliminary Environmental Information Report (PEI Report), which sets out the information and analysis that is available from the Environmental Impact Assessment of the Project at this stage in time. Volume C of the PEI Report addresses the effects and mitigation proposals associated with the On-line and Off-line highway improvements described in this chapter.

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12 Dalar Hir Park and Ride Facility

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12 Dalar Hir Park and Ride Facility

12.1 This chapter provides an overview of the preferred proposals for a temporary Park and Ride Facility at Dalar Hir, how they have evolved through pre-application consultation and how feedback has been considered. The chapter provides a summary of the preliminary environmental information associated with the site and how it has influenced the proposals. It also highlights areas where further feedback is sought to influence the design of the preferred temporary Park and Ride Facility proposals.

12.2 The Park and Ride Facility would support the construction phase of the Power Station. It would allow for secure vehicle parking, and the controlled transportation of workers, by bus, to the Wylfa Newydd Development Area, reducing the number of individual car trips travelling on the local road network.

12.3 The Park and Ride Facility would be a key component of our Integrated Traffic and Transport Strategy (ITTS). It is anticipated that the Park and Ride Facility would be used primarily by construction workers resident in the southern and western parts of Anglesey, as well as those commuting from the mainland. It would not be available for use by the public.

12.4 At the end of the construction period, the Park and Ride Facility would be removed and the site reinstated to agricultural use.

Site and key characteristics

12.5 The preferred location of the Park and Ride Facility is at Dalar Hir, immediately to the northeast of Junction 4 on the A55, as shown in figure 12.1.

12.6 The Dalar Hir site is a 28 hectare largely greenfield site, located approximately 1 mile to southeast of Bodedern, a small village. It adjoins the northern boundary of the A55. The site has easy access to the A55 and A5025. It is a short drive (8.5 minutes) from Holyhead and a 30 minute drive (15 miles) to the Wylfa Newydd Development Area via the A5025.

12.7 The site and surrounding area to the north, east and west of the site is characterised by open countryside with isolated farm properties albeit directly to the south of the site lies existing transport infrastructure (A55 and A5).

12.8 The Dalar Hir stream and tributary flow from north to south through the eastern section of the site, before flowing under the A5. The landscape character of the area is synonymous with West Anglesey farmland and the site lies within the Anglesey-wide Special Landscape area (SLA). The site lies 2.5km to the east of the Anglesey Area of Outstanding Natural Beauty (AONB).

12.9 The site is bounded by Holyhead Road (the A5) to the south, London Road to the west and the Cartio Môn Go-Karting centre to the east. A Driver and Vehicle Standards Agency (DVLA) weighbridge and lorry checkpoint are located to the west, on the opposite side of London Road. Hedgerows mark the northern and eastern extents of the site.

Figure 12.1 Preferred location of proposed Dalar Hir Park and Ride Facility

12.10 The nearest residential property is Bryn Goleu farmhouse at the Cartio Môn Go-Karting centre, which is approximately 200m from the eastern boundary of the proposed Park and Ride Facility site. The nearest other residential properties are approximately 300m to the north of the site. The Dalar Hir Farmhouse, located on the site itself (visible in aerial photographs), is no longer occupied and would be demolished as part of the first phase of any development on this site.

12.11 There are a number of small watercourses both within the site itself, and in the immediate surrounds, but the site is not within a flood risk zone.

12.12 The Llynnau y Fali – Valley Lakes Site of Special Scientific Interest (SSSI) is located 1.2km south-west of the Dalar Hir site. This SSSI consists of a series of small shallow lakes, supporting a variety of aquatic flora and fauna: the northernmost of these (Llyn Dinam) is a designated Special Area of Conservation (SAC). Llyn Traffwll SSSI is located 900m to the south; this is designated for its shallow lake supporting wildfowl.

12.13 There are badger setts located in the north-east and north-west of the site which have been considered in the layout and design of the proposals. A 30m buffer zone around any setts is proposed.

Description of the Proposals

The proposed development

12.14 The purpose of the proposed Park and Ride Facility would be to provide a temporary transport hub for construction workers travelling to and from the Wylfa Newydd Development Area. It would mitigate the potential effects of construction worker transport on Anglesey's highway network by allowing the transfer of construction workers and staff from private vehicles to buses, thus reducing the number of vehicles travelling along the A5025.

12.15 The Park and Ride Facility at Dalar Hir would be 15.5ha in size and located to the north of the A55. Our preferred proposals comprise:

- secure parking for up to 2,526 cars with an additional 20 disabled car spaces, as well as spaces for 55 minibuses, 94 motorbikes and 84 bicycles;
- a bus waiting pick up and drop off zone for up to 40 buses;
- a bus transport facility building (anticipated to be 61m long, 27m wide and 10m high). This building would provide transport information, a waiting area, welfare facilities, a bus driver canteen and management office facilities;
- a cycle store (anticipated to be 20m long, 11m wide, and 6m high);
- access via a new roundabout located near the existing A55-A5 junction (junction 4); and
- an electricity substation to distribute power to the site (anticipated to be 10m long by 11m wide by 6m high).

12.16 We have provided our preferred proposals in relation to site layout, building heights and appearance in the draft Masterplans included within the suite of documents that forms part of this consultation.

12.17 The detailed design of the buildings, layout of the site, landscaping and boundary treatment will be progressed further following this consultation and included in the final development proposals. These will either be determined through a Town and Country Planning Act application to be submitted to the IACC, or as part of the application for a Development Consent Order (DCO) depending on anticipated changes through the Wales Bill (further details on the consenting strategy are provided within chapter 1 of this document). Your views are welcomed on design, layout, landscaping and boundary treatment (see section below).

12.18 The design and layout of the proposals will be key in retaining and, where possible, enhancing important site characteristics (e.g. hedgerows and watercourses), to break down the scale and potential impacts of the parking areas, and to reduce the potential impact of the building and bus transfer area. The position of the buildings would be located sensitively and the design carefully considered to ensure lighting avoids, wherever possible, light spill onto water bodies and hedgerow/boundary habitats.

12.19 To minimise the amount of hardstanding on site, the car parking areas would use a permeable paving type product. This would improve drainage compared to traditional hardstanding and would be easy to remove and facilitate the site's eventual return to agricultural land (see proposed legacy use below). Roads and the bus drop off area would require a traditional macadam surface to withstand the traffic volumes and types of vehicle that would be using them.

12.20 A clear span bridge is proposed to avoid adverse effects on habitat and connectivity in the main watercourse.

12.21 We propose to create 15m wide ecological protection buffer zones either side around the stream and tributary and 10m wide zones either side around the primary wet ditch. Existing tree and shrub planting on the southern boundary would be kept, and enhanced, to screen views from the A5 and a landscaped buffer around the edge of the site would be proposed to minimise views in the landscape.

12.22 Access to the proposed facility for buses and workers' vehicles would be via a new roundabout located in close proximity to the existing A55-A5 junction at the western tip of the site. Pedestrian access and pedestrian crossing points would be clearly marked within the parking areas.

12.23 It is expected that construction work for this facility would begin in October 2019, and would take place over a period of up to 29 months. This construction period is based on Horizon incrementally providing additional parking spaces as the demand increases.

12.24 Good construction site management practices would be utilised during the construction of the Park and Ride Facility. An outline Construction Environmental Management Plan (CEMP) would be developed as part of the Environmental Impact Assessment (EIA) process and submitted with the planning application. The CEMP would be developed in detail by the construction contractor if consent for the development is granted by the IACC, but would be in accordance with the outline CEMP submitted with the planning application. The CEMP would provide a basis for monitoring the contractor's environmental performance during the construction process.

12.25 The construction workforce for the Park and Ride Facility would be a maximum of 120 workers on the construction site at any one time, working in shift patterns of a minimum of 7.5 hours per day, five days per week.

Proposed operation

12.26 The Park and Ride Facility would have an operational workforce of 40 bus drivers and 15 members of staff, with staff split between security, control room, and management. It would operate in accordance with the overall Wylfa Newydd Project construction shift patterns, and is likely to be operational both day and night. Please refer to chapter 5 (Building and Operating the Power Station) of this document for further details.

12.27 The Traffic and Transport Technical Note, which forms part of this consultation and is available on our website, includes an assumption of the number of traffic movements currently anticipated to be associated with the Park and Ride Facility. The assessment for Dalar Hir has been undertaken on the basis of up to 2,000 workers using the Park and Ride Facility. The Technical Note states that there would be a maximum of 42 daily return bus movements from Dalar Hir to the Power Station Site. This is based on three staggered morning shifts (27 return trips) and three staggered night shifts (15 return trips), and a capacity of 54 workers per bus. Further work is ongoing to determine the detailed proposals to transport workers and to inform the Transport Assessment which would accompany the DCO application, or the applications for Associated Development, consequently, these figures may be subject to change.

12.28 Taking into account the shift patterns set out in chapter 5 of this document, this would mean a maximum of 27 movements from the Park and Ride Facility to the Power Station Site between 07.00 and 08.00 and 27 movements back to the Park and Ride Facility between 18:00 and 19:00. There would be a further 15 movements, associated with the night shift travelling to the Park and Ride Facility towards the Power Station Site between 16:30 and 17:30 and 15 movements back between 03:30 and 04:30. This assumes approximately 30 minutes between the end of the shift and arriving at the Park and Ride Facility. Further information on our preferred bus routes is provided in chapter 10 of this document.

12.29 The above figures are based on the traffic modelling that was carried out prior to the finalisation of the current preferred proposals (as explained in the Traffic and Transport Technical Note). On the basis that the current proposal provides for 2,526 car parking spaces for workers, bus movements would be proportionally more and would therefore, be anticipated to be in the region of 50 daily return bus movements, rather than the 42 described above. An up to date assessment would however be provided in the Transport Assessment accompanying the DCO application or the applications for Associated Development.

12.30 There would also be vehicle movements from workers travelling to and from the Park and Ride Facility whilst not at work. These movements are included in the overall traffic modelling, and have not yet been disaggregated from the total vehicle movements anticipated to be generated by the Project. They would be reported with the Transport Assessment which would accompany the DCO application, or the applications for Associated Development.

12.31 When the Park and Ride Facility is operational there would be vehicle movements associated with staff and deliveries. The Park and Ride Facility would require an operational workforce of 55 staff. Based on a typical working day, this results in a worst case scenario of (assuming single car occupancy) 110 additional vehicle trips along the A55 per day (two-way) (i.e. 55 vehicles in and 55 vehicles out of the Park and Ride Facility). Deliveries by Light Goods Vehicles is estimated at two vehicle movements per day (two way) (i.e. two vehicles in and two vehicles out of the facility).

12.32 A typical transit for a worker driving to the Park and Ride Facility is anticipated to involve:

- arrival at the site via the entrance off a new roundabout at the A55-A5 Junction 4;
- the worker may need to queue on the access road within the site, before the barriers (see Master Plan in figure 12.2);

- car recognised by the automatic number plate recognition (ANPR) system, barriers open and car is admitted;
- worker parks at one of the parking zones in accordance with the nature of their trip;
- worker walks to the bus transport facility building via a pedestrian walkway;
- worker may wait at the facility building or use the amenities;
- worker proceeds to walk through to the bus waiting, pick up and drop off zone;
- the worker boards the bus to the Wylfa Newydd Development Area after satisfying necessary security requirements; and
- the bus proceeds to the Wylfa Newydd Development Area where a full security check is carried out to allow the worker access to the main construction site.

12.33 We anticipate that the Park and Ride Facility site at Dalar Hir would be occupied by construction workers from early 2020 onwards. The Park and Ride Facility is expected to remain operational until late 2026.

Proposed legacy

12.34 It is intended that the site would be returned to its present use as agricultural land following 2026. This would involve the removal of temporary structures and services, breaking up concrete and surfacing and the importation and deposition of topsoil of a similar grade to that which was in place before the Park and Ride Facility was constructed.

12.35 The enhanced existing hedge line and proposed new hedge line to the west of the site, along with the enhanced tree and shrub planting, using native species, on the southern boundary would be retained as a legacy benefit and is considered to be an improvement compared to the existing situation. In planning terms, the site is not considered appropriate for permanent development and therefore the return to agricultural use is the most suitable legacy use for the site.

Response to previous consultation

12.36 As part of Horizon's Stage One Pre-Application Consultation in 2014 and the January 2016 Project Update, comments were received and have been considered in the location and design of the Park and Ride Facility described in this chapter. The way in which our consultation to date has influenced the choice of and proposals for the Park and Ride Facility is summarised in the table below. Further detail on previous comments made can be found in the Consultation Summary Report.

12.37 The Project Update Consultation which took place in January 2016 described a Park and Ride Facility as one of the potential proposed uses for the site at Dalar Hir. Following consideration of feedback received from consultation, this is the preferred location for the Park and Ride Facility.

12.38 The IACC have expressed concerns about Horizon's site selection process and asked for further justification for the preferred choice of sites, noting concern about the compliance of the provision of a Park and Ride site at Dalar Hir with planning policy. However, that was based on the information available at the time and IACC has not yet expressed a definitive view on the preferred sites pending further information. Further justification for the site selection has now been provided in the revised version of the Report on Horizon's

Approach for Siting Associated Development to Support Construction of Wylfa Newydd ("the Associated Development Siting Report"). This Associated Development Siting Report is available on our website as part of this consultation.

12.39 Whilst we received a number of comments on the principle of the proposals, we only consulted on very high level plans for the Associated Development sites in our January Project Update consultation. As such, very limited feedback was received on the detailed placement of building and parking areas, a matter which we are consulting on as part of this Stage Two Pre-Application Consultation. The table below therefore, highlights design changes made generally as a result of design development and environmental information and also from our ongoing engagement with the Design Commission for Wales (DCfW) on our emerging proposals for the Associated Development sites

Table 12.1 Key project and design changes since the Stage One Pre-Application Consultation and the Project Update consultation

Change	Rationale
Horizon have located development further from existing watercourses and have given further consideration to drainage. Further design is being undertaken at present which includes the drainage design for this site. The drainage design will take into consideration any pollution prevention measures such as oil interceptors.	This is in response to comments raised by Natural Resource Wales (NRW). NRW considered that a Park and Ride Facility in this location would require adequate drainage including an oil interceptor. Horizon will provide further information to NRW when available.
Further consideration to the impact on A5 and A55. Traffic assessments have been carried out on the Park and Ride Facility site at Dalar Hir and the design is now exploring what improvements are required to minimise impact on the A5 and A55 for vehicles entering and existing the site. Provisionally, this is likely to include an additional roundabout at the junction, the design of which was driven by the need to accommodate a large number of right turning traffic (both cars and buses entering the Park and Ride Facility). The site has a double lane car entrance to maximise the traffic that we can bring onto the site and therefore minimising the impact on the existing highway. The roundabout will seek to give priority to exiting buses from the Park and Ride Facility other than from conflicting south bound traffic on London Road which from traffic modelling is expected to be minimal.	This was to respond to traffic concerns raised by local residents, such as how the Park and Ride Facility would link with the existing road network.
Further assessments are being conducted to determine the impact on Great Crested Newts and subsequent mitigation required.	NRW noted that with regards to protected species, there are records of Great Crested Newts (GCN) in the vicinity of the site, and it

Change	Rationale
This will be included as part of the EIA for this site which will be submitted with the TCPA application, or DCO application, as appropriate.	is likely that GCNs will be breeding and/or foraging within the site. The proposals must therefore demonstrate that there is no likely detriment to the maintenance of the 'Favourable Conservation Status' (FCS) of the local populations of species concerned.
The potential to disturb legally protected species including water voles is currently being assessed as part of the ecological baseline that is currently being carried out. Further assessments will be carried out to determine the impact and subsequent mitigation required. This will be included as part of the EIA for this site which will be submitted with the TCPA application, or DCO application, as appropriate.	Consultation comments received from NRW and North Wales Wildlife Trust noted that any planning application at Dalar Hir should also consider other protected species, including water voles.

12.40 Consultation comments received queried whether the Park and Ride Facility should be provided on the mainland. Horizon has decided not to provide a Park and Ride Facility on the mainland because current assessments have estimated that around 85% of workers will be living on Anglesey. A park and ride on the mainland means that workers would need to travel an unreasonable distance in buses to site. The transport model indicates that a significant number of workers would be required to travel east to access a Park and Ride only to travel back westwards on a bus to site. For the workers living on the mainland, Horizon shuttle buses would transport workers to the Power Station Site from a variety of locations.

Justification for preferred site for Park and Ride Facility and consideration of alternatives

12.41 A four stage site identification, screening and assessment process was undertaken to identify potentially suitable sites for the Park and Ride facility. Details of this process are provided in the Associated Development Siting Report Report.

12.42 The shortlisted sites at stage four were as follows:

- land Adjacent to Dalar Hir;
- Tir Ty Mawr Land;
- land off Station Rd and Part of Bryn Hyfryd; and
- land near Ynys Wen.

12.43 Following the four stage process noted above Horizon considers that, upon review of all material factors, Dalar Hir is the most suitable site to accommodate the Park and Ride Facility and this site has therefore been selected as the preferred location for this facility for the purposes of consultation.

12.44 Locational guidance within the Wylfa Newydd New Nuclear Build SPG, July 2014, supports the principle of Park and Ride facilities at Holyhead and environs (policy GP27), Llangefni and environs (policy GP28) and along the A55/A5 Corridor in proximity to Valley, Gaerwen, Llanfairpwll and Menai Bridge (GP30). The overall spatial approach in the emerging Anglesey and Gwynedd Joint Local Development Plan composite version, June 2016 (JLDP) is also to first consider employment sites closest to the settlement. The assessment referred to above adopted this approach, but it was found that those sites closest to the settlement should not be preferred for other material reasons, specifically, that all potentially available sites closer to Valley lie either fully or partly within Flood Zone C1, compared to the preferred Dalar Hir site which falls outside of an area of flood risk.

12.45 In addition, there are other material considerations which suggest that Dalar Hir should be preferred, including the location of one of the alternative sites (land off Station Road and Part of Bryn Hyfryd) within the AONB, potential impacts on the SSSI associated with the site at Tir Ty Mawr Land and very close proximity to residential properties associated with site and land near Ynys Wen. Although the latter is capable of being mitigated, it is a factor which weighs in the balance against selecting this site.

12.46 The preferred site at Dalar Hir is adjacent to Junction 4 of the A55 meaning that vehicles will not be required to travel along a single carriage highway for any significant distance and neither buses nor private vehicles would need to pass through a settlement, other than on a main road. The Dalar Hir site is also capable of accommodating all vehicle requirements in a single location which also weighs in its favour.

12.47 With regard to local planning policy, the preferred site at Dalar Hir is not allocated for a specific use in the extant Ynys Mon Local Plan (1996), the Stopped UDP (2005) or in the emerging JLDP. Sites on the A55/A5 corridor in proximity to Valley are however, supported by the SPG.

12.48 Therefore, given the above consideration of impacts and having regard to planning policy and guidance, our functional requirements for Park and Ride Facilities and land use constraints, Dalar Hir is the preferred location for a Park and Ride Facility to transport construction workers to the Wylfa Newydd Development Area.

Options for consultation

Layout

12.49 We would like to understand your views on the proposals for our preferred site at Dalar Hir, including the way in which buildings, landscaping and parking areas are positioned within the boundary of the site.

12.50 Our preferred proposal shows the bus transport facility being located centrally on the site to reduce walking times to the building. The bus waiting, pick up and drop off zone would be located next to the bus transport facility in order to reduce boarding time.

12.51 To inform the layout of the site we have carefully considered existing field boundaries and boundary walls and retaining hedges.

12.52 Environmental constraints on the site were identified early in the process, and have been taken into account from the outset. These included the consideration of protected species, existing hedgerows, and existing watercourses and drainage ditches, as well as

boundary habitats and planting, as described above. These have influenced the overall layout of the site which is presented in this chapter.

12.53 Our preferred approach to the layout of the buildings and parking on site is shown in figure 12.2 and we would welcome any views you have to improve this layout (see question at the end of this chapter).

Figure 12.2 Preferred Layout of Dalar Hir Park and Ride Facility

Architectural Design

12.54 The architectural design of the proposed buildings on the site is yet to be decided. The draft Masterplan for the Park and Ride Facility provides illustrative material that shows our current views on what the buildings may look like, taking into account national and local planning policy, including that in NPS EN-1. This includes a requirement for 'good' design and a recognition that the decision-maker should consider both functionality (including fitness for purposes and sustainability) and aesthetics (including its contribution to the area in which it would be located). The design has evolved in consultation with DCfW and with whom we will continue to engage up to the finalisation of the proposals. We would welcome your comments on our current preferred proposals (see question at the end of this chapter).

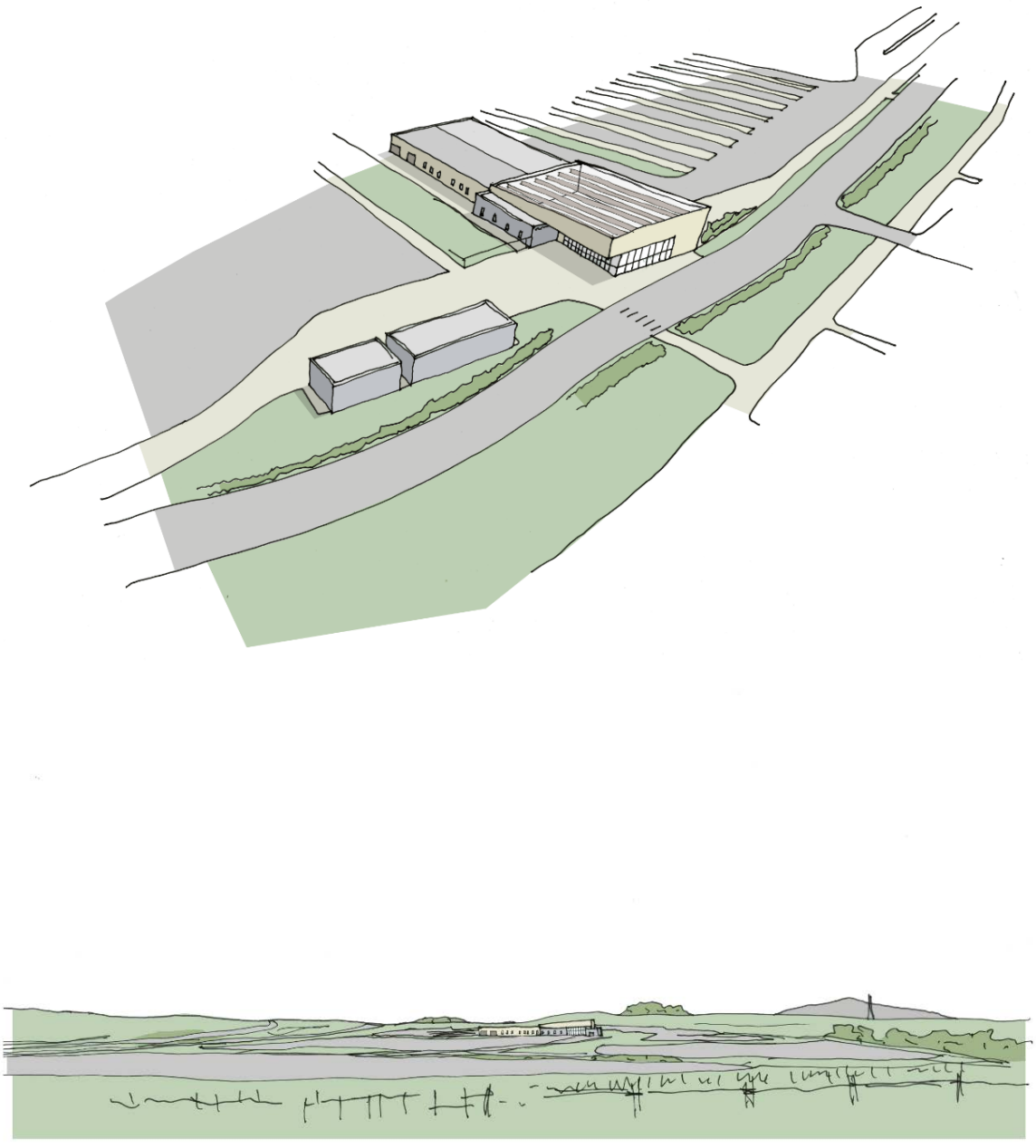
12.55 The overall architectural strategy for the Associated Development facilities, including the Park and Ride Facility at Dalar Hir, is driven by the desire to create an unimposing appearance, where the buildings are screened as far as possible, and where visible, they are of an appearance that allows them to harmonise with and complement the surroundings. A restricted natural palette would be adopted for all the buildings on-site, helping to link the buildings visually, and be unimposing with their surroundings. The use of typically Welsh building materials will be chosen and utilised in the building design to complement the character of the site's location. Further details of preferred materials palettes are provided in the draft Masterplans.

12.56 The buildings on the site would be temporary and are intended to be dismantled once they are no longer required. The buildings would therefore be designed with simplicity and efficiency of construction and removal as a priority. The final proposed design will be developed to ensure that it responds to local context, recognising that although temporary in nature, the developments would be *in-situ* for a number of years.

12.57 The architectural strategy for the building includes an aspiration for a sustainable, low impact structure, built with locally sourced materials and products including:

- timber cladding;
- sedum roof;
- lightweight insulated translucent roof panels; and
- local stone and /or gabion walling.

Figure 12.3 Preferred Architectural Design of Dalar Hir Park and Ride Facility



Landscaping and Boundary Treatments

12.58 The landscaping and boundary treatments provided on the site are also yet to be decided and discussions are ongoing with DCfW. Our preferred approach to landscaping and boundary treatment on site is shown in figure 12.4 however we would welcome your comments on this.

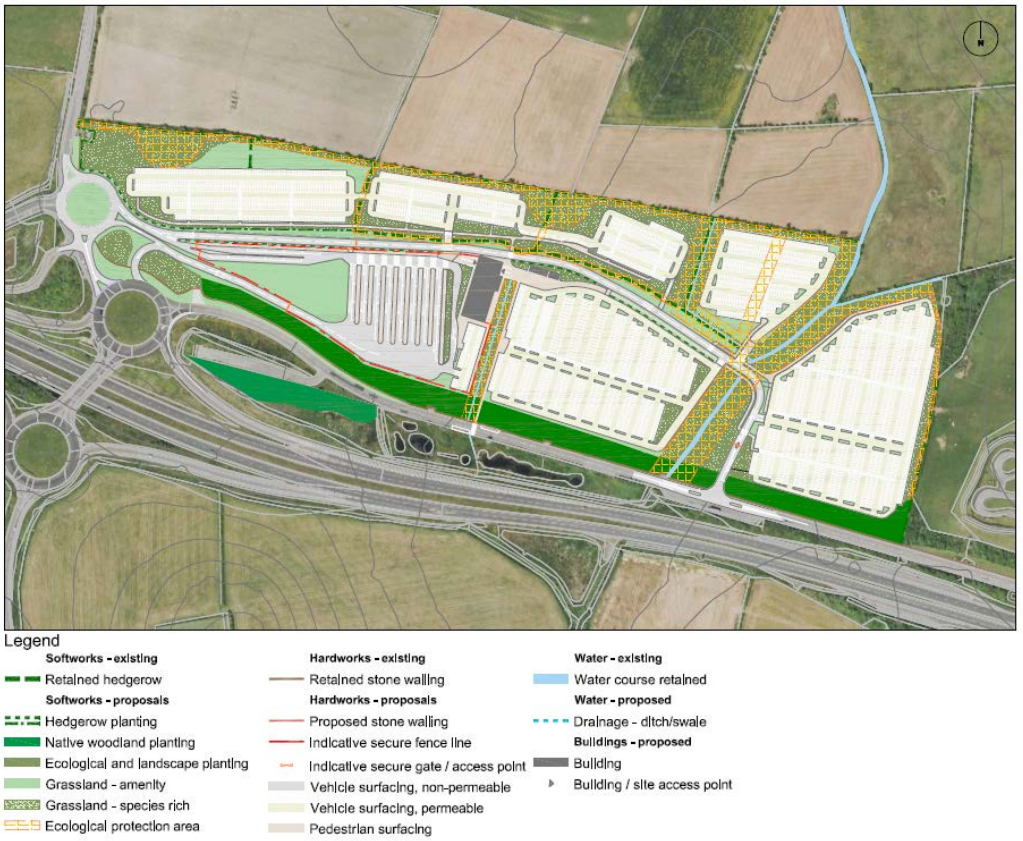
12.59 The preferred approach would be for the northern, western, and eastern boundaries of the site to be planted with species-rich grass, and there would be ecological protection buffer zones of 15m around the stream, tributary and water discharge location. Existing tree and shrub planting on the southern boundary would be kept, and enhanced, to screen views from the A5.

Question – Dalar Hir Park and Ride

Given the information provided on our Associated Development, do you have any views on:

- **how we can improve the preferred plans, including such issues as the layout of buildings and parking areas;**
- **how we can improve the external appearance of the buildings, landscaping and boundary treatment; and**
- **our proposed legacy for each site.**

Figure 12.4 Preferred approach to landscaping and boundary treatments at Dalar Hir Park and Ride Facility



Summary of Preliminary Environmental Information

12.60 Our preferred proposals at Dalar Hir are likely to have some effects on the environment during construction, operation and decommissioning of the Park and Ride Facility. The principal likely significant adverse and beneficial effects are summarised below and more detail is provided within the PEI Report (volume F) and in volume B01, which considers Project-wide socio-economic effects.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
Traffic and transport	There may be minor adverse impacts on people having to cross or navigate the A5 between the two new junctions and the A55 Junction 4 as part of their journeys due to changes to perceived traffic and related severance. There may also be minor adverse changes to journey times, changes in safety and changes in driver stress for people travelling along the A5 between the two new junctions and the A55 Junction 4. This would be mitigated through the implementation of a Construction Traffic Management Plan and Horizon would conduct monitoring of road freight deliveries. It has been estimated that the number of vehicles travelling to and from the site during the construction peak of Dalar Hir Park and Ride Facility would be 840 vehicles per day (two-way) (i.e. 420 vehicles in and 420 vehicles out of the	The effect of the increase in traffic associated with the Park and Ride Facility is not considered to be significant. The Traffic and Transport Technical Note states that there would be a maximum of 42 daily return bus movements from Dalar Hir to the Power Station site. This is based on three staggered morning shifts (27 return trips) and three staggered night shifts (15 return trips), and a capacity of 54 workers per bus. This is anticipated to increase to up to 50 movements once the revised parking numbers are modelled. In addition, there would be movements associated with staff and deliveries. Based on a typical working day, this results in a worst case scenario of (assuming single car occupancy) 110 additional vehicle trips along the A55 per day (two-way) (i.e. 55 vehicles in and 55 vehicles out of the Park and Ride Facility). Deliveries by Light	The minor adverse impacts during the construction phase are assumed to be the same as during the de-commissioning phase.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
	facility). However, this level of traffic would occur for only one month of the programme, and daily traffic flows either side of this construction peak would be lower. The construction traffic would be present for five days per week. Taking all this into account, the Annual Average Daily Traffic (AADT) would be approximately 580 vehicles per day (two-way) (i.e. 290 vehicles in/290 vehicles out of the facility), of which 150 would be Heavy Goods Vehicles (HGVs) (two-way) (i.e. 75 vehicles in/ 75 vehicles out of the facility).	Goods Vehicles is estimated at two vehicle movements per day (two way) (i.e. two vehicles in and two vehicles out of the facility).	
Landscape and visual	There could be a moderate adverse effect as the Park and Ride Facility would directly affect a small section of the designated Anglesey-wide SLA in which the site is located, the LCA 5: North Anglesey landscape character and the LANDMAP: Visual and Sensory: North-west drumlins. There could be a major adverse effect on recreational users of a nearby public footpath near Dalar Bach, a moderate adverse effect on recreational users of the National Cycle Route and moder-ate/minor adverse effects on recreational users of the	There could be a moderate adverse on landscape due to the presence of new structures, lighting and operation of vehicles, including buses. Mitigation is proposed by Horizon through a landscaping planting and management strategy which would help to integrate the Park and Ride Facility.	No significant effects on landscape and visual amenity are predicted during decommissioning.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
	more distant network of public footpaths. The Park and Ride Facility could have a minor adverse effect on the views for the nearby residential communities of Llanfihangel yn Nhowyn and Bodedern and moderate adverse effects on the Cartio Mon Go Karting centre. Mitigation is proposed by Horizon through a landscaping planting and management strategy which would help to integrate the Park and Ride Facility.		
Noise and Vibration	There could be minor/moderate adverse effects on residential areas and a residential care home in the vicinity of the site due to movement of construction traffic to and from the site. To mitigate this Horizon would prepare a Noise and Vibration Management Plan, select an access route to the Park and Ride Facility that reduces likely noise and vibration effects on nearby receptors and limit movements to and from the site to daytime hours during construction of the Park and Ride Facility.	There would be minor/moderate adverse effects on residential areas and a residential care home in the vicinity of the site due to regular use of the car parking areas and the movement of buses at the facility. To mitigate this Horizon would implement careful timing of shift changes, use low noise emission buses, reduce speed limits for buses and other vehicles on site and install noise barriers where necessary.	There would be minor/moderate adverse effects on residential areas and a residential care home in the vicinity of the site due to movement of construction (decommissioning) traffic to and from the site. To mitigate this Horizon would prepare a Noise and Vibration Management Plan, select an access route to the Park and Ride Facility that reduces likely noise and vibration effects on near-by receptors and limit movements to and from the site to daytime hours during decommissioning of the Park and Ride Facility.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
Socio-economics	There would be a potential for disruption to residents of Gwyddfor Residential Home and the amenity of the go-karting facility. This would be mitigated through the implementation of a Construction Environmental Management Plan (CEMP) to restrict construction activities to defined working areas and ensure access to the residential home and go-karting facility is maintained at all times. Adverse effects on land use would be mitigated by retaining access to existing agricultural land nearby.	There would be the potential for adverse crime-related effects, which are most likely to relate to fear of crime and criminal activities rather than actual changes. There would be on-site security, and the use of lighting and a barrier. Adverse effects on land use would be mitigated by retaining access to existing agricultural land nearby.	There would be a potential for disruption to residents of Gwyddfor Residential Home. This would be mitigated through the implementation of a Environmental Management Plan (EMP) to restrict construction activities to defined working areas and ensure access to the residential home and go-karting facility is maintained at all times.
Air Quality	There is low potential for construction activities to cause emissions of dust which could have adverse effects on nearby residential properties. Horizon will take measures to control and mitigate dust emissions and agree these with IACC. These measures would be incorporated into appropriate management plans and a Construction Environmental Management Plan (CEMP) would be produced. It is not expected that there would be a significant effect from road traffic emissions	No significant air quality effects are expected for the Park and Ride Facility during operation.	There is potential that demolition activities could lead to dust effects at the nearby residential properties. Horizon will take measures to control and mitigate dust emissions and agree these with IACC. These measures would be incorporated into appropriate management plans and an Environmental Management Plan (EMP) would be produced. It is not expected that there would be a significant effect from road traffic emissions or machinery used during

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
	or construction machinery during the construction of the Park and Ride Facility.		the decommissioning of the Park and Ride Facility.
Soils and Geology	There would likely be moderate adverse effect on soils due to topsoil stripping. To mitigate this, a Soil Management Strategy and Soil Management Plan would be implemented. This would involve details of the soils anticipated on site, measures for how the soils should be handled and plans for where soils are likely to be stripped, stored and placed. The potential exists for areas of unexpected contamination to be exposed resulting in major adverse effects upon site workers. Horizon would put in place a plan to enable prompt action to be taken and reduce the effects. This plan would include measures such as cordoning off areas, segregating contaminated soils from uncontaminated soils and specifying guidelines for the process required to determine remedial requirements. A CEMP and Materials Management Plan (MMP) would also be produced. The disturbance of existing contamination (if present) and any accidental pollution	No significant effects are expected during operation however an EMP would still be produced. This would include measures for good working practices, preventing leaks and spills of oils and fuels and methods for dealing with any leaks.	The importation and deposition of topsoil required to return the site to agricultural land may cause a moderate adverse effect upon the imported topsoil. Accidental pollution incidents during decommissioning may also result in moderate adverse effects upon the imported soils. An EMP and MMP would be produced to mitigate the above effects.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
	incidents may also result in moderate adverse effects upon the soils and Nant Dalar Hir and minor adverse effects upon the low value Secondary B aquifer within the bedrock geology.		
Groundwater and surface water	There could be moderate adverse effects on ground and surface water due to leaks and spills of fuels or other polluting materials. There could be major adverse effects on surface water as earthworks could result in high sediment loading in runoff affecting the water quality within Nant Dalar Hir, or Llyn Traddwll SSSI, with potential to affect the aquatic habitat. There could be major adverse effects on surface water due to the risk that the release of sediments has the potential to block culverts beneath the A5 and/or A55. There could be moderate adverse effects due to increased impermeable areas which could change the flow dynamics in water courses and locally increase surface water flow and flooding downstream along Nant Dalar Hir and potentially along the A5 and/or A55.	There could be a moderate adverse impact on surface water due to the increase in impermeable areas due to the presence of the Park and Ride Facility. This would potentially increase flooding off-site and reduce rainwater reaching the groundwater table. There would be moderate adverse impact due to new culverts and a new clear span bridge which have the potential to restrict flows within the Nant Dalar Hir during a flood event. There could be moderate adverse effects due to sewage discharges. An EMP would be prepared and implemented by Horizon to mitigate this.	The decommissioning of the site would following similar processes to those outline for the construction phase. A landscape restoration plan would also be developed to ensure that the water courses are reinstated appropriately.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
	Exposed bare earth surfaces could lead to moderate adverse effects due to increased silt loadings in run-off potential effects on the downstream receiving streams through sedimentation and smothering of the natural bed substrate. To mitigate the above, Horizon would follow good practice including the Pollution Prevention Guidelines (PPGs) and relevant Construction Industry Research and Information Association (CIRIA) guidance. A CEMP would also be prepared and implemented to set out such matters as the overarching pollution management principles to be applied and details of culvert monitoring.		
Terrestrial and freshwater ecology	Changes in air quality, traffic volumes and visual stimuli are unlikely to result in a significant effect on the majority of the ecological receptors within or adjacent to the site. To reduce or avoid potential effects on ecology a bridge has been incorporated into the design to avoid adverse effects on habitat, ditches are proposed to be retained, 10m buffers are proposed for watercourses to avoid effects	There could be a moderate adverse effect due to lighting affecting fish within the main watercourse which passes through the site. This would be mitigated through directional lighting away from watercourses and restricted use of lighting.	Potential significant effects on ecological receptors during the decommissioning phase are likely to be similar to those identified in the construction process. The site would be reinstated to previous land uses, allowing the habitats present previously to re-establish in the long term.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
	on water vole burrows and 30m buffers from active badger setts. There could be a moderate adverse effect due to lighting affecting fish within the main watercourse which passes through the site. This would be mitigated through directional lighting away from watercourses and restricted use of lighting. If loss cannot be avoided, then a translocation strategy under a licence from Natural Resources Wales (NRW) for water voles, badgers and fish rescue may be required, to ensure no significant effects. Any loss of habitats being used as a roost by bats would be addressed through a mitigation strategy secured as part of a European Protected Species licence with respect to bats, issued by NRW.		
Archaeology and cultural heritage	Construction would remove any surviving remains of seven assets and may remove unknown archaeological remains within the footprint of the Park and Ride Facility that cannot be detected by the archaeological geophysical survey that has been undertaken. Construction would also remove any	No significant effects are anticipated.	No significant effects are anticipated.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
	surviving remains of Dalar Hir farmstead and former cloddiau field boundary. The above would be mitigated by archaeological recording. Where the field boundary cannot be retained this would be mitigated by a historic landscape survey. Following mitigation, no significant effects on archaeology and cultural heritage are predicted as a result of the construction of the Dalar Hir Park and Ride Facility.		

13 Parc Cybi Logistics Centre

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13 Parc Cybi Logistics Centre

13.1 This chapter provides an overview of the proposals for a temporary Logistics Centre at Parc Cybi, how the proposals have evolved through pre-application consultation to date and how feedback has been considered. This chapter also provides a summary of the preliminary environmental information associated with the site and how it has influenced the proposals. It also highlights areas where further feedback is sought to influence the design of the Logistic Centre proposals.

13.2 A key part of our Integrated Traffic and Transport Strategy (ITTS) is to reduce HGV movements on the A5025 and to manage the controlled flow of vehicles to the Power Station Site. The provision of a Logistics Centre would ensure that deliveries to the Power Station Site are appropriately managed to minimise impacts on the local road network, in particular the A5025.

13.3 The Logistics Centre would be used to consolidate deliveries into fewer loads and to control and relieve the timing of traffic flow to the Power Station Site.

Site and key characteristics

13.4 A preferred site for the Logistics Centre has been identified at Parc Cybi. The location has easy access from the A55 and benefits from outline planning permission for warehousing development (see further detail below). The location of the preferred site is shown in figure 13.1.

13.5 The preferred Logistic Centre site is located within a wider employment area on the edge of Holyhead. The area is being supported by the Welsh Government as an Enterprise Zone and has been set aside for strategic employment land by the IACC. The land is serviced and available for development. The preferred Logistics Centre site is located in the north west of the wider Parc Cybi employment area as shown in figure 13.2 below.

13.6 The preferred Logistics Centre site is well located in relation to the strategic road network and is also appropriately located for acting as a holding facility for any goods coming to the Logistics Centre from the Port of Holyhead.

13.7 The preferred Logistics Centre site is located to the south east of the main settlement of Holyhead town, near existing industrial and retail developments.

13.8 The preferred Logistics Centre site is bounded by the A55 to the north, the Parc Cybi service road to the south, a substation to the west and open countryside to the east. Access would be achieved via the existing access to the south-west of the preferred Logistics Centre site.

13.9 The existing residential area of Kingsland is located approximately 230m to the west of the preferred Logistics Centre site and the residential area of Trearddur Bay is located approximately 700m to the south.

13.10 To the north-east of the site, on the east side of the A55, is the former Anglesey Aluminium Metal site and also the existing Penrhos industrial and retail estate.

Figure 13.1 Preferred location of proposed Logistics Centre

13.11 The Lon Trefignath cycle path runs (as shown below in figure 13.2) across the wider Parc Cybi employment site; this route provides a link between the Trearddur Farm Caravan Park and Holyhead. Its route follows the main Parc Cybi access road to the south of the preferred Logistics Centre site and the existing site access/egress crosses this. This cycle path is used by residents as an active travel route and by recreational walkers and cyclists as a route between the coast, communities and Holyhead.

13.12 The preferred Logistics Centre site is located within the Ynys Môn/Anglesey Area of Outstanding Natural Beauty (AONB), which covers the majority of Anglesey's coastline and areas of land which form the backdrop to the coast, Holyhead Mountain and Mynydd Bodafon.

13.13 A pond (100m x 20m), which we understand is an attenuation pond for the A55, is located between the north-east site boundary and A55 road. The Trefignath Burial Chambers Scheduled Monument is located 36m east of the preferred Logistics Centre site boundary.

13.14 There are no Sites of Special Scientific Interest or Regionally Important Geological Sites within close proximity of the site.

13.15 The ditch on site could have the potential for water voles, a protected species, although surveys have not identified their presence, and it is also possible that bats use the area on or adjacent to the site for foraging.

13.16 The preferred Logistics Centre site is not located within a flood risk zone according to the TAN15 Development Advice Map.

13.17 The planning history for the preferred Logistics Centre site demonstrates that it has previously been supported as a suitable location for business and industrial uses. An outline planning consent for the wider Parc Cybi site was granted in March 2005 for the development of a mixed-use scheme comprising employment uses, a hotel, office uses, leisure uses and industrial units (reference:19C842A/EIA).

13.18 In December 2009, a full planning application for the construction and operation of an office complex and industrial / warehousing facilities on two separate plots at Parc Cybi was submitted to the IACC. This included the preferred site for the Logistics Centre. Consent was granted in 2010 on the site of the preferred Logistics Centre for the construction of four units in warehouse and office use.

13.19 An access road to the preferred Logistics Centre site has already been constructed and one of the plots associated with the above 2005 planning permission (ref: 19C842A/EIA) has been built out (Road King, which is to the west of the proposed Logistics Centre site).

Description of the proposals

The proposed development

13.20 The Logistics Centre would serve the dual purpose of controlling the flow of traffic along the A5025 and consolidating small deliveries to minimise the number of vehicles travelling along the A5025.

13.21 The design of the Logistics Centre includes:

- a welfare/security building (approx. 300sqm, anticipated to be 22m long, 16m wide and 6m high;
- a warehouse (approx. 1900sqm in total). The warehouse would have height clearance to enable Heavy Goods Vehicles (HGVs) access as well as facilities for the loading of the equipment and materials;
- laydown area for storage of materials (approx. 1,000sqm);
- two security kiosks (at both entrance and exit of site, anticipated to be 6m long, 6m wide and 4.5m high);
- parking zones (57 HGV parking bays, four MGV parking bays, six LGV parking bays, two HGV loading/unloading bays near warehouses, 12 staff parking bays (including two disabled spaces); and
- firefighting water tanks.

13.22 The Logistics Centre would be able to accommodate up to 100 HGVs at any one time.

13.23 We have provided our preferred proposals in relation to site layout in the draft Masterplans included within the suite of documents that forms part of this consultation.

13.24 The detailed design of the buildings, layout of the site, landscaping and boundary treatment will be progressed further following this consultation and included in the final development proposals. These will be determined through a Town and Country Planning Act application to be submitted to the IACC (further details on the consenting strategy are

provided within chapter 1 of this document). Your views are welcomed on design, layout, landscaping and boundary treatment (see section below).

13.25 The internal layout of the site would be designed to support a clear and swift flow of personnel and materials through each of the areas.

13.26 A waste disposal system would be designed to include an external area set aside for the parking of commercial waste bins for paper, etc. and in the welfare/security building, central wastebaskets would be provided to separate recyclable waste at source.

13.27 The proposed design would incorporate Sustainable Urban Drainage Systems (SUDS) to minimise water run-off and control discharge to existing water courses. The vehicle hardstanding would be constructed using permeable paving and, when necessary, surface run-off would be contained in a below-ground storage system until it could be drained after a flood event.

13.28 A detailed energy appraisal would be undertaken in the detailed design stages to determine the most appropriate and viable energy supply solution.

13.29 In order to meet the required security levels associated with the management of material for a Nuclear Licenced Site, there would be a three-metre high perimeter fence in place. A 1500mm wide grassed boundary buffer zone around the site, inside the fence is also proposed.

13.30 Lighting would be required but it would be designed to minimise light spill into the surrounding area. It is proposed that it would be restricted to the welfare and security buildings and adjacent to the parking area at night.

13.31 The final design of the Logistics Centre would accommodate the route of the Lon Trefignath cycle path or Horizon would ensure that a suitable minor diversion is provided. Potential effects on the setting of the Trefignath Burial Chamber and the Ty-mawr Standing Stone and the sight lines between them would be minimised though the implementation of an appropriate landscaping scheme.

13.32 It is intended that the existing greenfield areas surrounding the site would not be changed as part of our proposals, although they may come forward for development at a later date as part of the proposals for the wider employment area.

13.33 Construction of the Logistics Centre would commence once the development consent order (DCO) for the Wylfa Newydd Power Station is received. It is anticipated that the construction of the Logistics Centre would take up to 12 months.

13.34 Working hours at the Logistics Centre are expected to be a minimum 7.5 hours a day for five days a week to a maximum of 24 hours a day seven days a week during peak construction period.

13.35 To minimise potential disruption to the nearby residential areas and to tourists visiting Kingsland and Trearddur Bay during construction of the Logistics Centre, the current proposals for the movement of HGV traffic along the A5025 would avoid evenings and weekends, though vehicle movement to the Logistics Centre would continue during these periods.

13.36 Good construction site management practices would be utilised during the construction of the Logistics Centre. An outline Construction Environmental Management Plan (CEMP) would be developed in detail by the construction contractor if consent for the development

is granted by the IACC, but would be in accordance with the outline CEMP. The CEMP would provide a basis for monitoring the contractor's environmental performance during the construction process.

Proposed operation

13.37 As part of the logistics activities, HGV deliveries would be allocated a time slot and associated delivery period when they should arrive at the Logistics Centre (please see chapter 10 of this document for the indicative dedicated HGV routes that would be used). The turnover delivery period is estimated to be approximately 65 minutes. This is the time from when the vehicle arrives at the Logistics Centre until its eventual arrival at the Power Station Site. The sequence of activities during this delivery period is expected to be as follows:

- vehicle arrives at the Logistics Centre site and queue up on the access road within the footprint of the site but before the security kiosk (design would cater for up to eight HGVs to queue at any time);
- delivery documentation is checked and authorised, vehicle drives through security and arrives at the inspection bay and is inspected as required (approximately 15 minutes);
- vehicle is accepted and driver is issued delivery documents and a departure time and is allocated holding bay number and a holding bay waiting time;
- vehicle leaves the Logistics Centre and drives directly to the Power Station Site. Onward movement would be controlled to ensure that vehicles were not travelling in convoy and to avoid sensitive times of the day. Once released, these vehicles would travel along the A55 to junction 4 and along the A5025; and
- if a vehicle is too early or has missed its time slot it would be directed to the overspill parking area where it would wait until another time slot is available or its pre-allocated time is due.

13.38 To address circumstances where HGVs are pending their time slot for arrival at the Logistics Centre or have missed them, a Traffic Management Plan (TMP) would be prepared and implemented. Details of the plan will be provided as part of any forthcoming planning application.

13.39 Approximately 47 staff would be employed at the Logistics Centre. The logistics management process would involve:

- provision of a core team of staff to include warehouse/plant operatives, auditors/inspectors logistics controllers and material controllers;
- provision of full time plant (owned or hired) to remain in permanent operational readiness to include racking, cranes, prime movers, platforms, forklift trucks and general sundries like palettes, tarpaulin, rope and chains);
- day-to-day management of traffic movements, via a real-time management system;
- handling of deliveries and materials;
- day-to-day material management and preservation including audits and inspections; and
- asset management to ensure operational readiness at all times (i.e. servicing plant and equipment).

13.40 In the worst case scenario, in which numerous smaller loads are not consolidated into fewer, larger loads, approximately 80 vehicles would be arriving and approximately 80 vehicles departing the Logistics Centre per hour. This includes all vehicles travelling to the Logistics Centre and then to the Wylfa Newydd Development Area. The vehicles would consist of Light Goods Vehicles (LGV)/Medium Goods Vehicles (MGV)/Heavy Goods Vehicles (HGV). These numbers equate to approximately 325 vehicles arriving and 325 vehicles departing per day.

13.41 HGV movements to and from the Power Station Site and the Logistics Centre shall generally be restricted to 0700 to 1900.

13.42 It is proposed that a TMP covering the construction phase deliveries shall be developed to include normal HGV deliveries, LGV deliveries and construction staff/labour.

13.43 The TMP shall specifically identify controls that will be implemented to mitigate the impact that HGV vehicle deliveries may have on peak traffic flows associated with school transportation and peak commuter traffic periods, which would be likely to include restricting HGV deliveries to the Power Station site along the A5025 during these times (e.g. 8.30-9am, 3-4pm and 5-6pm).

13.44 Deliveries outside of these hours may be required in exceptional circumstances however these would be subject to the issue of advance public notice.

13.45 With consolidation, the above numbers would reduce to approximately 40 HGVs arriving and 40 HGVs departing per hour for the peak two hours noted above, and approximately 150 HGVs arriving and 150 HGVs departing per day.

13.46 We anticipate that the Logistics Centre site would be operating from early 2020 onwards. The Logistics Centre is expected to remain operational until late 2024.

Proposed legacy

13.47 As stated previously, the development would initially operate as a Logistics Centre, but would be available following its use during the construction of the Power Station for an alternative warehousing (B8) use, either in connection with the Project or another appropriate employment use. If further planning permission is required for any external changes, this would be applied for closer to the time at which the facility would become available.

Response to previous consultation

13.48 As part of Horizon's Stage One Pre-Application Consultation in 2014 and the January 2016 Project Update consultation, comments were received from key stakeholders and the local community and have been considered in relation to the location and design of the Logistics Centre described in this chapter. The way in which our consultation to date has influenced the choice of and proposals for the preferred Logistics Centre site is summarised in the table below. Further detail on previous comments made can be found in the Consultation Summary Report.

13.49 The January Project Update stated that a site for the Logistics Centre was identified at Parc Cybi. Following feedback received from consultation, this is still the preferred location for the facility.

13.50 The IACC have expressed concerns about Horizon's site selection process and asked for further justification for the preferred choice of sites, noting concern about the compliance of the provision of the Logistics Centre at Parc Cybi with planning policy. The IACC did however express concern that Parc Cybi is a designated Enterprise Zone intended for business use and the scale of the proposed Logistics Centre would mean the loss of prime employment land at the outskirts of the largest town on the Island. There is still a significant amount of undeveloped land available Parc Cybi, and the both the proposed and legacy use of the land would be for employment purposes. Furthermore, the proposal could serve to kick-start other employment development on the site. Further justification for the site selection has now been provided in the revised version of the Report on Horizon's Approach for Siting Associated Development to Support Construction of Wylfa Newydd ("the Associated Development Siting Report"). This Associated Development Siting Report is available on our website as part of this consultation.

13.51 Whilst we received a number of comments on the principle of the proposals, we only consulted on very high level plans for the Associated Development sites in our January Project Update consultation. As such, very limited feedback was received on the detailed placement of building and parking areas, a matter which we are consulting on as part of this Stage Two Pre-Application Consultation. The table below therefore, highlights design changes made generally as a result of design development and environmental information and also from our ongoing engagement with the Design Commission for Wales (DCfW) on our emerging proposals for the Associated Development sites.

Table 13.1 Key Project and Design Changes since Stage One Pre-Application Consultation and the Project Update Consultation

Change	Rationale
Decision to use Parc Cybi as Logistics Centre site.	Details of this decision making process are provided the Associated Development Siting Report and summarised in chapter 9 of this document. Parc Cybi was chosen as it accords with the locational guidance in the SPG. It fully meets Horizon's functional requirements, is easily accessible from the A55 and is allocated for employment development so draws clear support from planning policy.
Legacy Use - Decision to retain the facility for an alternative warehouse/employment user when no longer required as a Logistics Centre.	This further enhances the long term benefits to Parc Cybi, generating long term employment opportunities.
Further consideration of landscaping proposals. Horizon would retain existing landscape features as far as possible. Landscape and habitat enhancement would also be considered (e.g. planting native trees and hedgerows to visually screen).	In response to comments raised at January Project Update highlighting that landscaping would be required to minimise visual impact of the proposals

Justification for preferred site for Logistics Centre and consideration of alternatives

13.52 A four stage site identification, screening and assessment process was undertaken to identify potentially suitable sites for the Logistics Centre.

13.53 Justification for this preferred site is provided in the Associated Development Siting Report and is summarised below.

13.54 The shortlisted sites at stage four of the above noted selection process were as follows:

- Parc Cybi;
- land adjacent to Dalar Hir;
- Tir Ty Mawr Land;
- land off Station Road and Part of Bryn Hyfryd;
- Yr Ogof;
- land Near Ynys Wen;
- land adjacent to Tyddyn Uchaf; and
- land Adjacent to Zealand Park.

13.55 Locational guidance within the Wylfa SPG supports the principle of freight consolidation facilities, which form part of the operations at the Logistics Centre, at Holyhead and environs (GP27), Llangefni and environs (GP28) and along the A55/A5 Corridor (GP30).

13.56 The preferred site at Parc Cybi is allocated in the Development Plan for employment purposes, including B8 use, and therefore, is preferable in planning terms to unallocated sites outside of the settlement boundaries. The Parc Cybi site lies within Holyhead settlement boundary which the SPG directs logistics/freight uses towards. It also lies to the west of causeway to Holy Island, which enables HGVs carrying construction materials arriving through the Port of Holyhead to travel via the Logistics Centre to the Power Station Site, without having to travel further east than they need to, and thus reducing traffic movements on the road.

13.57 It is not necessary, in planning terms, to consider further the merits of the site at Dalar Hir and land adjacent to Zealand Park as they are further away from the main settlements and therefore, do not pass through Stage Two of the assessment as they are less aligned with the locational guidance in the SPG. In respect of the other five sites at Valley and Holyhead these are not allocated for employment uses and consideration of potential environmental impacts, including impact on the AONB, residential amenity and flood risk would make development at these locations less desirable than the Parc Cybi site.

13.58 Furthermore, Parc Cybi accords with the locational guidance in the SPG, fully meets Horizon's functional site size (minimum of 3ha) and locational requirements (located on the strategic road network, within the 30 minute drive time area of the Power Station Site), is easily accessible from the A55 and is allocated for employment development so draws clear support from planning policy. The site lies within the Anglesey AONB, but exceptional circumstances, such as wider site economic benefits, have previously been

found to exist to justify employment development here both in previously approved planning applications and through the allocation of the site through Development Plans.

13.59 The Logistics Centre would be a business and industry use and the Parc Cybi site is specifically allocated for such uses in the extant Ynys Mon Local Plan (1996) and Stopped UDP (2005) and as an employment site (suitable for B1, B2 and B8) in the emerging Joint Local Development Plan (JLDP) (composite version, June 2016).

13.60 The site is located close enough to the Power Station Site that it allows the accurate timing of deliveries along the A5025.

13.61 The warehousing would also remain post-construction and would therefore, be available for Horizon or an alternative user, which enables the continued beneficial use of this allocated employment site. It could also act as a catalyst to the development of the remainder of the Parc Cybi area, many of the plots of which are still to be developed.

13.62 Therefore, given the above consideration of impacts and having regard to planning policy and guidance, our functional requirements for a Logistics Centre and land use constraints, Parc Cybi is the preferred location for a Logistics Centre.

Logistics Centre options

Layout

13.63 We would like to understand your views on the preferred proposals for our preferred site at Parc Cybi, including the way in which buildings, landscaping and parking areas are positioned on the sites.

13.64 The layout shown in figure 13.2 below is a preliminary preferred design based on the operational requirements for the Logistics Centre. These functional requirements have set the parameters for the size of buildings and the number of parking places and laydown areas to be provided.

13.65 The design work will continue to be developed as we become more certain of the precise operational requirements of the Project, feedback from consultation and environmental information.

13.66 We would like to understand your views on the proposals for our preferred site at Parc Cybi, including the way in which buildings, landscaping and parking areas are positioned within the boundary of the site.

13.67 The design and layout of the proposals will be key in retaining and, where possible, enhancing important site characteristics, to break down the scale and potential impacts of the parking and laydown areas. The position of the buildings should be located sensitively and the design carefully considered to ensure lighting avoids, wherever possible, light spill onto adjacent land uses. It is however, noteworthy that the site is located within an employment area which has been specifically allocated for such uses, and the buildings and parking areas would be seen in this context, albeit that the majority of the remainder of the area is still to be built out.

13.68 The buildings, access (for vehicles and persons) and parking bays are orientated according to available site boundaries, security requirements, function and the impact of anticipated vehicle circulation (e.g. taking into account 30m diameter HGV turning circles). In particular, safe access for all persons walking around the site (e.g. from staff parking to

buildings) has been considered. Staff parking is situated close to the welfare/security building to minimise unnecessary walking through the HGV zones. HGV parking and layout has been designed to instigate a “no reversing” policy. The access road within the site footprint and setting back of the entrance security point alleviates vehicles queuing on the public road outside the site.

13.69 Design work is ongoing, and the site layout could be subject to further change prior to any planning application being submitted. Our preferred approach to the layout of the buildings and parking on site is shown in figure 13.3 however, we would welcome your comments on this (see question at the end of this chapter).

Figure 13.2 Preferred Layout of proposed Logistics Centre

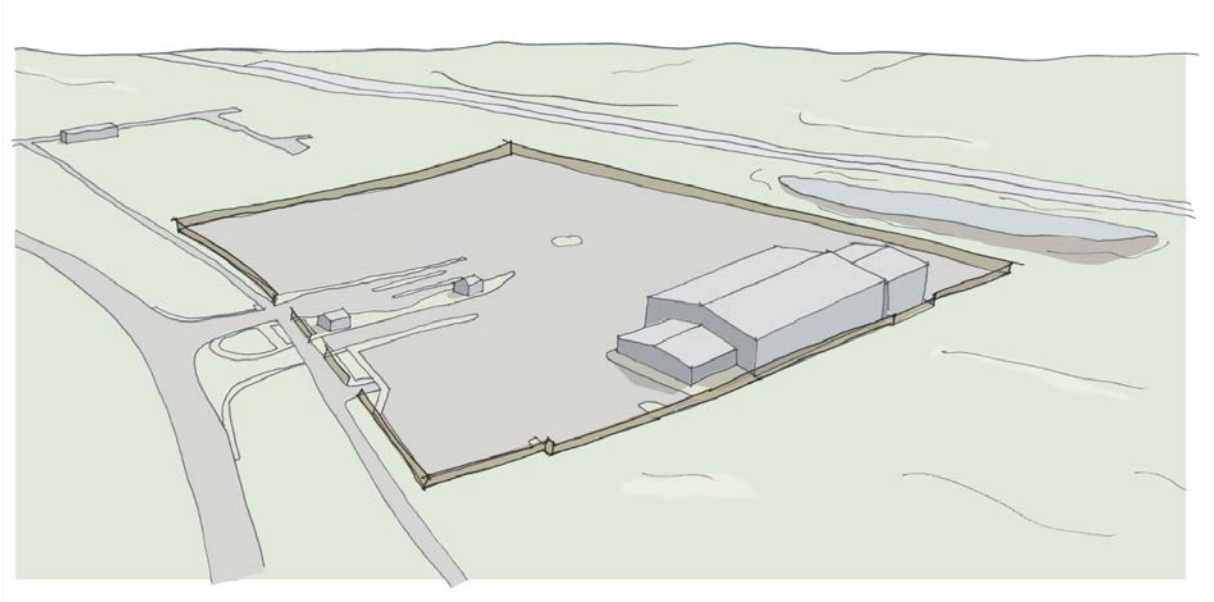
Architectural design

13.70 The architectural design of the proposed buildings on the site is yet to be decided. The draft Masterplan for the Logistics Centre provides illustrative material that shows our current views on what the buildings may look like, taking into account national and local planning policy, including that in NPS EN-1. This includes a requirement for ‘good’ design and a recognition that the decision-maker should consider both functionality (including fitness for purposes and sustainability) and aesthetics (including its contribution to the area in which it would be located). We would welcome your comments on our current preferred proposals (see question at the end of this chapter).

13.71 The overall architectural strategy for the Logistics Centre at Parc Cybi, responds to the intention to deliver a high quality employment unit, consistent with the current and emerging employment nature of the area. A restricted natural palette would be adopted for all the buildings on-site, helping to link the buildings visually, and be unimposing with their surroundings, whilst consistent with the employment nature of the wider area. Further details of preferred materials palettes are provided in the Draft Masterplans.

13.72 Horizon are currently working with the site developer Conygar, to develop a proposal that would meet Horizon's temporary needs, whilst not prejudicing the development and use of the site in the longer term. The draft Masterplan for the Logistics Centre site provides illustrative material which shows our current views on what the buildings may look like, which would be developed in partnership with Conygar, however we would welcome your comments on this.

Figure 13.3 Preferred architectural design of Logistics Centre site



Landscaping and boundary treatments

13.73 The landscaping and boundary treatments provided on the site are also yet to be decided.

13.74 The currently proposed landscaping and boundary treatment comprises maintaining a 1.5m grassed boundary buffer zone around the site and proposing a 3m high mesh panel security fence. This approach is appropriate to the context of the site as an industrial development plot, surrounded by future industrial development plots which would come forward under the wider Parc Cybi proposals.

Question – Parc Cybi, Logistics Centre

Given the information provided on our Associated Development, do you have any views on:

- **how we can improve the preferred plans, including such issues as the layout of buildings and parking areas;**
- **how we can improve the external appearance of the buildings, landscaping and boundary treatment; and**
- **our proposed legacy for each site.**

Summary of Preliminary Environmental Information

13.75 Our preferred proposals at Parc Cybi are likely to have some effects on the environment during construction, operation and decommissioning of the Logistics Centre. The principal likely significant adverse and beneficial effects are summarised below and more detail is provided within the PEI Report (volume H) and in volume B01, which considers Project wide socio-economic effects.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
Traffic and transport	There would be a short-term increase in traffic accessing the Parc Cybi during construction, comprising a mixture of daily workforce vehicles, goods vehicles and occasional movements of large plant. Exact details of the vehicle types and numbers remain to be confirmed, but in light of the nature and small scale of the works required to construct the Logistics Centre, the effects would not be significant. Horizon will encourage construction staff to vehicle share, where possible, and the Logistics Centre has been designed to allow up to eight HGVs to queue on the access road within the footprint before the security kiosk to reduce the risk of any adverse effects of HGVs queuing on the Parc Cybi spine road.	In the worst case scenario, in which numerous smaller loads are not consolidated into fewer, larger loads, approximately 80 vehicles would be arriving and approximately 80 vehicles departing the Logistics Centre per hour. These deliveries would generally be within 7am and 7pm, but we would seek to avoid peak hours such as school drop offs and peak travel to work times. These numbers equate to approximately 325 vehicles arriving and 325 vehicles departing per day. With consolidation, the above numbers would reduce to approximately 40 HGVs arriving and 40 HGVs departing per hour for the peak two hours noted above, and approximately 150 HGVs arriving and 150 HGVs departing per day. The increase in vehicle movements associated with the staff based at the	There would be the potential for similar effects as during construction for any decommissioning works. Equally, the change to an alternative warehousing use may reduce operational staff movements assuming the workforce reduces. Similar mitigation would be proposed as in the construction and operation phases.

Topic	Potential effects and mitigation		
	Construction phase	Operational phase	Decommissioning phase
		development would be small as the site only has 12 car parking spaces and staff would be working shifts, reducing the potential for peak traffic periods. Therefore, the effects from operational staff are not considered significant. Horizon will encourage operation staff to vehicle share, where possible, and the Logistics Centre has been designed to allow up to eight HGVs to queue on the access road within the footprint before the security kiosk to reduce the risk of any adverse effects of HGVs queuing on the Parc Cybi spine road.	
Socio-economic	Trearddur Bay Golf Course and Holyhead Sports Centre are over 700m to the west of the site. The site access does not pass the Logistics Centre and so would not be affected by the construction works. There would be a benefit from the temporary creation of construction jobs. Use of a local workforce where possible would bring investment into the wider, local economy. Due to the scale of the works however it is not considered that the effect would be significant.	A range of potential beneficial effects have been identified. These include long term employment opportunities for up to 46 staff; and local spending in the community from the employed workers living in the surrounding area. Due to the scale of these works the beneficial effects are not likely to be significant. However, as a development within the wider Parc Cybi industrial area, it may provide a longer term stimulus for the wider development of the Parc Cybi area.	The change to an alternative warehousing use would likely retain the operational beneficial effects.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
Landscape and visual	Potential adverse effects identified are loss of existing landscape boundary features, loss of a small area of woodland, effects on the Holyhead LANDMAP Visual and Sensory Aspect Area, visual effects associated with plant, traffic and construction activities to the residential community of Trearddur to the south and travellers along the A55 and B4545, effects on the scenic quality of the Anglesey AONB and night-time views of lighting associated with site construction activities. The effects of the loss of such features has been considered in relation to the approval for the outline masterplan for the wider site and found to be acceptable. Measures to mitigate the above effects include planting of native grassland species to enhance biodiversity and designing lighting to reduce light pollution. A Construction Environmental Management Plan (CEMP) would also be implemented to identify and ensure appropriate protection of environmental assets.	Potential adverse effects identified are the effects on scenic quality and views on Anglesey AONB, visual effects of operational lighting, the presence of development and associated activities in views from the residential community of Trearddur to the south and to travellers along the B4545 and A55 corridor and the effect of the Holyhead LANDMAP Visual and Sensory Aspect Area due to the presence of development and associated activities. Measures to mitigate the above effects include planting of native grassland species to enhance biodiversity and design of lighting to reduce light pollution.	Potential adverse effects identified are effects on the Holyhead LANDMAP Visual and Sensory Aspect Area, visual effects associated with plant, traffic and construction activities to the residential community of Trearddur to the south and travellers along the A55 and B4545, effects on the scenic quality of the Anglesey AONB and night-time views of lighting associated with site construction activities. Measures to mitigate the above effects include planting of native grassland species to enhance biodiversity and design of lighting to reduce light pollution. An Environmental Management Plan (EMP) would also be implemented to identify and ensure appropriate protection of environmental assets.
Noise and Vibration	There would be an increase in noise during construction from activities such as	The operational movement of upwards of 60 to 70 goods vehicles around the development	Any noise and vibration effects and mitigation during decommissioning

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
	stockpiling of materials and earth moving. However, the effects are not likely to be significant due to the distance between the construction works and receptors, as well as the existing background noise of the A55 traffic and railway line. For the closest receptors, at the business park to the north, the Anglesey Aluminium industrial complex noise emissions would further mask any potential noise effects from the construction works. A CEMP would be implemented to apply industry best practice controls to manage noise and vibration (e.g. working in daytime hours where possible, turning off machinery when not in use, use of silencers on plant where appropriate).	site, plus other site management activity, would create new noise emissions in the area. However, as noted for construction, effects are not likely to be significant due to a combination of distance to sensitive receptors and existing background noise sources. The site layout seeks to use the site buildings to act as noise barriers to mitigate any increase in noise emissions during operation.	activity would be similar to those described for construction. Retention of the site for an alternative warehousing (B8) use, either in connection with the Project, or for an alternative warehousing use, or other appropriate employment use would retain the operational effects, but at a reduced level with the reduction in goods vehicle activity.
Public access and recreation	There could be a minor adverse effect as the Lon Trefignath cycle path would be crossed by construction traffic for the duration of the construction works, posing a safety risk to users and affecting the amenity of this part of the recreational route through noise disturbance and dust emissions. The final design of the facility would consider options to retain safe access along the route of the Lon Trefignath cycle path (e.g. controlled	The effect of operational staff accessing the site is not considered to be significant as the design only allows parking for 12 cars on the basis that the staff would be working shifts, whereas a regular turnover of 60 to 70 goods vehicles, each going in and out, could have a significant effect. However, in light of the localised effect, the context of the nearby A55 and planned conversion of the surrounding land to an industrial area, the	There would be some effects on users of the cycle path, similar to the construction phase, associated with the decommissioning of the Logistics Centre or it conversion into an alternative warehousing use.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
	crossing, cycle path diversion, etc.). Adverse effects associated with noise, dust emissions and visual amenity would be reduced through application of the mitigation measures outlined in the noise and vibration, air quality, and landscape end visual amenity sections of this table.	effect would only be of minor significance.	
Air Quality	No significant effects are expected due to the distance to any potential receptors. A CEMP would be implemented to reduce the risk of adverse effects from dust and other air pollutants.	No significant effects are expected due to the distance to any potential receptors. A CEMP would be implemented to reduce the risk of adverse effects from dust and other air pollutants.	No significant effects are expected due to the distance to any potential receptors. An EMP would be implemented to reduce the risk of adverse effects from dust and other air pollutants.
Soils and Geology	There is a risk of encountering or releasing pollutant from contaminated land or creating contaminated soils from spills or leaks from fuels, oils and chemicals stored or used at the site. The implementation of standard good construction practices to manage this means that the potential effects are not expected to be significant.	No significant effects are anticipated.	There is a risk of encountering or releasing pollutant from contaminated land or creating contaminated soils from spills or leaks from fuels, oils and chemicals stored or used at the site. The implementation of standard good construction (decommissioning) practices to manage this means that the potential effects are not expected to be significant.
Groundwater and	Potential effects include increased surface	There is the potential for contamination of	The use of the site for an alternative

Topic	Potential effects and mitigation		
	Construction phase	Operational phase	Decommissioning phase
surface water	water runoff and reduced groundwater recharge due to an increase in impermeable area. There could also be contamination of surface water and groundwater e.g. for spills of leaks of fuels, oils and chemical stored or used on site. The implementation of standard good construction practices to manage this means that the potential effects are not expected to be significant. A CEMP would be implemented to reduce the risk of any spills or leaks causing pollution. Other mitigation measures include the use of Sustainable Urban Drainage Systems (SUDS) and the use of permeable paving for vehicle hardstanding areas.	surface water and groundwater associated with fuel leaks during operation, but oil interceptors would be incorporated into the surface water drainage system to protect the water quality within the watercourse and pond. Foul drainage from the welfare facilities would be discharged to the foul sewer or on-site package treatment plants. Roof drainage from the buildings would be discharged to the surface water system. It is proposed that the new surface water drainage system would discharge to the local watercourse, subject to the requirement to avoid any adverse impact on this watercourse, and subject to obtaining a discharge consent. Attenuation within the new system would be provided to ensure that discharge rate would be less than or equal to site greenfield run-off rate. A CEMP would be implemented to reduce the risk of any spills or leaks causing pollution. Other mitigation measures include the use of SUDS and the use of permeable paving for vehicle hardstanding areas.	warehousing (B8) use, either in connection with the Project, or for an alternative warehousing use would likely pose the same risks as the operation of the Logistics Centre, whilst any demolition of facilities would pose similar risks / effects as during the construction works. The same mitigation measures as stated for the construction and operational phases would be implemented.
Terrestrial and freshwater ecology	There would be no effect on designated sites, but there could be potential for significant effects on protected species.	Although the A55 currently creates a disturbance effect, the new artificial lighting would introduce a new effect, especially after	The potential effects would be limited to risks to protected species as outlined for the construction

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
	Any water vole in the ditch could be either directly impacted or indirectly from pollution run-off. The vegetation clearance works may pose a risk of harm or disturbance to protected nesting birds. Other protected species, such as badgers or bats, may be at risk of harm if they enter the construction site to forage during the construction work. The main direct effect would be the loss of semi-improved grassland, bare earth, and scrub and woodland habitats. The small scale of loss and low value of most of these habitats would mean the effect would not be significant. However, due to the rarity of woodland on Anglesey, the loss of woodland could be of minor, local significance, depending on the quality of the woodland habitat and its contribution to the biodiversity network of the larger woodlands to the south of the site. As mitigation, a CEMP would be implemented, the design would seek to avoid changes to the ditch habitat and planting would be proposed to compensate for loss of trees.	dark, on wildlife such as badgers and bats. As mitigation, a CEMP would be implemented, the design would seek to avoid changes to the ditch habitat, planting would be proposed to compensate for loss of trees, a lighting scheme would be designed to reduce light spill onto adjacent areas and environmentally sensitive zones. Opportunities would also be sought for habitat enhancement. Opportunities would also be sought for habitat enhancement.	stage above. As mitigation, an EMP would be implemented.
Archaeology and cultural heritage	Noise and visual intrusion from construction activities and traffic have the potential to have a temporary adverse	During operation, the Logistics Centre is likely to be visible in views from Trefignath Chambered Tomb and Ty-mawr Standing	Noise emissions and the visibility of decommissioning activities would have a temporary effect on the

Topic	Potential effects and mitigation		
	Construction phase	Operational phase	Decommissioning phase
	significant effect on the setting of Trefignath Chambered Tomb and Ty-mawr Standing Stone. While archaeological investigations undertaken for the Parc Cybi employment site have mitigated effects on archaeological remains over the majority of the Logistics Centre development, there are areas that have not been previously investigated or disturbed. Construction of the development has the potential to remove any archaeological remains that may be present. There is the potential for these permanent effects to be significant. Removal of archaeological remains in previously undisturbed areas would be mitigated by archaeological recording. The need for, and extent of, archaeological recording would be determined by geophysical surveys and archaeological trial trenching. Temporary construction and decommissioning effects on the settings of Trefignath Chambered. Tomb and Ty-mawr Standing Stone would be mitigated by best practice measures designed to reduce noise. Effects during construction and operation would be	Stone. The effect on the setting of these assets is predicted to be significant due to their Scheduled Monument status. Effects during construction and operation would be mitigated by recording of the present setting of these heritage assets through photographic recording, sympathetic landscape screening and high quality design.	settings of Trefignath Chambered Tomb and Ty-mawr Standing Stone, similar to the construction works. Temporary construction and decommissioning effects on the settings of Trefignath Chambered Tomb and Ty-mawr Standing Stone would be mitigated by best practice measures designed to reduce noise.

Topic	Potential effects and mitigation		
	Construction phase	Operational phase	Decommissioning phase
	mitigated by recording of the present setting of these heritage assets through photographic recording, sympathetic landscape screening and high quality design.		

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14 Rhosgoch Temporary Workers' Accommodation

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14 Rhosgoch Temporary Workers' Accommodation

14.1 This chapter provides an overview of the proposals for Temporary Workers' Accommodation at Rhosgoch, how they have evolved through pre-application consultation and how feedback has been considered. The chapter provides a summary of the preliminary environmental information associated with the site and how it has influenced the proposals. It also highlights areas where further feedback is sought to influence the design of the Temporary Workers' Accommodation in this location.

14.2 The requirement for Temporary Workers' Accommodation is identified in Horizon's Construction Worker Accommodation Strategy, which is also published as part of Horizon's Stage Two Pre-Application Consultation and summarised in chapter 9 of this document.

14.3 Significant work has been carried out to determine the most appropriate way of accommodating the construction workforce that will be resident on Anglesey during the construction of the Power Station. At its peak, it is anticipated that the workforce will grow to 10,720 construction workers, consisting of a construction workforce of between 8,000 and 10,000 workers, facilities management staff and operational staff. Up to 5,700 of these will need to be accommodated in purpose built temporary accommodation, taking into account construction requirements, the number of bedspaces that are likely to be available in tourist accommodation, private rental, empty homes and those workers who will be living at home and to allow flexibility to deal with uncertainty. Further details are provided in chapter 9 of this document.

14.4 Horizon has considered a number of sites for Temporary Workers' Accommodation and has developed a preferred strategy, having regard to a number of factors, including where workers are anticipated to be travelling from, the availability of existing consents, planning and environmental constraints at the shortlisted sites and community and Welsh language impacts, as well responses received during Horizon's Stage One Pre-Application Consultation and the January 2016 Project Update Consultation.

Site and key characteristics

14.5 We are proposing temporary accommodation for up to 1,500 workers at Rhosgoch, approximately 2.5 kilometres south-west of Amlwch and 1 kilometre north of Rhosgoch village. The preferred location of the proposed site is shown in figure 14.1 below.

Figure 14.1 Preferred location of proposed Temporary Workers' Accommodation at Rhosgoch

14.6 The Rhosgoch site is approximately 82.3 hectares and is located approximately 5km south-east of the Wylfa Newydd Development Area. The site consists of brownfield and greenfield land. The brownfield land was formerly used as an oil storage terminal. The site is in a rural location with the surrounding area comprised primarily of pastureland interspersed with isolated farmsteads, cottages and hamlets.

14.7 The nearest residential properties are located approximately 220m to the north of the site. There are several existing residential properties located at distances of about 10m to 25m away from the unclassified road which forms part of the proposed site access route. There is also an existing residential property close to the proposed new junction arrangement on the A5025 in Burwen, at a distance of about 150m from the new junction.

14.8 Approximately 100m north of the site is the 4.6MW two-turbine Ysgellog wind farm, which became operational in 2013.

14.9 At the eastern boundary of the site is the Gorsedd Wygyr drumlin, which is the highest point of the site at 80m above ordnance datum (AOD). From this high point, the landform gently slopes westwards and northwards to a low point of 30m AOD on the west and north-west boundaries of the site.

14.10 On the site itself, the majority of structures associated with the former fuel storage site have been dismantled and removed. However, the former fuel storage site bunds, and remnant infrastructure associated with the access tracks, pipework, electricity substation and some other structures, are still present on the western part of the site. The southern perimeter of the site is occupied by trees and shrubs, and the eastern part of the site is covered by a combination of grassland and scrub, with some hedgerows present along field boundaries.

14.11 There are a number of watercourses and other surface water features on and around the site; the largest is the Afon Wygyr, and tributaries to the Wygyr flow around the northern and western boundaries of the site. Springs, streams and drains across the site are all tributaries of the Afon Wygyr. There are two ponds present on the site, one on the north-west part of the site and the other on the southern part of the site.

14.12 The Copper Trail cycle path runs along the local road which connects the Rhosgoch Temporary Workers' Accommodation site to the A5025 and crosses the proposed site access.

14.13 A public footpath leads from a minor road to the north-east of the site, following a course close to the eastern perimeter, but outside its boundary, along the full length of the site (approximately 2km) before continuing onwards to the south-west. The disused Amlwch railway line passes within 180m east of the site and former railway sidings are present, linking the railway line and the site.

14.14 Although the Rhosgoch Temporary Workers' Accommodation site is a former oil storage terminal, vegetation has recolonised to a certain extent. Ponds on the site are known to great crested newts, a protected species. The great crested newts were recorded in four out of five ponds on site during surveys undertaken in spring 2016. For further detail please refer to Preliminary Environmental Information (PEI) Report (volume D).

14.15 The former use of the site would have given rise to some land contamination although clean-up activities took place on the cessation of the former use. Initial surveys of the

land suggest that some works will be required to address localised contamination. It is unlikely that large scale remediation will be required.

14.16 A Scheduled Monument, the Bodewryd stone, (a Bronze Age standing stone) is located approximately 130m to the south-west of the site.

14.17 The northern site boundary, which is bounded by the Afon Wygyr, is identified as being at risk of flooding from the watercourse, although flood extents are limited to a small strip of land adjacent to the watercourse. There is also a risk of surface water flooding corresponding to the Afon Wygyr and its tributaries which run along the eastern and western site boundaries; these are confined to the channels and to a small area of the floodplain. Additionally, there are small areas of shallow ponding within the centre of the site associated with the ponds and some isolated areas of low lying land. However, the topography of the site means that the majority of the site is raised several metres above the watercourse at points along the northern boundary and is therefore, outside the flood risk area.

14.18 The Rhosgoch Temporary Workers' Accommodation would be located within the Anglesey-wide Special Landscape Area (SLA); 800m north-east of the proposed Mynydd Mechell SLA and 2km to the south of the nationally designated Anglesey Area of Outstanding Natural Beauty (AONB). These are important landscape designations, and both national and local planning policy aim to conserve and enhance the natural beauty, distinctiveness and special qualities of these areas.

14.19 The Rhosgoch Temporary Workers' Accommodation is located within Landscape Character Area (LCA) 6 Amlwch and Environs as defined within the IACC Landscape Strategy and within LANDMAP Visual and Sensory Aspect Area 'Drumlins with windfarms'.

Description of the Proposals

The proposed development

14.20 The purpose of the proposed Temporary Workers' Accommodation would be to provide temporary accommodation for construction workers, working on the Wylfa Newydd Project and living away from home, as part of a choice of accommodation options available (more detail is provided in chapter 9 of this document). The accommodation would be occupied by individual workers, rather than families, and as such the accommodation is designed to meet the needs of workers living alone.

14.21 Our preferred proposals comprise:

- up to ten accommodation blocks of three to four storeys in height that will accommodate up to 1,500 workers involved in the construction activities for the Wylfa Newydd Power Station. Each block would contain bedrooms, communal kitchens, TV lounges, plant area, bin and bike storage and provision for laundry. The maximum anticipated dimensions of each block type is as follows:
    - a three storey block is anticipated to be a maximum of 59m long, 18m wide and 13.5m high; and
    - a four storey block is anticipated to be a maximum of 58.4m long, 18m wide and 16.6m high.

- a two to three storey amenity building (anticipated to be a maximum of 95.6m long, 42.6m wide and 12.5m high). This would include a small medical treatment/first aid room, security/control office, shop, administration and facilities management area, recycling point, kitchen, canteen, food storage area, television room, bar, gymnasium, toilets, changing rooms and shower facilities, a plant area and a general storage area;
- a two storey hub facilities/welfare building that is anticipated to house a reception, security, offices, medical, dental and basic retail facilities (anticipated to be a maximum of 62m long, 38m wide and 12.5m high);
- utilities building (anticipated to be a maximum of 16.8m long, 62m wide and 9m high). This would comprise site utilities (septic tank and packaged sewage treatment plant controls), laundry drop off/collection area, waste management, cycle storage, energy centre and general materials/equipment storage;
- parking areas – to provide a minimum of 1,100 spaces;
- bus terminal – this will be situated at the main entrance in the north-east of the site. It will be organised into platforms/bays to accommodate the parking of buses, pick up and drop off of workers. There will be capacity for 24 buses; and
- outdoor social areas – hardstanding areas, courtyards and 'pocket parks' for socialising and occasional visiting markets, grass sports pitch (multi-purpose for a variety of sports uses), running track through the campus.

14.22 We have provided our preferred proposals in relation to site layout, building heights and appearance in the draft Masterplans included in the suite of documents that form part of this consultation.

14.23 Although five and six storey blocks were originally proposed (and this is the maximum height for the assessments presented in the PEI Report), our current preferred proposal is a maximum height of four storeys.

14.24 The total footprint of the development is likely to be less than 20ha. The height of the tallest buildings (the four-storey temporary accommodation blocks) would be approximately 17m in height. The temporary accommodation blocks are anticipated to be located to the south of the site. They look to utilise the natural topography of the site and, where possible, are located away from the wind turbines.

14.25 The detailed design of the buildings, layout of the site, landscaping and boundary treatment will be progressed further following this consultation and included in the final development proposals. These will either be determined through a Town and Country Planning Act application to be submitted to the IACC, or as part of the application for a Development Consent Order (DCO) depending on anticipated changes through the Wales Bill (further details on the consenting strategy are provided within chapter 1 of this document). Your views are welcomed on design, layout, landscaping and boundary treatment (see section below).

14.26 The temporary accommodation would be in modular-type blocks that would provide an independent living space for each worker. As set out above, the accommodation would be supported by amenities provided in a campus environment. The amenity and welfare building will play a significant role, providing an area for workers to eat, socialise and relax.

14.27 Horizon's approach to storage, recycling and disposal of waste at the site will be developed further following consultation and will be included in any future application.

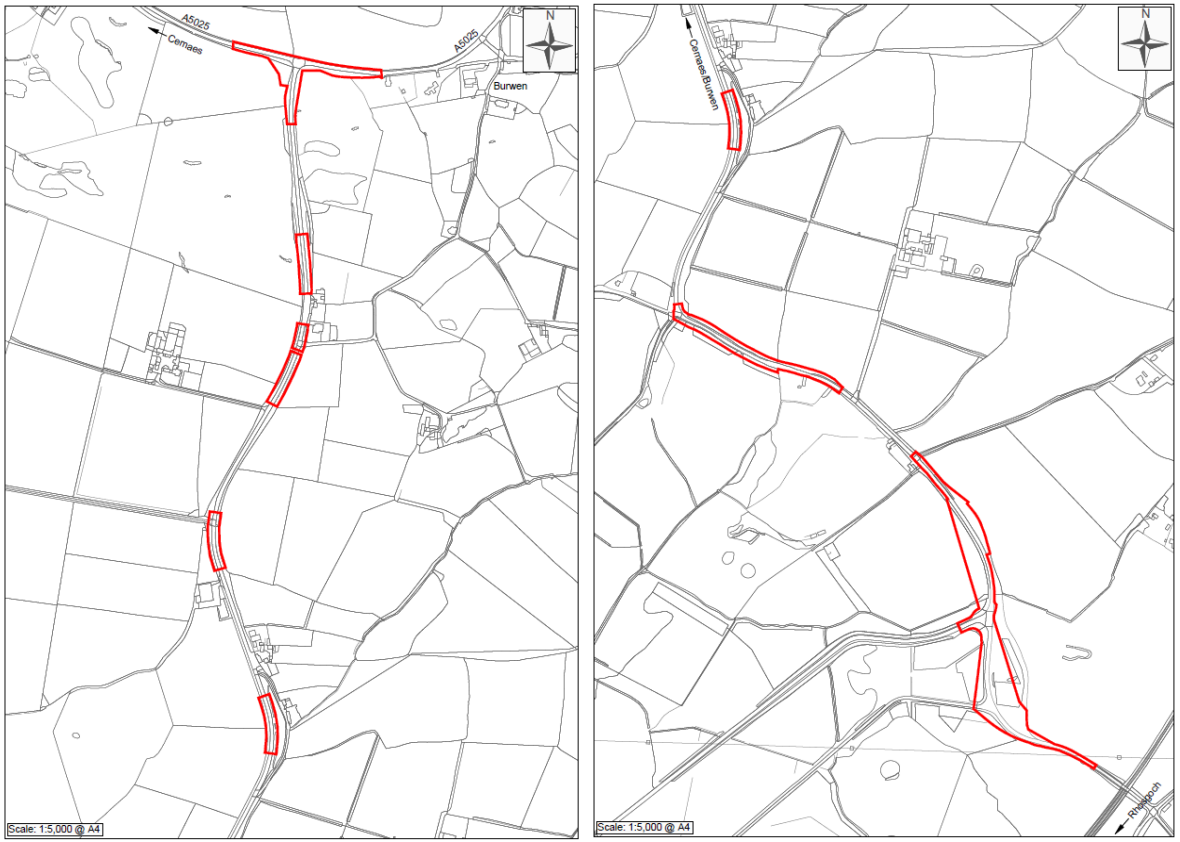
14.28 An energy centre may be required to provide power, heating and hot water for the Rhosgoch Temporary Workers' Accommodation. At this stage, we have not fully developed the type and size of combustion plant, such as a combined heat and power engine or boiler, or if an alternative solution using mains electricity may be used. We will continue to work on the designs of the energy centre to make sure that these are in line with best practice and the emissions would not affect people living on the site in the accommodation or in nearby homes.

14.29 The exact form of the road improvement works related to this specific proposed accommodation site has still to be finalised, but they are currently envisaged as comprising:

- a new entrance and exit to the north-east of the site, including minor amendments to the existing access road at the site entrance (e.g. road markings, signage, services protection, repair work to the road surface);
- a new roundabout at the A5025 (options to be developed further); and
- localised road widening.

14.30 Figure 14.2 below shows the proposed location of the road improvement works. The new roundabout, if required, would be located at the junction of the local road with the A5025 (as indicated in the uppermost red line boundary below), the site access would be located where the Rhosgoch access road joins the local road, and the road widening at various locations on the local road, as shown by the other red line boundaries below. Final details are being progressed on the precise nature of these proposals and any works requiring planning permission would be included in the application for Associated Development.

Figure 14.2 Preferred location of road improvement works on local road from Rhosgoch to A5025



14.31 We are also anticipating that there may need to be a temporary diversion of the Copper Trail during construction and operation of the Temporary Workers' Accommodation site, as a result of the increase in vehicle movements, including buses, along this route. Further details are provided in the PEI Report (volume B02).

14.32 Pedestrian access and pedestrian crossing points will be clearly marked within the parking areas.

14.33 Construction of Rhosgoch Temporary Workers' Accommodation would commence in May 2019 and would likely take place over a period of approximately 34 months in a single phase.

14.34 Approximately 285 construction workers would be required on-site during the construction phase for the Temporary Workers' Accommodation. Site working hours would be a minimum of 7.5 hours per day Monday to Friday, and half a day on Saturday.

14.35 The average number of vehicle movements to and from site during construction would be 80 heavy vehicle and 600 car or light vehicle movements per day, with a maximum of about 970 vehicles per day during the month of peak activity.

14.36 Good construction site management practices would be utilised during the construction of the Temporary Workers' Accommodation. An outline Construction Environmental Management Plan (CEMP) would be developed as part of the Environmental Impact Assessment (EIA) process. The CEMP would be developed in detail by the construction contractor if consent for the development is granted by the IACC, but would be in accordance with the outline CEMP. The CEMP would provide a basis for monitoring the contractor's environmental performance during the construction process.

14.37 Further details on the way in which Horizon is maximising the uptake of supply chain opportunities by local companies is described in chapter 8 of this document.

14.38 We anticipate that the temporary accommodation would be occupied by construction workers from early 2020 onwards. Generally, the peak workforce is expected during the period 2023-2024. The Temporary Workers' Accommodation is expected to remain operational for approximately seven years, until late 2026.

Proposed operation

14.39 Buses would transport shift workers to and from the Rhosgoch Temporary Workers' Accommodation and Wylfa Newydd Development Area, and would be timed to correspond with the main shift patterns. There may also be a shift change at night, involving associated bus movements to and from site.

14.40 The Traffic and Transport Technical Note, which forms part of this consultation and is available on our website, includes an assumption of the number of buses currently anticipated to be associated with the movement of workers from the Temporary Workers' Accommodation to the Power Station Site. As explained in the Traffic and Transport Technical Note, transport movements associated with Rhosgoch are not currently modelled however they will be included in future modelling. Based on the number of construction workers (up to 1,500), it can be estimated that there would be a maximum of 33 daily return bus movements to the Power Station Site. This is based on three staggered morning shifts (21 return trips) and three staggered night shifts (12 return trips), and a capacity of 54 workers per bus. Further work is ongoing to determine the detailed

proposals to transport workers and this would inform the Transport Assessment which would accompany the DCO application, or the applications for Associated Development.

14.41 Taking into account the shift patterns set out in chapter 4 of this document, it is estimated that this would mean a maximum of 21 movements from Rhosgoch to the Power Station Site between 07.00 and 08.00 and 21 movements back to the accommodation campus between 18:00 and 19:00. There would be a further 12 movements, associated with the night shift, travelling from Rhosgoch towards the Power Station Site between 16:30 and 17:30 and 12 movements back between 03:30 and 04:30. This assumes approximately 30 minutes between the end of the shift and arriving at the accommodation campus. Further information on our preferred bus routes is provided in chapter 10 of this document.

14.42 In addition, there would be the following return vehicle trips per day associated with staff and deliveries, which is set out in chapter D5 of the Preliminary Environmental Information (PEI) Report, volume D as follows:

- 376 cars;
- 78 light van/mini-bus
- 46 light goods vehicles; and
- eight Heavy Goods Vehicles (HGVs).

14.43 Based on a typical working day and assuming single vehicle occupancy, this results in a worst case scenario of approximately 500 return trips, equivalent to 1000 additional vehicle movements per day (i.e. 500 in and 500 out of the accommodation facility).

14.44 The traffic-related effects relating to the movement of construction workers are addressed in the PEI Report (volume B).

14.45 Access at the site will be via the following:

- a bus terminal at the main entrance at the north-east of the site which will provide the control of the worker passage from site accommodation to bus and onto the Power Station Site, on a daily basis;
- private vehicles may enter the site at the main entrance and then into one of two car park zones; and
- pedestrians and cyclists may enter via the main entrance or via alternative permissible rights of way.

14.46 It is anticipated that buses travelling to the Wylfa Newydd Development Area from Rhosgoch Temporary Accommodation would access the A5025 via the local road running approximately on a north-south alignment between the accommodation and A5025. Buses would then travel along the A5025 directly to the Power Station Site to drop off workers.

14.47 It is estimated that up to 187 members of staff would be involved in the daily operation of the temporary accommodation, including site management, security and welfare tasks.

14.48 Typical operational activities taking place on the site include:

- site management including catering, waste management, general facilities management, buildings maintenance, shop facilities, grounds maintenance and roads maintenance;

- site security;
- welfare tasks including cleaning, medical/first aid and waste and sewage management and removal;
- traffic movements to and from the site by residents and staff;
- movements of residents to and from leisure and welfare amenities on-site and in the local area; and
- goods deliveries and waste collection.

Proposed legacy

14.49 The Rhosgoch Temporary Workers' Accommodation is expected to remain operational for up to seven years. As the numbers of workers required for construction of the Power Station reduces, the development would be dismantled and the site reinstated.

14.50 Decommissioning could either occur in a number of phases as worker numbers decrease, or it could occur in a single phase. If the single phase route is preferred, this would be anticipated to last 12 months. If a modular construction approach were used, then it may be possible to use a phased decommissioning programme as the numbers of construction worker numbers requiring accommodation decreases.

14.51 Approximately 75 construction workers would be required for decommissioning. Standard site working hours would be 8am to 6pm Monday to Friday and 8am to 1pm on Saturday.

14.52 The site would be reinstated to semi-natural grassland, and the extent of the areas of semi-natural grassland present that were retained during construction would be increased. Natural drainage conditions would be restored and hedgerow field boundaries would be retained and strengthened to reinforce the field pattern where appropriate. Any utility services would be retained and there is an option to retain the sports facilities and the hub buildings on-site as a legacy benefit. As noted in the section below, Horizon have received consultation comments which highlight support for the retention of facilities on site following the use of the site for Temporary Workers' Accommodation.

14.53 In addition, there would be planning obligations associated with any planning permission that may be granted for the proposals (see approach to consenting in chapter 4 of this document), where they met the planning tests (being that they must be necessary, directly related to the development and be reasonable in scale in kind). Such obligations may include improvements to existing services, which would remain as legacy benefits following the removal of the development.

Response to previous consultation

14.54 As part of Horizon's Stage One Pre-Application Consultation in 2014 and the January 2016 Project Update Consultation, comments were received and have been considered in relation to the location and design of the Temporary Workers' Accommodation facilities described in this chapter. The way in which our consultation to date has influenced the choice of and proposals for the Rhosgoch site is summarised in the table below. Further detail on previous comments made can be found in the Consultation Summary Report.

14.55 The Stage One Pre-Application Consultation set out the draft principles for Horizon's Worker Accommodation Strategy covering a Broad Search Area within a reasonable distance from the Wylfa Newydd Development Area, together with identifying the

assessment criteria, including accessibility, socio-economic and cultural factors that would be used to evaluate the suitability of each site.

14.56 The IACC have expressed concerns about Horizon's site selection process and asked for further justification for the preferred choice of sites, noting concern about the compliance of the provision of Temporary Workers' Accommodation at Rhosgoch with planning policy. However that was based on the information available at the time and the IACC has not yet expressed a definitive view on the preferred sites pending further investigation. Further justification for the site selection has now been provided in the revised version of the Report on Horizon's Approach for Siting Associated Development to Support Construction of Wylfa Newydd ("the Associated Development Siting Report"). This Associated Development Siting Report is available on our website as part of this consultation.

14.57 Whilst we received a number of comments on the principle of the proposals, we only consulted on very high level plans for the Associated Development sites in our January Project Update consultation. As such, very limited feedback was received on the detailed placement of building and parking areas, a matter which we are consulting on as part of this Stage Two Pre-Application Consultation. The table below therefore highlights design changes made generally as a result of design development and environmental information and also from our ongoing engagement with the Design Commission for Wales (DCfW) on our emerging proposals for the Associated Development sites.

Table 14.1 Key Project and Design Changes since the Stage One Pre-Application Consultation and the Project Update Consultation

Change	Rationale
Selection of Rhosgoch as a preferred site for Temporary Workers' Accommodation.	Significant responses from the local community supporting the principle of Temporary Workers' Accommodation at the Rhosgoch site during Stage One Pre-Application Consultation. Both support and opposition was received at the Project Update consultation. Support for Rhosgoch was based on the desire for Temporary Workers' Accommodation to be located close to the Wylfa Newydd Site. Opposition to the use of Rhosgoch was largely due to the concern about increased traffic congestion in the area and the need for upgrade of the existing infrastructure to accommodate the temporary workers. It is noted that comments received supported the re-use of the Temporary Workers' Accommodation on site for tourism purposes. Although it is not proposed that the accommodation on site is kept as a legacy use, Horizon would leave the site serviced to facilitate a future use and some facilities could be retained.
Provision of two site layouts for	Our initial preference was to focus the

Change	Rationale
consideration.	development on the existing areas of hardstanding, to make the best use of the previously developed part of the site (i.e. Option 1). However, great crested newts were recorded in four out of the five ponds during surveys undertaken in spring 2016. Whilst the Option 1 layout would ensure the retention of these ponds, the area of hardstanding is within 250m of the ponds and therefore, within the terrestrial habitat of the newts. Due to the above and following consultation with Natural Resources Wales, we are developing an alternative layout, Option 2, which would avoid development within areas considered to be great crested newt habitat.
Further consideration is being given to the need for road improvements associated with the Rhosgoch site. The exact form of the road improvement works is still to be finalised but they are currently envisaged as comprising: • a new entrance/exit to the north-east of the site and minor amendments to the existing access road at the site entrance (e.g. road markings, signage, road surface repairs); • a new roundabout at the A5025; and • potential further improvements to the local road network.	Consultation comments from the public noted that if Rhosgoch is used as a location for Temporary Workers' Accommodation, road improvements should also be delivered.

Justification for preferred site for Temporary Workers' Accommodation and consideration of alternatives

14.58 A four stage site identification, screening and assessment process was undertaken to identify potentially suitable sites for the Temporary Workers' Accommodation. Details of this process are provided in the Associated Development Siting Report and summarised in chapter 9 of this document.

14.59 In addition, Horizon considered sites in Llangefni for Temporary Workers' Accommodation, following feedback received from consultation. As Llangefni does not fall within Horizon's Broad Area of Search, these sites are considered separately from the four stage assessment process.

14.60 There are no current planning policies which consider the provision of large scale Temporary Workers' Accommodation. However, the IACC have prepared the Wylfa

Newydd SPG (July 2014) to provide guidance on the way in which they will determine development for which they are the decision makers, or guide their approach to local impact for development which forms part of the DCO application.

14.61 Policy GP10 (Construction Worker Accommodation and Anglesey's Housing Market) of the SPG advises that Temporary Workers' Accommodation should be located in accordance with the settlement hierarchy and spatial strategy in the YMLP, stopped UDP and emerging Anglesey and Gwynedd Joint Local Development Plan (composite version, June 2016) (JLDP), seeking to focus new development in Holyhead, Llangefni and Amlwch with smaller scale growth in local service centres and service villages, with a preference for brownfield land.

14.62 The Rhosgoch site is away from settlement but part of it is brownfield land, the reuse of which draws support in planning policy making this site preferable to the other identified sites. The site is not within any land designated for its environmental value, and is well contained within the surrounding topography which would allow for a large scale development to take place with limited visual intrusion.

14.63 The support for the use of this site at Stage One Pre-Application Consultation, including via a petition received from Amlwch Town Council, provides further weight to this site being shortlisted for inclusion as an option for Temporary Workers' Accommodation and for further assessment of its suitability to provide a proportion of Horizon's workers' accommodation requirements.

14.64 National planning policy has a strong preference in favour of the re-use of land. Paragraph 4.9.1 of Planning Policy Wales (Edition 8, January 2016) states that "previously developed (or brownfield) land should, where possible, be used in preference to greenfield sites." National policy therefore provides strong support for the re-use of the site.

14.65 The site is allocated for employment (B1-B8) use in the extant Ynys Môn Local Plan (1996) and Stopped Unitary Development Plan (UDP) (2005) and as an employment "reserve site" in the emerging JLDP.

14.66 "Reserve sites" are those that specifically have the potential to meet the demand resulting from Wylfa Newydd, as well as the rest of the Anglesey Energy Island Programme. The Energy Island Programme is wide ranging and seeks to maximise employment growth and development opportunities related to nuclear, wind, tidal, biomass and solar and related servicing projects and supply-side opportunities. The draft policy states that the reserve sites will only be released for employment purposes when need has been demonstrated and that there is no other suitable protected employment site to meet the need. "Reserve sites" are therefore, by their nature not preferred employment sites and ones which should only be released for employment use once the other allocated sites have been considered and discounted. There is over 300ha of allocated employment land within Anglesey and Gwynedd, not including the reserve sites. The "reserve sites" are unlikely to be required until the very end or beyond the plan period (up to 2026). This is further the case due to the termination of the Rhiannon offshore wind project. This will likely mean that there is a significantly reduced demand for energy related employment land. The proposed use of the Rhosgoch site as a temporary accommodation campus in connection with a significant energy project is therefore an appropriate use of the land before it could be made available for more traditional employment purposes in the future.

14.67 The provision of Temporary Workers' Accommodation at the Rhosgoch site therefore, accords with the ethos of the emerging policy, which is to provide support for significant energy generation projects on the island.

14.68 The use of Rhosgoch for Temporary Workers' Accommodation is helping to make the best use of land, to support the most significant energy Project in Wales, before it could be made available for employment purposes in the longer term.

14.69 Rhosgoch is considered to be an appropriate site in planning policy terms for Temporary Workers' Accommodation. It is brownfield land, the re-use of which is strongly supported by national policy, benefits from local support and is well contained within the surrounding topography. It also enables the positive use of an allocated employment site prior to it being required for such purposes. Leaving the site in a serviced state would also enable it to be more easily developed as an employment site in the future.

14.70 Full details of alternative sites that were considered are provided within the Associated Development Siting Report.

Options for consultation

Layout

14.71 We would like to understand your views on the preferred proposals for our preferred site at Rhosgoch, including the way in which buildings, landscaping and parking areas are positioned on the site.

14.72 Horizon are still considering the most appropriate layout for buildings within the Rhosgoch site. Two options were previously being considered by Horizon. Option 1 provides for the development to be in the western portion of the site, within the former tank farm area, and Option 2 provides for the development to be within the eastern portion of the site, in the predominantly undeveloped area of the site. For the purposes of this consultation, we have presented one option (Option 3), which represents the latest proposals being discussed with Natural Resources Wales (NRW) and is a hybrid between Option 1 and Option 2, as this is considered to be the most realistic development scenario.

14.73 In responding to consultation, we ask that you respond with your views on the draft proposals represented in this chapter and as shown in the draft Masterplan document, which represents our most up to date thinking.

14.74 The Preliminary Environmental Information (PEI) Report presents an assessment of proposals based on Options 1 and 2 and therefore the effects of Option 3 would be within the parameters presented in this assessment. Please see PEI Report volume D for further details.

14.75 A key driver in the layout of the proposals is the presence of great crested newts. Great crested newts were recorded in four out of the five ponds on site during surveys undertaken in spring 2016. Great crested newts and their habitats are protected by law and Horizon would therefore need to apply for a licence from Natural Resources Wales (NRW) to carry out work that could adversely affect newts or their habitat.

14.76 Horizon is currently involved in discussions with NRW and the IACC to establish how much of the Rhosgoch Temporary Workers' Accommodation site is considered to be

suitable habitat for great crested newts and the best approach to ensuring the maintenance of their favourable conservation status.

14.77 The design and layout of the proposals will be key in retaining and where possible, enhancing important site characteristics (e.g. hedgerows and watercourses), to break down the scale and potential impacts of the parking areas and to reduce the potential impact of the buildings and bus terminal. The position of the buildings and sports facilities would be located sensitively and the design carefully considered to ensure lighting avoids, wherever possible, light spill onto water bodies and hedgerows and other boundary habitats.

14.78 To inform the layout of the site, we have carefully considered existing field boundaries and boundary walls, retaining hedges and positioning of ponds. Land contamination will also be a constraint to carefully consider when confirming the final site layout.

14.79 The temporary accommodation blocks are located to the south of the site. They look to utilise the natural topography of the site and where possible, are located away from the wind turbines. They are spaced about to form a cloister-like arrangement with blocks interspersed with courtyards and ‘pocket-parks’. The hub and welfare buildings are located approximately at the centre of the site, in between the accommodation blocks and vehicle areas. The vehicle areas are located to the north-east of the site, adjacent to the site entrance. This layout is proposed to give most efficient pedestrian access and egress and to separate the vehicle and accommodation areas.

14.80 The option that Horizon is currently considering for the layout of the buildings, sports facilities, bus terminal and parking on-site is shown in figure 14.3; we would welcome your comments on this.

14.81 Horizon has engaged with DCfW to discuss the proposals. The feedback received has been positive regarding the use of the site and suggestions were made regarding the layout of buildings on-site. Further information is provided in the draft Masterplan for Temporary Workers' Accommodation (see question at the end of this chapter).

Figure 14.3 Preferred layout of Rhosgoch Temporary Workers' Accommodation site

Architectural design

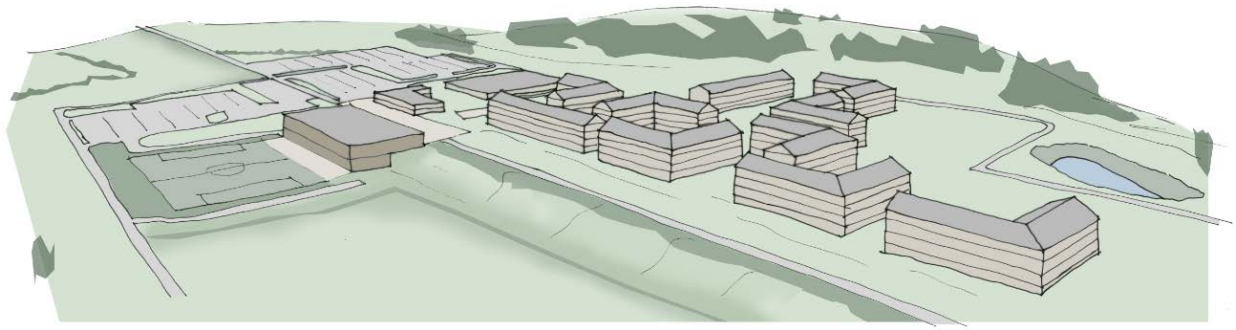
14.82 The architectural design of the proposed buildings on the site is yet to be decided. The draft Masterplan for the Rhosgoch site provides illustrative material that shows our current views on what the buildings may look like, taking into account national and local planning policy, including that in NPS EN-1. This includes a requirement for 'good' design and a recognition that the decision-maker should consider both functionality (including fitness for purposes and sustainability) and aesthetics (including its contribution to the area in which it would be located). The design has evolved in consultation with DCfW and who we will continue to engage with up to the finalisation of the proposals. We would welcome your comments on our current preferred proposals (see question at the end of this chapter).

14.83 The overall architectural strategy for the Associated Development facilities, including the Temporary Workers' Accommodation proposed at Rhosgoch, is driven by the desire to create an unimposing appearance, where the buildings are screened as far as possible, and where visible, they are of an appearance that allows them to harmonise with and complement the surroundings. A restricted natural palette would be adopted for all the buildings on-site, helping to link the buildings visually, and be unimposing with their surroundings. The use of typically Welsh building materials will be chosen and utilised in the building design to complement the character of a rural location. Further details of preferred materials palettes are provided in the draft Masterplans.

14.84 The buildings on the site would be temporary and are intended to be dismantled once they are no longer required. The buildings would therefore be designed with simplicity and efficiency of construction and removal as a priority. The final proposed design will be developed to ensure that it responds to local context, recognising that although temporary in nature, the developments may be *in-situ* for a number of years.

14.85 Buildings would maximise use of sustainable materials (for example, retaining and reusing on-site material during construction certified materials, responsible local sourcing of goods and services).

Figure 14.4 Preferred Architectural Design of Rhosgoch Temporary Workers' Accommodation site



Landscaping and boundary treatments

14.86 The landscaping and boundary treatments provided on the site are also yet to be decided. Our preferred approach to landscaping and boundary treatment is shown in figure 14.4: however, we would welcome your comments on this.

14.87 The aim would be to create well designed buildings, streetscapes and open spaces, responding to the character of the local surroundings and materials by utilising good architecture and landscaping. A key sustainable design objective has been to maximise and enhance existing local landscaping features, such as trees and hedges, and protection of ecological features.

14.88 The site perimeter is to consist of trees and hedges to reduce the visual impact and maintain the visual landscape appearance.

14.89 Landscape proposals include screen planting and native grassland seeding. A key feature is creating buffer zones around watercourses, establishing woodland and shrub areas, and other habitat features.

Figure 14.5 Preferred approach to landscaping and boundary treatments at the Rhosgoch Temporary Workers' Accommodation site

Question – Rhosgoch Temporary Workers' Accommodation

Given the information provided on our Associated Development, do you have any views on:

- **how we can improve the preferred plans, including such issues as the layout of buildings and parking areas;**
- **how we can improve the external appearance of the buildings, landscaping and boundary treatment; and**
- **our proposed legacy for each site.**

Summary of Preliminary Environmental Information

14.90 Our preferred proposals at Rhosgoch are likely to have some effects on the environment during construction, operation and decommissioning of the facility. The principal likely significant adverse and beneficial effects are summarised below and more detail is provided in the main body of the PEI Report (volume D) and in volume B01, which considers Project-wide socio-economic effects.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
Traffic and transport	It is estimated that the number of vehicles travelling to and from the Temporary Workers' Accommodation during construction peak would be 970 vehicles per day (two-way) however this level of traffic would only be present for 1 month and daily flows either side of this period would be lower. Construction traffic would only be present for 6 days per week. During construction of the Temporary Workers' Accommodation, there are likely to be effects on motorised, non-motorised and public transport users travelling along the A5025 (west), A5025 (east) and the A55 Britannia Bridge. This would be a minor to moderate adverse and short term and would be mitigated through the use of a Construction Traffic Management Plan.	The increase in traffic due to the operation of the accommodation facility is not regarded as significant for the A5025 (west) and A5025 (east). The increase in traffic due to the operation of the accommodation facility on the Rhosgoch access road is anticipate to cause a moderate adverse effect. The Temporary Workers' Accommodation would generate the following return vehicle movements per day (excluding those made by residents and buses to the Wylfa Newydd Power Station): • 376 cars; • 78 light van/mini-bus • 46 light goods vehicles; and • eight Heavy Goods Vehicles (HGVs). Based on a typical working day and assuming single vehicle occupancy, this	The nearest existing noise and vibration sensitive receptors are at a minimum of 250m from the proposed demolition areas. It is therefore unlikely that significant adverse effects would occur due to the operation of fixed and mobile machinery on-site. The level of traffic generated on the Rhosgoch access road during the decommissioning phase is predicted to be relatively high when compared with the existing low levels of traffic. Therefore, there is likely to be a moderate or major significant effect as a result of these operations. There may also be a lesser, but still potentially significant effect on receptors close to the A5025, which would also be part of the decommissioning access route. To mitigate the above, a Traffic Management Plan would be implemented.

Topic	Potential effects and mitigation		
	Construction phase	Operational phase	Decommissioning phase
		results in a worst case scenario of approximately 1000 additional vehicle movements per day (i.e. 500 in and 500 out of the accommodation facility). The total increase in traffic on the Rhosgoch access road on journey times and amenity, accidents and safety, and driver stress during operation of the Temporary Workers' Accommodation would be considered to represent an effect of no greater than moderate significance. Mitigation to reduce effects have been embedded in the proposals, including improvements to the Rhosgoch access road and its junction with the A5025 and a Traffic Management Plan and Travel Plan would be implemented.	
Landscape and visual	There could be an adverse moderate reversible effect on the Anglesey-wide SLA in which the site is located. The use of brownfield land and undulating topography would however limit the influence on the landscape designation and the construction would not directly affect the AONB or Mynydd Mechell SLA.	The development would directly affect a small section of the designated Anglesey-wide SLA in which the site is located. Embedded landscape planting features would help integrate the facility, although the introduction of large scale built form within the rural landscape would continue to cause a moderate adverse reversible effect. Effects for walkers on the nearby footpaths	Decommissioning would involve the setup of demolition site compound, mobilisation of demolition plant and traffic movements, demolition and removal of temporary structures and implementation of environmental mitigation works and reinstatement of previous land use. Any effects on landscape character, the SLA and visual amenity would be reversed.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
	There could be minor adverse effects due to small scale earthworks alterations to provide level building working areas and moderate adverse effects on the LCA6 Amlwch and Environs LCA and LANDMAP Visual and Sensory Aspect Area 'Drumlins with windfarms'. The use of brownfield land and undulating topography would however limit the influence on the landscape character. There could also be changes to the views and visual amenity of public footpath users and cyclist on the Copper Trail/National Cycle Route 566. The impact on footpath and cycle route users is considered to result in moderate/minor adverse effects. Local nearby communities of Rhosgoch, Bodewryd and Burwen currently have typically rural views. Views to the development and large scale construction activities would be open or intermittent, partially limited by topographical features and intervening vegetation. Effects would be	along the boundary would continue to be open and direct, resulting in a moderate adverse effect. Walkers on the PRoW network and cyclist's views on the Copper Trail/National Cycle Route 566 would continue to have some intermittent views of the development, although effects would likely be minor adverse. The communities of Rhosgoch and Bodewryd would continue to have nearby views resulting in moderate adverse effects. Effects would be minor adverse for the more distant receptor at Burwen. Travellers on the local roads would experience minor adverse visual effects. A key design intention of the development is the use of topography to help visually locate the buildings within the existing rural landscape, and to integrate the development with landscape features. Landscape proposals include screen planting and native grassland seeding. A key feature is designating buffer zones around watercourses, establishing woodland and shrub areas, and creating	A planting strategy for the reinstatement would be developed and would involve planting native trees and shrub species to reinforce existing hedgerows and create new links with existing hedgerows. A landscape management plan would help to ensure that the proposed landscaping establishes successfully as wells as forming visual screening, landscape pattern, character and biodiversity.

Topic	Potential effects and mitigation		
	Construction phase	Operational phase	Decommissioning phase
	moderate adverse for Rhosgoch and Bodwryd and minor adverse for Burwen. Travellers' views on the nearby local road network would be open or intermittent towards the large scale construction activities which would be a notable detractor in existing rural views. Effects would be moderate adverse. A lighting design would be developed to mitigate any light spill onto water bodies, retained hedgerows and boundary habitats. A landscape management plan would help to ensure that the proposed landscaping establishes successfully as wells as forming visual screening, landscape pattern, character and biodiversity.	buffer zones around habitat features. A landscape management plan would help to ensure that the proposed landscaping establishes successfully as wells as forming visual screening, landscape pattern, character and biodiversity.	
Socio-economics	There are no significant adverse effects anticipated. Potential enhancement opportunities include the implementation of apprenticeships and training programmes which would help to	There are no significant adverse effects anticipated. There would likely be a minor to moderate beneficial effect as the operation would likely lead to local job creation.	There are no significant adverse effects anticipated. There would likely be a minor to moderate beneficial effect as the construction would likely lead to local job creation.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
	increase the likelihood of employment opportunities for locally based residents. There would likely be a minor to moderate beneficial effect as the construction would likely lead to local job creation.		
Welsh Language	The WLIA consider effects on Welsh Language of the Project as a whole, rather than site by site and therefore the effects are reported during the operational phase of the Associated Development sites.	The WLIA also provided as part of this consultation considers the effects of the Project on Welsh Language. It recognises that whilst there would be a general increase in the population of the KSA, this would be greatest in the communities hosting the Temporary Workers' Accommodation, those being the areas of Holyhead, Amlwch, and around the Wylfa Newydd Development Area. The assessment assumes that the majority of non home-based workers moving into the KSA from other British countries or from overseas are non-Welsh speakers. This has the potential to be harmful to the Welsh language's place as part of the social fabric of the communities of the KSA. This is expected at this stage to be adverse, although the assessment also notes that	The WLIA consider effects on Welsh Language of the Project as a whole, rather than site by site and therefore the effects are reported during the operational phase of the Associated Development sites.

Topic	Potential effects and mitigation		
	Construction phase	Operational phase	Decommissioning phase
		there may be beneficial effects as a result of the increased employment opportunities available to local people, which may reduce the number of people leaving the area, or attract Welsh speakers back to the area. The WLIA explains that we are considering measures to reduce these effects, including measures that can be developed to raise awareness amongst non home-based construction workers, and their families and incomers during the operational stage, about the Welsh language and unique Welsh culture and traditions, which form an integral part of the social fabric of communities in the KSA. We are also considering working alongside local language initiative groups to support measures to normalise the use of the Welsh language in the community and measures to integrate newcomers into Welsh-speaking communities. Materials would be developed promoting the benefits of the Welsh language and bilingualism to families moving into the area.	
Public access and	There could be a temporary moderate	Any PRoW which may need to diverted	Traffic related to decommissioning would

Topic	Potential effects and mitigation		
	Construction phase	Operational phase	Decommissioning phase
recreation	adverse effect if the final alignment of the construction site boundary cross Public Rights of Way (PRoW) 44/028/01, 44/028/2 or 11/075/1 as they may need to be diverted. PRoW 11/075/1 would cross the new access road and would therefore introduce a road crossing into a rural off-road footpath. Additionally PRoW 11/037/1 could experience a reduction or loss of amenity owing to the proximity of construction works. There would be a minor to moderate adverse effect on pedestrians, cyclists (including those using the Copper Trail) and equestrians using the Rhosgoch access road whilst the road improvements are being carried out. Mitigation measure embedded in the design of the proposals include providing footpath and cycle path diversions in advance of construction fence erection. Mitigation measures would be put in place to reduce noise, air pollution and visual effects (as detailed in other sections of this table). A traffic	during construction may continue to be diverted temporarily during operation, subject to the final design of the proposals. Additionally, there may be the requirement to temporarily divert the Copper Trail cycle route, to mitigate effects of additional vehicles, including buses, using the local road from the site, this could have an adverse effect on users of the cycle route. The impacts of construction workers living at Rhosgoch is considered in chapter B2. The potential effects on pedestrians, cyclists and horse-riders relating to the transportation of construction workers to the Wylfa Newydd Power Station are including within chapter B2.	have to cross the B5111 in order to access the site, which is part of the Copper Trail. As with construction of the scheme, the PRoWs running through the site may need to be diverted. Additionally, users of PRoWs within the vicinity of the scheme could experience loss or reduction of amenity. Mitigation measures would be put in place to reduce noise, air pollution and visual effects (as detailed in other sections of this table). A traffic management plan would be implemented e.g. including speed limits for HGVs.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
	management plan would be implemented. Bilingual signage regarding the location of PRoW 11/075/1 would be erected to advise that construction traffic would be crossing a PRoW. Clear signage would be put in place to alter cyclists of the construction works.		
Noise and Vibration	Depending on final layout, during construction there would unlikely be significant adverse effects related to the operation of fixed and mobile construction machinery on site. There could be moderate or major adverse effect as a result of the proposed works to improve the Rhosgoch access road on the existing properties in close proximity to the proposed Rhosgoch access road and junction with the A5025. To mitigate the above adverse impacts Horizon would implement a Noise and Vibration Management Plan (as part of an overarching Construction Environmental Management Plan (CEMP)), which would include	There is likely to be a moderate adverse effect as a result of the traffic movements on the Rhosgoch access road. During operation there would be regular use of the car parking areas, bus terminal and goods delivery/waste collection areas albeit this is unlikely to be significant. There could be adverse effects due to increased noise sue to the operation of fixed equipment for heating, ventilations and air conditioning for the temporary accommodation block and other buildings on site albeit this is unlikely to be significant. There could be adverse effects due to increased noise from the entertainment in the amenity building (e.g. television, games and music) albeit this is unlikely to be	Effects upon noise and vibration levels in the area close to the development site are likely to be similar to those generated during the construction phase, with the exception that there will not be any further work required on the Rhosgoch access road. To mitigate the above, best practice control measures were be applied. Horizon would prepare a Noise and Vibration Management Plan (as part of an overarching Construction Environmental Management Plan (CEMP)), which would include measures such as low noise machinery and limiting construction working hours.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
	measures such as low noise machinery and limiting construction working hours.	significant. There could be minor significant adverse effects due to sports activities on the proposed multi-use sports pitch. To mitigate the above, best practice control measures were be applied. This would include managing shift patters for support staff and all deliveries to/exports from the site to avoid or reduce effects during more sensitive periods, install noise barriers, carefully site any externally mounted fixed equipment, ensure all plant and entertainment rooms and buildings have sufficient sound insulation, install noise barriers around the multi-use sports pitch and manage the use of the multi-use sports pitch to avoid sensitive times of the day and night.	
Air Quality	There could be significant adverse effects on residential properties within 300m of the site due to dust caused by construction activities within the site boundary. There could be significant adverse effects on residential properties within 100m of the Rhosgoch access road	The potential effects on air quality at human receptors during the operation of the Rhosgoch Temporary Workers' Accommodation would not be significant.	There is potential for a significant effect at the nearby homes due to dust emissions under certain weather conditions and in the absence of appropriate control. It is anticipated that there would not be any significant effects at human or ecological receptors due to emissions from road traffic or plant and machinery during the

Topic	Potential effects and mitigation		
	Construction phase	Operational phase	Decommissioning phase
	due to dust caused by improvement works to the Rhosgoch access road. There would not be a significant effect at human or ecological receptors from road traffic emissions on the Rhosgoch access road and wider road network during the construction of the Rhosgoch Temporary Workers' Accommodation. The potential effects on air quality at human and ecological receptors from plant and machinery would also not be significant. Horizon would take measures to control and mitigate dust emissions during construction. This would include best practice control measures such as dust monitoring, surveys and visual inspections of the site and works, comprehensive measures and working methods to prevent and reduce dust emissions at their source. These measures would be incorporated in a CEMP. It is not anticipated that any significant effects would remain after application of the mitigation measures.		decommissioning phase. Horizon would take measures to control and mitigate dust emissions during decommissioning. This would include best practice control measures such as dust monitoring, surveys and visual inspections of the site and works, comprehensive measures and working methods to prevent and reduce dust emissions at their source These measures would be incorporated in a CEMP. It is not anticipated that any significant effects would remain after application of the mitigation measures.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
Soils and Geology	During construction soils may be damaged or degraded due to compaction, smearing during handling resulting in degradation of soil structure and increased soil erosion, and mixing with soils of different grade or other materials. If Option 1 progresses, given the soils in the western portion of the site (in the former tank area) are likely either absent or low value at best, the effects of the development would be minor adverse without mitigation being implemented. If Option 2 progresses, because the soils in the eastern portion of the site have been identified as high value, the effects of the development would be major adverse without mitigation being implemented. Regardless of whether Option 1 or Option 2 is progressed, the results of the ground investigations would be used to inform a remediation strategy to remove any unacceptable risks, should they be identified. This would	Effects during operation are not considered significant. It should be noted that ground investigations and associated contamination risk assessments are yet to be completed, and therefore this assessment is based upon information currently available. An EMP would be implemented. Pollution prevention strategies would form part of the plan (including good working practices, measures to protect the environment such as preventing leaks and spills of oils and fuels and including methods for dealing with any leaks of spills that might occur).	This phases would require replacement of topsoil to a similar grade at present. Works related to this have the potential to cause a major adverse effect upon the good quality topsoil used and a minor adverse effect upon any poor quality topsoil used. Accidental pollution incidents during decommissioning may also result in moderate adverse effects upon the soils.

Topic	Potential effects and mitigation		
	Construction phase	Operational phase	Decommissioning phase
	generally have a beneficial effect, as the remediation would 'clean up' contaminated areas. Option 1 involves re-developing the former tank farm area (where contamination has been encountered and is anticipated), and therefore this Option would have the most beneficial effect. The potential exists for areas of unexpected contamination to be exposed during the construction works, which may pose a risk to receptors if not managed appropriately. The primary effect would be upon site workers who may be directly exposed to contamination resulting in major adverse effects. Adjacent land users could also be impacted, although any effects are likely to be reduced to moderate adverse given the distance to off-site receptors. These effects are most likely for Option 1, where there is a much greater chance of encountering contamination. The disturbance of existing contamination or accidental pollution		

Topic	Potential effects and mitigation		
	Construction phase	Operational phase	Decommissioning phase
	incidents during construction at the site may also result in effects on the identified receptors, ranging from moderate adverse upon the soils to minor adverse upon the low value Secondary B aquifer within the bedrock geology. The disturbance of existing contamination is most likely for Option 1, whereas the likelihood of accidental pollution incidents is considered the same for Option 1 and Option 2. To mitigate the above, measures would be embedded in the design and proposed approach, for example, top soil would be stripped prior to construction, and investigations and remediation undertaken when required). Horizon would also implement a Soil Management Strategy and Soil Management Plan which set out the best practice for the management of soils Horizon would put a plan in place for dealing with any unexpected contamination encountered on site. A CEMP would be implemented.		

Topic	Potential effects and mitigation		
	Construction phase	Operational phase	Decommissioning phase
	Pollution prevention strategies would form part of the plan (including good working practices, measures to protect the environment such as preventing leaks and spills of oils and fuels and including methods for dealing with any leaks of spills that might occur). A Materials Management Plan would be implemented to set a clear framework for the management of excavated materials on-site so that they could be reused. There would likely be a beneficial long term effect as the remediation of contamination would remove potential pollution linkages to a number of receptors (e.g. site surface waters and the secondary B aquifer in bedrock).		
Groundwater and surface water	A minor to moderate adverse effect could occur due to degradation of surface and groundwater quality due to leaks, spillages or fuels of other polluting materials and from septic tanks used for construction. There could be a major adverse effect due to high sediment loading in runoff	Moderate adverse effects could occur as the operation of a package sewage treatment plant to treat foul water could result in uncontrolled leaks or spills of untreated effluent potentially polluting the groundwater and surface water environments. The presence of new impermeable	The potential effects on the water environment during these works would be very similar to those during construction. The decommissioning of the site would include removal of all buildings and return of the site to its current form. The decommissioning would follow the same processes outlined for construction to

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
	affecting surface water quality in the Afon Wygyr, its tributaries and on-site drains due to the construction and crushing of concrete. There could be a minor adverse effect on ground water and moderate adverse effect on surface water due to compaction of surface soils reducing groundwater recharge and increasing surface runoff, potentially increasing flood risk. There could be a moderate or major adverse effect as existing soil or water contamination at the site could potentially be mobilised to groundwater or surface water during construction activities. There could be a minor adverse effect if the construction of storm water drainage outfalls on the Afon Wygyr or its tributaries affect watercourse morphology. Horizon would embed mitigation within the design of the proposals. For example, include the imposition of 5m to 15m buffer zones around surface	hardstanding areas could result in local increases to surface water runoff rates and increased flood risk. This could be of moderate significance. The presence of new impermeable hardstanding areas could result in a reduction in the groundwater recharge rate. This could be of minor significance. Spillages and leaks of fuels and oils associated with the car parking and any fuel tanks associated with emergency generators could affect groundwater and surface water quality. This could be of minor significance. Any drainage outfall structures associated with the site or associated road improvements could result in localised loss of natural river bank and bed and the outfall could alter the local flow regime and effect watercourse bed morphology. This could be of minor significance. Horizon would embed mitigation within the design of the proposals as described for the construction phase. An EMP would be implemented which would include pollution prevention	reduce the effects of the works to remove structures within the Afon Wygyr and its tributaries and the surrounding area. Additional work would be undertaken to ensure that the watercourse is reinstated taking into account the natural processes and changes in the fluvial geomorphology since the outfall structure was implemented.

Topic	Potential effects and mitigation		
	Construction phase	Operational phase	Decommissioning phase
	water courses to protect them from the effects of construction, use sustainable urban drainage systems and if necessary, an attenuation pond to management flood risk. Oil interceptors would be incorporated in drainage design to protect water quality. Power supply would be via off-site electrical generation to avoid the need for on-site fuel storage for generators. There would be no abstraction for water supply and pre-fabricated buildings would be used to avoid the need for piling or deep excavation that could require dewatering. The location of outfalls would consider the sensitivity of the watercourse being discharged into. The outfall would be directed away from the banks of a river to mitigate any potential risk of erosion. Good practice measures would be implemented following guidance such as Pollution Prevention Guidelines. A CEMP would be implemented which would include pollution prevention principles.	principles and procedures for checking and reporting compliance and adapting the plan if significant pollution is identified. If connection to the main sewer is not possible a package sewage treatment plant would also be included in the design. This would ensure that no untreated foul water was discharged into the water environment.	

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
Terrestrial and freshwater ecology	Changes in air quality, traffic volumes and visual stimuli are unlikely to result in a significant effect on the ecological receptors within the site and surrounding area. There is the potential for light to affect commuting or foraging bats but this is not considered to be significant. Significant effects on great crested newt may occur as a result of habitat loss, fragmentation, modification or degradation. Activities associated with the clearance of the site ahead of construction may result in mortality and injury, habitat loss, whilst developments close to the aquatic features may risk adverse effects upon breeding habitats. If habitat loss or degradation could not be avoided through the use of appropriate buffer zones and demarcated environmentally sensitive areas, then a European Protected Species licence with respect to great crested newt, granted by NRW, would be required. The licence application would need to ensure that a robust mitigation	Operational activities are not predicted to have a significant effect on ecological receptors following embedded and additional mitigation measures.	Likely pathways for effects on ecological receptors during decommissioning are predicted to be similar to those experienced during the construction phase of the development. However, the habitats within the site would not support the same ecological receptors as they would either have been translocated out from the area, or would have been passively displaced. The effects of decommissioning are therefore, only predicted to affect ecological receptors on the boundary of the site and would be short-term and not significant. This is based on the likelihood that embedded and additional mitigation measures similar to those described for construction measures would.

Topic	Potential effects and mitigation		
	Construction phase	Operational phase	Decommissioning phase
	strategy was secured which would maintain the favourable conservation status of great crested newt within the local area, and thus avoid significant effects. Mortality and injury effects may occur in the absence of appropriate mitigation measures, should habitats be cleared within the site. During construction activities, there would be plant machinery temporarily imported onto the site. There is therefore, the potential for plant to transport soil containing viable propagules of invasive non-native plant species. There is also a risk of transferal from pedestrian movement and worker vehicles. A method statement would be developed and implemented, setting out the procedures of the removal and disposal of invasive species to prevent their spread. Mitigation embedded in the design has been taken into consideration in determining the potential effects on each receptor. Embedded mitigation		

Topic	Potential effects and mitigation		
	Construction phase	Operational phase	Decommissioning phase
	includes; the retention and protection of all water features within the site (including buffer zones), retention of boundary features and the design and construction of appropriate foul and surface water drainage systems to collect and, where appropriate, attenuate the drainage prior to discharge. The following additional measures are considered to avoid and reduce the effects; the adherence to current best practice guidelines on pollution prevention and sedimentation, timing of construction phases to avoid sensitive breeding periods, the design of lighting to avoid hedgerows and watercourses and standard measures to restrict the length of noisy operations and the use of temporary noise barriers if required. Furthermore, measures would be put in place to ensure appropriate supervision by an Ecological Clerk of Works through construction, provision of a method statement setting out the procedures for avoiding the spread of		

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
	invasive species and post construction planting within the design that links to retained features, together with the enhancement of retained hedgerows.		
Archaeology and cultural heritage	Noise and visual intrusion from construction works and construction traffic movement associated with the access road would temporarily affect the setting of Seion Methodist Chapel, Reheboth Calvinist Chapel, the Werthyr Standing Stone and late prehistoric earthworks on Werthyr Hill. Noise from construction works would temporarily affect the setting of Gwredog 19th century house and Bodewyrd Standing Stone. These assets would not be visible to or from the Rhosgoch Temporary Workers' Accommodation. Construction works have the potential to remove any unknown archaeological remains that may be present. The area within the development boundary comprises a disused fuel-storage facility. Where ground breaking works have taken	As topography and mature trees would screen heritage assets from the development, no significant effects are predicted on archaeology and cultural heritage during operation of the Rhosgoch Temporary Workers' Accommodation or access road.	Noise and visual intrusion from decommissioning works and decommissioning traffic movement would temporarily affect the setting of Seion Methodist Chapel, Reheboth Calvinist Chapel, Werthyr Standing Stone and the late prehistoric earthworks on Werthyr Hill. Site selection and layout options have included consideration of archaeological and cultural heritage sensitivities in order to reduce or avoid effects. To mitigate possible effects resulting from decommissioning Horizon would implement construction best practice measures designed to reduce noise and the removal of unknown archaeological remains that may be present would be mitigated by archaeological recording in advance of construction.

Topic	Potential effects and mitigation		
	Construction phase	Operational phase	Decommissioning phase
	place as a result of the construction of this facility, archaeological remains are likely to have been removed. Areas within the development boundary not previously subject to ground breaking works have the potential for unknown archaeological remains to be present. Site selection and layout options have included consideration of archaeological and cultural heritage sensitivities in order to reduce or avoid effects. To mitigate possible effects resulting from construction Horizon would implement construction best practice measures designed to reduce noise and the removal of unknown archaeological remains that may be present would be mitigated by archaeological recording in advance of construction.		

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15 Kingsland and Cae Glas, Holyhead

List of Figures

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15 Kingsland and Cae Glas, Holyhead

15.1 This chapter provides an overview of the preferred proposals for Temporary Workers' Accommodation at the Kingsland and Cae Glas sites in Holyhead. The sites form part of the wider Land and Lakes development[1], which was granted planning permission in April 2016 (outline permission). The outline permission permits temporary use of the Kingsland and Cae Glas sites for construction workers' accommodation in connection with the Project.

15.2 This chapter describes the sites and explains our preferred proposals for them. However, on the basis that outline permission has already been granted, there is no opportunity for consultation to influence the proposals at this stage. It is, however, noted that the detailed design of the proposals would be subject to reserved matters applications (see further details below) which would be subject to consultation as appropriate in due course. Discussions are ongoing between Horizon and the developer of Kingsland and Cae Glas on how the development would be delivered, including who would apply for consent for the reserved matters application and who builds the development. Horizon would, however, take an active role in ensuring that the detail of Phase 1 of the outline permission, which includes the Temporary Workers' Accommodation, is consented and developed to meet our needs.

15.3 Kingsland and Cae Glas are part of Horizon's preferred strategy for the provision of Temporary Workers' Accommodation, together with the preferred sites at Rhosgoch, on-site accommodation and permanent housing (initially used as Temporary Construction Workers' Accommodation) at Madyn Farm.

15.4 In addition, we are proposing an alternative site at Amlwch (sites to the east and west of the B5111, 'Amlwch Sites A and B', see chapter 16). Although feedback from our January Project Update consultation suggested that this option would not be preferred by the local community, it is a sustainable site, close to settlement, which is preferred by the Isle of Anglesey County Council's (IACC) New Nuclear Build at Wylfa: Supplementary Planning Guidance 2014 (Wylfa SPG). We are therefore, continuing to consult on more detailed proposals for Amlwch Sites A and B until we are at a stage when we can confidently select our preferred options, with the benefit of full consultation responses and environmental information.

15.5 The requirement for Temporary Workers' Accommodation is identified within Horizon's Construction Worker Accommodation Strategy, which is also published as part of Horizon's Stage Two Pre-Application Consultation and summarised in chapter 9 of this document.

15.6 Significant work has been carried out to determine the most appropriate way of accommodating the construction workforce that will be resident on Anglesey during the construction of the Wylfa Newydd Power Station. At its peak, it is anticipated that the workforce will grow to 10,720 construction workers, consisting of a construction workforce of between 8,000 and 10,000 workers, facilities management staff and operational staff. Up to 5,700 of these will need to be accommodated in purpose-built, temporary accommodation, taking into account construction requirements, the number of bedspaces

[1] Outline planning permission granted to Land and Lakes (Anglesey) Ltd for leisure-related development at three sites (Penrhos, Kingsland and Cae Glas) on 19 April 2016 under application ref 46C427K/TR/EIA/ECON.

that are likely to be available in tourist accommodation, private rental, empty homes and those workers who will be living at home, and to allow flexibility to deal with uncertainty. Further details are provided in chapter 9 of this document.

Sites and key characteristics

15.7 Horizon has considered a number of sites for Temporary Workers' Accommodation and has developed a preferred strategy, having regard to a range of factors, including where workers are anticipated to be travelling from, the availability of existing consents, planning and environmental constraints at the shortlisted sites and community and Welsh language impacts, as well responses received during Horizon's Stage One Pre-Application Consultation and the January Project Update consultation.

15.8 The Kingsland site comprises 18.5 hectares of land located to the south of the A55 between Holyhead and Treaddur Bay. The site adjoins the Holyhead Leisure Centre and Sports Stadium and is bounded by Mill Road along part of its northern boundary. The east of the site abuts the B4545, and Holyhead Golf Club is located to the south with undulating, managed grassland interspersed with areas of rough heath and conifer tree groups. Most of the site to the east of the public footpath comprises improved pasture and some agricultural features, such as hedgerows and stone wall field boundaries are present. The site gently slopes down to its northern corner and this area has a wetland character with marsh characteristics. To the west of the site, beyond the public footpath, the land is characterised by coarse heath and grassland with rocky outcrops. Heathland also dominates the land to the north, west and south-west of the site. The western part of the site is intersected by a public right of way leading to Lôn Isallt, which also serves as a vehicular access to a number of residential properties.

15.9 The Cae Glas site covers an area of 109 hectares and comprises a mixture of afforested and agricultural land, mixed scrub and woodland and is bounded by the A55 Expressway and railway line to the north and the inland sea (part of the Beddmanarch-Cymyran Site of Special Scientific Interest (SSSI)) to the east. A private vehicular access from the A5 passing over the railway and A55 bisects the site and leads to Lôn Towyn Capel adjacent to Trearddur Bay. To the south-east of the private access there is a former landfill site which was used to deposit waste materials in connection with the former aluminium smelting processes at Anglesey Aluminium. Lôn Trefignath runs along the western boundary of the site and the north-east corner of the site contains the Trefignath Burial Chamber, which is a Scheduled Ancient Monument.

15.10 The sites are both located within the Anglesey Area of Outstanding Natural Beauty (AONB) and the Holy Island Special Area of Conservation (SAC). Part of the Cae Glas site is within an area designated as a green wedge. Cae Glas is located in an area that is regarded as undeveloped coast and is also adjacent to Beddmanarch-Cymyran SSSI. The Kingsland site extends into a tidal flood risk area as defined on the Welsh Government's Flood Risk Development Advice Maps.

15.11 Holy Island Coast SSSI is located approximately 900m to the south-west of Kingsland and 1.8km to the west of Cae Glas. The Trefignath Burial Chamber, which is located within the Cae Glas site is a Scheduled Ancient Monument (SAM).

15.12 An area in the north-east of the Cae Glas site, adjacent to the A55 and the railway line, was used as a waste disposal site (Cae Glas Landfill) and part of the site is also an old infilled quarry.

15.13 The nearest settlement to the Kingsland site is Holyhead to the north and the closest residential properties are those along Kingsland Road and Mill Road to the north of the Leisure Centre site.

15.14 The village of Trearddur Bay is located to the south of the Cae Glas site and the nearest residential properties are located on Trearddur Road, adjacent to the south-western boundary of the site and Hunters Chase immediately to the west of the site.

15.15 The location of the proposed Kingsland and Cae Glas Temporary Workers' Accommodation sites are shown in figure 15.1.

Figure 15.1 Preferred Locations of proposed workers' accommodation at Kingsland and Cae Glas sites

The outline permission

15.16 The two sites, together with a third site at Penrhos (known collectively as "Land and Lakes") benefit from outline planning permission for leisure-related development granted by the IACC on 19 April 2016. The Penrhos site would-provide for a leisure village of up to 500 lodges and cottages and associated facilities. Cae Glas would provide Temporary Workers' Accommodation in the first phase, and then an extension to the leisure village afterwards, together with replacement open space, replacement sports facilities and ecological provision. Kingsland would provide Temporary Workers' Accommodation which would then convert to up to 360 residential dwellings.

15.17 The planning application for the outline permission was made in hybrid form, i.e. a combined outline and full planning application. In respect of the Kingsland and Cae Glas sites, planning permission was granted in outline with all matters reserved except for means of access. This means that details relating to the appearance, landscaping, layout and scale of the proposals would be submitted to and approved by the IACC at a future date. Elements of the proposals at the Penrhos site were approved in full. Penrhos does not form part of Horizon's proposals and would be taken forward independently by the promoter of the Land and Lakes scheme.

15.18 Key to the outline permission is that it requires the first use of both Kingsland and Cae Glas to be Temporary Workers' Accommodation to support the Project. If the two sites are not used in the first instance for Temporary Workers' Accommodation then neither legacy use (i.e. extension to the leisure village at Cae Glas and the residential development at Kingsland) would be permitted to take place.

15.19 Horizon's proposals are that the Kingsland and Cae Glas sites together would provide 3,500 bedspaces for Temporary Workers' Accommodation, this being the maximum number permitted by the outline permission.

Description of the proposals

15.20 Both sites benefit from outline permission for our preferred use, as described above. As such, the principle of the development, including the mix of uses between the two sites, and acceptability of the environmental effects, is already established. The outline permission sets out a number of conditions and constraints (known as parameters) within which the proposals must be developed, including relating to height, scale and location of the buildings and restrictions on the maximum number of leisure and residential units and bedspaces to be occupied as workers' accommodation. The conditions also require environmental enhancement to take place and deliver significant community benefits. Horizon is currently carrying out an exercise to understand whether its detailed requirements for workers' accommodation can be accommodated within the parameters set by the outline permission; if so, it would then apply for a reserved matters application which allows the IACC to determine the phasing of the development together with the detail of the location of all associated facilities, services, roads, landscaping and any other associated elements. Each reserved matters approval would be accompanied by a Design Guide demonstrating how the development complies with Exemplar Development requirements (as required by the Section 106 legal agreement signed in relation to the outline permission).

15.21 Our preferred proposals at the Kingsland site would comprise up to 360 new houses (to a maximum height of 10m) which would be initially sub-divided to provide Temporary Workers' Accommodation.

15.22 Initially, the properties at Kingsland would not have a kitchen, and occupiers would be encouraged to use the eating facilities provided at Cae Glas, which would also accommodate the administration buildings - the "Central hub" (see below). Access to the Kingsland site would be from the B4545.

15.23 Our preferred proposals at the Cae Glas site are anticipated at this stage to comprise:

- up to 315 lodges which would initially be sub-divided to provide Temporary Workers' Accommodation;
- a central hub building providing reception and canteen facilities;
- leisure facilities, including potentially a new grass football pitch and cricket pitch; and
- a Combined Heat and Power Centre, subject to detailed energy assessment.

15.24 Access to the Cae Glas site would be via Parc Cybi. Lôn Trefignath would be widened and a 3.5 metre shared footway and cycleway provided for around 70 metres distance from the existing roundabout. Mitigation and enhancement measures will include significant new areas of advanced planting for the Kingsland and Cae Glas sites.

15.25 The owner of the sites has entered into a legal agreement pursuant to section 106 of the Town and Country Planning Act 1990 (S106 Agreement) with the IACC to secure site-specific mitigation in relation to the development. This includes various measures to seek to make the development acceptable in planning terms and secure mitigation, including those relating to:

- Welsh language – a contribution, to be paid in yearly instalments to secure mitigation as defined by the Welsh Language Impact Assessment, including the funding of a Welsh Language Tutor and a Welsh Language Officer;
- health – contributions determined as necessary to mitigate the impact on health facilities during occupation of the development by nuclear workers, including an annual payment towards the increase in ongoing costs of meeting additional demand on medical services, such as GP and dentist services, a one-off capital payment and a contingency sum;
- tourism – contributions to mitigate any adverse impact on Anglesey's tourism industry during occupation by nuclear workers;
- SSSI management scheme – a scheme to be submitted to ensure that any impact on the SSSI is managed, monitored and mitigated to include details of contaminated land and the potential for leachate into the SSSI from the works; and
- highway improvements – measures to ensure that the highways impact of the use of the site by nuclear workers is assessed and mitigated (see below).

15.26 The S106 Agreement includes an obligation requiring the owner of the sites to provide the IACC with a Highways Scope and Methodology to include full details of the forecast trip

generation and mitigation of the impact of the Temporary Workers' Accommodation on the trunk road network. This is described further below.

15.27 With regard to local planning policy, development at Kingsland and Cae Glas represents a departure from the development plan. However, the IACC, when granting planning permission, has the proposed use of the sites against planning policy and took into account other material considerations and determined that the provision of Temporary Workers' Accommodation, together with the proposed legacy uses, was appropriate.

15.28 The IACC considered[2] that the need for the development was an important consideration in determining the planning application and that Temporary Workers' Accommodation is required to deliver a Nationally Important Infrastructure Project supported by the UK and Welsh Governments. An important element of the proposals was also that the Temporary Workers' Accommodation at Kingsland and Cae Glas would need to be in place in order for either of the legacy uses to be capable of implementation.

15.29 Although the outline permission also allows for a park and ride facility for up to 700 cars, a hotel and a lakeside hub, this is not currently part of our preferred proposals for Temporary Workers' Accommodation and are not required to be delivered as part of our proposed use. Some of these facilities may be taken forward by others as part of the legacy use of the site.

Response to previous consultation

15.30 The Stage One Pre-Application Consultation in 2014 set out the work to be undertaken by Horizon around the identification of accommodation for construction workers who do not already live locally. This included defining our draft principles for a Worker Accommodation Strategy to inform the identification of potential locations, in broad terms, for the provision of Temporary Workers' Accommodation and other types of Associated Development.

15.31 The January Project Update consultation in 2016 set out the Construction Worker Accommodation Strategy, within which we recognised that our workers would need to make use of a range of different types of accommodation, including specially provided Temporary Workers' Accommodation on a number of identified sites, namely the Wylfa Newydd Development Area (the on-site Temporary Workers' Accommodation), Rhosgoch, Kingsland and Cae Glas (Holyhead) and Madyn Farm, Amlwch.

15.32 The IACC expressed direct support for the use of Kingsland and Cae Glas as Temporary Workers' Accommodation in their response to the January Project Update consultation. They noted that, given that the planning effects of the Land and Lakes scheme had already been assessed, Horizon should seek to locate as many workers on this site as possible. This is the case and our preferred proposals include 3,500 bedspaces at Kingsland and Cae Glas, however, this does not provide enough bedspaces by itself and therefore further sites for Temporary Workers' Accommodation are still required.

15.33 The majority of comments expressed at our previous consultations supported the principle of accommodating temporary workers on the Kingsland and Cae Glas sites. There were some objections raised to the principle of the proposals, although it is noted that these comments were also raised in relation to the outline planning application, and have

[2] In reports to the Head of Planning Service and the IACC Planning Committee dated 2 October 2013 and 6 November 2013.

therefore been considered by the IACC and weighed in the balance when they decided to grant planning permission.

15.34 The detailed design of the proposals would be developed in accordance with the parameters of the outline permission that has already been granted and there would be an opportunity for comments to be made to the reserved matters submissions.

Justification for preferred sites for Temporary Workers' Accommodation and consideration of alternatives

15.35 A four stage site identification, screening and assessment process was undertaken to identify potentially suitable sites for the Temporary Workers' Accommodation. Details of this process are provided in the Report on Horizon's Approach for Siting Associated Development to Support Construction of Wylfa Newydd ("the Associated Development Siting Report") and summarised in chapter 9 of this document.

15.36 Justification for this preferred site is provided in the Associated Development Siting Report and is summarised below.

15.37 The emerging Anglesey and Gwynedd Joint Local Development Plan (consolidated draft, June 2016) (the JLDP) sets out a spatial strategy in Policy TAI3 for the location of Temporary Workers' Accommodation in connection with the Wylfa Newydd Project. In addition, the Wylfa SPG sets out the IACCs preferred approach to the location of each Associated Development, which reflects the spatial strategy in Policy TAI3 of the JLDP. This spatial approach is broadly to first consider sites closest to settlements.

15.38 Horizon have followed this approach to site selection and sites closer to centres were selected as preferred sites to accommodate Temporary Workers' Accommodation unless material considerations indicate that it is inappropriate to do so. The location of the sites adjacent to Holyhead settlement means that it would be preferred by the SPG to sites further from settlement.

15.39 The Cae Glas and Kingsland sites also benefit from the outline permission for Temporary Workers' Accommodation, which weighs strongly in their favour, when compared to other sites.

15.40 Both sites would create a positive legacy once construction at the Power Station Site had finished in the form of an extension to the leisure village at Cae Glas and permanent residential development at Kingsland.

15.41 The January Project Update consultation that took place in January 2016 identified that up to 4,000 workers could be accommodated at the proposed "Land and Lakes" development at Kingsland and Cae Glas, Holyhead, and that this development already had planning permission subject to agreeing a section 106 agreement. The outline permission has subsequently been granted which has limited the provision of accommodation to 3,500 bedspaces. The Kingsland and Cae Glas sites therefore remain a preferred option for delivering up to 3,500 bedspaces as Temporary Workers' Accommodation within the Phase 1 development approved on both sites.

Further details of the outline permission

15.42 Given the stage that the proposals have reached on this site, as explained above, there is no opportunity for consultation to influence the preferred proposals. The outline permission sets a series of constraints with which the detailed design must comply. The Land and Lakes carried out pre-application consultation prior to submission of the application and therefore local residents and stakeholders had the opportunity to comment on and shape the proposals before the formal planning application was submitted to the IACC.

15.43 The series of drawings below provides further details of the consented scheme for both sites, including indicative masterplans that illustrate one way in which the development could come forward, within the approved parameters.

Layout

15.44 The indicative masterplan that shows how buildings may be laid out on the two sites (subject to further approval of details) is shown for information in figures 15.2a and 15.2b.

Figure 15.2a Approved Indicative Masterplan for Kingsland Temporary Workers' Accommodation site

Figure 15.2b Approved Indicative Masterplan for Cae Glas Temporary Workers' Accommodation site

Architectural design

15.45 The architectural design of the proposed buildings on the sites is yet to be decided. However, the design of the proposals would demonstrate Horizon's commitment to high quality design thereby satisfying the criteria for good design for energy infrastructure required by Overarching National Policy Statement for Energy (NPS EN-1). Horizon's aim is to create a well-connected sustainable community with well-designed buildings, streetscapes, and public areas responding to the character and identity of the local surroundings and materials by utilising good architecture and landscaping.

15.46 The reserved matters approvals will require the IACC to determine the phasing of the development together with detail of the location of all associated facilities, services, roads, landscaping and any other associated elements. Each reserved matters approval would be accompanied by a Design Guide demonstrating how the development complies with Exemplar Development requirements.

15.47 Horizon intends to continue to work with the promoter of the Land and Lakes scheme to develop the detailed design of the buildings, within the parameters established by the outline permission.

15.48 The Design and Access Statements submitted with the outline permission include details of what the proposed buildings could look like. Examples of visualisations from those statements are provided in figures 15.3a and 15.3b below for information. Further work is required to understand the implications of Horizon's detailed requirements on the design of the buildings.

Figure 15.3a Illustrative view of Kingsland Temporary Workers' Accommodation site

Figure 15.3b Illustrative view of Cae Glas Temporary Workers' Accommodation site

Landscaping and boundary treatments

15.49 The landscaping and boundary treatments to be provided on the sites are also yet to be decided. As above, Horizon will continue to work with the promoter of the Land and Lakes scheme to develop the landscaping proposals, within the parameters established by the outline permission. These would be subject to a reserved matters application in due course and would demonstrate how the development complies with Exemplar Development requirements.

15.50 Examples of the advance planting proposals were approved as part of the outline permission.

Summary of Preliminary Environmental Information

15.51 In respect of the Kingsland and Cae Glas sites, the approved scheme is likely to have some effects on the environment during construction and operation of the facility. The principal effects are summarised below and more detail is provided within the Environmental Impact Assessment[3] accompanying the outline permission.

15.52 Both Kingsland and Cae Glas are considered as 'committed schemes' for the purposes of the Preliminary Environmental Information (PEI) Report accompanying this Stage Two Pre-Application Consultation. They are therefore, considered in the cumulative effects of the Project (PEI volume I), but are not reported individually.

15.53 Given that the planning permission includes Temporary Workers' Accommodation for up to a maximum of 3,500 workers, and that these workers would access the sites on a daily basis, including night shifts, the S106 Agreement includes an obligation requiring the owner of the sites to provide the IACC with a Highways Scope and Methodology for approval prior to commencement of construction of Cae Glas Phase 1 and/or Kingsland Phase 1, whichever is the earlier. This would include full details of the forecast trip generation and mitigation of the impact of the Temporary Workers' Accommodation on the trunk road network. The obligation requires the owner to conduct a Highways Assessment for approval by the IACC in accordance with the approved Highways Scope and Methodology and then to implement and adhere to the provisions contained within the approved Highways Assessment. In this regard, there can be confidence that there is appropriate provision for the highways impact of the proposal to be both understood and mitigated.

15.54 The Traffic and Transport Technical Note, which forms part of this consultation and is available on our website, includes an assumption of the number of buses currently anticipated to be associated with the movement of workers from the Temporary Workers' Accommodation to the Power Station Site. The assessment for Kingsland and Cae Glas has been undertaken on the basis of up to 3,000 workers accommodated between both sites, because the modelling work was undertaken before the final number of bedspaces on these sites was known. The changes in worker numbers are relatively modest for each geographical area and, given that there would be around 50 workers per bus, the change in the numbers of buses is relatively small at each location. Similarly, whilst there would also be changes in the numbers of workers travelling to their permanent home at weekends, this only occurs every other weekend and only for a limited period of time per

[3] As set out in the Land and Lakes EIA at Chapter 21: Cumulative Impacts and Chapter 22: Summary of Mitigation and Residual Effects.

week i.e. on Thursday evenings in one direction (i.e. leaving the Wylfa Newydd Development Area) and on Sunday evenings returning in the opposite direction. For the reasons described above, it is considered that the traffic modelling to date is sufficiently robust to understand where the most significant increases in traffic are likely to occur. Further details are provided in the Traffic and Transport Technical Note.

15.55 The Traffic and Transport Technical Note states that there would be a maximum of 60 daily return bus movements (e.g. 60 in and 60 out) to the Power Station Site. This is based on three staggered morning shifts (39 return trips) and three staggered night shifts (21 return trips), and a capacity of 54 workers per bus. Further work is ongoing to determine the detailed proposals to transport workers and this would inform the Transport Assessment which would accompany the DCO application.

15.56 Taking into account the shift patterns set out in chapter 4 of this document, this would mean a maximum of 39 movements from Kingsland and Cae Glas to the Power Station Site between 07.00 and 08.00 and 39 movements back to the accommodation campus between 18:00 and 19:00. There would be a further 21 movements, associated with the night shift travelling from Kingsland and Cae Glas towards the Power Station Site between 16:30 and 17:30 and 21 movements back between 03:30 and 04:30. This assumes approximately 30 minutes between the end of the shift and arriving at the accommodation campus. Further information on our preferred bus routes is provided in chapter 10 of this document.

15.57 On the basis that 3,500 bedspaces are now proposed, bus movements would be proportionally more and would therefore be anticipated to be in the region of 70 daily return bus movements. Further information will be provided in the Transport Assessment which would accompany the DCO application.

15.58 During construction, there would potential be residual effects such as the generation of noise, dust and visual changes, particularly in relation to construction traffic. To reduce adverse effects on nearby sensitive receptors such as local residents, a Construction Environmental Management Plan (CEMP) will be submitted to and approved by the IACC. This will outline how the effects of construction can be managed by following good practice and using environmental controls that are routinely and successfully applied to similar developments. The submission of a Preliminary and Detailed CEMP is required by condition 32 of the outline permission.

15.59 The most significant adverse effects are associated with changes to landscape character and views into the sites due to their previously undeveloped nature and key sensitivities including the AONB and Holy Island SAC within which both sites are located. The IACC committee report for the Land and Lakes development notes that an Appropriate Assessment was carried out by Natural Resources Wales which concludes that there would be no likely significant effects on the SAC.

15.60 Existing tree cover and new planting will minimise potential visual effects, as will high quality architectural design and use of a range of typical natural and sustainable materials including local natural stone and local natural mineral slate or a natural stone / slate of equivalent colour. New planting will also provide a strong landscape setting and partial screening and privacy for the occupants of the lodges. In respect of Cae Glas, careful siting of car parking at lower ground levels, with associated tree and shrub planting, will provide effective screening. Landscape bunds will be planted with native species.

15.61 Planning conditions require that each reserved matter approval application submitted would include detail explaining how the development aims to conserve and enhance the AONB and demonstrate compliance with Exemplar Development principles.

15.62 Effects on the Welsh language have been informed by an Impact Assessment that forms part of the EIA assessment[4]. Once the appropriate management processes and codes of conduct are implemented, it is anticipated that there would be no significant impacts upon the Welsh language or community structure associated with workers to be accommodated. Therefore the EIA assesses that residual impact is considered to be negligible at the local level in the short term. Indirect impacts of the development on Welsh language and communities in the local area are considered to be moderate beneficial in the long term at the local level and the impact of the development on Welsh culture is considered to be beneficial.

15.63 The socio-economic effects[5] arising from the Land and Lakes development would be positive and these would include the delivery of new employment in Anglesey and a direct contribution to the primary tourism objectives of the Island. The construction phase of the Land and Lakes development as a whole would sustain approximately 420[6] construction jobs each year over the eight year period, with between 110 and 170 of these jobs taken by Anglesey residents.

15.64 Once operational, the Land and Lakes development as a whole would yield in the region of 150,000 and 200,000 visitors to Anglesey per annum. The leisure village would yield 465 direct on-site jobs, based on 150,000 visitors (a figure which could rise to 620 jobs with 200,000 visitors). The 465 jobs will span a variety of occupations and between 75% and 90% of all on-site jobs (or 350 to 420) will be taken by Anglesey residents. The Land and Lakes development would help to address the employment needs in wards of Holyhead. The leisure facilities at Penrhos and Cae Glas are likely to bring additional trips and expenditure to Anglesey and the Kingsland residential units will facilitate more spending in Holyhead and other centres. The development has the potential to positively influence the general image and perception which local people and visitors have of Holyhead and Holy Island.

[4] As set out in the Land and Lakes EIA at Chapter 8: Socioeconomics, Regeneration and Health.
[5] As set out in the Land and Lakes EIA at Chapter 8: Socioeconomics, Regeneration and Health.
[6] Job numbers expressed as full time equivalent.

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16 Sites to west and east of B5111, Amlwch (Sites A and B)

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16 Sites to west and east of B5111, Amlwch (Sites A and B)

16.1 This chapter provides an overview of the proposals for Temporary Workers' Accommodation at two sites to the south east of Amlwch, to the west and east of the B5111 known as Amlwch Sites A and B, how they have evolved through Pre-Application Consultation and how feedback has been considered. The chapter provides a summary of the preliminary environmental information associated with the site and how it has influenced the proposals. It also highlights areas where further feedback is sought to influence the design of the Temporary Workers' Accommodation in this location.

16.2 The requirement for Temporary Workers' Accommodation is identified in Horizon's Construction Worker Accommodation Strategy, which is also published as part of Horizon's Stage Two Pre-Application Consultation and summarised in chapter 9 of this document.

16.3 Horizon's preferred sites for the provision of Temporary Workers' Accommodation are at Kingsland and Cae Glas (part of the sites known collectively as "Land and Lakes"), Rhosgoch, and on-site accommodation and permanent housing (initially used as Temporary Construction Workers' Accommodation) at Madyn Farm. In addition, we are proposing these two alternative sites at Amlwch.

16.4 Sites A and B are in sustainable locations, close to settlement, which is a principle promoted by the Isle of Anglesey County Council's (IACC) New Nuclear Build at Wylfa: Supplementary Planning Guidance 2014 (Wylfa SPG). We are therefore consulting on more detailed proposals for these sites on the basis of masterplans which have been revised since the January Project Update consultation. We will then select our preferred options, with the full benefit of consultation and environmental information.

16.5 Significant work has been carried out to determine the most appropriate way of accommodating the construction workforce that will be resident on Anglesey during the construction of the Power Station. At its peak, it is anticipated that the workforce will grow to 10,720 construction workers, consisting of a construction workforce of between 8,000 and 10,000 workers, facilities management staff and operational staff. Up to 5,700 of these will need to be accommodated in purpose built temporary accommodation, taking into account construction requirements, the number of bedspaces that are likely to be available in tourist accommodation, private rental, empty homes and those workers who will be living at home and to allow flexibility to deal with uncertainty. Further details are provided in chapter 9 of this document.

16.6 Horizon has considered a number of sites for Temporary Workers' Accommodation and has developed a preferred strategy, having regard to a number of factors, including where workers are anticipated to be travelling from, the availability of existing consents, planning and environmental constraints at the shortlisted sites and community and Welsh language impacts, as well responses received during Horizon's Stage One Pre-Application Consultation and the January Project Update Consultation.

16.7 Amlwch Sites A and B lie to the east of land known as Madyn Farm, which is Horizon's preferred site for permanent housing, initially to be used by construction workers. Our proposals at Madyn Farm are discussed separately in chapter 17 of this document.

Site and key characteristics

16.8 Sites A and B are located immediately to the south of Amlwch and lie at the foot of the rolling landform, distinctive of this area. The sites are overlooked from higher ground to the south, east and west. This higher ground falls steeply into the southern areas of the sites on both sides of the B5111 from approximately 60m AOD to 40m AOD. The fall of land across the sites becomes gentler and even as the sites get nearer towards the town of Amlwch. The area to the west of the B5111 is an area of grassland with scattered mounds and rock outcrops within an otherwise relatively flat landform. These features may be remnants of historical copper mining synonymous with the area.

16.9 The sites are in an open landscape setting within the Parys Mountain Historic Landscape Area and the Anglesey-wide Special Landscape Area (SLA) but are not within the Anglesey Area of Outstanding Natural Beauty (AONB). The closest part of the AONB is located to the north-east of Amlwch and the southern boundary runs along Llaneilian Road approximately 0.6 miles to the north-east of the site.

16.10 The nearest residential property on the northern side of the A5025 is located approximately 40 metres from the northernmost tip of Site B. Further residential properties are located to the north of the junction of the A5025 and the B5111 and immediately to the south of the petrol filling station at the junction. There are also residential properties located at the Madyn Farm site, which is proposed for permanent accommodation as part of this Project, and a number of properties are located along the northern side of the A5025 before the junction with Salem Street.

16.11 There is a camp site, the Llaethdy-mawr farmhouse, to the south of Site B, on the opposite side of the local road which forms the southern boundary of the site.

16.12 The sites benefit from good existing road access and easy access to the Power Station Site via the A5025 (seven miles). Although in a countryside location, the sites are considered to be on the edge of the settlement, being within close proximity to, and walking distance from, Amlwch.

16.13 The sites' open character to the east reflects that of the surrounding landscape and benefits little from any natural forms of screening, notwithstanding there is existing commercial development located beyond the site within the settlement boundary to the north-west. Given the local topography, the sites are visible from the countryside to the south and east, although wider views from the south are limited somewhat by the large leisure centre and school buildings (Ysgol Syr Thomas Jones) on higher ground to the south of Amlwch.

16.14 We are proposing that Amlwch Sites A and B together deliver accommodation for up to 800 temporary construction workers. The preferred location of the proposed sites is shown in figure 16.1 below.

16.15 Our proposal for Temporary Workers' Accommodation at Amlwch Sites A and B is distinct from the proposals to deliver up to 50 permanent housing units on the Madyn Farm site located immediately to the west, where permanent housing will be initially sub-divided to provide 200 bed spaces for Temporary Workers' Accommodation.

Figure 16.1 Preferred location of proposed Temporary Workers' Accommodation at Amlwch Sites to West and East of the B5111 (Sites A and B)

Description of the Proposals

The proposed development

16.16 The purpose of the proposed Temporary Workers' Accommodation would be to provide temporary accommodation for construction workers, working on the Wylfa Newydd Project and living away from home, as part of a choice of accommodation options available (more detail is provided in chapter 9 of this document). The accommodation would be occupied by individual workers, rather than families, and as such the accommodation is designed to meet the needs of workers living alone.

16.17 Our preferred proposals comprise:

- eight accommodation blocks of two to three stories (approximate dimensions 100 metres in length, 20 metres in width and up to 12 metres in height) each proving en-suite accommodation, shared self-catering facilities, a TV lounge, bike storage etc. for a total of 800 workers;

- a two storey amenity and welfare building (approximate dimensions 63 metres in length, 60 metres in width and six metres in height) - this would include a small medical treatment and first aid room, security and control office, shop, administration and facilities management area, recycling point, kitchen, canteen, food storage area, television room, bar, gymnasium, toilets, changing rooms and shower facilities, a plant area and a general storage area;
- ancillary buildings providing support services such as energy centre, site utilities, waste management and cycle storage;
- a septic tank and package treatment plant to deal with sewage from the site;
- three car parking areas to cater for the whole campus, with final number of car parking spaces to be confirmed. Parking areas to the south of Site A and north-east of Site B would be for residents and a third area to the south of the amenity building would be for staff;
- a bus pick-up and drop-off area for taking workers to and from the Power Station Site; and
- landscaped areas.

16.18 The overall site boundary (i.e. Sites A and B) encompasses approximately 14.5 hectares and the accommodation blocks would be located within two zones to the west and east of the B5111, respectively. The amenity building, staff car park and bus pick-up and drop-off area would be located towards the centre of the site, maximising the distance between these potential sources of noise and the closest existing residential properties in Amlwch.

16.19 Vehicular access to Site A is proposed via two points along the B5111. Access to Site B would be via two points on the B5111 and two additional access points to the A5025 to the east and north of the site.

16.20 We have provided our preferred proposals in relation to site layout, building heights and appearance in the draft Masterplans included within the suite of documents that forms part of this consultation.

16.21 The detailed design of the buildings, layout of the site, landscaping and boundary treatment will be progressed further following this consultation and included in the final development proposals. These will either be determined through a Town and Country Planning Act 1990 (TCPA) application to be submitted to the IACC, or as part of the application for a Development Consent Order (DCO) depending on anticipated changes through the Wales Bill (further details on the consenting strategy are provided within chapter 1 of this document). Your views are welcomed on design, layout, landscaping and boundary treatment (see section below).

16.22 The eight temporary accommodation blocks would be spaced within the site to form two accommodation zones (A and B) split by the existing B5111 road. The accommodation would be in modular-type blocks that would provide an independent living space for each worker. As set out above, the accommodation would be supported by amenities provided in a campus environment. The amenity building would play a significant role, providing an area for workers to eat, socialise and relax.

16.23 We propose that the blocks would be of prefabricated construction and are set back from the roads so as to allow natural screening from general views via small trees or hedges which will create a natural green frontage to the development.

16.24 Horizon's approach to storage, recycling and disposal of waste at the site will be developed further following consultation and will be included in any future application.

16.25 Construction of the Sites A and B (and Madyn Farm) would commence in late 2019 and would likely take place over a period of approximately 36 months (three years), with initial accommodation being constructed within 18 months of the grant of the DCO for the Wylfa Newydd Generating Station.

16.26 Horizon is investigating the opportunity of using a modular construction system, with many of the buildings being pre-fabricated off-site.

16.27 Construction activities would take place mainly within the boundaries of the site with one of the proposed car parking areas used as a construction compound. Some minor works affecting the highway are also anticipated. These would likely include new entry/exit points to the south-east and north of the site, and on either side of the B5111. Further amendments to the B5111 to form a pedestrian crossing and bus drop-off area, and improvements to the roundabout immediately north of the site, may also be required.

16.28 Environmentally significant features adjacent to the site will be retained with buffer zones, e.g. hedgerows, streams (including Afon Goch), wet ditches and trees.

16.29 The scale of earthworks to be carried out is currently uncertain and depends on the results of topographical surveys.

16.30 Approximately 140 workers would be required on site during the construction phase for the Temporary Workers' Accommodation. Site working hours would be a minimum of 7.5 hours per day Monday to Friday, and half a day on Saturday.

16.31 Good construction site management practices would be utilised during the construction of the Temporary Workers' Accommodation. An outline Construction Environmental Management Plan (CEMP) would be developed as part of the Environmental Impact Assessment (EIA) process. The CEMP would be developed in detail by the construction contractor, but would be in accordance with the outline CEMP. The CEMP would provide a basis for monitoring the contractor's environmental performance during the construction process.

16.32 Further details on the way in which Horizon is maximising the uptake of supply chain opportunities by local companies is described in chapter 8 of this document.

Proposed operation

16.33 We anticipate that the Temporary Workers' Accommodation would be occupied by construction workers from early 2020 onwards. Generally, the peak workforce is expected during the period 2023-2024. The Temporary Workers' Accommodation is expected to remain operational for approximately seven years, until late 2026.

16.34 At this stage, it is intended that once constructed, the accommodation would be fully utilised until the construction numbers decrease and the whole site is no longer required, although the accommodation is designed so that is can be built and deconstructed in phases. The temporary accommodation would be dismantled once no longer required for worker accommodation. The design of the development, including use of a modular system, could optimise this process and reduce the amount of waste generated.

16.35 Buses would transport shift workers between the sites and Power Station Site, and would be timed to correspond with the main shift patterns. There may also be a shift change at night, involving associated bus movements to and from site.

16.36 The Traffic and Transport Technical Note, which forms part of this consultation and which is available on our website, includes an assumption of the number of buses currently anticipated to be associated with the movement of workers from the Temporary Workers' Accommodation to the Power Station Site. The assessment for Amlwch has been undertaken on the basis of up to 1,000 workers accommodated between Sites A and B and Madyn Farm. The Technical Note states that there would be a maximum of 24 daily return bus movements to the Power Station Site. This is based on three staggered morning shifts (15 return trips) and three staggered night shifts (nine return trips), and a capacity of 54 workers per bus. Further work is ongoing to determine the detailed proposals to transport workers and this would inform the Transport Assessment which would accompany the DCO application, or the applications for Associated Development.

16.37 Taking into account the shift patterns set out in chapter 4 of this document, this would mean a maximum of 15 movements through Amlwch to the Power Station Site between 07.00 and 08.00 and 15 movements back to the accommodation campus between 18:00 and 19:00. There would be a further nine movements, associated with the night shift travelling through Amlwch towards the Power Station Site between 16:30 and 17:30 and nine movements back between 03:30 and 04:30. This assumes approximately 30 minutes between the end of the shift and arriving at the accommodation campus. Further information on our preferred bus routes is provided in chapter 10 of this document.

16.38 There would also be vehicle movements from workers travelling to and from the site whilst not at work. These movements are included in the overall traffic modelling, and have not yet been disaggregated from the total vehicle movements anticipated to be generated by the Project. They would be reported with the Transport Assessment which would accompany the DCO application, and the TCPA applications for Associated Development. Based on the modelling carried out to date (see the Traffic and Transport Technical Note), it is anticipated that annual average daily traffic flows would be 3,200 movements on the A5025 in Amlwch, compared to 2,700 movements as surveyed in 2014, an increase of 500 vehicle movements (i.e. 250 movements each way).

16.39 In addition, there would be vehicle movements associated with staff and deliveries, which is set out in chapter G5 of the Preliminary Environmental Information (PEI) Report, volume G as follows:

- 188 cars;
- 39 light van/mini-bus;
- 23 Light Goods Vehicles (over 3.5 tonnes, up to 7 tonnes); and
- four HGVs.

16.40 Therefore, based on a typical working day (assuming single vehicle occupancy), this would result in a worst case scenario of approximately 500 additional vehicle movements per day (i.e. 250 vehicles in and 250 vehicles out).

16.41 It is estimated that up to 115 members of staff would be involved in the daily operation of the temporary accommodation. This would include:

- one or two members of staff involved in the management and security of each block;
- approximately 75 members of staff involved in the operation of the amenity and welfare building;
- 20 members of staff associated with the operation of the remaining ancillary buildings; and
- one or two members of security staff to man the security entrance gatehouse.

Proposed legacy

16.42 We propose that this Temporary Workers' Accommodation would be operational for a maximum of seven years after which time Sites A and B would be restored to agricultural use and grassland. The temporary accommodation would be removed after use, but the services would remain in place, enabling possible future redevelopment. The enhanced perimeter planting would remain in place, which would result in a biodiversity benefit from the existing position.

16.43 Site A, as explained further below, is allocated for housing in the Joint Local Development Plan (JLDP) for Anglesey and Gwynedd (composite draft, June 2016) and both sites are in sustainable positions, on the edge of settlement. Therefore, the retention of services on the sites is considered to be an appropriate legacy for the sites. It is not considered appropriate at this time to develop accommodation that could be converted to permanent housing, given the scale of the accommodation proposed, which would be equivalent to circa 200 permanent homes on the edge of Amlwch. The site would not be available for conversion to housing until 2026, at which time housing needs may have changed. By leaving the site in a serviced condition, an appropriate future legacy use could be determined as appropriate, having regard to housing need and policy at that time.

16.44 The preferred proposals also include a permanent diversion of the Public Right of Way (PRoW), which would follow the western boundary of Site A and would be located between Site A and the Madyn Farm site. This would retain connectivity between the A5025 and the leisure centre, recreation ground and school. Horizon is also exploring options of improving the PRoW surface to increase accessibility.

16.45 In addition, there would be planning obligations associated with any TPCA planning permission granted for the proposals (see approach to consenting in chapter 4 of this document), where they met the planning tests (being that they must be necessary, directly related to the development and be reasonable in scale in kind). Such obligations may include improvements to existing services and facilities, which would remain as legacy benefits following the removal of the worker accommodation.

Response to previous consultation

16.46 As part of the Stage One Pre-Application Consultation in 2014 and the January Project Update consultation in 2016, comments were received and have been considered in relation to the location and design of the Temporary Workers' Accommodation facilities described in this chapter. The way in which our consultation to date has influenced the proposals for Amlwch Sites A and B is summarised in the table below.

16.47 Significant concern was raised during the consultation process, particularly by the local community and Amlwch Town Council, about the use of Sites A and B for Temporary

Workers' Accommodation. Whilst we understand these concerns, these are sustainable sites, on the edge of the settlement, which is preferred by the Council's SPG.

16.48 The IACC have expressed concerns about Horizon's site selection process and asked for further justification for the preferred choice of sites, which are addressed in the revised version of the Report on Horizon's Approach for Siting Associated Development to Support Construction of Wylfa Newydd ("the Associated Development Siting Report"), which is available on our website as part of this consultation. The IACC has not yet expressed a definitive view on the preferred sites on the basis that they required further justification for the site selection, although it noted the local concern about these particular sites in their response to the January Project Update consultation, in particular the concerns with regard to potential impact on services and the Welsh Language. The IACC also noted that, given that the planning effects of the Land and Lakes scheme had already been assessed, Horizon should seek to locate as many workers on this site as possible, up to the 3,500 workers permitted. This is the case and our preferred proposals include 3,500 bedspaces at Kingsland and Cae Glas, however, this does not provide enough bedspaces by itself and further sites for Temporary Workers' Accommodation are still required.

16.49 A decision on whether to proceed with the Amlwch sites is dependent on our final selection of sites and the number of bedspaces to be provided at each, having regard to ongoing commercial negotiations and the output from consultation.

16.50 Horizon is therefore, continuing to consult on more detailed proposals for these sites until we are at a stage when we can confidently select our preferred options, with the full benefit of consultation and environmental information.

16.51 Whilst we received a number of comments on the principle of the proposals, we only consulted on very high level plans for the Associated Development sites in our January Project Update consultation. As such, very limited feedback was received on the detailed placement of building and parking areas, a matter which we are consulting on as part of this Stage Two Pre-Application Consultation. The table below therefore highlights design changes made generally as a result of design development and environmental information and also from our ongoing engagement with the Design Commission for Wales (DCfW) on our emerging proposals for the Associated Development sites.

Table 16.1 Key Project and Design Changes since Pre-Application Consultation Stage One and the January 2016 Project Update Consultation

Change	Rationale
Initial proposals envisaged three accommodation blocks each of four stories, focussed only on Site A. Height of buildings reduced to two-three storeys.	To reduce impact on immediate surroundings, and wider views.
Density of proposals reduced and spread across a wider site area (including Site B).	To reduce visual impact and to respond to surrounding context. Necessitated increasing size of development site to include Site B, but this was considered to be a more contextually appropriate solution.
Initial layouts included the welfare and amenity block and bus terminal to the north	These facilities would be close to existing residential areas of Amlwch, which would

Change	Rationale
of the Amlwch 'A' Site, with direct access onto the A5025. Moved to Site 'B', further from residential properties.	increase the likelihood of disturbance to local residents from noise associated with the operation of the welfare and amenity facilities, and the transfer of workers to and from buses. The layout did not include a sufficient distance from the drainage ditch on the east boundary of the Amlwch 'A' Site where water voles have been recorded.
Changes to the proposed locations of car parking areas focussing these towards the centre of the site to maximise the distance between these and the closest existing residential properties in Amlwch.	To respond to comments raised by the local community.
Design of blocks amended from straight to curved.	To respond to the form the landscape.
Environmental buffer zones added.	To minimise impact on existing residential homes and wider landscape.
Removal of accommodation blocks to southern part of Site B and replacement with grassed areas.	To reduce the visual impact of development, as this part of the site is on higher ground.

Justification for the preferred site for Temporary Workers' Accommodation and consideration of alternatives

16.52 A four stage site identification, screening and assessment process was undertaken to identify potentially suitable sites for the Temporary Workers' Accommodation. Details of this process are provided the Associated Development Siting Report and summarised in chapter 9 of this document.

16.53 Justification for Amlwch Sites A and B is provided in the Associated Development Siting Report and is summarised below.

16.54 The emerging JLDP sets out a spatial strategy in Policy TAI3 for the location of Temporary Workers' Accommodation in connection with the Wylfa Newydd Project. In addition, the SPG sets out the IACC's preferred approach to the location of each Associated Development, which reflects the spatial strategy in Policy TAI3 of the JLDP. This spatial approach is broadly to first consider sites closest to settlements.

16.55 Horizon have followed this approach to site selection and sites closer to centres were selected as preferred sites to accommodate Temporary Workers' Accommodation unless material considerations indicate that it is inappropriate to do so. The location of the sites adjacent to Amlwch settlement means that it would be preferred by the Wylfa SPG to sites further from settlement.

16.56 With regard to local planning policy, the preferred Amlwch Sites A and B are not allocated for a specific use in the existing Ynys Môn Local Plan (YMLP) (1996) or in the stopped Unitary Development Plan (UDP) (2005). They fall within countryside outside the development boundary of Amlwch.

16.57 The YMLP states that planning permission will not be granted for development within the countryside unless a scheme creates jobs and nowhere else is suitable. However, this needs to be viewed in the context that these are proposals for temporary accommodation, which are part of a wider significant infrastructure project creating substantial jobs for the Island. The sites are also well located in relation to the existing settlement and its services.

16.58 The sites fall adjacent to the development boundary of Amlwch, defined as an Urban Service Centre in the emerging JLDP; Site A to the west of the B5111 is also allocated for housing under site reference T8 (Land at Madyn Farm).

16.59 There are no current planning policies that consider the provision of large scale temporary workers' accommodation. However, the IACC has prepared the SPG to provide guidance on the way in which it will determine development for which it is the decision maker, or guide its approach to completing a local impact report for development that forms part of Horizon's DCO application.

16.60 Policy GP10 (Construction Worker Accommodation and Anglesey's Housing Market) of the SPG advises that Temporary Workers' Accommodation should be located in accordance with the settlement hierarchy and spatial strategy in the YMLP, stopped UDP and emerging JLDP, seeking to focus new development in Holyhead, Llangefni and Amlwch with smaller scale growth in local service centres and service villages, with a preference for brownfield land.

16.61 As we have not identified any suitable brownfield sites available within or on the edge of settlement (refer to the Associated Development Siting Report for details) the provision of Temporary Workers' Accommodation at Amlwch Sites A and B is therefore considered to accord with current and emerging policy and guidance.

16.62 We believe there is an opportunity for Temporary Workers' Accommodation for up to 800 workers to be provided at Amlwch Sites A and B together with new permanent housing at the adjacent Madyn Farm site to be used initially by some of our workers, creating a positive legacy once construction has finished. The temporary accommodation would be removed after use and the site would be returned to green fields with landscaping enhancements retained and services in place, enabling possible future redevelopment.

16.63 Full details of alternative sites that were considered are provided within the Associated Development Siting Report.

Options for consultation

Layout

16.64 We would like to understand your views on the preferred proposals for Amlwch Sites A and B, including the way in which buildings, landscaping and parking areas are positioned on the sites.

16.65 The design and layout of the proposals will be key in retaining, and where possible, enhancing important site characteristics, including hedgerows and watercourses. The positioning of buildings and parking areas can also help to break down the scale of the proposals.

16.66 The design of the proposals has taken existing topography, field boundaries and boundary walls into account. Existing hedgerows would be retained where possible, albeit a number of localised openings would be required for pedestrian and vehicular access. We propose to orientate the buildings in a way to reduce their effect on the surrounding areas, particularly existing residential areas of Amlwch. The retention of as much boundary vegetation as possible would help to screen the development from residential areas and would also help to reduce the perception of noise and disturbance.

16.67 The higher ground on the southern section of Site B to the east of the B5111 will be kept free from built development and the design maximises retention and incorporation of areas of semi-improved grassland and dense planting on the western boundary.

16.68 Our preferred approach to the layout of the buildings and parking on site is shown in figure 16.2 and we would welcome any views you have to improve this layout.

Figure 16.2 Preferred layout of Amlwch Sites to West and East of the B5111 (Sites A and B)

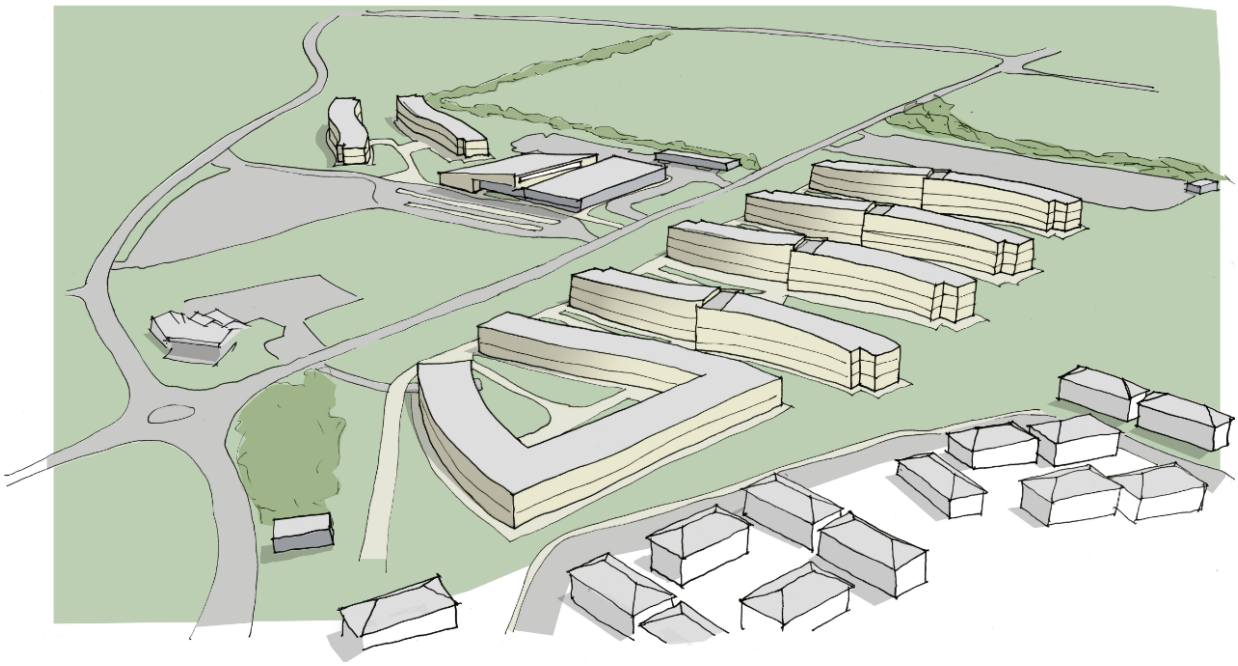
Architectural design

16.69 The architectural design of the proposed buildings on the site is yet to be decided. The draft Masterplan for the Amlwch Sites A and B provides illustrative material that shows our current views on what the buildings may look like, taking into account national and local planning policy, including that in NPS EN-1. This includes a requirement for 'good' design and a recognition that the decision-maker should consider both functionality (including fitness for purposes and sustainability) and aesthetics (including its contribution to the area in which it would be located). The design has evolved in consultation with DCfW and who we will continue to engage with up to the finalisation of the proposals. We would welcome your comments on our current preferred proposals (shown in figure 16.3) (see question at the end of this chapter).

16.70 The overall architectural strategy for the Associated Development facilities, including the Temporary Workers' Accommodation proposed at Amlwch, is driven by the desire to create an unimposing appearance, where the buildings are screened as far as possible, and where visible, they are of an appearance that allows them to harmonise with and complement the surroundings. A restricted natural palette would be adopted for all the buildings on-site, helping to link the buildings visually, and be unimposing with their surroundings. The use of typically Welsh building materials will be chosen and utilised in the building design to complement the character of a rural location. Further details of preferred materials palettes are provided in the draft Masterplans.

16.71 The buildings on the site would be temporary and are intended to be dismantled once they are no longer required. The buildings would therefore be designed with simplicity and efficiency of construction and removal as a priority. The final proposed design will be developed to ensure that it responds to local context, recognising that although temporary in nature, the developments would be in place for a number of years.

Figure 16.3 Preferred architectural design of Amlwch Sites to West and East of the B5111 (Sites A and B)



Landscaping and boundary treatments

16.72 The landscaping and boundary treatments provided on the site are also yet to be decided. Our preferred approach is shown in figure 16.4 and we would welcome your comments on this.

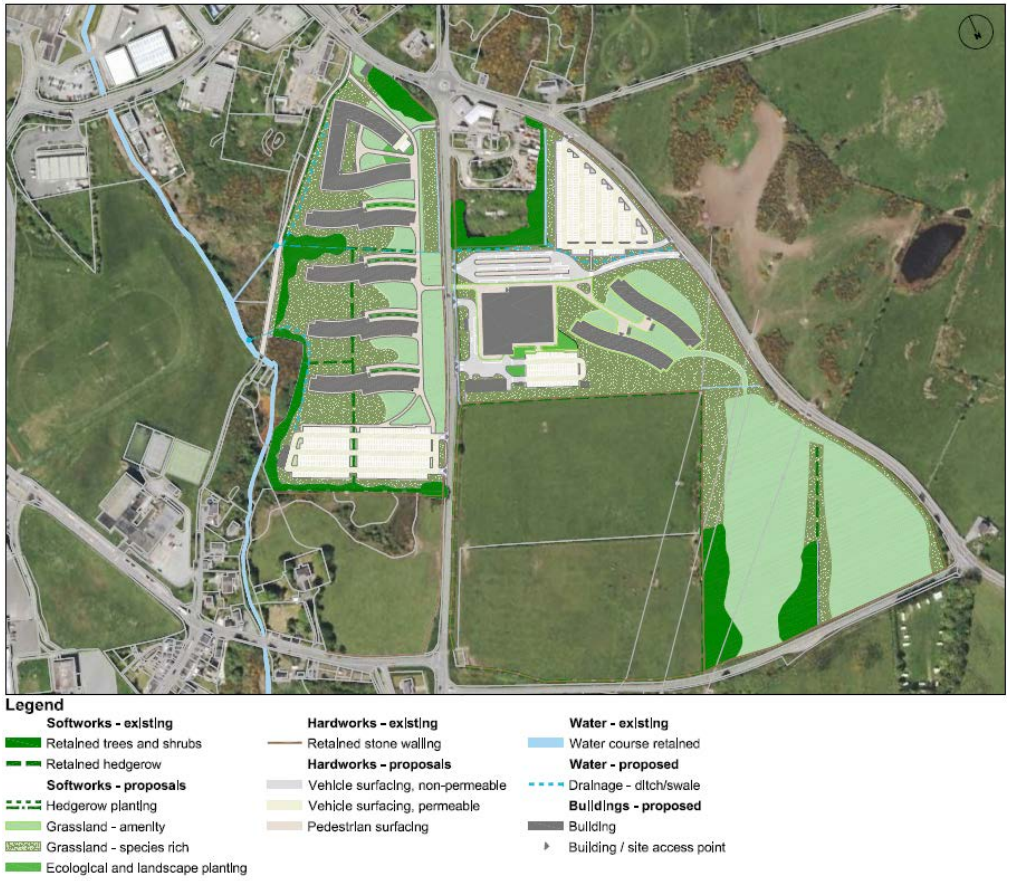
16.73 The aim would be to create a well-connected, sustainable community extension with well-designed buildings, streetscapes and open spaces, responding to the character and identity of the local surroundings and materials by utilising good architecture and landscaping. A key sustainable design objective has been to maximise and enhance existing local landscaping features, such as trees and hedges, and protection of ecological features.

16.74 The visual impact of the site will be masked via a small tree/hedge lined boundary along the A5025 road to provide a natural 'green' screen. Mixed grassland and shrubs are intended to the south. Woodland will be reinstated next to the stream on the southern boundary. In general, small areas of coastal type planting, tolerant to salt laden winds, will be utilised where possible. An existing footpath to the east of the houses will be required to be moved approximately 10 to 20 metres east of its current location to provide continual use during and after development.

Question - Given the information provided on our Associated Development, do you have any views on:

- **How we can improve the preferred plans, including such issues as the layout of buildings and parking areas;**
- **How we can improve the external appearance of the buildings, landscaping and boundary treatment; and**
- **Our proposed legacy for each site.**

Figure 16.4 Preferred approach to landscaping and boundary treatments at Amlwch Sites to West and East of the B5111 (Sites A and B)



Summary of Preliminary Environmental Information

16.75 Our proposals at Amlwch Sites A and B are likely to have some effects on the environment during construction and operation of the facility. The principal likely significant adverse and beneficial effects are summarised below and more detail is provided in the main body of the PEI Report (volume G) and in Volume B1, which considers Project-wide socio-economics effects.

16.76 No significant effects are predicted during construction, operation or decommissioning for archaeology and cultural heritage or groundwater and surface water, which are not therefore covered in this table.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
Traffic and transport	It has been estimated that the number of vehicles travelling to and from the development during the construction peak would be approximately 1,250 per day (two-way) (i.e. 625 vehicles in and 625 vehicles out of the site). However, this level of traffic would only be present for two months of the programme and daily traffic flows either side of this construction peak would be lower. Additionally, construction traffic would only be present for six days per week. The Annual Average Daily Traffic (AADT), which is the total volume of vehicle traffic on a road flowing past a certain point over a year divided by 365 days, would be approximately 850 vehicles per day (two-way) (i.e. 425 vehicles in and 425 vehicles out of the site), of which 50 would be	The effect of the increase in traffic associated with the Temporary Workers' Accommodation site is not considered to be significant. There would be an increase in bus movements on the A5025 through Amlwch of circa 48 two-way daily movements (i.e. 24 in and 24 out). 15 of these would occur between 07:00 and 08:00 and 9 between 16:30 and 17:30. Additionally, there is expected to be circa 500 additional daily vehicle movements as a result of staff and deliveries to and from the site and a further 500 daily vehicle movements through Amlwch as a result of the Project as a whole (although not this is not disaggregated for Sites A and B and includes trips not directly associated with this Temporary Workers' Accommodation site). This would result in a significant impact in terms of	The minor adverse impacts during the construction phase are assumed to be the same as during the de-commissioning phase.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
	HGVs (two-way) (i.e. 25 vehicles in and 25 vehicles out of the site), during construction of Sites A and B and Madyn Farm. During construction of the Temporary Workers' Accommodation, there are likely to be effects on motorised, non-motorised and public transport users travelling along the A55 Britannia Bridge, A5025 (west) and the A5025 (east) between the Power Station Site and Amlwch. This would be minor and short-term and would be mitigated through the use of a Construction Traffic Management Plan.	safety and journey times, but is considered to be minor and would be mitigated through the use of a Construction Traffic Management Plan.	
Socio-Economics (including public services)	During construction, staff would be recruited to carry out the construction work, resulting in a moderate beneficial effect. Construction activities could reduce bookings by tourists at the camp site at Llaethdy-mawr farmhouse. This would be mitigated through the implementation of a Construction and Environmental Management Plan (CEMP) which would reduce the effect of the site on the surrounding area. The proposals have	Staff would be recruited to work on the operational site, resulting in a moderate beneficial effect. Potential effects on public services during the operation of the Temporary Workers' Accommodation are considered in volume B1 of the PEI Report (rather than in volume G). This is because they are considered to be Project-wide effects. The assessment states that could be a requirement for an additional 5.4 GPs and 2.9 dentists to support the new workforce and their dependants on Anglesey. In order to mitigate this,	The minor adverse impacts during the construction phase are assumed to be the same as during the de-commissioning phase.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
	also been sited to be located as far as possible from the southern end of the site, closest to the camp site. This effect is considered to be minor adverse, with mitigation.	service planning discussions are in progress with Betsi Cadwaladr University Health Board (BCUHB) and other service providers to determine how and where services would be provided for construction workers. The options being considered include the enhancement of existing services or dedicated health care provision at the Temporary Workers' Accommodation. As service planning discussions are ongoing it is too early to describe the detail of specific mitigation. However, we will meet the workforce health care and dental care needs by whatever mechanism is agreed with BCUHB. There is also a potential adverse effect on the police service, but it is considered that this could be reduced to minor with appropriate mitigation. There is a potential minor adverse effect on the fire and rescue service, although this is across the north Wales region, and it is not possible to predict the effect on Anglesey alone. Although there is no leisure provision proposed to be provided on this Temporary Workers' Accommodation site, facilities are proposed to be provided at other sites, which would be available to the workers living at Amlwch and so the impact on leisure services is not considered to be	

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
		significant.	
Landscape	During construction, there would be changes in the landscape character of the area, which includes the Anglesey Special Landscape Area (SLA) and Parys Mountain and Slopes proposed SLA. With the introduction of a Landscape Management Plan, this is anticipated to be minor adverse. There would also be changes to views and visual amenity of public footpath users, the local community, users of the Ysgol Syr Thomas Jones school, leisure centre and Llaethdy-mawr camp site. The impact on footpath users is considered to be major adverse and short term, moderate for other receptors and minor for users of the school.	During operation, there would be similar effects as during construction on the landscape character of the area. However, effects on views and visual amenity are considered to reduce to moderate to minor adverse during operation.	During decommissioning, there would be changes to views and visual amenity of moderate adverse for footpath users and minor adverse for the community of Amlwch.
Welsh Language	The WLIA consider effects on Welsh Language of the Project as a whole, rather than site by site and therefore, the effects are reported during the operational phase of the Associated Development sites.	The WLIA also provided as part of this consultation considers the effects of the Project on Welsh Language. It recognises that whilst there would be a general increase in the population of the Key Socio-economics Study Area (KSA), this would be greatest in the communities hosting the Temporary Workers'	The WLIA consider effects on Welsh Language of the Project as a whole, rather than site by site and therefore the effects are reported during the operational phase of the

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
		Accommodation, those being the areas of Holyhead, Amlwch, and around the Wylfa Newydd Development Area. The assessment assumes that the majority of non home-based workers moving into the KSA from other British countries or from overseas are non-Welsh speakers. This has the potential to be harmful to the Welsh language's place as part of the social fabric of the communities of the KSA. This is expected at this stage to be adverse, although the assessment also notes that there may be beneficial effects as a result of the increased employment opportunities available to local people, which may reduce the number of people leaving the area, or attract Welsh speaker's back to the area. The WLIA explains that we are considering measures to reduce these effects, including measures that can be developed to raise awareness amongst non home-based construction workers, and their families and incomers during the operational stage, about the Welsh language and unique Welsh culture and traditions, which form an integral part of the social fabric of communities in the KSA. We are also considering working alongside local language initiative groups to support measures to normalise	Associated Development sites.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
		the use of the Welsh language in the community and measures to integrate newcomers into Welsh-speaking communities. Materials would be developed promoting the benefits of the Welsh language and bilingualism to families moving into the area.	
Public Access and Recreation	During construction, the existing Public Right of Way across the site (PRoW 11/038/1) would be diverted. It is anticipated that this diversion would follow the boundary of the development site and be of a similar length to the existing PRoW. This would retain connectivity between the A5025 and the leisure centre, recreation ground and school throughout the construction stage.	In order to minimise disruption, it is intended that the temporary diversion of PRoW 11/038/01 is retained permanently. We are exploring the option to improve the surface of the PRoW to increase accessibility, providing a minor beneficial effect.	The decommissioning work could create noise and dust which could reduce recreational amenity for those using the PRoW, recreation ground and camp site resulting in a minor adverse effect. This would be mitigated through the use of measures to limit noise and air pollution (see detail in relation to noise and air below).
Noise	During construction there would be effects related to the operation of fixed and mobile construction machinery on site. This would be minor and short term and would be mitigated through the implementation of a Noise and Vibration Management Plan, which would include measures such as low noise machinery	During operation there would be regular use of the car parking areas, bus transportation zones and goods delivery/waste collection areas. This would be mitigated through the management of shift patterns, encouraging the use of public transport and installing noise barriers, if considered appropriate. This effect is considered	The minor adverse impacts during the construction phase are assumed to be the same as during the de-commissioning phase.

Topic	Potential effects and mitigation		
	Construction phase	**Operational phase**	**Decommissioning phase**
	and limiting construction working hours. This effect is considered to be minor to not significant.	to be minor to not significant.	
Air Quality	No significant effects are predicted during construction of the proposed Temporary Workers' Accommodation.	No significant effects are predicted during operation of the proposed Temporary Workers' Accommodation, but good practice construction methods would still be used, including comprehensive measures and working methods to prevent and reduce dust emissions at their source.	No significant effects are predicted during decommissioning of the proposed Temporary Workers' Accommodation.
Soils and Geology	There would be a minor adverse effects on soils during construction, but these are moderate, low to very low quality.	No significant effect on soils are predicted during operation.	Topsoil replacement would be managed by a Soil management strategy and soil management plan, but minor adverse effects on soil quality may remain.
Ecology	Lighting during construction works of the Temporary Workers' Accommodation may result in a minor adverse impacts on bats. This would be mitigated by directing lighting away from watercourses and reducing the use of lighting where possible.	Lighting during operation of the Temporary Workers' Accommodation may result in a minor adverse impacts on bats. This would be mitigated by directing lighting away from watercourses and reducing the use of lighting where possible.	The minor adverse impacts during the construction phase are assumed to be the same as during the de-commissioning phase.

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17 Amlwch, Madyn Farm

List of Figures

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17 Amlwch, Madyn Farm

17.1 This chapter provides an overview of the proposals for permanent housing at the Amlwch, Madyn Farm site, how they have evolved through pre-application consultation and how feedback has been considered. The chapter provides a summary of the preliminary environmental information associated with the site and how it has influenced the proposals. It also highlights areas where further feedback is sought to influence the design of the permanent housing this location.

17.2 The principle of development on the site has been established by an existing planning permission for 31 dwellings granted by Isle of Anglesey County Council (IACC) in July 2007 (under reference number 11C304A). The relevant pre-commencement conditions on the consent were discharged and the consent was implemented through the digging of foundations. The consent is therefore considered to have been implemented and the principle of development on the site has been established. The existing consent does not however meet Horizon's needs for the Project and we are proposing a new planning permission with a revised layout which makes better use of the site.

17.3 Our preferred proposals are for the site to be first used as Temporary Workers' Accommodation and then to be available for permanent housing, a proportion of which could be for affordable homes for transfer to the IACC or another suitable affordable housing provider. Further details are provided below.

17.4 The site is in a sustainable location, close to settlement, which is in principle promoted by the IACC New Nuclear Build at Wylfa: Supplementary Planning Guidance 2014 (Wylfa SPG).

17.5 Significant work has been carried out to determine the most appropriate way of accommodating the construction workforce that will be resident on Anglesey during the construction of the Power Station. At its peak, it is anticipated that the workforce will grow to 10,720 construction workers, consisting of a construction workforce of between 8,000 and 10,000 workers, facilities management staff and operational staff. Up to 5,700 of these will need to be accommodated in purpose built temporary accommodation, taking into account construction requirements, the number of bedspaces that are likely to be available in tourist accommodation, private rental, empty homes and those workers who will be living at home and to allow flexibility to deal with uncertainty. Further details are provided in chapter 9 of this document.

17.6 Horizon has considered a number of sites for Temporary Workers' Accommodation and has developed a preferred strategy, having regard to a number of factors, including where workers are anticipated to be travelling from, the availability of existing consents, planning and environmental constraints at the shortlisted sites and community and Welsh language impacts, as well responses received during Horizon's Stage One Pre-Application Consultation and the January 2016 Project Update Consultation.

17.7 Madyn Farm is a partly brownfield site located to the west of Amlwch Sites A and B, which are in turn located to the west and east of the B5111 and are also part of this consultation. Our proposals at Amlwch Sites A and B are discussed separately in chapter 16 of this document.

Site and key characteristics

17.8 The site is located immediately to the south of Amlwch and at the foot of the rolling landform, distinctive of this area. The site is overlooked from higher ground to the south, east and west. The area to the west of the B5111 is an area of grassland with scattered mounds and rock outcrops within an otherwise relatively flat landform. These features may be remnants of historical copper mining synonymous with the area.

17.9 The site is in an open landscape setting within the Parys Mountain Historic Landscape Area and the Anglesey-wide Special Landscape Area (SLA) but is not within the Anglesey Area of Outstanding Natural Beauty (AONB). The closest part of the AONB is located to the north east of Amlwch and southern boundary of the AONB runs along Llaneilian Road approximately 0.6 mile to the north east of the site.

17.10 The site's open character to the east reflects that of the surrounding landscape and benefits little from any natural forms of screening, though there is existing commercial development located beyond the site within the settlement boundary to the north-west. Given the local topography, the site is likely to be visible from the countryside to the south and east, although wider views from the south are limited somewhat by the large leisure centre and school buildings (Ysgol Syr Thomas Jones) on higher ground to the south of Amlwch.

17.11 The nearest residential properties are located to the north of the junction of the A5025 and the B5111 and at the Madyn Farm site itself. There are also a number of properties located along the northern side of the A5025 before the junction with Salem Street, opposite the proposed access to the site. To the immediate north of the site there are a group of commercial properties which are in use as small business units and for the storage of buses.

17.12 The site benefits from good existing road access and easy access to the Power Station Site via the A5025 (seven miles). The sites are considered to be on the edge of settlement, being within close proximity to, and walking distance from, Amlwch.

17.13 The preferred location of the proposed permanent housing site is shown in figure 17.1.

17.14 We are proposing that the site delivers 50 permanent housing units which would first be occupied by 200 temporary construction workers. A proportion of the retained housing units would be made available as affordable housing.

Figure 17.1 Preferred location of proposed permanent housing at Madyn Farm, Amlwch

Description of the proposals

The proposed development

17.15 The purpose of the proposed Temporary Workers' Accommodation would be to provide temporary accommodation for construction workers, working on the Wylfa Newydd Project and living away from home, as part of a choice of accommodation options available (more detail is provided in chapter 9 of this document). The accommodation would be occupied by individual workers, rather than families, and as such the accommodation is designed to meet the needs of workers living alone.

17.16 Our preferred proposals comprise:

- permanent housing in the form of 50 two storey houses (3 bedroom terraced or semi-detached properties), initially to accommodate a maximum of 200 temporary construction workers; and
- car parking, boundary treatment and other associated works.

17.17 This permanent housing will initially be sub-divided to provide Temporary Workers' Accommodation. In practice, the houses would be built as a three-bedroom house and the living rooms would be utilised as a fourth bedroom during their use as temporary accommodation.

17.18 As the houses would be provided with kitchens and bathrooms, separate welfare and amenity facilities are not provided. The workers would be also able to utilise the facilities in the nearby Temporary Workers' Accommodation campus at Rhosgoch, or Amlwch Sites A and B, if this option is taken forward.

17.19 If Amlwch Sites A and B (to the west and east of the B5111) are chosen as preferred sites, workers living in these units would utilise the bus pick-up and drop-off areas provided on these sites. In the event that Amlwch Sites A and B are not preferred, workers would be served by the direct buses provided to service the north and east of the island, which would be enhanced accordingly (see chapter 10 of this document for proposed routes). Details of bus pick-up and drop-off points if Madyn Farm is developed without the adjoining sites have not yet been decided, but would be included within the application for this site under the Town and Country Planning Act 1990 (TCPA).

17.20 Car parking for the permanent housing would be provided through on-street parking and individual drives. The detailed layout of the car parking proposed would be developed following this Stage Two Pre-Application Consultation.

17.21 Separate car parking for facilities and maintenance staff would not be provided on the site, on the basis that such visits will be limited in nature and would be likely to be provided as part of a wider maintenance service with the other sites for Temporary Workers' Accommodation.

17.22 The site boundary for Madyn Farm covers approximately three hectares of land area and comprises a parcel of land of approximately 100 metres by 300 metres. The houses would be three bedroom with a floor area of around 105sqm each.

17.23 Vehicular access to the Madyn Farm site is proposed via the A5025 at a point located to the west of its junction with the B5111. There would be no formal site entrance or security arrangements, given the nature of the accommodation provided.

17.24 We have provided our preferred proposals in relation to site layout, building heights and appearance in the draft Masterplans included in the suite of documents that form part of this consultation.

17.25 The detailed design of the buildings, layout of the site, landscaping and boundary treatment will be progressed further following this consultation and included in the final development proposals, to be determined through a TCPA application to the IACC (further details on the consenting strategy are provided in chapter 1 of this document). Your views are welcomed on design, layout, landscaping and boundary treatment (see section below).

17.26 Horizon's approach to storage, recycling and disposal of waste at the site will be developed further following consultation and will be included in any future application.

17.27 Construction of the Madyn Farm permanent housing would commence in late 2019 and would likely take place over a period of approximately 22 months. Some works are also likely to be required to the site access and these would be determined following further

detailed design. It is currently anticipated that these access works would be within the adopted highway.

17.28 Approximately 40 workers would be required on site for construction of the permanent housing. Site working hours would be a minimum of 7.5 hours per day Monday to Friday, and half a day on Saturday.

17.29 Good construction site management practices would be utilised during the construction of the Temporary Workers' Accommodation. An outline Construction Environmental Management Plan (CEMP) would be developed as part of the Environmental Impact Assessment (EIA) process. The CEMP would be developed in detail by the construction contractor, but would be in accordance with the outline CEMP. The CEMP would provide a basis for monitoring the contractor's environmental performance during the construction process.

17.30 Further details on the way in which Horizon is maximising the uptake of supply chain opportunities by local companies is described in chapter 8 of this document.

Proposed operation

17.31 We anticipate that the permanent housing would be occupied as Temporary Workers' Accommodation from late 2020 onwards. Peak workforce is expected during the period 2023-2024. The Temporary Workers' Accommodation is expected to remain operational for approximately seven years until late 2026.

17.32 Buses would transport shift workers to and from the temporary accommodation and Power Station Site, and would be timed to correspond with the main shift patterns. There may also be a shift change at night, involving associated bus movements to and from site.

17.33 The Traffic and Transport Technical Note, which forms part of this consultation and is available on our website, includes an assumption of the number of buses currently anticipated to be associated with the movement of workers from the Temporary Workers' Accommodation to the Power Station Site. The assessment for Amlwch has been undertaken on the basis of up to 1,000 workers accommodated collectively between Sites A and B and Madyn Farm.

17.34 On the basis that 200 of these would be associated with the Madyn Farm site alone, it is anticipated that there would be a maximum of five daily return bus movements to the Power Station Site, as part of an enhanced service to that proposed to serve workers living to the north and east of Anglesey. This is based on three staggered morning shifts (three return trips) and three staggered night shifts (up to three return trips), and a capacity of 54 workers per bus. Further work is ongoing to determine the detailed proposals to transport workers and this would inform the Transport Assessment which would accompany the DCO application, or the applications for Associated Development.

17.35 Taking into account the shift patterns set out in chapter 4 of this document, this would mean a maximum of three movements through Amlwch to the Power Station site between 07.00 and 08.00 and three movements back to the accommodation site between 18:00 and 19:00. There would be a further up to three movements, associated with the night shift travelling through Amlwch towards the Power Station site between 16:30 and 17:30 and up to three movements back between 03:30 and 04:30. This assumes approximately 30 minutes between the end of the shift and arriving at the accommodation site. Further information on our preferred bus routes is provided in chapter 10 of this document.

17.36 There would also be vehicle movements from workers travelling to and from the site whilst not at work. These movements are included in the overall traffic modelling, and have not yet been disaggregated from the total vehicle movements anticipated to be generated by the Project. They would be reported with the Transport Assessment which would accompany the planning application for this site. Based on the modelling carried out to date (see Traffic and Transport Technical Note), it is anticipated that annual average daily traffic flows would be 3,200 movements on the A5025 in Amlwch, compared to 2,700 movements as surveyed in 2014, an increase of 500 vehicle movements (i.e. 250 movements each way).

17.37 In addition, there would be vehicle movements associated with staff and deliveries, which is set out in chapter G5 of the Preliminary Environmental Information (PEI) Report, volume G, in relation to the comprehensive development of Madyn Farm and Amlwch Sites A and B (see chapter 16 of this document). Assuming a fifth of these movements are associated with Madyn Farm alone, this would equate to 100 additional vehicle movements per day (i.e. 50 vehicles in and 50 vehicles out). This is considered to be a very worst case scenario and it is anticipated that movements would in practice be lower and this would be reflected in the Transport Assessment which would be accompany the planning application for this site.

17.38 There would only be a small number of staff involved in the daily operation of the site whilst it is in use for Temporary Workers' Accommodation, including facilities and maintenance staff. This would be likely to be delivered as part of the wider maintenance contract with other facilities that may be provided in the Amlwch area, including at Rhosgoch, or Amlwch Sites A and B and is anticipated to be around four members of staff, on the basis that no separate welfare, amenity or catering facilities is proposed.

Proposed legacy

17.39 We propose that this Temporary Workers' Accommodation would be operational for a maximum of seven years to house temporary workers for the construction phase of the Wylfa Newydd Project. After this time these will become permanent houses, a proportion of which would be affordable housing, which would be available to transfer to the IACC or an alternative affordable housing provider, thereby delivering the legacy use of the site.

17.40 The preferred proposals also include a permanent diversion of the Public Right of Way (PRoW), which would follow the eastern boundary of the site and would be located between this site and the proposed alternative sites at Amlwch Sites A and B. This would retain connectivity between the A5025 and the leisure centre, recreation ground and school. Horizon is also exploring options of improving the PRoW surface to increase accessibility.

17.41 In addition, there would be planning obligations associated with any planning permission that may be granted for the proposals (see approach to consenting in chapter 4 of this document), where they met the planning tests (being that they must be necessary, directly related to the development and be reasonable in scale in kind). Such obligations may include improvements to existing services and facilities, which would remain as legacy benefits following the use of the development by temporary workers.

Response to previous consultation

17.42 As part of Horizon's Stage One Pre-Application Consultation in 2014 and the January 2016 Project Update Consultation, comments were received and have been considered in the location and design of the Temporary Workers' Accommodation facilities described in this chapter. The way in which our consultation to date has influenced the choice of and proposals for Madyn Farm is summarised in the table below.

17.43 There was significant support at the Stage One Pre-Application Consultation and January Project Update Consultations for the use of Madyn Farm for permanent accommodation.

17.44 In light of this support, and the fact that Madyn Farm is a sustainable site, close to settlement, which is a principle promoted in the Wylfa SPG, Horizon is taking the Madyn Farm site forward as part of its proposals for housing workers and therefore continuing to consult on more detailed proposals for this site at this stage.

17.45 We only consulted on very high level plans for the Associated Development sites in our January Project Update consultation. As such, only limited feedback was received on the detailed placement of building and parking areas. This is a matter which we are now consulting on as part of this Stage Two Pre-Application Consultation. The table below therefore, highlights design changes made generally as a result of design development and environmental information and also from our ongoing engagement with the Design Commission for Wales (DCfW) on our emerging proposals for the Associated Development sites.

Table 17.1 Key Project and Design Changes since Stage One Pre-Application Consultation and January 2016 Project Update Consultation

Change	Rationale
Horizon has selected the Madyn Farm site as a preferred option to deliver 50 permanent housing units which will first be occupied as Temporary Workers' Accommodation for 200 workers.	Significant support received through public consultation.
Development of preferred palette of local building materials.	To respond to comments made during the DCfW design process.
A commitment to provide a proportion of the proposed housing as permanent affordable homes.	Although there were no direct comments regarding the provision of affordable homes, comments raised at the January Project Update consultation included that investment should be provided to benefit local people

Justification for preferred site for worker accommodation and consideration of alternatives

17.46 As this site benefits from planning permission for residential use, the principle of development has already been established and therefore the site was not taken through the same site selection process used to determine the preferred sites for Temporary

Workers' Accommodation. Whilst it is acknowledged that the existing consent envisaged a different use of the site than the temporary use proposed, this accords with the spatial strategy for the provision of workers' accommodation, as described below.

17.47 The spatial strategy set out in the emerging Anglesey and Gwynedd Joint Local Development Plan (composite version, June 2016) (JLDP) and the Wylfa SPG is broadly to first consider sites closest to settlements.

17.48 The location of the site adjacent to Amlwch settlement means that it would be preferred by the SPG to sites further from settlement. It is also supported by the guidance within GP10 of the SPG to seek to minimise the need to travel and to deliver a legacy of permanent accommodation beyond the construction period.

17.49 The Madyn Farm site is not allocated for a specific use in the existing Ynys Mon Local Plan (1996) or in the Stopped UDP (2005), however, it benefits from an existing planning permission which has established the principle of residential development on the site. The SPG also encourages the provision of Temporary Workers' Accommodation adjacent to settlement on sustainable sites.

17.50 The Wylfa SPG supports the principle of new housing in Urban Service Centre locations given this accords with the emerging JLDP Strategic Policy PS3. The SPG also supports beneficial legacy uses, including the provision of permanent homes.

17.51 The provision of permanent housing, to first be used as Temporary Workers' Accommodation at Madyn Farm is therefore, considered to accord with current and emerging policy and guidance.

Options for consultation

Layout

17.52 We would like to understand your views on the preferred proposals for our preferred site at Madyn Farm, including the way in which buildings, landscaping and parking areas are positioned in the site.

17.53 The design and layout of the proposals reflects that of a traditional housing development, with streets, open spaces and back gardens.

17.54 The location of the majority of the site boundaries away from residential areas, and adjacent to commercial uses, means that the physical impact of the development on existing communities is generally minimised; however it is recognised there are residential homes opposite the site access and the layout of the site has taken this into account by off-setting the proposed houses from this boundary.

17.55 Environmentally significant features surrounding the site e.g. hedgerows, streams (including Afon Goch), wet ditches and trees will be retained with buffer zones. The design of the proposals has taken existing topography, field boundaries and boundary walls into account. The retention of as much boundary vegetation as possible will help to screen the development from residential areas and will also help to reduce the perception of noise and disturbance.

17.56 Our preferred approach to the layout of the buildings and parking on site is shown in figure 17.2 and we would welcome any views you have to improve this layout.

Figure 17.2 Preferred Layout of Madyn Farm for permanent housing site

Architectural design

17.57 The architectural design of the proposed buildings on the site is also yet to be decided. The draft Masterplan for Madyn Farm provides illustrative material that shows our current views on what the buildings may look like, taking into account national and local planning policy, including that in NPS EN-1. This includes a requirement for 'good' design and recognition that the decision-maker should consider both functionality (including fitness for purposes and sustainability) and aesthetics (including its contribution to the area in which it would be located). The design has evolved in consultation with DCfW and who we will continue to engage with up to the finalisation of the proposals. We would welcome your comments on our current preferred proposals (see question at the end of this chapter).

17.58 Followed feedback received from consultation, particularly from DCfW, a restricted natural palette will be adopted for all the buildings, helping to visually link the buildings and be in context with their surroundings. The use of typically Welsh building materials will be chosen and utilised within the building design to complement the character of a rural location. The preferred architectural design is illustrated in figure 17.3.

17.59 The houses would be of high quality design and build that will support the demands of modern day life. A mixture of semi-detached and terraced houses is proposed. Our aim is to create a well-connected sustainable community extension with well-designed buildings, streetscapes, green public areas responding to the character and identity of the local surroundings and materials by utilising good architecture and landscaping.

17.60 The final proposed design will be developed to ensure that buildings will respond to local context and would reflect the permanent nature of the proposals.

Figure 17.3 Preferred Architectural Design of the Madyn Farm permanent housing

Landscaping and boundary treatments

17.61 The landscaping and boundary treatments provided on the site are also yet to be decided. Our preferred approach is shown in figure 17.4 and we would welcome your comments on this.

17.62 A key sustainable design objective has been to maximise and enhance existing local landscaping features, such as trees and hedges, and protection of ecological features.

17.63 An existing footpath to the west of the permanent houses will be required to be diverted approximately 10 to 20 metres east of its current location to provide continued use during and after development.

Question - Given the information provided on our Associated Development, do you have any views on:

- **How we can improve the preferred plans, including such issues as the layout of buildings and parking areas;**
- **How we can improve the external appearance of the buildings, landscaping and boundary treatment; and**
- **Our proposed legacy for each site.**

Figure 17.4 Preferred approach to landscaping and boundary treatments at the Madyn Farm permanent housing site

Summary of Preliminary Environmental Information

17.64 Our proposals at Madyn Farm are likely to have some effects on the environment during construction and operation of the houses as Temporary Workers' Accommodation. The likely significant adverse and beneficial effects are summarised below and more detail is provided in the main body of the PEI Report (volume G) and in volume B1, which considers Project-wide socio-economics effects in the Key Socio-economic Study Area (KSA). The assessment of environmental effects related to Madyn Farm are currently not disaggregated from the cumulative effects of the proposals with Amlwch Sites A and B. This would however, be done as part of any Environmental Statement or individual environmental reports carried out in relation to the planning application for development at this Associated Development site.

17.65 The summary table below therefore, relates to the cumulative effects of Madyn Farm and Amlwch Sites A and B, unless the individual effects can be easily disaggregated, e.g. for traffic movements. The effects relating to Madyn Farm would however be anticipated to be proportionally smaller (i.e. one fifth).

17.66 No decommissioning effects are reported, as the houses would remain in place.

Table 17.2 Cumulative effects of Madyn Farm and Amlwch Sites A and B

Topic	Potential effects and mitigation	
	Construction phase	Operational phase
Traffic and transport	During construction of the Temporary Workers' Accommodation, there are likely to be effects on motorised, non-motorised and public transport users travelling along the A55 Britannia Bridge, A5025 (west) and the A5025 (east) between the Power Station Site and Amlwch. This would be minor and short-term and would be mitigated through the use of a Construction Traffic Management Plan. It has been estimated that the number of vehicles travelling to and from the development during the construction peak would be approximately 250 per day (two-way) (i.e. 125 vehicles in and 125 vehicles out of the site). However, this	The effect of the increase in traffic associated with the Temporary Workers' Accommodation site is not considered to be significant. There would be an increase in bus movements on the A5025 through Amlwch of circa 10 two-way daily movements (i.e. 5 in and 5 out). 3 of these would occur between 07:00 and 08:00 and up to 3 between 16:30 and 17:30. Additionally, there is expected to be about 100 additional daily vehicle movements as a result of staff and deliveries to and from the site. A further 100 daily vehicle movements through Amlwch are

Topic	Potential effects and mitigation	
	Construction phase	**Operational phase**
	level of traffic would only be present for two months of the programme and daily traffic flows either side of this construction peak would be lower. Additionally, construction traffic would only be present for six days per week. The Annual Average Daily Traffic (AADT), which is the total volume of vehicle traffic on a road flowing past a certain point over a year divided by 365 days, would be approximately 170 vehicles per day (two-way) (i.e. 85 vehicles in and 85 vehicles out of the site), of which 10 would be HGVs (two-way) (i.e. 5 vehicles in and 5 vehicles out of the site), during construction of Madyn Farm.	anticipated as a result of the Project as a whole (although this is not disaggregated from Sites A and B and includes trips not directly associated with this Temporary Workers' Accommodation site). This would result in a significant impact in terms of safety and journey times, but is considered to be minor and would be mitigated through the use of a Construction Traffic Management Plan.
Socio-Economics (including public services)	During construction, staff would be recruited to carry out the construction work, resulting in a moderate beneficial effect. Construction activities at the permanent housing site alone would be unlikely to effect the camp site at Llaethdy-mawr farmhouse, given the distance from the site.	Staff would be recruited to work on the operational site, resulting in a moderate beneficial effect. Potential effects on public services during the operation of the Temporary Workers' Accommodation are considered in Volume B1 of the PEI Report (rather than in volume G). This is because they are considered to be Project-wide effects. The assessment states that could be a requirement for an additional 5.4 GPs and 2.9 dentists to support the new workforce and their dependants on Anglesey. In order to mitigate this, service planning discussions are in progress with Betsi Cadwaladr University Health Board (BCUHB) and other service providers to determine how and where services would be provided for construction workers. The options being considered include the enhancement of existing services or dedicated health care provision

Topic	Potential effects and mitigation	
	Construction phase	Operational phase
		at the Temporary Workers' Accommodation. As service planning discussions are ongoing it is too early to describe the detail of specific mitigation. However, we will meet the workforce health care and dental care needs by whatever mechanism is agreed with BCUHB. While primary school capacity across the KSA (see PEI volume B1) as a whole is sufficient to accommodate the dependants of non home-based workers, it is recognised that there may be localised issues. For example, if all 170 dependants were located in Anglesey West, the surplus capacity would increase to within 8% of total capacity. Overall, a level of concentration of demand for school places is considered unlikely and the effects are assessed as not significant. However, it is proposed that monitoring would be carried out to allow increased demand to be recorded and managed or mitigated, as required, during the construction period. Mitigation could include the need to make financial contributions to certain primary schools the KSA. Consideration would also be given to the need to provide teachers with more diverse language skills, should the first language of new pupils require this. Demand for additional Welsh language services is considered within the Welsh language Impact Assessment Interim Report, such as additional services within the Welsh language immersion centres. There is also a potential adverse effect on the police service, but it is considered that this could be reduced to minor with appropriate mitigation. There is a potential minor adverse effect on the fire and rescue

Topic	Potential effects and mitigation	
	Construction phase	**Operational phase**
		service, although this is across the north Wales region, and it is not possible to predict the effect on Anglesey alone. Although there is no leisure provision proposed to be provided on this Temporary Workers' Accommodation site, facilities are proposed to be provided at other sites, which would be available to the workers living at Amlwch and so the impact on leisure services is not considered to be significant.
Landscape	During construction, there would be changes in the landscape character of the area, which includes the Anglesey Special Landscape Area (SLA) and Parys Mountain and Slopes proposed SLA. With the introduction of a Landscape Management Plan, this is anticipated to be minor adverse. There would also be changes to views and visual amenity of public footpath users, the local community, users of the Ysgol Syr Thomas Jones school, leisure centre and Llaethdy-mawr camp site. The impact on footpath users is considered to be major adverse and short term, moderate for other receptors and minor for users of the school.	During operation, there would be similar effects as during construction on the landscape character of the area. However, effects on views and visual amenity are considered to reduce to moderate to minor adverse.
Welsh Language	The WLIA consider effects on Welsh Language of the Project as a whole, rather than site by site and therefore the effects are reported during the operational phase of the Associated Development sites.	The WLIA also provided as part of this consultation considers the effects of the Project on Welsh Language. It recognises that whilst there would be a general increase in the population of the KSA, this would be greatest in the communities hosting the Temporary Workers' Accommodation, those being the areas of Holyhead, Amlwch, and around the Wylfa Newydd Development Area.

Topic	Potential effects and mitigation	
	Construction phase	Operational phase
		The assessment assumes that the majority of non home-based workers moving into the KSA from other British countries or from overseas are non-Welsh speakers. This has the potential to be harmful to the Welsh language's place as part of the social fabric of the communities of the KSA. This is expected at this stage to be adverse, although the assessment also notes that there may be beneficial effects as a result of the increased employment opportunities available to local people, which may reduce the number of people leaving the area, or attract Welsh speaker's back to the area. The WLIA explains that we are considering measures to reduce these effects, including measures that can be developed to raise awareness amongst non home-based construction workers, and their families and incomers during the operational stage, about the Welsh language and unique Welsh culture and traditions, which form an integral part of the social fabric of communities in the KSA. We are also considering working alongside local language initiative groups to support measures to normalise the use of the Welsh language in the community and measures to integrate newcomers into Welsh-speaking communities. Materials would be developed promoting the benefits of the Welsh language and bilingualism to families moving into the area.
Public Access and	During construction, the existing Public Right of Way across	In order to minimise disruption, it is intended that the temporary

Topic	Potential effects and mitigation	
	Construction phase	**Operational phase**
Recreation	the site (PRoW 11/038/1) would be diverted. It is anticipated that this diversion would follow the boundary of the development site, between Madyn Farm and the alternative sites for temporary accommodation at Amlwch Sites A and B. It would be of a similar length to the existing PRoW. This would retain connectivity between the A5025 and the leisure centre, recreation ground and school throughout the construction stage.	diversion of PRoW 11/038/01 is retained permanently. We are exploring the option to improve the surface of the PRoW to increase accessibility, providing a minor beneficial effect.
Noise and Vibration	During construction there would be effects related to the operation of fixed and mobile construction machinery on site. This would be minor and short term and would be mitigated through the implementation of a Noise and Vibration Management Plan, which would include measures such as low noise machinery and limiting construction working hours. This effect is considered to be minor to not significant.	During operation there would be regular use of the car parking areas and goods delivery/waste collection areas. This would be mitigated through the management of shift patterns, encouraging the use of public transport and installing noise barriers, if considered appropriate. This effect is considered to be minor to not significant.
Air Quality	No significant effects are predicted during construction of the proposed Temporary Workers' Accommodation.	No significant effects are predicted during operation of the proposed Temporary Workers' Accommodation, but good practice construction methods would still be used, including comprehensive measures and working methods to prevent and reduce dust emissions at their source.
Soils and Geology	There would be a minor adverse effects on soils during construction, but these are moderate, low to very low quality.	No significant effect on soils are predicted during operation.
Ecology	Lighting during construction works of the Temporary	Lighting during operation of the Temporary Workers'

Topic	Potential effects and mitigation	
	Construction phase	**Operational phase**
	Workers' Accommodation may result in a minor adverse impacts on bats. This would be mitigated by directing lighting away from watercourses and reducing the use of lighting where possible.	Accommodation and in connection with the permanent housing may result in a minor adverse impacts on bats. This would be mitigated by directing lighting away from watercourses and reducing the use of lighting where possible.

18. Off-Site Power Station Facilities

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18. Off-Site Power Station Facilities

18.1 As part of our emergency planning arrangements, Horizon needs to develop a suite of integral facilities that would be physically separate from, but local to, the Power Station Site. We call these our Off-Site Power Station Facilities. The need for these facilities is a requirement in order to provide resilience against extreme events with very low probabilities. The principle of including these facilities in the Wylfa Newydd Project derives from the requirements of the Office for Nuclear Regulation (ONR) in respect of emergency planning. Further details are provided in the emergency arrangements section of this document in chapter 5.

18.2 This chapter provides an overview of the proposals and requirements of the Off- Site Power Station Facilities, which consist of the co-located Alternative Emergency Control Centre (AECC) and Environmental Survey Laboratory (ESL) at its preferred location in Cefn Coch together with the Mobile Emergency Equipment Garage (MEEG) at its preferred location in Llanfaethlu.

18.3 These facilities are an integral part of the safe operation of the Power Station, so would form part of Horizon's application for a Development Consent Order (DCO). Because they are not located in the Wylfa Newydd Development Area however, they are presented separately in this chapter for clarity.

18.4 Since the January Project Update consultation in 2016 the requirements for the Wylfa Newydd Project have developed through the on-going discussions with the ONR and Horizon's technical assessment of accident scenarios and consequences.

18.5 The following sections expand on the information provided during the January Project Update consultation and further explain the need for, and operational characteristics of, each of the facilities. They also discuss the further work undertaken as part of the design development process and how the sites have evolved following the pre-application consultation.

18.6 The preferred locations of each facility have been determined by applying a series of siting criteria based on both locational and operational requirements. Details of alternative sites that were considered are set out in the report on Horizon's Approach for Siting Off-Site Power Station Facilities, together with an additional addendum report in respect of the siting of the AECC and ESL which has been produced following further representations received from the Isle of Anglesey County Council (IACC).

Alternative Emergency Control Centre and Environmental Survey Laboratory

18.7 The AECC would provide back-up command and communications facilities that would be used to remotely manage an incident at the Power Station in the extremely unlikely event the primary facilities on the Power Station Site were untenable or if there was no access to the Power Station Site.

18.8 In this capacity, the AECC would be occupied by the emergency controller, technical support team and support staff who would be able to use the AECC to continue to provide strategic control of the Power Station. A small number of vehicles would need to be based at this facility and there would also be communication connections to the Power Station Site. The AECC would also facilitate liaison with the local authority and

emergency services at their own emergency co-ordination facility, which is termed the Strategic Coordination Centre.

18.9 The ESL would perform a normal operating function for environmental monitoring and, as such, would contain facilities such as radiation monitoring equipment to conduct radiological surveys in the local area. There would be equipment for analysing samples and assessing the implications for the public and the environment under normal operation and during an emergency situation.

18.10 Whilst it is possible to separate the AECC and ESL buildings, it is Horizon's preference to co-locate the facilities given their associated operational requirements and how they would complement one another in an emergency situation. It is good practice for the AECC and ESL functions to be co-located and this is the approach Magnox has adopted for the Existing Power Station.

Site and key characteristics

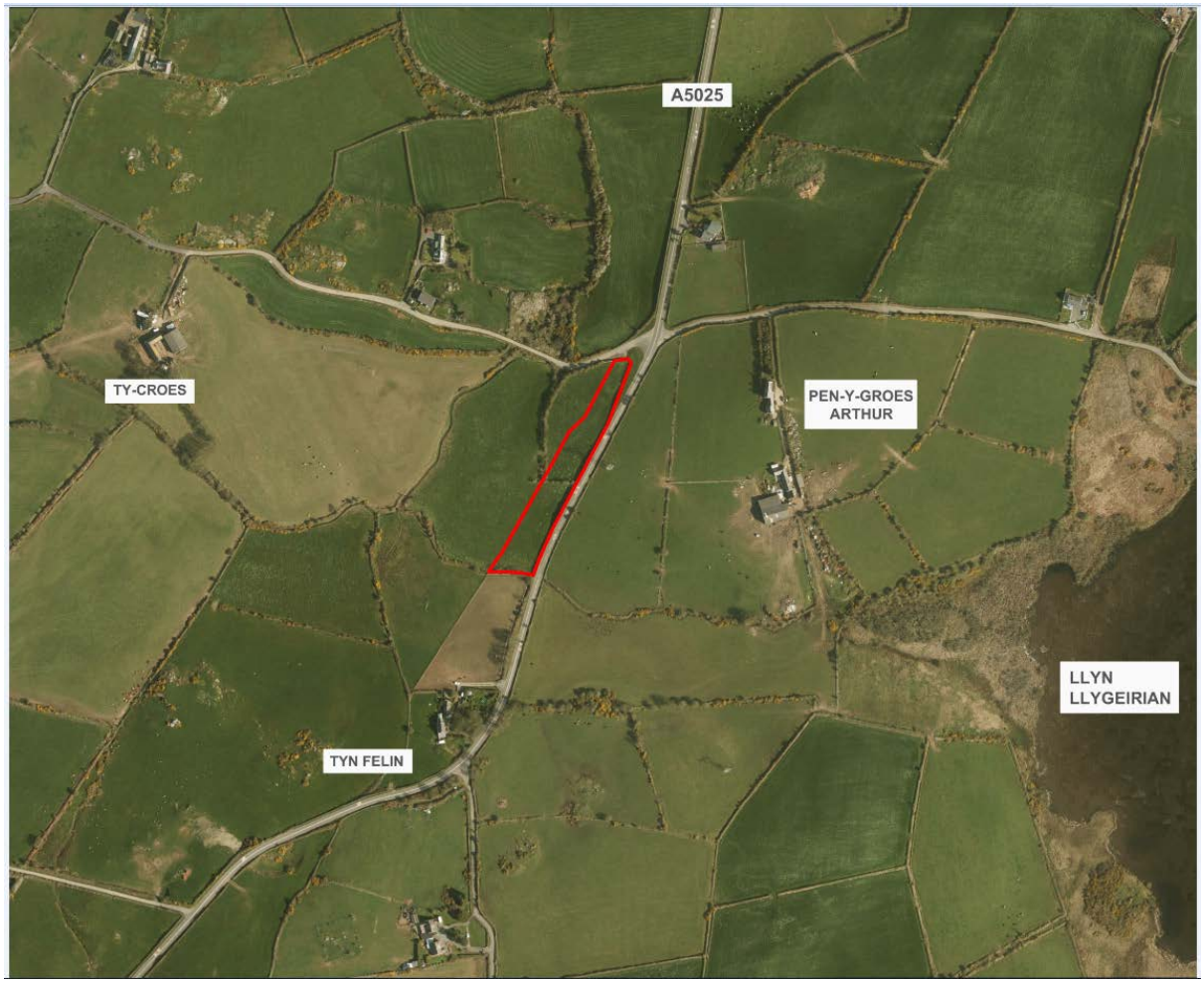
18.11 Horizon's preferred site for the AECC and ESL is at Cefn Coch. It comprises 0.63 ha of land located to the west of the existing A5025 between Llanrhyddlad and Tregele, approximately 4.8km from the Power Station Site.

18.12 The site comprises agricultural land, with existing hedgerows and stone wall boundaries, together with a small watercourse along its southern boundary. It is surrounded by agricultural land with scattered residential properties and farm holdings beyond. Other site features include electrical and telegraph wires that pass overhead. The site is currently accessed via an (unnamed) road to the north that links Llanfairynghornwy and Llanfechell.

18.13 The area around the site is predominantly improved grassland set within a landscape of small fields with boundaries consisting of low stone walling or hedge planting, with scattered trees and bramble along the boundary walls. There are some scattered trees to the southern boundary of the site.

18.14 The land within this immediate area is subject to additional proposals to facilitate the construction of the Power Station, relating to the proposed offline improvement of the A5025 that involves a new by-pass in the immediate area (see chapter 11 of this document). Subject to planning permission being granted, this highway improvement would split this parcel of land from the remainder of the field and the adjacent fields, such that it will form an island between both the new road and the existing A5025. Our preferred proposal is therefore to make the best use of this land by developing it for the AECC and ESL. Figure 18.1 below identifies the preferred site.

Figure 18.1 Preferred location of the AECC and ESL at Cefn Coch



Description of the proposals

The proposed development

18.15 The AECC requires critical infrastructure protection status, and the necessary security will be achieved through a strengthened exterior construction of stonewalling, fencing and retaining walls, combined with vegetation barriers. This would be supplemented with closed circuit television and lighting. Due to the linear, compact nature of the site and the need to respect the key views of travellers passing the site on the nearby road, it is not possible to achieve the required security level through boundary treatment alone, so the AECC would be a secure building.

18.16 The AECC would be designed to be resilient to flooding and seismic events, with power supplies fed from independently backed up supplies so that it can remain operational for up to seven days in the event of loss of power supplies.

18.17 The following facilities have been included in the AECC and ESL design:

- the combined permanent AECC and ESL building is proposed to be a single storey structure with approximate maximum dimensions of 61.5m in length, 17m in width and 10.2m in height;
- staff car parking, including disabled parking bays, motorcycle spaces and cycle store;
- access and delivery areas;
- site drainage system;
- a small sewage treatment unit; and
- an ancillary building, including utility and waste management.

18.18 In addition to the above, a temporary mobile telecommunications mast may be used occasionally, if communications by other means are lost.

18.19 We have provided our preferred proposals in relation to site layout, building heights and appearance in the draft masterplans, which are available online as part of the Stage Two Pre-Application Consultation materials (see also figure 18.2). The detailed design of the buildings, layout of the site, landscaping and boundary treatment will be progressed further following this consultation and included within the final development proposals, as part of the application for a DCO.

Architectural design

18.20 The architectural designs of the proposed buildings are yet to be finalised. Our preferred proposals (as shown in figure 18.3) have, however, been developed with an overarching strategy of creating an unimposing appearance, where the buildings are screened as far as possible, and where visible, they are of an appearance that allows them to harmonise with and complement the surroundings.

18.21 In addition to this, and as part of the layout, we propose to orientate the buildings in a way that reduces their effect on the surrounding areas, particularly existing residential properties in the vicinity of the site, and as far as practicable within operational requirements.

18.22 Given the lifespan of the building, the final design will need to respond to the local context, recognising that the development will be a feature within the landscape for many years to come.

18.23 A restricted natural palette will be adopted for all the buildings, helping to link the buildings visually, and to be unimposing with their surroundings. The use of typically Welsh building materials will complement the character of the area. Locally occurring stone, rocks and other natural materials will be considered in arriving at a number of distinctive design elements, which will subsequently feed into settling key design principles.

18.24 Using all of these inputs, the design of the scheme will continue to develop following feedback from the consultation as well as through further engagement with the Design Commission for Wales and officers from the IACC, in order to obtain their professional inputs on materials and the final design.

18.25 The aim would be to create a well-integrated, well-designed, sustainable building that would respond to the character and identity of the local surroundings through the sympathetic use of materials, architectural treatment and landscaping.

Landscaping and boundary treatments

18.26 The landscaping would be designed within boundaries typical of the surrounding landscape, and would feature low stone walling or hedge planting with scattered trees.

18.27 Environmentally significant features surrounding the site, such as trees, hedgerows, streams and wet ditches, will be retained with buffer zones wherever possible, though a number of localised openings would be required for pedestrian and vehicular access.

18.28 It is anticipated that the adverse visual effect of the buildings can be limited through a co-ordinated approach to the planting and landscaping schemes that will be implemented for the new road alignment along the A5025. The retention of as much boundary vegetation as possible will also help to screen the development and reduce any potential disturbance to properties nearby.

18.29 The key sustainable design objective is to maximise and enhance existing local landscaping features and to disturb ecological features as little as practicable. Overall, the proposed approach is to create a farmstead style setting which would be in keeping with the local vernacular.

Proposed operation

18.30 It is expected that two staff would work at the ESL on a regular basis, although the AECC would not usually be staffed. However, should there be an incident, there could be more than 40 people working at the site.

18.31 During normal operation of the Power Station, the AECC would be expected to be in use only once per year for an annual incident exercise. The ESL would have a day-to-day role for routine sampling (normal working hours only). Only in an incident would both the AECC and ESL be operational 24 hours a day.

18.32 Training at the AECC would take place at regular intervals, involving a small number of staff using the main AECC area for a limited period of time. Approximately once a month, maintenance would need to be carried out at the facility, which may include running a back-up generator for a short time.

Proposed legacy

18.33 At present, it is assumed that the AECC and ESL building would be decommissioned and removed from the site around the same time as decommissioning of the Power Station commences at the end of its operational life. Any alternative proposals for use of the building or the site beyond this period would need to be considered and determined as part of a future planning application at that time.

Justification for preferred site for AECC and ESL and consideration of alternatives

18.34 A four-stage site selection process, informed by initial pre-application consultation, was followed to identify suitable sites for the AECC and ESL as summarised below:

- Stage One was a desk-based exercise that identified potentially suitable sites. This included an initial screening exercise to discount sites that were protected by nationally or internationally important designations.

- Stage Two then took those sites that were deemed potentially suitable in broad terms and considered them against Horizon's operational prerequisites: these were determined in discussions with the ONR and Horizon's own technical assessment of accident scenarios and consequences.
- Stage Three then considered the extent to which sites complied with the spatial strategy in the draft Joint Local Development Plan (JLDP) and locational guidance set out in the Supplementary Planning Guidance (SPG). This guidance advocates a sequential approach to site selection, considering the main settlements first and then moving to smaller settlements and then out of settlement. Generally, sites most closely aligned with the spatial strategy (within settlement) in the draft JLDP and the principles in the SPG have been selected unless material considerations indicate otherwise.
- Stage Four of the assessment then took the shortlisted sites and applied a number of finer grain criteria to enable the sites to be compared and contrasted consistently before selecting a preferred site.

18.35 This process identified two potential sites for the AECC and ESL: A5025 Site – Cefn Coch and the A5025 Site between Llanrhyddlad and Tregele.

18.36 Given the above consideration of effects and having regard to planning policy and guidance, our functional requirements for the AECC and ESL and land use constraints, Cefn Coch has been chosen as the preferred location for these facilities.

18.37 Full details of alternative sites that were considered are provided in the Report on Horizon's Approach for Siting Off-Site Power Station Facilities.

Response to previous consultations

18.38 As part of our emergency planning arrangements and since our Stage One Pre-Application Consultation in 2014 we have been working closely with regulators in understanding the needs for Off-Site Power Station Facilities in order to meet the requirements established by the Office for Nuclear Regulation. Stage One Pre-Application Consultation outlined the details in respect of a 'Broad Area of Search' in which sites would be selected. However, at that time, the detailed requirements of the Off-Site Power Station Facilities were not considered to be mature enough to provide meaningful consultation.

18.39 The January Project Update consultation provided the first opportunity to introduce the requirements of the Off-Site Power Station Facilities as part of our emergency planning arrangements. The AECC and ESL facility was introduced, together with the rationale for its inclusion in the DCO application, given the work undertaken with regulators since Stage One Pre-Application Consultation to understand the needs of the facilities, and in particular to meet the requirements established by the ONR. The consultation also highlighted details of Horizon's preferred choice of site.

18.40 Public responses to the January Project Update consultation generally appreciated the need for the emergency facilities off site. No public comments were received on the choice of the preferred site that led us to change our preferred site. However, comments received in respect of potential effects from residential amenity and disturbance perspective have been noted and were subsequently fed back into the design and layout process in order to reduce potential effects wherever possible.

18.41 Further detail on the responses received from statutory consultees, members of the public and other stakeholders, together with Horizon's response and the resultant changes made to the Project, are provided in the Consultation Summary Report. Comments made in relation to the AECC and ESL developments:

- noted general acceptance of the need to locate the AECC and ESL close to the Power Station and on the Isle of Anglesey;
- asked for further detail on the design and appearance of the buildings. Building aesthetics need to be carefully considered to blend into the open countryside;
- asked for further detail in respect of the level of lighting that would be required;
- asked for further detail in terms of the likely traffic movements that would be generated by the facilities; and
- asked for further detail in respect of the overall layout of the sites to ensure there is no development within flood risk zones or adverse effect on watercourses.

Latest update

18.42 During the preparation of our Stage Two Pre-Application Consultation, potential alternative sites on which to locate the AECC and ESL came to Horizon's attention.

18.43 One of these sites, the former Llanrhyddlad School site, has been initially assessed as potentially able to meet Horizon's broad operational prerequisites. We are therefore carrying our further work to determine whether it would be a suitable alternative site for the AECC and ESL, although initial analysis suggest that Cefn Coch will remain our preferred site.

18.44 We have, however, provided initial information on the Llanrhyddlad School site, including how the building may be arranged on the site, and preliminary environmental information on its likely effects. This information can be found within the Alternative AECC and ESL Addendum Report and we would welcome your views on this site as an alternative to Cefn Coch.

AECC and ESL options for consultation

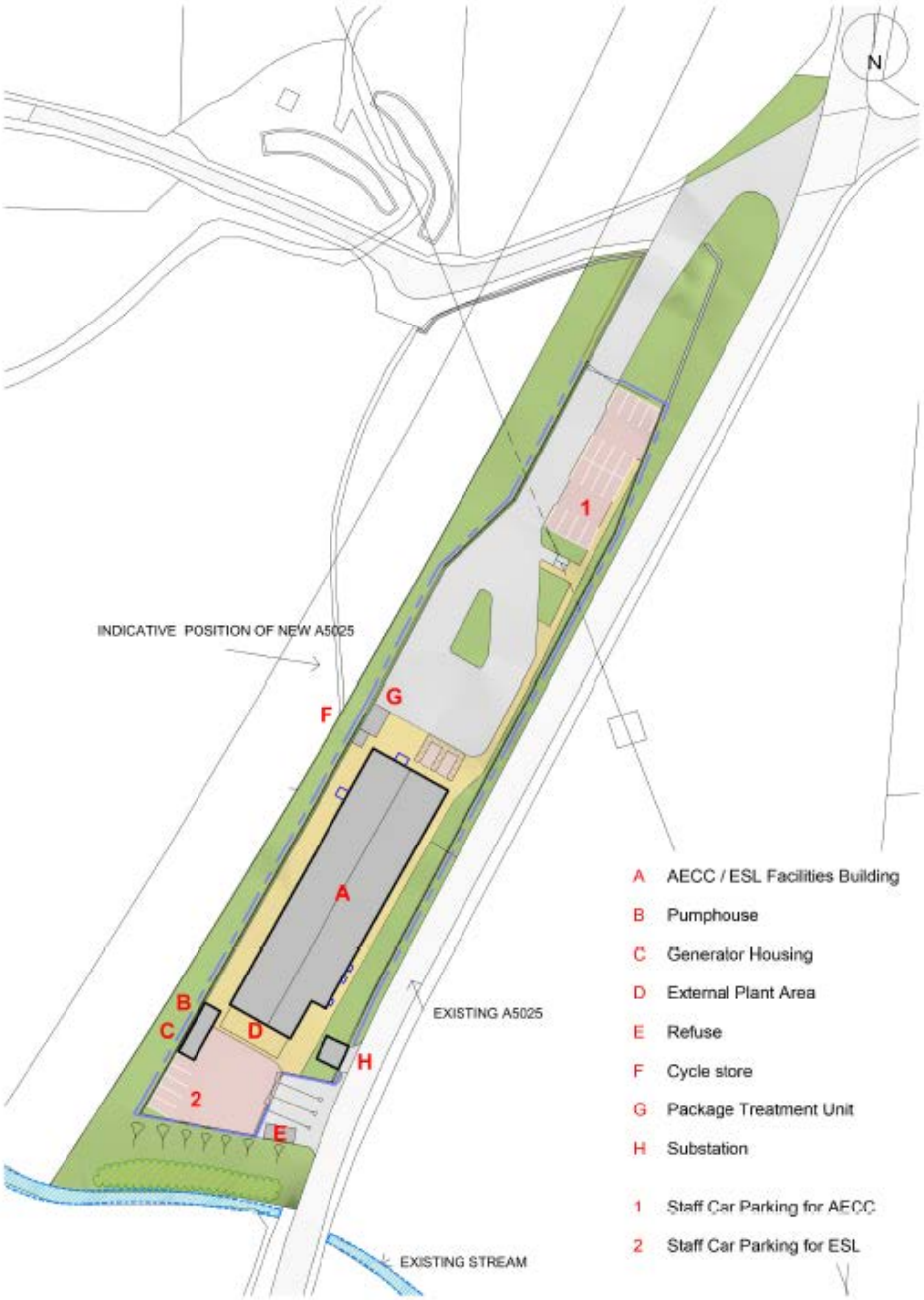
Layout

18.45 We would like to understand your views on the proposals for our preferred site Cefn Coch, including the way in which buildings, landscaping and parking areas are positioned within the boundaries of the sites.

18.46 The final design and layout of the proposals will be key in retaining, and where possible, enhancing important site characteristics, breaking down the scale and massing of the buildings and any associated effect on residential amenity whilst ensuring the emergency requirements associated with the facility can be delivered.

18.47 Our preferred approach to the layout of the buildings in line with the operational requirements for the site together the parking required on site is shown in figure 18.2, and we would welcome any views you have to improve this layout (see question at the end of this chapter).

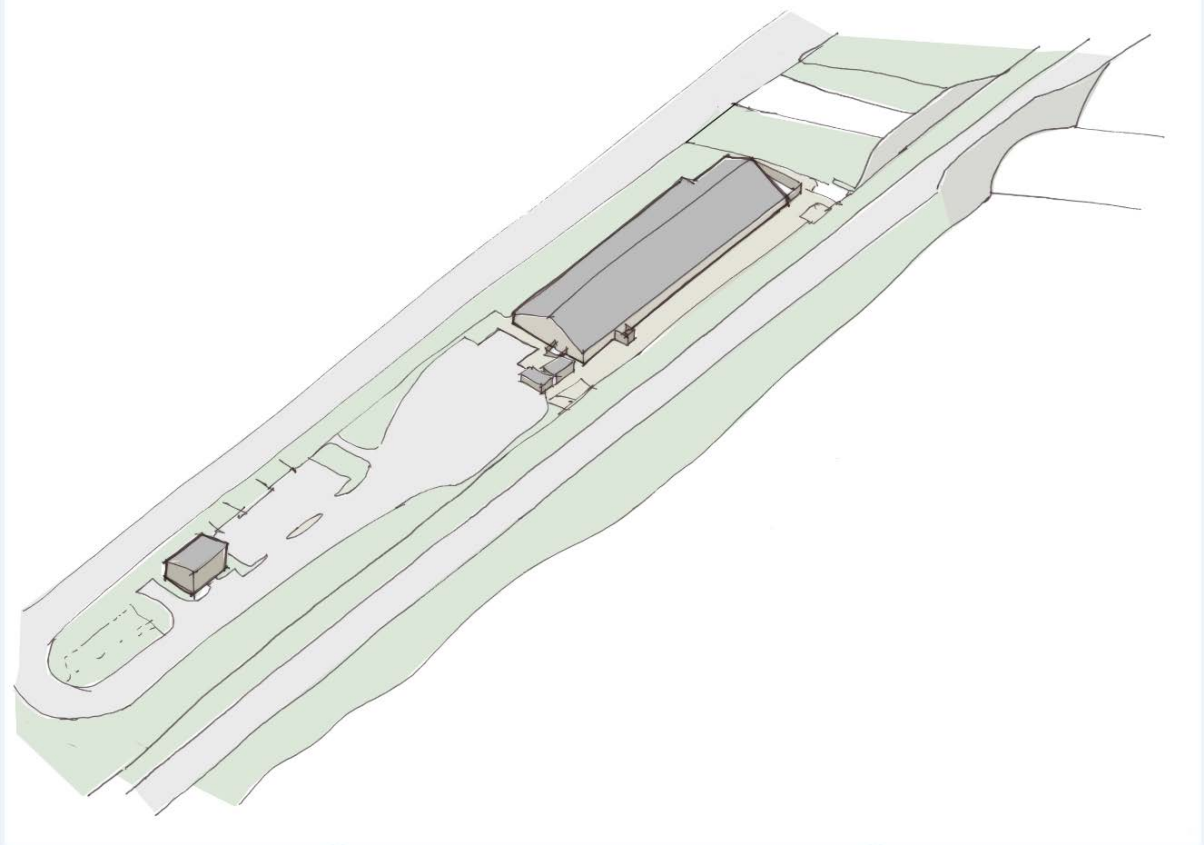
Figure 18.2 Preferred layout of AECC and ESL at Cefn Coch



Architectural design

18.48 The architectural design of the proposed buildings on the site is also yet to be decided. The draft Masterplan for the sites (shown in figure 18.3) provides illustrative material that shows our current views on what the buildings may look like, however we would welcome your comments on this.

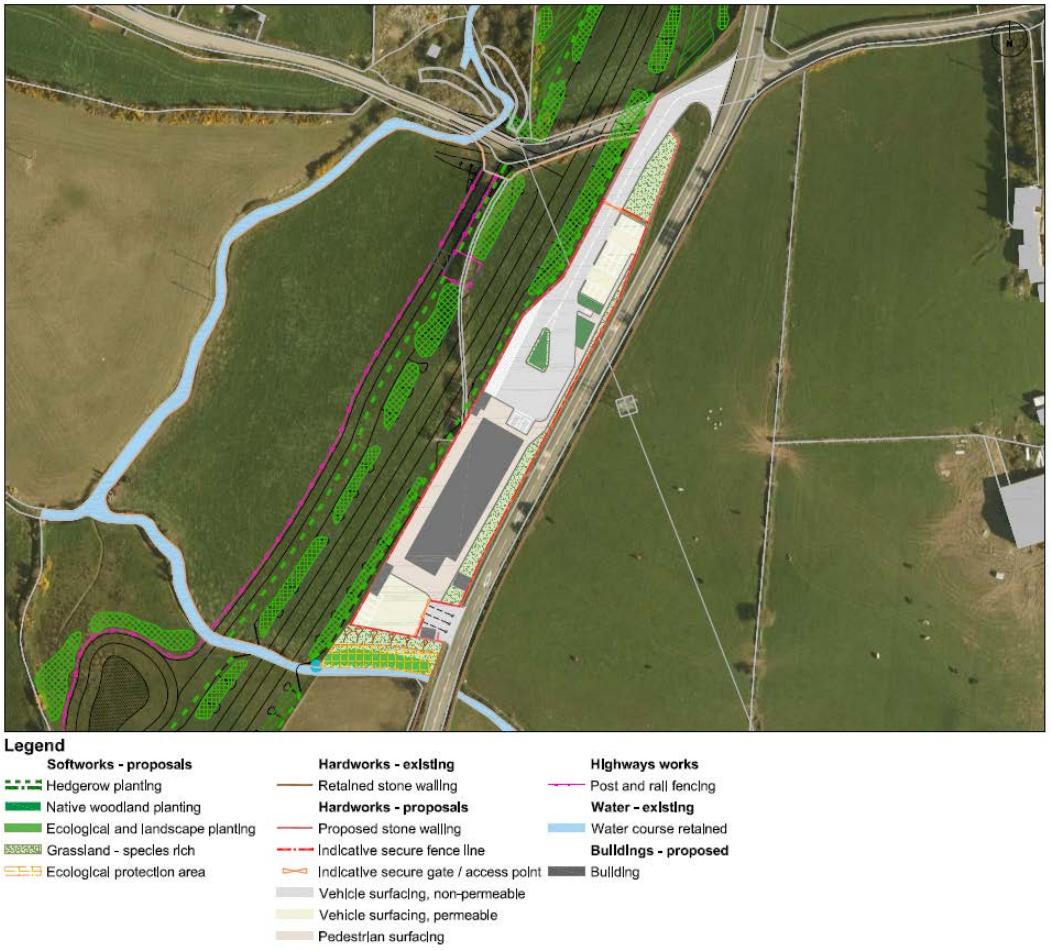
Figure 18.3 Preferred Architectural Design of AECC and ESL



Landscaping and boundary treatments

18.49 The landscaping and boundary treatment is also yet to be decided. Our preferred approach to landscaping and boundary treatment on site is shown in figure 18.4 below. However, we would welcome your comments on this.

Figure 18.4 Preferred approach to landscaping and boundary treatments of the AECC and ESL



Summary of preliminary environmental information

18.50 The following table provides a summary of the main potential environmental effects that are anticipated from the construction and ongoing operation of the AECC and ESL. More detailed information is provided in the Preliminary Environmental Information (PEI) Report (Volume B17).

Table 18.1 Summary of potential environmental effects and proposed mitigation

Effect type	Effect level	Mitigation	Effect level post mitigation
Increases in noise and vibration levels due to the activity of heavy plant, machinery and vehicle movements during construction of the AECC and ESL	Moderate adverse (based on an initial assessment)	Good construction practices	Not significant
Short-term increase in the number of vehicles coming to and from the site during construction of the AECC and ESL	Minor adverse	Implementation of a Construction Traffic Management Plan	Not significant
Localised nuisance dust due to construction activity during construction of the AECC and ESL	Minor adverse	Good construction practices	Not significant
Potential damage or degradation of high-value soils as a result of the topsoil stripping and construction works during construction of the AECC and ESL	Major adverse	Implementation of a soil management plan	Minor adverse
High sediment run-off affecting water quality during construction of the AECC and ESL	Major adverse	Good construction practices	Not significant
Changes to the landscape, affecting recreational users and residents during operation of the AECC and ESL	Major to moderate adverse	Good design with landscape management plan	Major to moderate adverse

Mobile Emergency Equipment Garage

18.51 The MEEG would enable Horizon to store a number of specialist vehicles at a location close to but separate from the Power Station Site, allowing them to be rapidly deployed if needed to support an incident. The MEEG could also be used as a marshalling point for support arriving on Anglesey before onward dispatch to the Power Station Site in an emergency situation.

18.52 Similarly to the AECC and ESL, as part of the emergency arrangements for the Power Station Site, there are certain locational criteria that needed to be met in selecting a site for the facilities.

Site and key characteristics

18.53 Horizon's preferred site for the MEEG is the bus garage at Llanfaethlu, which consists of 1.08 ha of land located to the east of the existing A5025 almost opposite the location for the new school, approximately 9km from the Power Station Site.

18.54 The site comprises existing commercial garages and workshops together with associated hard standings, and is used as a bus depot and associated motor maintenance facilities in conjunction with the running of the current business.

18.55 The site is predominately hard standing with the exception of the two large industrial style buildings, and sits at a lower elevation than the surrounding area. In terms of screening, the site benefits from scattered planting to its northern boundary together with bunding mounds around the eastern and southern sides of the site boundaries. In terms of residential receptors, there are a number of properties in the vicinity of the site and located primarily either side of the existing entrance when viewed from the A5025. In addition, there are also scattered properties to the rear of the site with agricultural holdings beyond in the surrounding countryside.

18.56 The land to the south of the site and beyond is subject to additional proposals to facilitate the construction of the Power Station, relating to the proposed Off-Line improvement to the A5025 (see chapter 11 of this document) to straighten the road. While the works will not directly affect the site, the opportunity to provide a co-ordinated approach through landscaping and water attenuation is being explored. Figure 18.6 below identifies the preferred site.

Figure 18.5 Preferred location of the MEEG at Llanfaethlu

Description of the proposals

The proposed development

18.57 The MEEG requires critical infrastructure protection status, and the necessary security will be achieved through a strengthened exterior construction of stonewalling, fencing and retaining walls, combined with vegetation barriers. This would be supplemented with closed circuit television and lighting.

18.58 The MEEG would be designed to be resilient to flooding and seismic events with power supplies to be fed from independently backed up supplies so that it can remain operational for up to seven days in the event of loss of power supplies.

18.59 The following facilities have been included in the layout and design of the MEEG:

- the MEEG is proposed to consist of two permanent buildings. The main building is a single storey structure with the approximate maximum dimensions of 56m in length, 24m in width and 13.6m in height. There is also a light vehicle storage building with approximate maximum dimensions of 30.5m in length, 18.5m wide and a maximum of 8.5m in height;
- auxiliary vehicle storage building;
- staff car parking, including disabled parking bays, motorcycle spaces and cycle store;
- access and delivery areas;
- site drainage system;
- a small sewage treatment unit;
- portakabin office pod;
- underground fuel tank to provide fuel for filling vehicles; and
- ancillary/plant buildings including external plant area, refuse compound and generator.

18.60 In addition to the above, a temporary mobile telecommunications mast may be used occasionally, if communications by other means are lost.

18.61 We have provided our preferred proposals in relation to site layout, building heights and appearance in the draft Masterplans which are available online as part of our Stage Two Pre-Application Consultation materials (see also figure 18.6). The detailed design of the buildings, layout of the site, landscaping and boundary treatment will be progressed further following this consultation and included within the final development proposals, as part of the application for a DCO.

Architectural design

18.62 The architectural design of the proposed buildings on site is yet to be finalised. Our preferred proposals (as shown in figure 18.7) have been developed with an overarching strategy to create an unimposing appearance, where the buildings are screened as far as possible, and where visible they are of an appearance that allows them to harmonise with and complement the surroundings.

18.63 In addition to this and as part of the proposal we aim to capitalise on the layout of the existing brownfield site where the orientation of the buildings has been structured in a

way to reduce their effect on the surrounding areas, particularly existing residential areas within the vicinity of the site.

18.64 The buildings on the site would be permanent given their requirement to be available for the lifespan of the Power Station itself. The final proposed design will therefore need to be developed to ensure that it responds to local context, recognising that the development will be a feature within the landscape for many years to come.

18.65 A restricted natural palette will be adopted for the buildings to integrate them within the context of the village setting whist recognising the functional requirements of the buildings where the use of complimentary materials to that of the surrounding area will be sought. An assessment of locally occurring stone, rocks and other natural materials will be assessed in arriving at a number of distinctive design elements, which will subsequently feed into settling key design principles.

18.66 Using all of these inputs, the design of the scheme will continue to development following feedback from the consultation as well as through further engagement with the Design Commission for Wales and officers from the IACC in order to obtain their professional inputs on materials and the final design.

18.67 The aim would be to create a well-integrated, well-designed sustainable buildings, which would responding to the character and identity of the local surroundings through the sympathetic use of materials, architectural treatment and landscaping.

18.68 A key sustainable design objective is to maximise and enhance existing local landscaping features and non-disturbance of ecological features.

Landscaping and boundary treatments

18.69 The landscaping and boundary treatments to be provided for the MEEG would consist of a combination of stone walling and planting designed to reflect the surrounding plant species, density and pattern, designed to meet two objectives:

- to integrate the site into the surrounding landscape; and
- to provide a secure boundary for the site incorporating weld mesh fencing in association with the design of the buildings. The fence would be located behind the planting and on the perimeter of the hard standing area.

18.70 It is anticipated that the visual effect of the site can be limited through a co-ordinated approach to the planting and landscaping schemes that will be required for the new road alignment along the A5025 as well as improvements to other boundaries in the form of tree planting and hedgerow improvements. In addition to this it is proposed to locate the vehicle storage building at the front of the site, creating a key boundary to screen the main courtyard of the site which would also replicate the current boundary features.

18.71 The design and layout of the proposals will be key in retaining, and where possible, enhancing important site characteristics (e.g. hedgerows, bunding and watercourses), to break down the scale and potential effects of the proposed buildings, parking and ancillary facilities. The retention of as much boundary vegetation as possible would help to screen the development from residential areas.

Proposed operation

18.72 The MEEG would have an operational workforce of up to four staff and 12 drivers during training (which would happen during normal working hours approximately once a year). During an incident, the staff would be working 24 hours per day, seven days per week. During periodic vehicle checks, typically once every six months, a similar number of staff will also be required on site. The facility would not be staffed at other times.

Proposed legacy

18.73 The MEEG buildings are permanent facilities that would be required for the lifetime of the operation of the Power Station. In terms of a future use of the buildings and land, this is something that would be controlled as part of the decommissioning programme in relation to the overall site, where any alternative proposals beyond this period would need to be considered and determined as part of a future planning application.

Justification for preferred site for MEEG and consideration of alternatives

18.74 The MEEG site was selected following the same four-stage process as set out in respect of the AECC and ESI as set out above.

18.75 This site selection process three potential sites for the MEEG were identified as meeting the broad requirements of the SPG and operational pre-requisites: garage at Llanrhyddlad, bus garage at Llanfaethlu and land near Llanfaethlu.

18.76 Given the consideration of the four stages of the site selection process having regard to planning policy and guidance, our functional requirements for the MEEG, land use constraints and commercial considerations, on balance the most suitable site to accommodate the required facility at this time is considered to be the bus garage at Llanfaethlu.

18.77 Full details of alternative sites that were considered are provided within the Report on Horizon's Approach for Siting Off-Site Power Station Facilities.

Response to previous consultations

18.78 As part of our emergency planning arrangements and since our Stage One Pre-Application Consultation in 2014 we have been working closely with regulators in understanding the needs for Off-Site Power Station Facilities in order to meet the requirements established by the ONR. Our Stage One Pre-Application Consultation outlined the details in respect of a 'Broad Area of Search' for which sites would be selected. However, at this time of the detailed requirements of the Off-Site Power Station Facilities were whilst know to Horizon were not considered to be mature enough to provide meaningful consultation.

18.79 The January Project Update consultation provided the first opportunity to introduce the associated requirements of the Off-Site Power Station Facilities as part of our emergency planning arrangements. The concept of the MEEG was introduced together with the rationale for its inclusion in the DCO application. The consultation also highlighted details of Horizon's preferred choice of site.

18.80 Public responses to the January Project Update consultation generally appreciated the need for the emergency facilities off site. No public comments were received on the

choice of the preferred site that led us to consider changing our preferred site. However, comments received in respect of potential effects from a residential amenity and disturbance perspective have been noted and were subsequently fed back into the design and layout process in order to reduce potential effects wherever possible.

18.81 Further detail on the responses received from statutory consultees, members of the public and other stakeholders, together with Horizon's response and the resultant changes made to the Project, are provided in the Consultation Summary Report. Comments made in relation to the MEEG:

- there is general acceptance of the need to locate the Mobile Emergency Equipment Garage MEEG close to the Power Station and on the Isle of Anglesey;
- asked for further detail on the design and appearance of the buildings. Building aesthetics need to be carefully considered to blend into the area.
- asked for further detail in respect of the level of lighting that would be required;
- asked for further detail in terms of the likely traffic movements that would be apparent on site; and
- asked for further detail in respect of the overall layout of the site to ensure there are no adverse effect on watercourses.

MEEG options for consultation

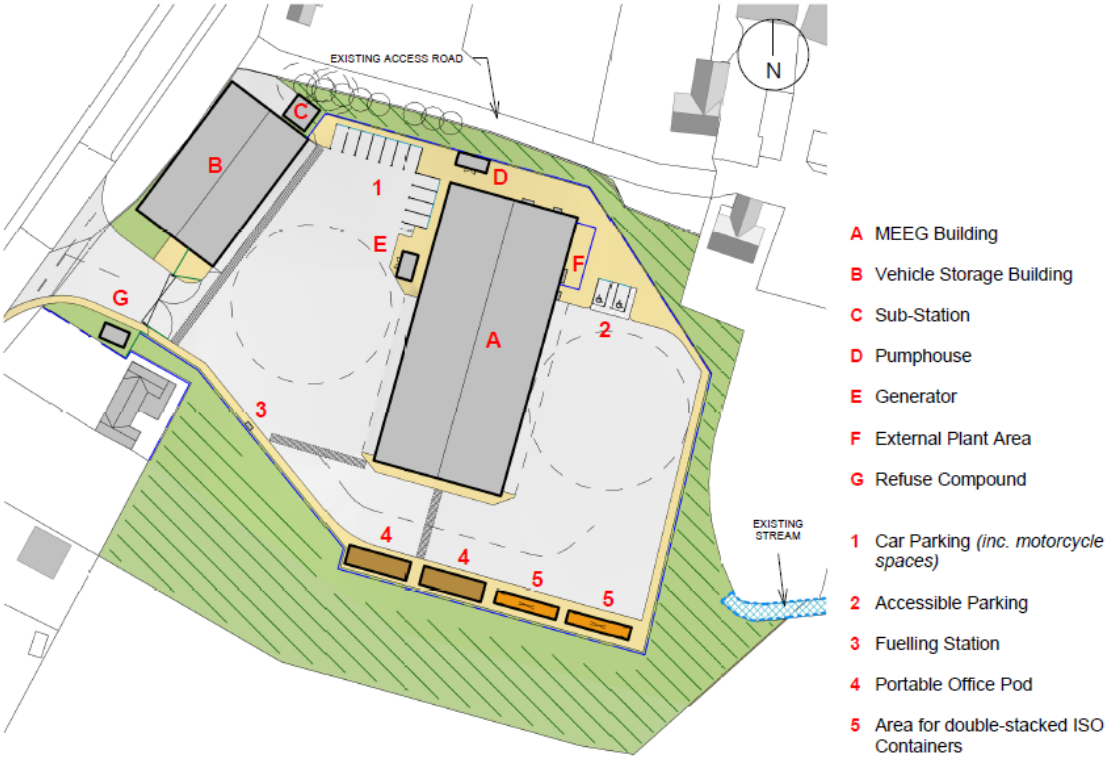
Layout

18.82 We would like to understand your views on the proposals for our preferred site, including the way in which buildings, landscaping and parking areas are positioned within the boundaries of the sites.

18.83 The final design and layout of the proposals will be key in retaining, and where possible, enhancing important site characteristics, breaking down the scale and massing of the buildings and any associated effect on residential amenity whilst ensuring the emergency requirements associated with the facility can be delivered.

18.84 Our preferred approach to the layout of the buildings in line with the operational requirements for the site together the parking required on site is shown in figure 18.6, and we would welcome any views you have to improve this layout.

Figure 18.6 Preferred layout of MEEG



Architectural design

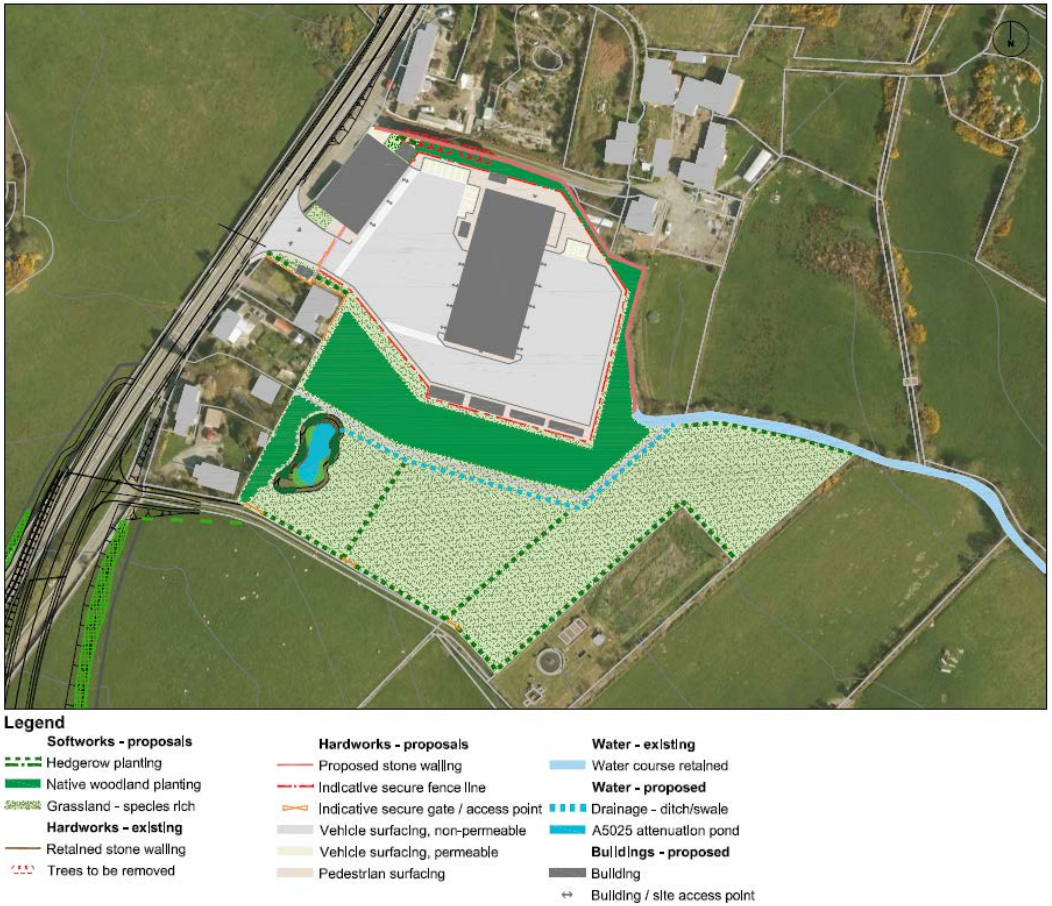
18.85 The architectural design of the proposed buildings on the site is also yet to be decided. The draft Masterplan for the site, provided as part of this Stage Two Pre-Application Consultation, provides illustrative material which shows our current views on what the buildings may look like, however we would welcome your comments on this.

Figure 18.7 Preferred Architectural Design of MEEG

Landscaping and boundary treatments

18.86 The landscaping and boundary treatment provided on the site is also yet to be decided. Our preferred approach to landscaping and boundary treatment is shown in figure 18.7 below. We would welcome your comments on this.

Figure 18.8 Preferred approach to landscaping and boundary treatments of the MEEG



Question – MEEG and AECC/ESL

Given the information provided on our Off-Site Power Station Facilities, do you have any views on:

- **how we can improve the preferred plans, including such issues as the layout of buildings and parking areas; and**
- **how we can improve the external appearance of the buildings, landscaping and boundary treatment.**

Summary of preliminary environmental information

18.87 The following table provides a summary of the key potential environmental effects that may arise from the construction and ongoing operation of the MEEG. More detailed information is provided in the PEI Report (volume B18).

Table 18.2 Summary of potential environmental effects and proposed mitigation

Effect type	Effect level	Mitigation	Effect level post mitigation
Increases in noise and vibration levels due to the activity of heavy plant, machinery and vehicle movements during construction of the MEEG	Moderate adverse (based on an initial assessment)	Good construction practices and reduced hours of work or noise hoarding	Not significant
Localised nuisance dust due to construction activity during the construction of the MEEG	Moderate adverse	Dust suppression and good construction practices	Minor adverse
Mobilisation of existing ground contamination or increase in sediments entering groundwater or surface water during construction of the MEEG	Moderate adverse	Removal of contamination where necessary and good construction practices	Minor beneficial
Change to the drainage arrangements in the area and resilience to flooding during operation	Minor beneficial	Good drainage design including consideration of flood risk	Minor beneficial
Changes to the landscape, affecting recreational users and residents during operation	Major to minor adverse	Good design with landscape management plan	Major to minor adverse

19 Other assessments

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19 Other assessments

Introduction

19.1 Horizon is undertaking a number of assessments to identify the potential effects of the Wylfa Newydd Project. The work to date on the Environmental Impact Assessment (EIA) is presented within the Preliminary Environmental Information (PEI) Report and is also briefly summarised in this document for each of the constituent parts of the Project. This chapter provides a summary of the other assessments that Horizon is undertaking, specifically:

- Welsh Language Impact Assessment (WLIA);
- Health Impact Assessment (HIA);
- Habitats Regulations Assessment (HRA); and
- Equality Impact Assessment (EqIA).

19.2 These assessments are linked to the EIA, and they draw on information from the topic-specific assessments as well as from each other as appropriate. These assessments are ongoing due to their iterative nature and their need to respond to and inform the design information for, and consultation on, the Wylfa Newydd Project. The assessments will continue to evolve towards their finalised position for submission in support of the applications for a Development Consent Order (DCO) and Associated Development, under the (TCPA) in connection with the Wylfa Newydd Project. Each of these assessments is described in further detail in this chapter, and in the relevant Interim Report that has been published as part of this Stage Two Pre-Application Consultation.

Welsh Language Impact Assessment

19.3 Horizon recognises that the consideration of the Wylfa Newydd Project requires careful assessment of the potential impacts on the Welsh language and culture of the local communities. The Welsh Language Impact Assessment (WLIA) is the tool we are using to assess these potential effects and support the decision making process in accordance with local and national planning policy. We are currently part way through the WLIA process and, when finalised, the WLIA will accompany Horizon's application for a DCO. There will be separate WLIAs, or Welsh Language Statements, prepared for the applications for Associated Development submitted under the TCPA as appropriate.

19.4 The WLIA responds to and informs the evolution of the Wylfa Newydd Project on an iterative basis. The Welsh language and culture is important to the development of key aspects of the Wylfa Newydd Project including Temporary Workers' Accommodation, the provision of employment premises and recruitment in relation to the supply chain and supporting the development of a skilled workforce locally. The WLIA is also key to the development of Horizon's Welsh Language and Culture Strategy.

19.5 Horizon's WLIA Interim Report has been published as part of this Stage Two Pre-Application Consultation and provides members of the public, community groups and language interest groups with a summary of the key potential effects of the Wylfa Newydd Project on the Welsh language and culture based on the assessment work done to date.

19.6 The WLIA Interim Report identifies the key effects of the Wylfa Newydd Project on the community and Welsh language for each stage of the Wylfa Newydd Project, i.e.

construction, operation and decommissioning, based on information available at the time of writing. The assessment may change by the time of submission of the final WLIA as new information becomes available and as a result of comments provided in response to this Stage Two Pre-Application Consultation. The WLIA Interim Report also sets out the way in which Horizon is considering mitigating adverse effects of the Wylfa Newydd Project on the community and the Welsh language, but also strengthening and enhancing positive effects.

19.7 In order to support the assessment process and ensure that the approach to the WLIA is robust, we have established an independently chaired WLIA Steering Group. The Steering Group is made up of representatives from the Isle of Anglesey County Council (IACC), Gwynedd Council, Menter Môn and Wylfa Newydd's Project Liaison Group. Representatives from the Welsh Language Commissioner's Office and the Welsh Government's Welsh Language Division also attend the Steering Group meetings to act as observers to the assessment work.

19.8 Comments and feedback were sought from key stakeholders during the Stage One Pre-Application Consultation in order to shape the WLIA. The methodology for the WLIA is described in chapter 3 of the WLIA Interim Report. The potential impacts of the Wylfa Newydd Project are described in relation to 18 key questions. Taken together, the questions consider implications of the Wylfa Newydd Project on five key aspects of community life: the characteristics of the population; quality of life; economic factors; supply and demand of infrastructure; and social and cultural aspects (including social cohesion and possible community tensions). The findings are explored in chapters 6 to 9 of the WLIA Interim Report.

19.9 We have identified through the WLIA to date that the Wylfa Newydd Project will provide job opportunities for local residents and investment to the local economy, which would strengthen communities and may attract back residents who previously left the area. Horizon recognises the long-term benefits of this towards sustaining the well-being of the Welsh language and culture. However, the temporary presence of a large number of construction workers within local communities could have a negative effect, by reducing the proportion of Welsh speakers, and by placing increased demand on local services and resources such as housing and schools.

19.10 Where adverse or positive effects are identified, the WLIA Interim Report, identifies areas where mitigation and enhancement measures will be developed. Initial mitigation and enhancement measures are set out in chapter 10 of the WLIA Interim Report and include:

- maximising employment opportunities for local people through our Jobs and Skills strategy;
- consideration of measures to increase the construction workforce's awareness of the language and develop an ability to speak Welsh if desired;
- support for apprentices, graduates and trainees to develop their Welsh language skills;
- support for local primary schools and/or immersion centres.

19.11 These measures will be developed further with the input of specialist Welsh language planners. There is also scope for consultation comments to influence the package of measures under consideration and how these become more detailed and definite proposals during the subsequent stages of assessment and design refinement.

19.12 As part of this Stage Two Pre-Application Consultation, we have produced a pledge that Horizon has signed up to relating to our proposed measures to mitigate and enhance effects on the Welsh language and culture.

19.13 There is still work to be done on the WLIA as more design decisions are made. More detailed assessment will be carried out, for example in relation to the location of the Temporary Workers' Accommodation and the socio-economic analysis of the construction workforce profile (i.e. the number and type of skills required). Engagement with the Steering Group and key related organisations will continue as feedback from the consultation is fed into the WLIA. We will continue to develop appropriate mitigation and enhancement measures, along with a plan for monitoring the effectiveness of such measures.

19.14 Horizon's assessment teams will continue to work closely together as the EIA, WLIA, HIA and EqIA progress. There are elements relating to the Welsh language that are intrinsic to the specialist topics within the EIA and HIA and, where this is the case, these topic assessments (e.g. Landscape and Visual, Archaeology and Cultural Heritage, Public Access and Recreation, and Socio-economics) also include consideration of the potential effects on the Welsh language and culture.

19.15 In addition, the linguistic and community effects of each of the proposed developments seeking planning permission under the TCPA are being considered. This will take the form of a Welsh Language Statement or a WLIA submitted alongside the application, depending on the nature of the development. The final WLIA report, which accompanies the DCO application, will consider all separate Welsh Language Statements or WLIAs previously submitted in order to understand and assess the cumulative effects on the Welsh language and culture.

The Welsh Language Impact Assessment Interim Report sets out our initial proposals for enhancing the benefits and reducing the negative effects of the Project.

Question - Do you have any specific suggestions on the measures that we have identified to enhance benefits and reduce negative effects to Welsh-speaking communities, or the Welsh language and culture?

Health Impact Assessment

19.16 As a responsible developer, not only is Horizon fully committed to delivering world class levels of health and safety on the Wylfa Newydd Project, but we also believe we should encourage well-being in our local communities. Horizon is undertaking a HIA to identify the potential beneficial and adverse effects of the Wylfa Newydd Project on health and well-being. The HIA adopts the World Health Organisation's definition of health and well-being and considers determinants of health at the individual, community and societal levels, as well as the differences across communities, known as health inequalities. When finalised, the HIA will accompany Horizon's application for a DCO to support the decision making process.

19.17 We are currently part way through the HIA process, which responds to and informs the evolution of the Wylfa Newydd Project on an iterative basis. The Wylfa Newydd Project design, EIA and HIA process have progressed to a point where the likely significant effects on health and well-being can be established. The design process is ongoing so

the current results indicate the focus for further work rather than final conclusions of the HIA.

19.18 The HIA Interim Report is published as part of the Stage Two Pre-Application Consultation to set out the current status of the assessment work, drawing on outputs of modelling work and findings documented in relevant parts of the PEI Report, together with the feedback from discussions with a range of technical stakeholders. This snapshot, partway through the process, is beneficial for gaining public feedback.

19.19 The methodology for the HIA outlined in chapter 3 of the HIA Interim Report has been developed drawing on the advice of an independently chaired HIA Steering Group that includes representatives from:

- Betsi Cadwaladr University Health Board (BCUHB);
- the Wylfa Project Liaison Group (Wylfa PLG) (representing local community interests);
- Public Health Wales;
- the Welsh Government;
- the Wales HIA Support Unit;
- the Isle of IACC;
- Horizon; and
- Magnox.

19.20 Natural Resources Wales , Public Health England and the Office for Nuclear Regulation (ONR) are observers at steering group meetings.

19.21 The methodology was also set out in the HIA Scoping Report that was consulted upon as part of the Stage One Pre-Application Consultation. Feedback from this consultation has been used in the development of the methodology.

19.22 The potential impacts of the Wylfa Newydd Project relate to a range of factors connected with health and well-being including: air quality; noise; housing; transport; demand for medical and health services; lifestyle and behaviour; community identity social networks and culture; employment, income and economic development; education and training; public understanding of risk; physical activity; energy generation to meet demand and maintain affordability; and energy generation through low-carbon technology. For example, the Wylfa Newydd Project will provide a boost to the economy of Anglesey and provide job opportunities for local residents, which would be beneficial to overall health and well-being. On the other hand, construction of the Project could result in adverse effects, although they are expected to be local to the works and shorter term. This includes the potential for changes in air quality and noise levels, and for the influx of temporary construction workers to affect demand for services and community dynamics. All of the identified potential effects are described in parts B to E of the HIA Interim Report.

19.23 The HIA Interim Report identifies areas where mitigation and enhancement measures need to be developed in relation to the interim assessment including:

- health planning discussions in relation to increased demand for health services and facilities, including pharmacies;

- training and health promotion activities with the workforce;
- work with local communities relating to potential environmental effects, public health and community identity;
- support for local businesses that may be affected by the Wylfa Newydd Project;
- communication of potential career options and encouragement to local young people to benefit from such job opportunities; and
- road safety measures and consideration of active travel routes.

19.24 The HIA Interim Report also describes any mitigation that has already been identified in other assessments that is also relevant to the health effects. There is ongoing work to capitalise on health opportunities and avoid adverse health effects, including addressing uncertainties that currently prevent detailed mitigation and enhancement from being proposed, or prevent confirmation that the proposed measures should be effective. The feedback from this consultation will also be used in the development of these mitigation and enhancement measures.

19.25 Work is ongoing on the HIA as design information is refined. Our HIA specialists will continue to work with other impact assessment specialists, both to inform those assessments and to review the HIA conclusions as other assessments are progressed or updated. The HIA desk-based analysis will also be complemented by further consultation and engagement. This will include community targeted consultation, liaison with the HIA Steering Group and discussions with stakeholders and other groups (including those identified from the public consultation responses).

19.26 Horizon has a programme of rapid HIAs that is being undertaken for each TCPA application that is being submitted to the IACC for Associated Development. The comprehensive HIA final report to be submitted with the DCO will consider the health effects of all the components of the Wylfa Newydd Project together, including the final design and management plans.

Question - The Health Impact Assessment Interim Report sets out our initial proposals for enhancing the benefits and reducing the negative effects of the Project on health and well-being.

Please can you provide thoughts on the positive benefits and potential risks to your well-being that you might expect from the Power Station? If so, please tell us how these might affect your overall views about the Project.

Habitats Regulations Assessment

19.27 Horizon recognises that the Wylfa Newydd Project has the potential to affect a number of European Designated Sites. Therefore, we are undertaking specialist assessments to provide the Secretary of State (as the competent authority) with sufficient information to enable them to make an appropriate assessment of the implications of the Project for those sites in view of the sites' conservation objectives, if determined to be necessary. These specialist assessments form the HRA.

19.28 HRA is a step by step process that helps determine whether there is a likely significant effect on the integrity of a European Designated Site, and assesses adverse effects where appropriate. It examines alternative solutions, provides justification for Imperative Reasons of Overriding Public Interest (IROPI) and allows compensatory measures to be

secured if appropriate. The European sites considered by the HRA include Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and candidate sites for these designations.

19.29 Horizon has adopted an evidence planning approach, meaning that a HRA Evidence Document will provide important information about the process, methodologies and decisions taken in the production of the HRA. Work on this live document will continue in 2016 and 2017, and a final version outlining the likely significant effects will accompany Horizon's application for a DCO. There have been extensive discussions with statutory consultees and key stakeholders to ensure that this approach is consistent and robust. Further information on the approach is provided in the HRA Interim Report.

19.30 The HRA Interim Report has been published as part of this Stage Two Pre-Application Consultation to set out the progress of the work undertaken to date relating to the assessment of the potential effects of the Project on European Designated Sites. The purpose of the HRA Interim Report is to explain how Horizon has approached the assessment to date and the stage in the process that has been reached (including progress since Stage One Pre-Application Consultation); to identify the preliminary findings of that work; and to set out what further work remains to be undertaken.

19.31 Engagement with key stakeholders has assisted the development of the HRA and regular meetings have taken place with the HRA Working Group, which includes representatives from the Planning Inspectorate, Natural Resources Wales and the IACC. In addition, a series of consultation workshops have begun with Competent Authorities, statutory consultees and non-governmental organisations.

19.32 The HRA team have worked with the EIA team to implement a series of technical discussions and workshops on a range of critical topics.

19.33 Baseline surveys have continued in order to obtain sufficient information to inform the HRA and EIA processes. Some surveys will continue into 2017, including those for marine mammals and marine birds.

19.34 Horizon has undertaken a scoping exercise to define which European Designated Sites should be scoped in for consideration in the screening stage (Stage 1) of the HRA. Horizon has identified 75 European Designated Sites that have the potential to be affected by the Wylfa Newydd Project, including by the construction and operation of the NSIP and by its Associated Development. Details of the European Designated Sites currently identified for taking forward to the Stage 1 screening assessment, together with details of their qualifying features, are set out in the HRA Interim Report.

19.35 In addition to the HRA that covers the elements of the Wylfa Newydd Project covered by the DCO, there are separate HRAs being undertaken for the Associated Development applications, where appropriate. A report to inform the HRA for the detailed offshore ground investigation works was undertaken and submitted to Natural Resources Wales . This element of the Project was subsequently approved and is being undertaken in summer 2016. Currently, the HRA team are working on a report to inform an HRA for the Site Preparation and Clearance works to be submitted to the IACC in autumn 2016.

19.36 The next steps in the HRA process will be: consultation upon and finalisation of the scoping and Stage 1 screening exercises; continued preparation of the HRA Evidence Document; and commencement of appropriate assessment (Stage 2) of European Designated Sites for which likely significant effects could not be excluded.

19.37 We are committed to ongoing consultation with all stakeholders with respect to HRA, including with the HRA Working Group, non-governmental organisations and the public. The HRA Working Group meetings will continue to be central to maintaining a clear and transparent dialogue over the process that Horizon will be taking in developing the information to inform the HRA with respect to the DCO.

Equality Impact Assessment

19.38 Horizon is undertaking an EqIA to consider the potential effects of the Wylfa Newydd Project on people with 'protected characteristics'. These are people who are protected by law under the Equality Act 2010. Protected characteristics include age, disability, gender, gender reassignment, marriage and civil partnership, pregnancy, maternity, race, religion or belief, and sexual orientation. Further details on the Equality Act 2010 can be found online at www.gov.uk/guidance/equality-act-2010-guidance.

19.39 Whilst Horizon is not a public body and is not bound by the Public Sector Equality Duty to consider the effects on protected characteristics, we recognise that an overarching assessment of potential equality effects is both good practice and of assistance in the identification of additional mitigation measures to avoid adverse equality effects, or to improve inclusion. Therefore, and partly as a result of the feedback from the Stage One Pre-Application Consultation, we decided to undertake an EqIA.

19.40 The EqIA is based on the EIA, HIA and WLIA. As these assessments are still ongoing, the EqIA Interim Report considers effects identified in those reports to date. The EqIA Interim Report has been published as part of this Stage Two Pre-Application Consultation, and provides a summary of the preliminary assessment work done to date for consideration by members of the public, community groups and other key stakeholders. When finalised, the EqIA will accompany Horizon's application for a DCO.

19.41 There is no requirement for an EqIA to follow a specified process so different approaches can be developed for different areas, types of policy or project. The approach we have adopted is based on recent practice used for other large infrastructure projects and is described in chapter C of the EqIA Interim Report. The EqIA will consider the entirety of the Wylfa Newydd Project, including the Associated Development.

19.42 Some effects of the Wylfa Newydd Project would be experienced differently by different people, so the EqIA considers how the Wylfa Newydd Project could affect protected characteristic groups more than the population in general ('disproportionately'), or in a particular way ('differentially'). There are five 'categories of effect' that are considered relevant to assess how people with protected characteristics may be affected by the Wylfa Newydd Project: noise and air quality; employment and skills; traffic, transport and physical access; access to community infrastructure, public services and public open space; and, social cohesion. Chapter E of the EqIA Interim Report sets out the potential equality effects that have been identified to date, based on the residual effects of the other assessments (i.e. effects that remain after mitigation measures have been applied). These include:

- disproportionate adverse construction effects (e.g. air quality, noise, etc) on those who are at home for long periods during the day-time when construction would be taking place, i.e. young and old people, and those who are pregnant, nursing, or disabled;
- disproportionate beneficial effects of employment and skills opportunities on young people;

- differential effects of traffic severance, reduced amenity, increased journey times and safety along the A5025 at Llanfaethlu for groups who may be more reliant on walking across the A5025 to access community facilities;
- differential effect on females due to a change in the gender ratio as a result of a construction workforce with a large proportion expected to be male;
- disproportionate effect on children of school-age both those currently living on Anglesey, and those who may come to Anglesey with parents, due to demand outweighing capacity for places at Welsh-language immersion centres; and
- temporary adverse differential effect on older and young people as a result of changes in social networks and culture due to the new mix of people.

19.43 The next steps for the assessment of equality impacts will involve:

- meeting with key stakeholders including the IACC and local community representatives to obtain additional information about the sensitivities and needs of people who share protected characteristics in the communities that have the potential to be affected by the Wylfa Newydd Project;
- reviewing and updating the EqIA in line with refinements to the EIA, HIA and WLIA; and
- identifying appropriate further mitigation which would help avoid or reduce equality effects.

We want to reduce the potential effects on social and equality issues on Anglesey. Our initial work can be found in the Equality Impact Assessment Interim Report.

Question - Do you have any information on equality issues on Anglesey, or suggestions for measures to help reduce effects, that may help us in further work on the Equality Impact Assessment?

20 How would communities be affected?

List of Figures

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20 How would communities be affected?

Introduction

20.1 This chapter summarises how local communities could be affected by the Wylfa Newydd Project. It is based on information from the Preliminary Environmental Information (PEI) Report and other assessments prepared for the Stage Two Pre-Application Consultation. This chapter does not contain new evidence or assessments.

20.2 This chapter contributes towards the commitment made by Horizon in the Statement of Community Consultation (SOCC) that we will consider potential effects on local communities.

20.3 The objectives of this chapter are to:

- identify the local communities that are most likely to be affected by the Wylfa Newydd Project;
- summarise the likely environmental, social and economic effects of the Wylfa Newydd Project on these communities; and
- provide an overview of how Horizon proposes to reduce potential adverse effects and maximise the potential benefits of the Project for local communities.

20.4 This chapter focuses on those communities located near to the Wylfa Newydd Development Area (including the Power Station Site), Off-Site Power Station Facilities and Associated Development sites. An indicative construction programme is shown in figure 5.1 in chapter 5 of this document.

20.5 The chapter is structured as follows:

- Approach and methodology: how have we undertaken this assessment?
- Consultation with communities: what type of feedback have we received from local communities?
- Potential effects on communities: what are the possible types of effect and which communities might be affected?
- Summary of effects on local communities: a section describing likely effects for each community.

Approach and methodology

20.6 Our starting point was to identify and define the local communities most likely to be affected by the proposals. We did this through systematic consideration of:

- our knowledge of the area;
- our knowledge of the proposals and their possible effects;
- feedback from previous consultations; and
- review of maps, and other information sources.

20.7 We then reviewed evidence and assessment findings from the PEI Report and assessments prepared for the Stage Two Pre-Application Consultation to find out what

the effects on each community might be, taking into account the various elements of the project and their envisaged timescales.

20.8 We looked at responses to previous consultations to highlight matters that may be of interest or concern and have highlighted these in the chapter where we could relate concerns to a particular community. The responses relate to the effects of the community rather than an indication that the responses have been received from that community.

20.9 The last stage was to capture the measures proposed for each community to avoid and reduce adverse effects or to enhance benefits.

20.10 For each community, this chapter summarises effects arising from:

- early construction stages, including works to improve the A5025, Site Preparation and Clearance of the Power Station Site, construction of Temporary Workers' Accommodation and other Associated Development sites;
- Wylfa Newydd Power Station construction, which includes the operation of the Associated Development sites; and
- commissioning and operation of the Wylfa Newydd Power Station, which includes the operation of the Off-Site Power Station Facilities.

20.11 Decommissioning of the Wylfa Newydd Power Station is not considered in this chapter, as it would have a 60 year life span, and decommissioning effects would be dependent on the characteristics of the local communities at that time. Decommissioning effects from temporary features, such as the Temporary Workers' Accommodation and the Park and Ride, are likely to be similar to the effects during their construction.

20.12 The summary of potential effects on local communities focuses on those which are considered at this stage to be possibly significant or likely to be of particular interest to a community.

Consultation with communities

20.13 Consultation with local communities about the Wylfa Newydd Project, including public exhibitions took place in 2014, as part of the Stage One Pre-Application Consultation. Two further public consultations took place, the first in July 2015, which provided an update on Associated Development and Off-Site Power Station Facilities, and the second in January 2016, which provided an update on the Project as a whole (January Project Update).

20.14 Ongoing engagement has included:

- meetings with a wide range of voluntary and community groups across the Isle of Anglesey as well as stakeholders and public bodies, such as the IACC;
- distribution of newsletters about two to three times per year to all households on the Isle of Anglesey;
- advertisements about pre-application consultation and the Wylfa Newydd Project more broadly; and
- provision of information about the Wylfa Newydd Project to community representatives on the Wylfa Newydd Project Liaison Group.

20.15 The types of issues raised by communities during previous consultations include:

- the need for more information on the location, size and operational characteristics of worker accommodation, logistics centres, and park and ride facilities;
- more detail on the assessment and mitigation of environmental effects;
- more information on the highways and transport proposals, including road improvements, safety upgrades; particularly along the A5025;
- Welsh language and culture must be supported and protected;
- ensuring opportunities are provided for local workforce and the need for early work to ensure readiness of the supply chain to make the most of business opportunities viewed as a priority;
- provision of training programmes for local people to ensure readiness to meet the demand of the Project programme;
- impacts on existing communities, particularly the provision and availability of services and housing;
- the need to protect and retain tourism;
- the need for the Project to provide community benefits both during construction and as a legacy;
- emphasis on landscaping necessary to address visual effects on the area surrounding the Power Station Site;
- support for multi-modal transport and interest in the proposed Integrated Traffic and Transport Strategy (ITTS); and
- support for the proposed Marine Off-Loading Facility (MOLF).

20.16 A summary of the feedback we have received so far on the Project is provided in the Consultation Summary Report, which is available on our website. Full details of all consultation, and how we have taken it into account in the development of our proposals, will be provided in the Consultation Report which will be submitted as part of the Development Consent Order (DCO) application.

What are the potential effects on communities?

What type of effects might there be?

20.17 Assessments and studies done so far indicate that the types of effects that local communities might experience could include:

- Welsh language and culture – the effect of an increase in non-Welsh speakers in the community;
- socio-economic – implications for employment and business, including beneficial effects;
- public access and recreation – including closures or changes to Public Rights of Way (PRoW);
- landscape and visual – including the impacts on views from homes and PRoW both during construction and once the developments are complete;

- air quality – changes arising, for example, from emissions from construction vehicles and plant;
- traffic and transport – including the impact on walkers, cyclists, cars and public transport during the construction of the Power Station in terms of access and travel time;
- noise and vibration – any changes in noise levels associated with construction activity and vehicle movements; and
- equality – people with protected characteristics might experience greater effects than the population in general.

Which communities are likely to be affected?

20.18 We recognise that the effects of the Wylfa Newydd Project, both adverse and beneficial, would be experienced across Anglesey and north Wales. The local communities most likely to be affected by the Wylfa Newydd Project are those next to or close by the Wylfa Newydd Development Area (including the Power Station Site), Off-site Power Station Facilities and Associated Development. These communities are shown in figure 20.1 and include:

- Amlwch, including Bull Bay and Amlwch Port;
- Bodewryd and Rhosgoch;
- Cemaes;
- Cemlyn Bay;
- Tregele;
- Llanfechell;
- Llanrhyddlad;
- Llanfaethlu;
- Llanfachraeth;
- Llanynghenedl;
- Bodedern and Llanfihangel yn Nhowyn;
- Valley;
- Holyhead, including Kingsland and Trearddur Bay; and
- Llangefni; and communities near Britannia Bridge and Menai Bridge, including Llanfairpwllgwyngyll, Treborth, Menai Bridge and Penrhosgarnedd.

20.19 The following sections provide a summary for each of these communities, setting out in brief how they may be affected by the construction and operation of the Wylfa Newydd Project.

Our approach to avoid or reduce area-wide effects

20.20 Chapter 21 of this document presents our approach to mitigation. Chapter 21 sets out the ways that we would avoid or reduce effects which would apply across all communities.

20.21 Our approach to avoiding or reducing effects in each community specifically for employment, Welsh language, and traffic and transport effects are summarised below.

Employment

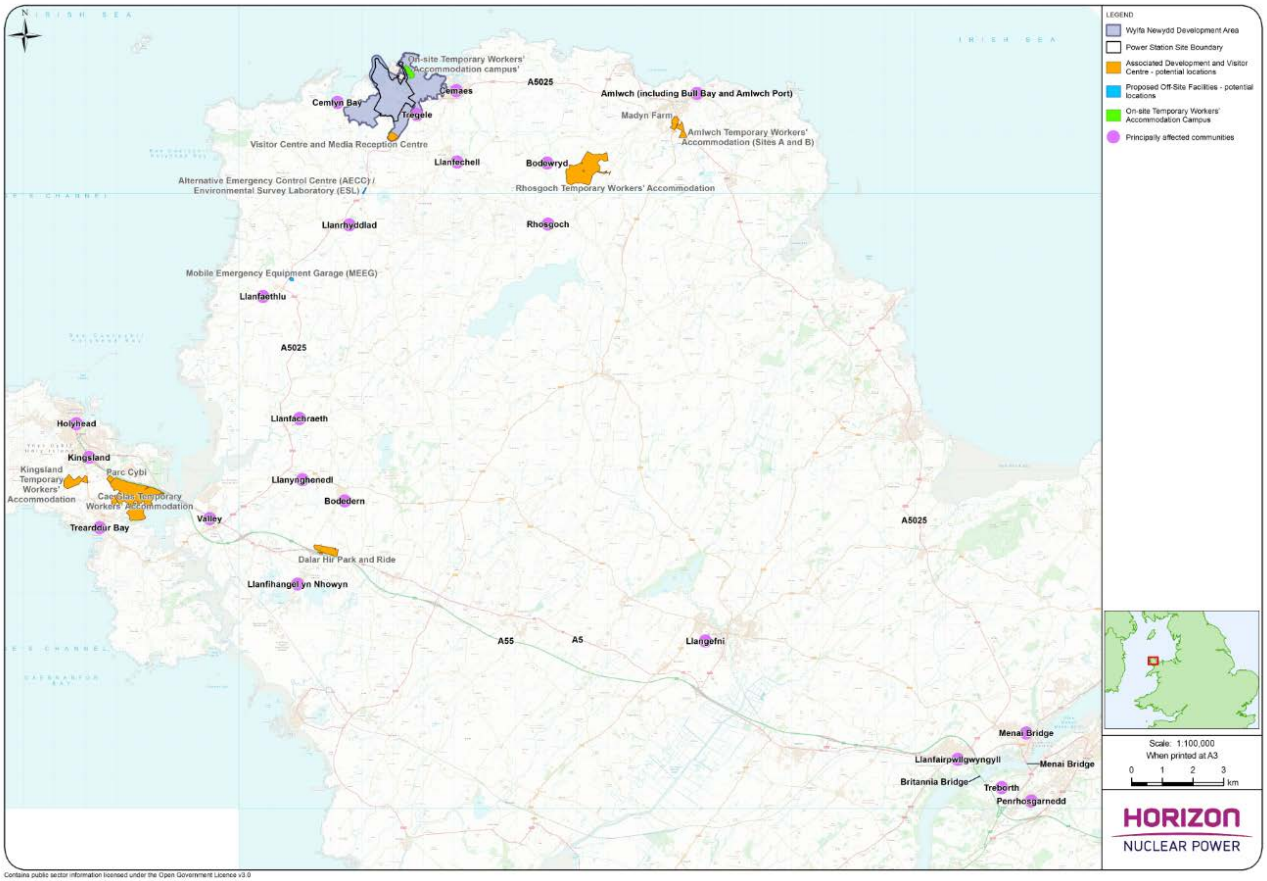
20.22 During construction a workforce of up to 10,720 is envisaged, consisting of between 8,000 and 10,000 workers, as well as facilities management staff and operational staff. Once operational, the Power Station Site would require approximately 850 personnel to operate it over its 60 year lifespan. About 45% of the operational jobs are expected to be filled by people from the Isle of Anglesey or the Menai area of the mainland. Our draft Jobs and Skills Strategy and our Education Engagement Strategy show how we plan to give skills and training opportunities to local people to work on the Wylfa Newydd Project. Our draft Jobs and Skills Strategy and our Education Engagement Strategy focuses on developing activities and opportunities in north Wales to ensure that local workers have information about training that could lead to employment to support each aspect of the Wylfa Newydd Project. Chapter 8 of this document provides further information on these strategies.

Welsh language

20.23 The Welsh Language Impact Assessment (WLIA) Interim Report identifies that there would generally be an adverse effect on the Welsh language as a result of the scale of population increase during the construction stage. The in-migration of workers, a significant proportion of whom are assumed to be non-Welsh speakers, would affect the balance of Welsh speakers by reducing the proportion of Welsh speakers. We value the Welsh language and we want to support workers to develop the language within the workplace. We would work with stakeholders to develop and implement a Welsh Language and Culture Strategy to mitigate negative effects.

20.24 This would include measures such as providing materials for in-migration workers that promote benefits of the Welsh language and bilingualism to families moving to the area as well as promoting employment opportunities at the Power Station to the local population, particularly young people, which would help to reduce out-migration of Welsh speakers. We have also recently updated our Welsh Language Policy, which sets out our current commitments to using Welsh and also, where appropriate, sets targets to help us develop our use of Welsh.

Figure 20.1 Local communities most likely to be affected by the Wylfa Newydd Project



Traffic and transport

20.25 During construction most communities would be likely to experience an increase in traffic levels. These are described separately for each of the communities. Measures to alleviate traffic problems include:

- a MOLF to allow large freight items to be imported by sea directly to the development;
- a Logistics Centre (at Parc Cybi) to consolidate loads and reduce traffic on the A5025;
- bussing of workers from Temporary Workers' Accommodation to the construction site;
- a Park and Ride Facility at Dalar Hir;
- additional bus services to the Power Station from the mainland and north and east Anglesey; and
- A5025 improvements.

20.26 Further information on these measures can be found in chapter 11 of this document and in our ITTS.

Summary of effects on local communities

Amlwch, including Bull Bay and Amlwch Port

Context

20.27 Amlwch is one of the main settlements in the Isle of Anglesey. Amlwch, Amlwch Port and smaller local communities located near Amlwch, including Bull Bay, are assumed to be a single community for the purposes of this assessment.

20.28 Amlwch has a population of about 4,000 people. It is located approximately 9km (5.5 miles) east of the Wylfa Newydd Development Area. Amlwch is a historic port and copper mining town which once housed a large shipbuilding yard.

20.29 The Wales Coast Path passes through the north of Amlwch and generally follows the coast, around Bull Bay and Amlwch Port.

20.30 Horizon's preferred sites for the provision of Temporary Workers' Accommodation includes a site some 2.5km (1.5 miles) south of Amlwch, near Rhosgoch, as well as permanent housing at Madyn Farm on the southern outskirts of Amlwch, which would initially be used by construction workers and then as permanent residential homes. We are proposing an alternative site for Temporary Workers' Accommodation on land adjacent to Madyn Farm, east and west of the B5111 (referred to as Amlwch Sites A and B).

20.31 The Temporary Workers' Accommodation proposed across these three sites would provide temporary housing for:

- up to 1,500 construction workers at Rhosgoch;
- an alternative option for around 800 construction workers at Amlwch Sites A and B; and

- 200 construction workers at Madyn Farm (to later become 50 permanent residential homes).

20.32 Chapter 14 of this document provides more information on the proposals at Rhosgoch, chapter 16 provides more information on the proposals for Sites A and B, whilst chapter 17 provides information on the Madyn Farm proposals.

Consultation feedback

20.33 We received feedback from the Amlwch community during the Stage One Pre-Application Consultation and the January Project Update consultation in 2016.

20.34 Significant concern was raised about the use of Amlwch Sites A and B for Temporary Workers' Accommodation, particularly by the local community and Amlwch Town Council. However, there was significant support for the use of Madyn Farm for permanent accommodation.

20.35 Although the Amlwch Sites A and B option was not favoured by the local community, it is a sustainable location, close to settlement, which is a principle promoted by the Isle of Anglesey County Council in the New Nuclear Build at Wylfa: Supplementary Planning Guidance (Wylfa SPG) which was published in July 2014. Horizon is therefore, consulting on more detailed proposals for this option.

20.36 There was concern about how the population increase arising from the Temporary Workers' Accommodation at Amlwch and Rhosgoch may affect existing community facilities and health services, as well as the condition and capacity of the A5025 (Cemaes to Amlwch) to allow for changes in traffic. The Amlwch Town Council advocated measures to ensure that non-Welsh speakers have full support to learn about the culture and learn the Welsh language.

20.37 Legacy benefits were suggested by the Amlwch community. The types of benefits included: financial support for the Amlwch Leisure Centre; upgrading the A5025 between Valley and Cemaes or Amlwch; re-opening the existing rail line to Amlwch and surrounding areas; and providing serviced office facilities for small businesses and start-ups. The re-use of Rhosgoch, after it was no longer required for construction workers, for holiday accommodation was also suggested.

Summary of effects

Effects during construction of the Wylfa Newydd Project

20.38 The effects of the Wylfa Newydd Project on Amlwch and the surrounding, smaller settlements of Bull Bay and Amlwch Port would mainly happen during the construction stages of the Power Station. Construction of the various elements of the Power Station, including preparatory works, would occur over a total time period of around 11 years, but the operation of the Temporary Workers' Accommodation would only be for around seven years within this period.

20.39 The construction of Temporary Workers' Accommodation in the vicinity of the Amlwch community, including at Rhosgoch, would take place over 36 months. Depending on site selection, it would create up to around 425 jobs, and would thus boost the local employment opportunities. Additional employment opportunities in the wider area would arise from construction of other elements of the Wylfa Newydd Project across various

sectors; a workforce of up to 10,720 is envisaged, consisting of between 8,000 and 10,000 workers, as well as facilities management staff and operational staff.

20.40 The construction workforce profile shows that construction workers numbers are expected to exceed 6,000 for around four years, between mid-2021 and mid-2025, with workers exceeding 8,000 between the end of 2021 to the end of 2024. It is anticipated that during this time the most significant effects during construction would be experienced, although changes to the landscape, for example through new landscape mounding, buildings and structures, would remain throughout the construction period.

20.41 When complete and inhabited, over 300 job opportunities would be created for the daily operation of the Temporary Workers' Accommodation, including site management, security and welfare tasks. The presence of the Temporary Workers' Accommodation sites and their residents would also boost the local economy through increased use of local services.

20.42 The construction of the Wylfa Newydd Project would affect roads used by many in the Amlwch community. During construction of the Temporary Workers' Accommodation there would be an increase in traffic on the A5025 and on other roads accessing the sites. Traffic management plans would help reduce possible adverse effects on road users and minor improvements are proposed between the A5025 and the Rhosgoch site.

20.43 The average number of vehicle movements to and from site during construction of the Temporary Workers' accommodation (depending on site selection) would be up to approximately 50 heavy vehicle and 800 car or light vehicle movements per day two way (i.e. 425 vehicles in and 425 vehicles out), with a maximum of about 1,250 vehicles per day during the month of peak activity. Traffic management plans would be imposed to help reduce possible adverse effects on road users.

20.44 When the Temporary Workers' Accommodation is complete and the construction of the Power Station is underway, there is likely to be a change in traffic along the A5025 between Amlwch and the Power Station Site, principally as a result of an increase in buses to serve the construction workforce, either living in the Temporary Workers' Accommodation in Amlwch or Rhosgoch, or living in their own homes, or other accommodation, to the north and east of the island.

20.45 Construction traffic, including traffic to and from the Temporary Workers' Accommodation proposed near Amlwch, would add to traffic on the A5025 between the Power Station Site and Amlwch, but the increase is likely to be modest, at around 7%. We are not proposing to widen this part of the A5025, but we are reviewing road signs and markings on this stretch to see if modifications could help reduce traffic speeds and make the road safer.

20.46 We anticipate that around 24 return daily bus journeys (24 there and 24 back) would be made to and from the Power Station Site and Amlwch and 33 return bus journeys (33 there and 33 back) would be made to and from the Power Station Site and Rhosgoch, timed to coincide with shift patterns. These would be between 07:00 and 08:00 in the morning and 18:00 and 19:00 in the evening, to serve the day shift, and 16:30 and 17:30 in the afternoon and 03:30 and 04:30 in the early morning, to serve the night shift. Only the buses serving the sites in Amlwch (Sites A and B and Madyn Farm) would travel through Amlwch, as the buses from Rhosgoch would travel down the local access road and directly onto the A5025, to the west of Amlwch.

20.47 There would also be buses serving workers living to the north and east of the island that would travel through Amlwch, on their route to the Power Station Site. We currently anticipate that there would be 36 return daily bus journeys (36 there and 36 back) to serve the day shift and 18 return bus journeys to serve the night shift (18 there and 18 back). These figures are all based on around 50 workers travelling in each bus.

20.48 We are seeking to reduce the effects of our buses on the local community through the use of low noise emissions vehicles and timing our trips so that they are outside peak travel to work and school drop off times.

20.49 In addition, there would be vehicle movements associated with staff travelling to and from the Temporary Workers' Accommodation site and deliveries. This is anticipated to be about 500 vehicle movements (250 in and 250 out) a day, but this is considered to be a worst case scenario. The numbers of vehicles likely to be travelling to and from the site on a daily basis will be refined and confirmed following further detailed traffic analysis.

20.50 At the peak of Power Station construction, there are likely to be moderate delays at the A55 Britannia Bridge and minor delays on the remainder of the A55 and A5025. We would reduce the effects of these changes to traffic through a number of measures that would apply across Anglesey, which are described above and in chapters 10, 11, 12 and 13 of this document and in our ITTS.

20.51 The construction of the Rhosgoch Temporary Workers' Accommodation may also require some temporary diversions to PRoW, but these would only be during the construction period, which would be up to three years.

20.52 The Copper Trail cycle route follows the course of the local access road to Rhosgoch for about 1km, before it turns westwards to Hafodllin. Users may be affected during construction and operation of the Rhosgoch Temporary Workers' Accommodation. We are considering options to divert part of the Copper Trail to avoid users sharing traffic generated by the Rhosgoch Temporary Workers' Accommodation.

20.53 The Amlwch sites would require a minor, but permanent diversion of a Public Right of Way to follow the eastern boundary of the Madyn Farm site, between this site and Amlwch Site A, to retain the connection between the A5025 and the leisure centre, recreation ground and school.

20.54 For those living close to the proposed Temporary Workers' Accommodation, noise and dust could arise from the construction activities. The proposals nearest to Amlwch could mean that children at Ysgol Syr Thomas Jones Secondary School would experience an increase in noise levels during construction. However, this would be controlled through a Construction Environmental Management Plan (CEMP), which would enforce tried and tested measures such as the use of low noise and vibration machinery and limiting construction working hours.

20.55 Construction workers living in Temporary Workers' Accommodation for a period of around seven years may mean that the Amlwch community could notice a change to the availability of existing health services, including GPs, mental health services, dentists, and secondary and tertiary care (hospitals and emergency services). Our emerging Health and Well-being Strategy would set out how to mitigate the effects on the existing health facilities in the Amlwch community. One of the main measures is for the provision of on-site emergency medical treatment and first aid facilities, a canteen, shop, gymnasium and outdoor sports and social areas for the construction workers. Options being considered

for meeting the health and dental care needs of our workers include the enhancement of existing services or dedicated health care provision at the Temporary Workers' Accommodation, as well as emergency health care provisions on-site.

20.56 The southern extent of the Amlwch site would be linked to the Amlwch Leisure Centre via a new pedestrian access route. It is assumed that the construction workers would utilise Amlwch Leisure Centre for recreation, although they would also be encouraged to use the leisure facilities provided at Rhosgoch. This has been further considered in volume B chapters B1 and B2 of the PEI Report.

20.57 There would be an adverse effect on the Welsh language as a result of the scale of population increase during the construction stage. The in-migration of workers, a significant proportion of whom are assumed to be non-Welsh speakers, would affect the balance of Welsh speakers by reducing the proportion of Welsh speakers. Our approach to avoiding and mitigating area-wide adverse effects on the Welsh language are summarised at the beginning of this chapter and in chapter 21 of this document.

Effects during operation of the Wylfa Newydd Project

20.58 The Power Station Site would require approximately 850 personnel to operate it over its 60 year lifespan. About 45% of the jobs would be filled by people from the Isle of Anglesey or the Menai area of the mainland. A proportion of these jobs could go to people living in and around Amlwch.

20.59 On completion of the construction of the Wylfa Newydd Project, it is proposed that the Temporary Workers' Accommodation at Madyn Farm would become permanent housing. Some of this is proposed to be affordable housing, which would provide a legacy benefit to the Amlwch community.

20.60 The Rhosgoch Temporary Workers' Accommodation, if this option is selected, would be dismantled on completion of Project construction, and the site reinstated to semi-natural grassland. Any utility services would be retained and there is an option to retain the sports facilities and one of the hub buildings on-site for the benefit of the wider community.

20.61 Should the alternative option be taken forward for Amlwch Temporary Workers' Accommodation at Sites A and B, the sites would be restored to grassland and agricultural land respectively. In addition, it is intended that services would be retained on Site A, to assist in its future re-use for housing, which it is allocated for in the emerging Anglesey and Gwynedd Joint Local Development Plan (JLDP). The Amlwch community would still be able to access the Amlwch Leisure Centre via a new pedestrian access from the southern end of the site once the sites have been vacated, and they would benefit from the proposed resurfacing of this path.

Bodewryd and Rhosgoch

Context

20.62 Rhosgoch and Bodewryd are small villages located in the northern part of the Isle of Anglesey. There are also several individual properties scattered around the wider area surrounding these villages. When we refer to Rhosgoch as part of this assessment, we are also including the potential effects on surrounding communities of Bodewryd and nearby properties.

20.63 The elements of the Wylfa Newydd Project closest to Rhosgoch community are the Temporary Workers' Accommodation for up to 1,500 construction workers (Rhosgoch Temporary Workers' Accommodation) proposed at a location about 1km north of Rhosgoch village, about 0.5km east of Bodewryd and approximately 2.5km south-west of Amlwch. Minor improvements would be made to the local road between the accommodation site and the A5025, including localised road widening and improvements to the junction with the A5025.

20.64 In the wider area, accommodation for some 200 workers is proposed on the southern outskirts of Amlwch at Madyn Farm, about 3.5km from Rhosgoch and Bodedern. This accommodation would remain in place after construction to provide permanent residential homes, a proportion of which would be affordable housing.

20.65 An alternative location for temporary accommodation for some 800 workers is proposed on land adjacent to Madyn Farm, east and west of the B5111 (Sites A and B).

20.66 Chapter 14 of this document describes the proposals for the proposed Rhosgoch Temporary Workers' Accommodation and chapters 16 and 17 describe the proposals at Amlwch and Madyn Farm, respectively.

Consultation feedback

20.67 We received feedback from the Stage One Pre-Application Consultation and the January Project Update consultation.

20.68 Feedback from this community area was mainly about the Rhosgoch Temporary Workers' Accommodation, with significant responses from the local community supporting the principle of Temporary Workers' Accommodation at the Rhosgoch site, with most responses supporting accommodation for up to 500 workers, rather than at Amlwch Sites A and B during Stage One Pre-Application Consultation.

20.69 There was concern about how the Temporary Workers' Accommodation could affect traffic, especially on narrow rural roads and at the Cemaes roundabout and Cemaes bypass. There was support for using rail to transport construction material and workers where possible.

20.70 There was concern about the ability of existing infrastructure to cope with the increase in population during the use of the accommodation.

20.71 Some comments received supported the re-use of the Temporary Workers' Accommodation on site for tourism purposes.

20.72 Legacy benefits suggested by the community included a new primary care facility near the Temporary Workers' Accommodation and allowing local residents to share on-site leisure facilities.

Summary of effects

Effects during construction of the Wylfa Newydd Project

20.73 The effects of the Wylfa Newydd Project on Rhosgoch and the surrounding, smaller settlements would mainly happen during the construction stages of the Power Station. Construction of the various elements of the Power Station, including preparatory works, would occur over a total time period of around 11 years, but the operation of the Temporary Workers' Accommodation would only be for around seven years within this period.

20.74 The Rhosgoch community would benefit during construction from employment opportunities for local residents, including apprenticeships and training programmes for local residents.

20.75 The construction of Temporary Workers' Accommodation in the vicinity of the Amlwch community, including at Rhosgoch, would take place over 36 months. Depending on site selection, it would create up to around 425 jobs, and would thus boost the local employment opportunities. Additional employment opportunities in the wider area would arise from construction of other elements of the Wylfa Newydd Project across various sectors; a workforce of up to 10,720 is envisaged, consisting of between 8,000 and 10,000 workers, as well as facilities management staff and operational staff.

20.76 When complete and inhabited, over 300 job opportunities would be created for the daily operation of the Temporary Workers' Accommodation, including site management, security and welfare tasks. The presence of the Temporary Workers' Accommodation sites and their residents would also boost the local economy through increased use of local services, in addition to those that are provided within the Temporary Workers' Accommodation.

20.77 The construction workforce profile shows that construction workers numbers are expected to exceed 6,000 for around four years, between mid-2021 and mid-2025, with workers exceeding 8,000 between the end of 2021 to the end of 2024. It is anticipated that during this time the most significant effects during construction would be experienced, although changes to the landscape, for example through new landscape mounding, buildings and structures, would remain throughout the construction period.

20.78 There would be an adverse effect on the Welsh language as a result of the scale of population increase in the Rhosgoch area during the construction stage. The in-migration of workers, a significant proportion of whom are assumed to be non-Welsh speakers, would affect the balance of Welsh speakers by reducing the proportion of Welsh speakers. Our approach to avoiding and mitigating area-wide adverse effects on the Welsh language are summarised at the beginning of this chapter and in chapter 21 of this document.

20.79 During construction of the Rhosgoch Temporary Workers' Accommodation, residents may notice changes in traffic on local roads, including:

- restrictions to vehicles using the unclassified, local access road between the A5025 and the accommodation site because of the movement of construction vehicles; and
- short-term traffic disruption while we improve the minor roads which would serve as the site access route between the Rhosgoch Temporary Workers' Accommodation and the A5025.

20.80 The average number of vehicle movements to and from site during construction of the Temporary Workers' Accommodation (depending on site selection) would be up to approximately 80 heavy vehicle and 600 car or light vehicle movements per day two way (i.e. 340 movements in and 340 movements out), with a maximum of about 970 vehicles per day during the month of peak activity. Traffic management plans would be imposed to help reduce possible adverse effects on road users.

20.81 During the construction of the Wylfa Newydd Power Station, the Rhosgoch Temporary Workers' Accommodation would be home for up to 1,500 construction workers from early 2020 for up to seven years.

20.82 These workers would all be bussed to the construction site to reduce the effects of increased construction worker traffic on local roads between the Rhosgoch Temporary Workers' Accommodation and the Power Station Site.

20.83 We anticipate that around 33 return daily bus journeys (33 there and 33 back) would be made to and from the Power Station Site and Rhosgoch, timed to coincide with shift patterns. These would be between 07:00 and 08:00 in the morning and 18:00 and 19:00 in the evening, to serve the day shift, and 16:30 and 17:30 in the afternoon and 03:30 and 04:30 in the early morning, to serve the night shift. These buses travel down the local access road and directly onto the A5025, to the west of Amlwch. These figures are all based on around 50 workers travelling in each bus.

20.84 We are seeking to reduce the effects of our buses on the local community through the use of low noise emissions vehicles and timing our trips so that they are outside peak travel to work and school drop off times.

20.85 In addition, there would be vehicle movements associated with staff travelling to and from the Temporary Workers' Accommodation site and deliveries. This is anticipated to be about 1000 vehicle movements (500 in and 500 out) a day, but this is considered to be a worst case scenario. The numbers of vehicles likely to be travelling to and from the site on a daily basis will be refined and confirmed following further detailed traffic analysis.

20.86 Our ITTS describes the measures that would be taken to mitigate effects and enhance the benefits of the traffic-related elements of the Wylfa Newydd Project. Works are proposed to improve the A5025 between Valley and the Power Station Site. Although some of these improvements would be in place prior to construction of the accommodation, some would be underway at the same time, which may mean that journey times would change for those residents who travel along the A5025 on this section.

20.87 The construction of the Rhosgoch Temporary Workers' Accommodation would also require some diversions to cycle routes, paths and PRoW.

20.88 The Copper Trail cycle route follows the course of the local access road to Rhosgoch for about 1km, before it turns westwards to Hafodllin. Users may be affected during construction and operation of the Rhosgoch Temporary Workers' Accommodation. We are considering options to divert part of the Copper Trail to avoid users sharing traffic generated by the Rhosgoch Temporary Workers' Accommodation.

20.89 The Rhosgoch community is likely to notice changes in views and the landscape, as the construction of the Rhosgoch Temporary Workers' Accommodation gets underway. Careful consideration is being given to site screening, design and landscaping to reduce effects on views and landscape.

20.90 For those living close to the Rhosgoch Temporary Workers' Accommodation site or the construction route on minor roads between the A5025 and the site, there is a risk of noise and dust while the accommodation is being built. However, this would be controlled through a CEMP, which would enforce tried and tested measures including the use of low noise and vibration machinery and limiting construction working hours.

20.91 Once the site is inhabited by construction workers, residents living near to the site may experience some noise from the generally increased level of activity on the site. We are developing the construction worker conduct standards and an induction pack that would be provided to all workers, both construction and operational. These include a code of conduct, an employee rules document, information regarding health and safety, as well as information on drugs, alcohol and substance misuse.

20.92 The introduction of a construction workforce to the Temporary Workers' Accommodation may mean that there could be some demand on existing health services, including for GPs, mental health, dentists, and secondary and tertiary care (hospitals and emergency services). Our emerging Health and Well-being Strategy would set out how to mitigate the effects on the existing health facilities in the Rhosgoch community. One of the main measures is for the provision of on-site emergency medical treatment and first aid facilities , a canteen, shop, gymnasium and outdoor sports and social areas for the construction workers. Options being considered to meet the health and dental care needs of our workers include the enhancement of existing services or dedicated health care provision at the Temporary Workers' Accommodation, as well as emergency health care provisions on-site.

Effects during operation of the Wylfa Newydd Project

20.93 The Power Station Site would require approximately 850 personnel to operate it over its 60 year lifespan. About 45% of the jobs would be filled by people from the Isle of Anglesey or the Menai area of the mainland. A proportion of these jobs could go to people living in and around Rhosgoch and Bodewryd.

20.94 The Rhosgoch community can expect to experience benefits of the local road improvements. These benefits include the potential for improved highway safety and improved capacity for the increase in traffic movements as a result of the Wylfa Newydd Project.

20.95 On completion of the construction of the Wylfa Newydd Project, the Rhosgoch Temporary Workers' Accommodation would be dismantled and the site reinstated to semi-natural grassland. Any utility services would be retained and there is an option to retain the sports facilities and one of the hub buildings on-site for the benefit of the Rhosgoch community.

Cemaes

Context

20.96 Cemaes is a small fishing port and town with a population of about 1,300, located on the north coast of Anglesey, surrounding Cemaes Bay.

20.97 Land extending to the north-east of Cemaes is designated as the Anglesey Area of Outstanding Natural Beauty (AONB) and the adjacent coastline is designated as part of

the North Anglesey Heritage Coast. Cemaes is popular with walkers, being located on the Wales Coast Path.

20.98 The Wylfa Newydd Development Area (the maximum area needed for the power station main construction activities and for the setting and features of the operational power station) is separated from the western edge of Cemaes by a narrow corridor of agricultural land. We have recognised the very close proximity of Cemaes to the Power Station Site from the earliest stages of the Project and have developed our proposals for landscaping the Power Station Site, both during construction and operation, to seek to reduce the effects of the proposals on Cemaes as far as possible. Nevertheless, a construction project of this magnitude will have significant residual effects, particularly for those communities closest to the Power Station Site.

20.99 During enabling works, there would be topsoil mounds of up to two metres in height in the north-east of the site, adjacent to the western edge of Cemaes.

20.100 During the main construction activities on the Power Station Site, there would be landscaped mounding in place to screen the construction site from Cemaes and the wider area. The proposed landscape mounding starts within about 10m of the rear of properties to the western edge of Cemaes, where it is +15m above ordnance datum (AOD) in height and rises to a height of about +35m AOD at about 275m from the rear of the same properties. At this point, Cemaes is at a similar height AOD and therefore, the slope has been designed to rise gradually, reflective of the character of the surrounding drumlins. It is proposed that the mounding be used for agriculture, including grassland for grazing, which would help to soften the effect of the mounding, however, it is recognised that there would be a significant change in the nature of the landscape and views from properties, particularly to the west of Cemaes.

20.101 On completion of construction, the landscaped mounding nearest to Cemaes would remain as agricultural land, including species rich grassland, and would be divided into fields. It would then provide visual screening of the completed Power Station.

20.102 The proposals include construction of Temporary Workers' Accommodation within the Wylfa Newydd Development Area for use by critical security and construction workforce who are required to be located in close proximity to the Power Station Site. The on-site Temporary Workers' Accommodation would be campus-style housing for up to 500 workers. The preferred location for the on-site accommodation campus is to the south of Wylfa Head and to the east of the Existing Power Station, overlooking Cemaes Bay, just over 1km west of Cemaes.

20.103 More information on the proposals in the vicinity of Cemaes can be found in chapters 5 and 6 (information on the main Power Station), chapter 7 for an explanation of our landscaping and environmental masterplan for the Wylfa Newydd Development Area and chapter 11 for highways improvements.

Consultation feedback

20.104 We received feedback from the Cemaes community during the Stage One Pre-Application Consultation.

20.105 Feedback was mainly about the location of the Temporary Workers' Accommodation near Cemaes, with a general preference for it to be located as close as possible to the Power

Station Site. Residents of Cemaes generally did not want the Temporary Workers' Accommodation to be located within or near Cemaes.

20.106 It is understood that there is concern in the community about the proximity of the topsoil mounds, however, no specific feedback on this issue was received during the Stage 1 Pre-Application Consultation or the January Update Consultation.

Summary of effects

Effects during construction of the Wylfa Newydd Project

20.107 The construction phase for the Wylfa Newydd Project, including site preparation works, would run over about 11 years in total. It would require a workforce of up to 10,720, creating significant employment opportunities, including apprenticeships, for community residents, and would boost the local economy as a result of the influx of construction workers to Anglesey.

20.108 The construction workforce profile shows that construction workers numbers are expected to exceed 6,000 for around four years, between mid-2021 and mid-2025, with workers exceeding 8,000 between the end of 2021 to the end of 2024. It is anticipated that during this time the most significant effects during construction would be experienced, although changes to the landscape, for example through new landscape mounding, buildings and structures, would remain throughout the construction period.

20.109 For those in the community who use the A5025, this road would be noticeably busier during construction. Improvement works, including resurfacing, bypasses and better overtaking opportunities between Valley and the Power Station Site, would provide a lasting legacy for all users along this route. These improvements would be delivered in time to support the peak of construction activities at the Power Station Site. Traffic is anticipated to increase by up to 90% on the A5025 south of the Power Station access road during peak construction activities.

20.110 Construction traffic, including traffic to and from the Temporary Workers' Accommodation proposed near Amlwch, would add to traffic on the A5025 between the Power Station Site and Amlwch, but the increase is likely to be modest, at around 7%. We are not proposing to widen this part of the A5025, but we are reviewing road signs and markings on this stretch to see if modifications could be made to help reduce traffic speeds and make the road safer.

20.111 At peak construction, there are likely to be moderate delays at the A55 Britannia Bridge and minor delays on the remainder of the A55 and A5025.

20.112 A number of PRoW cross the Wylfa Newydd Development Area, including the Wales Coast Path and the Copper Trail/National Cycle Network (NCN) Route 566 (Cemlyn Road).

20.113 The Wales Coast Path passes through the Wylfa Newydd Development Area and would need to be permanently diverted during both construction and operation. The Copper Trail would be diverted along Nanner Road. National Trust land to the west of the Wylfa Newydd Development Area is used by walkers and provides access to the coast. Other paths and PRoW within the Wylfa Newydd Development Area would be affected by loss of amenity during the Site Preparation and Clearance works, and would then be either permanently closed or diverted, as necessary, during construction.

20.114 Access to Porth-y-pistyll would be permanently restricted both from the shore and from the sea.

20.115 The Fisherman's car park is located within the Wylfa Newydd Development Area and therefore, would be expected to close as a result of the construction of the Power Station Development. Our proposals involve the re-provision of the Fisherman's car park to an alternative location to the north-west of Porth Wylfa, but this would only be available following construction of the Power Station. Temporary closure of this car park would adversely affect users of the car park during the construction of the Power Station.

20.116 The Wylfa Newydd Development Area is visible from the surrounding area, from nearby communities including Cemaes, and the existing Power Station is a prominent feature in the landscape. Views towards the site and the general landscape would change as early stages of construction of the Power Station get underway. Topsoil mounds would be a feature at these early stages. Landscape and visual effects would be reduced through careful consideration of screening and permanent landscaping and landforming.

20.117 Cemaes residents who live on the western edge of the settlement would be within approximately 300m of the topsoil mounds, during enabling works. Besides affecting views towards the site, noise and dust from these operations is a possibility. However, this would be controlled through a CEMP, which would enforce tried and tested measures including the use of dust control and monitoring, low noise and vibration machinery, and limiting of construction working hours.

20.118 Chapter 7 explains in more detail how a comprehensive LEMP is being developed for the Wylfa Newydd Development Area, which would set out our proposals for the landscape and environmental setting of the Power Station. Residents to the western edge of Cemaes would be within 10m of the proposed landscaped mounding, as described above, which gradually rises from +15m AOD in height (where it is at about the same level as the properties in Cemaes) to +35m AOD. This landscape mounding would provide important visual and noise screening for these properties from the Power Station construction site.

20.119 The on-site Temporary Workers' Accommodation would be a campus style development with up to four accommodation blocks (each up to four storeys) plus other service and amenity buildings. The combination of accommodation, transport provision and key services and facilities means that the on-site accommodation could be largely self-contained in terms of meeting the daily needs of the occupants, hence minimising adverse impacts on local services in Cemaes.

20.120 The preferred location for the on-site Temporary Workers' Accommodation is to the south of Wylfa Head and to the east of the Existing Power Station, overlooking Cemaes Bay. This is mainly to locate the Temporary Workers' Accommodation away from existing communities where possible. The site would be landscaped to soften views from key areas such as Cemaes, Wylfa Head and the Wales Coast Path.

20.121 Of those residents living closest to the construction works, people who spend a large amount of time at home during the day, including older people, disabled and parents at home with children, would be most likely to be affected by noise increases. Children at Cemaes Primary School would experience an increase noise levels during construction.

20.122 There would be an adverse effect on the Welsh language as a result of the scale of population increase in the local area during the construction stage. The in-migration of

workers, a significant proportion of whom are assumed to be non-Welsh speakers, would affect the balance of Welsh speakers by reducing the proportion of Welsh speakers. Our approach to avoiding and mitigating area-wide adverse effects on the Welsh language are summarised at the beginning of this chapter and in chapter 21 of this document.

Effects during operation of the Wylfa Newydd Project

20.123 The Power Station Site would require approximately 850 personnel to operate it over its 60 year lifespan. About 45% of the jobs would be filled by people from the Isle of Anglesey or the Menai area of the mainland. A proportion of these jobs could go to people living in Cemaes.

20.124 Significant traffic delays are not anticipated during site operation. A beneficial aspect of the Wylfa Newydd Project would be an improved A5025 between Valley and the Power Station site built to current safety standards.

20.125 Views from in and around Cemaes towards the Power Station Site would be permanently changed, with the new Power Station being more prominent in views than the existing Power Station, and landscape mounding evident.

20.126 The proposed site levels have been guided by a desire to balance cut and fill volumes during site clearance and excavation in order to reduce the import and export of materials, while balancing local environmental effects, operational cost and energy demand (especially cooling water pumping). The minimum ground level has been set above the anticipated extreme flood event level and development platforms have therefore, been created.

20.127 The design of landscape mounding has been refined to optimise building platform and construction laydown platform levels of 20m to 22m AOD for administration and support buildings and the western laydown area and a level of generally 26m to 28m AOD for the eastern laydown area. The resulting landscape mounding design incorporating the revised volume of excavated material means that the heights of new landforms would be likely to range from +30m AOD to +50m AOD, which is in scale with the height of existing surrounding drumlins. Gradients would be likely to range from 1 in 6 to 1 in 10, with the exception of some specific areas of the landscape mounds, which would be constructed at 1 in 2 and planted to soften their appearance. The mound closest to Cemaes would be up to +35m AOD in height.

20.128 The Wales Coast Path and Copper Trail diversions would continue in place throughout the operation of the power station. Access to Porth-y-pistyll would be permanently restricted both from the shore and from the sea, and some other paths and PRoW within the Wylfa Newydd Development Area would also remain permanently closed or diverted.

20.129 On completion of the Power Station construction, the Temporary Workers' Accommodation would be removed and the site reinstated to its former condition.

20.130 The Power Station would remain for 60 years, after which time it would be decommissioned. We will undertake another assessment then to understand the effects of decommissioning and to ensure that appropriate mitigation is put in place. The landscaped mounding provided to screen views during construction and operation would also serve to screen views of the site during decommissioning.

Cemlyn Bay

Context

20.131 Cemlyn Bay, on the north-west coast of Anglesey, lies approximately 1km west of the Power Station Site. The area contains various scattered dwellings, for the purposes of this assessment, captured under the heading of Cemlyn Bay.

20.132 The Wylfa Newydd Development Area (the maximum area needed for the power station main construction activities and for the setting and features of the operational Power Station) adjoins the coastal hinterland of Cemlyn Bay, where it includes part of the property known as Cestyll Garden.

20.133 Cemlyn Bay lies approximately 750m to the west of the operational Power Station and the houses here would experience a substantial change in outlook and landscape as a result of the proposals. Cemlyn Bay is also close to the proposed location for the MOLF at Porth-y-pistyll.

20.134 We have recognised the very close proximity of properties around Cemlyn Bay to the Power Station Site from the earliest stages of the Project and have developed our proposals for landscaping the Power Station Site, both during construction and operation, to seek to reduce the effects of the proposals on these properties as far as possible. Nevertheless, a construction project of this magnitude will have significant residual effects, particularly for those communities closest to the Power Station Site.

20.135 During the main construction activities on the Power Station Site, there would be landscaped mounding in place to screen the construction site from Cemlyn Bay and the wider area. The proposed landscape mounding starts either adjacent to, or within about 50m of the closest residential properties and rises from +10m AOD to +40m AOD. It is proposed that the mounding be used for agriculture, including grassland for grazing, which would help to soften the effect of the mounding, however, it is recognised that there would be a substantial change in the nature of the landscape and views from properties in Cemlyn Bay.

20.136 On completion of construction, the landscaped mounding nearest to Cemlyn Bay would remain as agricultural, including species rich grassland, and would be divided into fields. It would then provide visual screening of the completed Power Station.

20.137 More information on the proposals in the vicinity of Cemlyn Bay can be found in chapters 5 and 6 for the Power Station and chapter 11 for highways improvements.

Consultation feedback

20.138 We received feedback from the Cemlyn Bay community during the Stage One Pre-Application Consultation.

20.139 Concern was expressed about the proposed closure of access to Cemlyn Bay via Cemlyn Road, particularly for disabled people. Concern was also raised more generally about the effect of construction traffic on how local residents may get around. The Cemlyn Bay community requested that the traffic effect of the movement of local traffic is considered in the assessment of traffic and transport for the Wylfa Newydd Project.

Summary of effects

Effects during construction of the Wylfa Newydd Project

20.140 The construction phase for the Wylfa Newydd Project, including site preparation works, would run over about 11 years in total. It would require a workforce of up to 10,720, creating significant employment opportunities, including apprenticeships, for community residents, and would boost the local economy as a result of the influx of construction workers to Anglesey. A proportion of construction jobs could go to people living in Cemlyn Bay.

20.141 Development of the Wylfa Newydd Power Station would require the permanent closure of a section of Cemlyn Road, from Tregele to Cemlyn Bay. Traffic is likely to use Nanner Road as an alternative route, so improvements to Nanner Road are proposed in advance of the closure.

20.142 For those in the community who use the A5025, this road would be noticeably busier during construction. Improvement works, including resurfacing, bypasses and better overtaking opportunities between Valley and the Power Station Site, would a lasting legacy for all users along this route. These improvements would be delivered in time to support the peak of construction activities at the Power Station Site. Traffic is anticipated to increase by up to 90% on the A5025 south of the Power Station during peak construction activities.

20.143 The construction workforce profile shows that construction workers numbers are expected to exceed 6,000 for around four years, between mid-2021 and mid-2025, with workers exceeding 8,000 between the end of 2021 to the end of 2024. It is anticipated that during this time the most significant effects during construction would be experienced, although changes to the landscape, for example through new landscape mounding, buildings and structures, would remain throughout the construction period.

20.144 Construction traffic, including traffic to and from the Temporary Workers' Accommodation proposed near Amlwch, would add to traffic on the A5025 between the Power Station Site and Amlwch, but the increase is likely to be modest, at around 7%. We are not proposing to widen this part of the A5025, but we are reviewing road signs and markings on this stretch to see if modifications could be made to help reduce traffic speeds and make the road safer.

20.145 At peak construction, there are likely to be moderate delays at the A55 Britannia Bridge and minor delays on the remainder of the A55 and A5025.

20.146 A number of PRoW cross the Wylfa Newydd Development Area, including the Wales Coast Path and the Copper Trail/NCN Route 566 (Cemlyn Road). The Wales Coast Path passes through the Wylfa Newydd Development Area and would need to be permanently diverted during both construction and operation. The Copper Trail would be diverted along Nanner Road. National Trust land to the west of the Wylfa Newydd Development Area is used by walkers and provides access to the coast. Other paths and PRoW within the Wylfa Newydd Development Area would be affected by loss of amenity during the Site Preparation and Clearance works, and would then be either permanently closed or diverted, as necessary, during construction.

20.147 Access to Porth-y-pistyll would be permanently restricted both from the shore and from the sea.

20.148 Construction works for the MOLF, generating units and other buildings and infrastructure would be visible from Cemlyn Bay. Views towards the site and the general landscape would change as early stages of construction of the power station get underway. Residents nearest to the works could experience an increase in noise and a decrease in air quality during works. These effects would be controlled through a CEMP, which would enforce tried and tested measures including the use of dust control and monitoring, low noise and vibration machinery, careful siting of activities and limiting of construction working hours.

20.149 Of those residents living closest to the construction works, people who spend large amount of time at home during the day, including older people, disabled and parents at home with children, are most likely to be affected by construction noise.

20.150 Topsoil mounds would be a feature at the early stages of construction. Landscape and visual effects would be reduced through careful consideration of screening and permanent landscaping and landforming. Chapter 7 explains in more detail how a comprehensive LEMP is being developed for the Wylfa Newydd Development Area, which would set out our proposals for the landscape and environmental setting of the Power Station. At Cemlyn Bay, the LEMP includes mounding which rises from +10m AOD to +40m AOD to screen views of the Power Station, both during construction and operation, from the south west. It is recognised that for a few, isolated properties in Cemlyn Bay, this would result in a significant change in outlook.

20.151 Cestyll Garden is listed on the Cadw/ICOMOS Register of Parks and Gardens of Special Historic Interest in Wales. The remnants of the kitchen garden, which are part of the Cestyll Garden, would be removed to facilitate construction.

20.152 There would be an adverse effect on the Welsh language as a result of the scale of population increase in the local area during the construction stage. The in-migration of workers, a significant proportion of whom are assumed to be non-Welsh speakers, would affect the balance of Welsh speakers by reducing the proportion of Welsh speakers. Our approach to avoiding and mitigating area-wide adverse effects on the Welsh language are summarised at the beginning of this chapter and in chapter 21 of this document.

Effects during operation of the Wylfa Newydd Project

20.153 The Power Station Site would require approximately 850 personnel to operate it over its 60 year lifespan. About 45% of the jobs would be filled by people from the Isle of Anglesey or the Menai area of the mainland. A proportion of these jobs could go to people living in Cemlyn Bay.

20.154 Significant traffic delays are not anticipated during site operation.

20.155 Cemlyn Road closure and the Wales Coast Path and Copper Trail diversions would continue in place throughout the operation of the power station. Access to Porth-y-pistyll would be permanently restricted both from the shore and from the sea, and some other paths and PRoW within the Wylfa Newydd Development Area would also remain permanently closed or diverted.

20.156 Views from the Cemlyn Bay area would be permanently changed, with the already prominent built profile of the existing Power Station effectively being extended inland. The Power Station would remain for 60 years, after which time it would be decommissioned. We will undertake another assessment then to understand the effects of decommissioning

and to ensure that appropriate mitigation is put in place. The landscaped mounding provided to screen views during construction and operation would also serve to screen views of the site during decommissioning.

Tregele

Context

20.157 Tregele straddles the A5025 south-east of the Wylfa Newydd Project. It is one of the closest settlements to the Wylfa Newydd Development Area and has a population of approximately 170.

20.158 The Wylfa Newydd Development Area (the maximum area needed for the power station main construction activities and for the setting and features of the operational power station) is separated from the western edge of Tregele by the A5025. We have recognised the very close proximity of Tregele to the Power Station Site from the earliest stages of the Project and have developed our proposals for landscaping the Power Station Site, both during construction and operation, to seek to reduce the effects of the proposals on Tregele as far as possible. Nevertheless, a construction project of this magnitude will have significant residual effects, particularly for those communities closest to the Power Station Site.

20.159 Thre would be topsoil mounds of up to2m high to the west of the Power Station Site on the opposite side of the A5025 from Tregele. There are two properties located to the west of the A5025 which would be very close to the topsoil mounds.

20.160 During the main construction activities on the Power Station Site, there would be landscaped mounding in place to screen the construction site from Tregele and the wider area. The proposed landscape mounding rises gradually from the A5025 opposite Tregele to a height of +25m AOD (level with Tregele) to +35m AOD. In order to provide an indication of what this mounding would look like, we have provided some illustrative cross sections of the LEMP from properties in Tregele to the east of the A5025 in chapter 7 of this document. These show the mounding in place with planting to soften it and screening the construction laydown area beyond, which is at a height of +26m AOD. It is proposed that the mounding be softened with tree planting, however, it is recognised that there would be a significant change in the nature of the landscape and views from properties, particularly to the west of Tregele.

20.161 On completion of construction, the landscaped mounding nearest to Tregele would be used for agriculture, including species rich grassland, and would be divided into fields. Areas of broadleaved woodland are also propped opposite Tregele, which would then provide visual screening of the completed Power Station.

20.162 The preferred location for the Horizon Training and Simulator Building (which would be about 125 x 65 x 16m above the relevant building platform) is within the Power Station Site boundary, in the north-eastern corner of the Wylfa Newydd Development Area, just north of Tregele, off the A5025 road near its junction with the existing power station access road.

20.163 The main access to the Power Station would be at the south-east corner of the site, connecting to the A5025 via a proposed new roundabout junction to the south of Tregele.

20.164 A Visitor Centre and Media Reception Centre is proposed on the north-western side of the A5025, to the immediate north of Groes Fechan and within 1km south of Tregele.

20.165 More information on the proposals in the vicinity of Tregele can be found in chapters 5 and 6 for the Power Station and chapter 11 for highways improvements.

Consultation feedback

20.166 We received feedback from the community during the Stage One Pre-Application Consultation and January Project Update consultation.

20.167 The Tregele community is located on the south-western boundary of the Wylfa Newydd Development area and would therefore, be very close to construction activity, as well as operational activities. One of the main concerns was the visual changes as the Power Station and Visitor and Media Reception Centre takes shape as well as the need for road and highways improvements to service the Power Station Site, particularly on the A5025 for the movement of HGVs during construction.

Summary of effects

Effects during construction of the Wylfa Newydd Project

20.168 The Tregele community would be adjacent to the Power Station Site.

20.169 The construction phase for the Wylfa Newydd Project, including site preparation works, would run over about 11 years in total. It would require a workforce of up to 10,720, creating significant employment opportunities, including apprenticeships, for community residents, and would boost the local economy as a result of the influx of construction workers to Anglesey.

20.170 The construction workforce profile shows that construction workers numbers are expected to exceed 6,000 for around four years, between mid-2021 and mid-2025, with workers exceeding 8,000 between the end of 2021 to the end of 2024. It is anticipated that during this time the most significant effects during construction would be experienced, although changes to the landscape, for example through new landscape mounding, buildings and structures, would remain throughout the construction period. A proportion of these jobs could go to people living in Tregele.

20.171 The A5025 would be noticeably busier during construction. Improvement works, including resurfacing, bypasses and better overtaking opportunities between Valley and the Power Station Site, would provide a lasting legacy for all users along this route. These improvements would be delivered in time to support the peak of construction activities at the Power Station Site.

20.172 Traffic is anticipated to increase by up to 90% on the A5025 south of the Power Station during peak construction activities. This could affect air quality and noise levels for residents close to this stretch of the A5025. Our approach to avoiding and mitigating traffic effects is outlined at the beginning of this chapter as well as in chapter 21 of this document.

20.173 During construction, it envisaged that a maximum of 40 Heavy Goods Vehicles (HGV) deliveries per hour would travel along the A5025 between the site and Valley, taking into account consolidation of loads in the proposed Logistics Centre, but this could increase to 80 HGVs an hour without consolidation. These deliveries would be within a 12 hour

window per day Monday to Sunday only, but avoiding peak traffic periods, such as school pick up and peak commuting times. During normal circumstances, we would therefore limit HGV deliveries on the A5025 between 8.30am and 9am and 3.30am and 5pm, until the off-line bypasses are constructed and open. Deliveries outside of these hours may be required in exceptional circumstances however we would inform the public of this in advance. We will produce a Traffic Management Plan (TMP) which would specifically identify controls that will be implemented to mitigate the impact that HGV vehicle deliveries have on the A5025.

20.174 The Power Station Access Road, which joins the A5025 south of Tregele, would be constructed as soon as practicable within the Main Construction stage. The use of this access would reduce site traffic passing through Tregele.

20.175 Construction traffic, including traffic to and from the Temporary Workers' Accommodation proposed near Amlwch, would add to traffic on the A5025 between the Power Station Site and Amlwch, but the increase is likely to be modest, at around 7%. We are not proposing to widen this part of the A5025, but we are reviewing road signs and markings on this stretch to see if modifications could be made to reduce traffic speeds and make the road safer.

20.176 At peak construction, there are likely to be moderate delays at the A55 Britannia Bridge and minor delays on the remainder of the A55 and A5025. We would employ careful design of site levels and landscaping to reduce materials transported off site

20.177 Tregele residents who live on the western edge of the settlement would be within 50m of the topsoil mounds, during the enabling works. Noise and dust from these works and other construction operations is a possibility. Construction noise and dust would be controlled through a CEMP, which would enforce tried and tested measures including the use of dust control and monitoring, low noise and vibration machinery, and limiting of construction working hours.

20.178 Chapter 7 explains in more detail how a comprehensive Landscape and Environmental Masterplan (LEMP) is being developed for the Wylfa Newydd Development Area, which would set out our proposals for the landscape and environmental setting of the Power Station. Residents to the western edge of Tregele would be within 10m of the proposed landscaped mounding, which gently rises at a gradient of around 1:2 to a height of +25-35m AOD. This landscape mounding would provide important visual screening for these properties from the Power Station construction site, but would, in itself, result in a significant change in the local landscape.

20.179 Of those residents living closest to the construction works, people who spend large amount of time at home during the day, including older people, disabled and parents at home with children, are most likely to be affected by construction noise.

20.180 The effect of lighting from the construction works on Tregele would be reduced through the use of directional lighting.

20.181 A number of PRoW cross the Wylfa Newydd Development Area, including the Wales Coast Path and the Copper Trail/NCN Route 566 (Cemlyn Road). The Wales Coast Path passes through the Wylfa Newydd Development Area and would need to be permanently diverted during both construction and operation. The Copper Trail would be diverted along Nanner Road. National Trust land to the west of the Wylfa Newydd Development Area is used by walkers and provides access to the coast. Other paths and PRoW within

the Wylfa Newydd Development Area would be affected by loss of amenity during the Site Preparation and Clearance works, and would then be either permanently closed or diverted, as necessary, during construction.

20.182 Access to Porth-y-pistyll would be permanently restricted both from the shore and from the sea.

20.183 The Wylfa Newydd Development Area is visible from nearby communities including Tregele, with the Existing Power Station being a prominent feature in the landscape. Views towards the site and the general landscape would change as early stages of construction of the power station get underway. Topsoil mounds would be a feature at these early stages.

20.184 The proposed site levels have been guided by a desire to balance cut and fill volumes during site clearance and excavation in order to reduce the import and export of materials, while balancing local environmental effects, operational cost and energy demand. The minimum ground level has been set above the anticipated extreme flood event level and development platforms have been created.

20.185 The heights of new landforms would be likely to range from +30m AOD to +50m AOD which is in scale with the height of existing surrounding drumlins. Gradients would be likely to range from 1 in 6 to 1 in 10, with the exception of some specific areas of the landscape mounds such as those adjacent to Tregele, which would be constructed at 1 in 2 and planted to soften their appearance.

20.186 There would be an adverse effect on the Welsh language as a result of the scale of population increase in the local area during the construction stage. The in-migration of workers, a significant proportion of whom are assumed to be non-Welsh speakers, would affect the balance of Welsh speakers by reducing the proportion of Welsh speakers. Our approach to avoiding and mitigating area-wide adverse effects on the Welsh language are summarised at the beginning of this chapter and in chapter 21 of this document.

Effects during operation of the Wylfa Newydd Project

20.187 The Power Station Site would require approximately 850 personnel to operate it over its 60 year lifespan. About 45% of the jobs would be filled by people from the Isle of Anglesey or the Menai area of the mainland.

20.188 The Visitor and Media Reception Centre development would serve as a tourist attraction, providing information about the Power Station, and would also include an educational hub for school children and students and a cafe. The location of the Visitor and Media Reception Centre is some 700m from the southern edge of Tregele and so there would be limited visual impact of this building on the village itself, although there are some individual properties which are located adjacent to the proposed new buildings.

20.189 Significant traffic increases or delays are not anticipated during site operation. A beneficial aspect of the Wylfa Newydd Project would be an improved A5025 built to current safety standards.

20.190 Views from in and around Tregele towards the Power Station Site would be permanently changed, with the new Power Station being more prominent and landscape mounding evident.

20.191 The Training and Simulator Building and its plot have been integrated into the temporary bunding and permanent LEMP structural planting and mounding measures for the Power Station Site. Tregele would also benefit from the extensive earthworks and planting along the A5025 that would assimilate the Power Station into the surrounding landscape. This would provide screening and noise attenuation for the residents of Tregele during both its construction and operation.

20.192 The Main Plant would be made up of two units (Unit 1 and 2), radioactive waste buildings, and a Cooling Water System. The Main Plant is orientated so that Unit 1 would be partially behind Unit 2, when viewed from Tregele, mitigating local views to Unit 1.

20.193 There is likely to be a change to night-time lighting in Tregele, owing to the proximity of the proposed Power Station. This effect would be reduced through the use of directional lighting.

20.194 The Wales Coast Path and Copper Trail diversions would continue in place throughout the operation of the Power Station. Access to Porth-y-pistyll would be permanently restricted both from the shore and from the sea, and some other paths and PRoW within the Wylfa Newydd Development Area would also remain permanently closed or diverted.

Llanfechell

Context

20.195 Llanfechell is a small village in the northern part of the Isle of Anglesey, located about 2km to the south of Cemaes on Brynddu Road. It is the largest of several small villages and dispersed settlements that make up Mechell Community Council area.

20.196 The site of the proposed Wylfa Newydd Power Station is approximately 2.5km to the north west of Llanfechell. Temporary Workers' Accommodation is proposed at Rhosgoch about 4km to the east of Llanfechell and a Visitor and Media Reception Centre is proposed about 2km to the west of Llanfechell.

Consultation feedback

20.197 We received feedback from the community during the Stage One Pre-Application Consultation.

20.198 Feedback on the proposals in this area was mainly about the location of the Temporary Workers' Accommodation, with a general preference for it to be located as close as possible to the Power Station Site. Residents of Llanfechell generally did not want Temporary Workers' accommodation to be located within or near Llanfechell.

Potential effects

Effects during construction of the Wylfa Newydd Project

20.199 The construction phase for the Wylfa Newydd Project, including site preparation works, would run over about 11 years in total. It would require a workforce of up to 10,720, creating significant employment opportunities, including apprenticeships, for community residents, and would boost the local economy as a result of the influx of construction workers to Anglesey.

20.200 The construction workforce profile shows that construction workers numbers are expected to exceed 6,000 for around four years, between mid-2021 and mid-2025, with workers

exceeding 8,000 between the end of 2021 to the end of 2024. It is anticipated that during this time the most significant effects during construction would be experienced, although changes to the landscape, for example through new landscape mounding, buildings and structures, would remain throughout the construction period.

20.201 Llanfechell residents who use the A5025 may experience a change to traffic on this road. The A5025 would be noticeably busier during construction. Improvement works, including resurfacing, bypasses and better overtaking opportunities between Valley and the Power Station Site, would a lasting legacy for all users along this route. These improvements would be delivered in time to support the peak of construction activities at the Power Station Site. Traffic is anticipated to increase by up to 90% on the A5025 south of the Power Station during peak construction activities. This could affect air quality and noise levels for residents close to this stretch of the A5025.

20.202 The preferred location for the on-site accommodation campus is to the south of Wylfa Head and to the east of the Existing Power Station, overlooking Cemaes Bay. The site would be landscaped to soften views from key areas such as Cemaes, Wylfa Head and the Wales Coast Path.

20.203 On-site accommodation would be a campus style development with up to four accommodation blocks (each up to four storeys) plus other service and amenity buildings. The combination of accommodation, transport provision and key services and facilities means that the on-site campus could be largely self-contained in terms of meeting the daily needs of the occupants, hence minimising adverse impacts on local services in the surrounding area.

20.204 The Power Station Site would be visible in some longer distance views from Llanfechnell, in part because of the lack of existing vegetation to screen views. This would especially be the case at night time where taller elements, such as crane lighting would be visible about intervening features although the effects would be reduced by the proposed landscape mounding, opposite Tregele, and Tregele itself, as well as the undulating landform to the west of Llanfechnell itself.

Effects during operation of the Wylfa Newydd Project

20.205 The Power Station Site would require approximately 850 personnel to operate it over its 60 year lifespan. About 45% of the jobs would be filled by people from the Isle of Anglesey or the Menai area of the mainland. A proportion of these jobs could go to Llanfechnell residents.

20.206 The Llanfechell community is unlikely to experience significant traffic delays during site operation.

Llanrhyddlad

Context

20.207 The village of Llanrhyddlad is located on the north-western side of Anglesey on the northern side of the A5025 between Cefn Coch and Bodwyn. The village is made up of a few main clusters of residential properties, principally set back from or perpendicular to the A5025, with some isolated properties and farm buildings outside of these clusters.

20.208 The elements of the Wylfa Newydd Project closest to Llanrhyddlad include on-line highway improvements to the A5025 and the Alternative Emergency Control Centre

(AECC) and Environmental Survey Laboratory (ESL), which would be located approximately 1km to the north-east. The proposed dimensions of the combined AECC and ESL building would be a maximum length 61.5m, maximum height 10.2m and maximum width 17m. Although there are no on-line improvements proposed where the A5025 passes through Llanrhyddlad itself, the proposal is to resurface the entire stretch of the A5025 between Valley and the Power Station Site.

20.209 We are also considering an alternative site for the AECC and ESL on the Cylch y Garn Primary School, which is due to close shortly. Information on this potential alternative can be found within the AECC/ESL Addendum Report. We appreciate that if this site is selected, Llanrhyddlad would experience different effects than those reported here. These are considered in the Addendum Report.

Consultation feedback

20.210 We received feedback from the community during the Stage One Pre-Application Consultation and the January Project Update consultation.

20.211 Concern was expressed about the increase in traffic along the A5025 and the impact it will have on communities, including Llanrhyddlad. Widespread support was expressed for upgrades to the road, with the exception of some residents who were concerned about the impact of major road works.

Summary of effects

Effects during construction of the Wylfa Newydd Project

20.212 The Llanrhyddlad community would be within 4km of the Power Station Site. The Llanrhyddlad community could expect to benefit from the opportunities from the Wylfa Newydd Project as well as a boost to the local economy because of the influx of construction workers to Anglesey over the 11-year construction phase as well as training and apprenticeship opportunities.

20.213 The construction workforce profile shows that construction workers numbers are expected to exceed 6,000 for around four years, between mid-2021 and mid-2025, with workers exceeding 8,000 between the end of 2021 to the end of 2024. It is anticipated that during this time the most significant effects during construction would be experienced, although changes to the landscape, for example through new buildings, structures and infrastructure including roads, would remain throughout the construction period. A proportion of these jobs could go to people living in Llanrhyddlad.

20.214 The A5025 would be noticeably busier during construction. During construction, it envisaged that a maximum of 40 Heavy Goods Vehicles (HGV) deliveries per hour would travel along the A5025 between the site and Valley, taking into account consolidation of loads in the proposed Logistics Centre, but this could increase to 80 HGVs an hour without consolidation. These deliveries would be within a 12 hour window per day Monday to Sunday only, but avoiding peak traffic periods, such as school pick up and peak commuting times. During normal circumstances, we would therefore limit HGV deliveries on the A5025 between 8.30am and 9am and 3.30am and 5pm, until the off-line bypasses are constructed and open. Deliveries outside of these hours may be required in exceptional circumstances however we would inform the public of this in advance. We will produce a Traffic Management Plan (TMP) which would specifically identify controls

that will be implemented to mitigate the impact that HGV vehicle deliveries have on the A5025.

20.215 Improvement works to the A5025, including resurfacing, bypasses and better overtaking opportunities between Valley and the Power Station Site, would a lasting legacy for all users along this route. These improvements would be delivered in time to support the peak of construction activities at the Power Station Site. Traffic is anticipated to increase by up to 90% on the A5025 south of the Power Station during peak construction activities.

20.216 Measures to mitigate traffic effects are described in the introduction to this chapter. Specific to Llanrhyddlad, the MOLF in particular would help to reduce traffic movements on the A5025 by handling about 60-80% of materials needed during construction. The logistics centre would also help to control the flow of traffic.

20.217 There may be a slight increase in levels of air pollutants for residents closest to the A5025. Dust control and other measures during construction would reduce this impact.

20.218 There may also be a slight increase in noise and vibration for residents closest to the A5025. Of those residents living closest to the construction works, people who spend large amount of time at home during the day, including older people, disabled and parents at home with children, are most likely to be affected. Noise limits would be adhered to during construction.

20.219 There would be an adverse effect on the Welsh language as a result of the scale of population increase in the local area during the construction stage. The in-migration of workers, a significant proportion of whom are assumed to be non-Welsh speakers, would affect the balance of Welsh speakers by reducing the proportion of Welsh speakers. Our approach to avoiding and mitigating area-wide adverse effects on the Welsh language are summarised at the beginning of this chapter and in chapter 21 of this document.

Effects during operation of the Wylfa Newydd Project

20.220 During operation, 850 new permanent jobs would be created at the Power Station. It is expected that, as a minimum, around 45% of these jobs would be filled by people from Anglesey or within the Menai area of the mainland. A proportion of these could go to people living in Llanrhyddlad.

20.221 A beneficial aspect of the Wylfa Newydd Project would be an improved A5025 built to current safety standards.

20.222 In the operation of the Power Station, traffic flows are expected to be lower than in the construction phase, and associated air quality and noise and vibration effects would be less.

Llanfaethlu

Context

20.223 The village of Llanfaethlu is located on the western side of Anglesey on the A5025. The village consists of a main cluster of residential properties, a church and a coffee shop and has a population of approximately 550 people. There are more isolated residential properties and farm buildings that surround the village, including the hardstanding area currently in use as a garage and bus/coach depot that is the proposed location for the Mobile Emergency Equipment Garage (MEEG) approximately 350m to the north of

Llanfaethlu. The proposed dimensions of the new MEEG would be 56m length x 24m wide x 13.6m high.

20.224 The element of the Wylfa Newydd Project closest to Llanfaethlu is the proposed off-line highway improvements to the A5025 which would bypass Llanfaethlu on the eastern side. The Llanfaethlu community would be within 7km of the Power Station Site.

Consultation feedback

20.225 Engagement with the Llanfaethlu community showed that providing a bypass directly to either the east or the west of the existing alignment would not be a preferable option. Three options were therefore, devised to bisect the two existing bends and cross the existing highway between the bends. Following further assessment, Option 2 was preferred as it would be more beneficial in terms of construction, environmental, visual, severance and safety impacts.

20.226 The Llanfaethlu community was generally supportive of a bypass of Llanfaethlu but was concerned about the effect that the removal of through-traffic might have on the Coffee House Shop.

Summary of effects

Effects during construction of the Wylfa Newydd Project

20.227 The Llanfaethlu community could expect to benefit from the opportunities from the Wylfa Newydd Project as well as a boost to the local economy because of the influx of construction workers to Anglesey over the 11-year construction phase as well as training and apprenticeship opportunities.

20.228 The construction workforce profile shows that construction workers numbers are expected to exceed 6,000 for around four years, between mid-2021 and mid-2025, with workers exceeding 8,000 between the end of 2021 to the end of 2024. It is anticipated that during this time the most significant effects during construction would be experienced, although changes to the landscape, for example through new buildings, structures and infrastructure including roads, would remain throughout the construction period. A proportion of these jobs could go to people living in Llanfaethlu.

20.229 The A5025 would be noticeably busier during construction. During construction, it envisaged that a maximum of 40 Heavy Goods Vehicles (HGV) deliveries per hour would travel along the A5025 between the site and Valley, taking into account consolidation of loads in the proposed Logistics Centre, but this could increase to 80 HGVs an hour without consolidation. These deliveries would be within a 12 hour window per day Monday to Sunday only, but avoiding peak traffic periods, such as school pick up and peak commuting times. During normal circumstances, we would therefore limit HGV deliveries on the A5025 between 8.30am and 9am and 3.30am and 5pm, until the off-line bypasses are constructed and open. Deliveries outside of these hours may be required in exceptional circumstances however we would inform the public of this in advance. We will produce a Traffic Management Plan (TMP) which would specifically identify controls that will be implemented to mitigate the impact that HGV vehicle deliveries have on the A5025.

20.230 Improvement works, including resurfacing, bypasses and better overtaking opportunities between Valley and the Power Station Site, would a lasting legacy for all users along this

route. These improvements would be delivered in time to support the peak of construction activities at the Power Station Site. Traffic is anticipated to increase by up to 90% on the A5025 south of the Power Station during peak construction activities.

20.231 Measures to mitigate traffic effects are described in the introduction to this chapter. Specific to Llanfaethlu, the MOLF in particular would help to reduce traffic movements on the A5025 by handling about 60-80% of materials needed during construction. The logistics centre would also help to control the flow of traffic.

20.232 For a period of one month during peak construction of the MEEG, approximately 135 vehicles would travel through Llanfaethlu, or via the new bypass once constructed, to and from the MEEG site each day (270 vehicle movements). In the rest of the approximately five year construction period for the MEEG, an average of approximately 70 vehicles would travel through Llanfaethlu to and from the MEEG site each day (140 vehicle movements).

20.233 There may be a slight increase in levels of air pollutants for residents closest to the A5025. Dust control and other measures during construction would reduce this impact.

20.234 There may be a slight increase in noise and vibration for residents closest to the A5025. This would occur due to an increased traffic to the Power Station and the presence of construction equipment and machines for the construction of the MEEG. Children at the new primary school proposed at Llanfaethlu would experience an increase noise levels during construction. Nosie effects would be controlled through a CEMP, which would enforce tried and tested measures including the use of low noise and vibration machinery and, limiting construction working hours.

20.235 Users of local footpaths may find it takes longer to cross the new section of road. A new footpath would be provided to the west of the A5025 to allow pedestrians to access Llanfaethlu village from the properties to the north of the bypass.

20.236 While the A5025 road upgrades are under construction, reduced pedestrian amenity and increased journey times may particularly affect older people, children and disabled people who need to cross the A5025 to access community facilities. However, once these upgrades are complete, road safety would be improved with particular benefits for these groups in communities that are bypassed following the improvements.

20.237 The construction of the MEEG would produce a direct physical effect on the landscape (e.g. the removal of vegetation and stone walls). In addition, nearby residents and users of public footpaths to the north, south and directly opposite the MEEG site would notice changes to their views as a result of the construction compound, movement of construction materials and construction of the new Facility. Environmental screening would take place by vegetation planting and replacement of stone walls to reduce this impact.

20.238 There would be an adverse effect on the Welsh language as a result of the scale of population increase in the local area during the construction stage. The in-migration of workers, a significant proportion of whom are assumed to be non-Welsh speakers, would affect the balance of Welsh speakers by reducing the proportion of Welsh speakers. Our approach to avoiding and mitigating area-wide adverse effects on the Welsh language are summarised at the beginning of this chapter and in chapter 21 of this document.

Effects during operation of the Wylfa Newydd Project

20.239 During operation 850 new permanent jobs would be created at the Power Station. It is expected that, as a minimum, around 45% of these jobs would be filled by people from Anglesey or within the Menai area of the mainland. A proportion of these may go to residents in Llanfaethlu.

20.240 A beneficial aspect of the Wylfa Newydd Project would be an improved A5025 built to current safety standards. Residents of Llanfaethlu would also experience a positive legacy benefit of the proposed bypass.

20.241 In the operation of the Power Station, traffic flows are expected to be much lower than in the construction phase, therefore, the associated effects, for example air quality and noise and vibration would be significantly less.

20.242 The operation of the MEEG would contribute very little to traffic flows on the A5025, and associated effects, for example, air quality and noise and vibration would be similar to the existing situation. The MEEG would not be manned on a daily basis. It would generate low vehicle movements only during training, an incident, or for infrequent maintenance. Once built, people who use the footpath to the north and south of the MEEG could expect to only see the rooflines of the MEEG building mainly because of landscape planting, which would have matured by the time MEEG is operating.

Llanfachraeth

Context

20.243 Llanfachraeth is a small village located on the western side of Anglesey on the A5025, 10km east of Holyhead. Llanfachraeth has a pub, hotel, post office and place of worship, and has a population of approximately 600 people. Residential properties are present either side of the A5025 with more isolated residential properties and farm buildings slightly further afield to the east and west.

20.244 The elements of the Wylfa Newydd Project closest to Llanfachraeth include off-line highway improvements to the A5025 which would bypass Llanfachraeth on the eastern side. The Llanfachraeth community would be within 11km of the Power Station.

Consultation feedback

20.245 We received feedback from the Llanfachraeth community during the Stage One Pre-Application Consultation. Feedback was mainly about the design options to bypass the Llanfachraeth village. The Llanfachraeth community was generally positive toward the option that took the bypass furtherest away from the village on a large radius curve.

20.246 In July 2015, changes were made to the design of the Llanfachraeth proposals following consultation feedback. These included the incorporation of an embankment to cross two existing watercourses, and movement of the design further away from residential properties, which would also be more suitable for overtaking.

Summary of effects

Effects during construction of the Wylfa Newydd Project

20.247 The Llanfachraeth community could expect to benefit from the opportunities from the Wylfa Newydd Project as well as a boost to the local economy because of the influx of remaining workers to Anglesey over the 11-year construction phase as well as training and apprenticeship opportunities.

20.248 The construction workforce profile shows that construction workers numbers are expected to exceed 6,000 for around four years, between mid-2021 and mid-2025, with workers exceeding 8,000 between the end of 2021 to the end of 2024. It is anticipated that during this time the most significant effects during construction would be experienced, although changes to the landscape, for example through new buildings, structures and infrastructure including roads, would remain throughout the construction period.

20.249 Our draft Jobs and Skills Strategy and our Education Engagement Strategy shows how we plan to give skills and training opportunities to local people to work on the Wylfa Newydd Project. Our draft Jobs and Skills Strategy and our Education Engagement Strategy focuses on developing activities and opportunities in north Wales to ensure that local workers have information about training that could lead to employment to support each aspect of the Wylfa Newydd Project.

20.250 The A5025 would be noticeably busier during construction. During construction, it envisaged that a maximum of 40 Heavy Goods Vehicles (HGV) deliveries per hour would travel along the A5025 between the site and Valley, taking into account consolidation of loads in the proposed Logistics Centre, but this could increase to 80 HGVs an hour without consolidation. These deliveries would be within a 12 hour window per day Monday to Sunday only, but avoiding peak traffic periods, such as school pick up and peak commuting times. During normal circumstances, we would therefore limit HGV deliveries on the A5025 between 8.30am and 9am and 3.30am and 5pm, until the off-line bypasses are constructed and open. Deliveries outside of these hours may be required in exceptional circumstances however we would inform the public of this in advance. We will produce a Traffic Management Plan (TMP) which would specifically identify controls that will be implemented to mitigate the impact that HGV vehicle deliveries have on the A5025.

20.251 Improvement works, including resurfacing, bypasses and better overtaking opportunities between Valley and the Power Station Site, would a lasting legacy for all users along this route. These improvements would be delivered in time to support the peak of construction activities at the Power Station Site. Traffic is anticipated to increase by up to 90% on the A5025 to the south of the Power Station during peak construction activities.

20.252 Measures to mitigate traffic effects are described in the introduction to this chapter. Specific to Llanfachraeth, the MOLF in particular would help to reduce traffic movements on the A5025 by handling about 60-80% of materials needed during construction. The logistics centre would also help to control the flow of traffic.

20.253 There may be a slight increase in levels of air pollutants for residents closest to the A5025. Dust control and other measures during construction would reduce this impact.

20.254 There may also be a slight increase in noise and vibration for residents closest to the A5025. Of those residents living closest to the construction works, people who spend

large amount of time at home during the day, including older people, disabled, and parents at home with children, are most likely to be affected. Noise limits would be adhered to during construction.

20.255 While the A5025 road upgrades are under construction, reduced pedestrian amenity and increased journey times may particularly affect older people, children and disabled people who need to cross the A5025 to access community facilities. However, once these upgrades are complete, road safety would be improved with particular benefits for these groups in communities that are bypassed following the improvements.

20.256 There would be an adverse effect on the Welsh language as a result of the scale of population increase during the construction stage. This would include measures such as providing materials for in-migration workers that promote benefits of the Welsh language and bilingualism to families moving to the area and promoting employment opportunities at the Power Station to the local population, particularly young people, which would help to reduce out-migration.

Effects during operation of the Wylfa Newydd Project

20.257 During operation 850 new permanent jobs would be created at the Power Station. It is expected that, as a minimum, around 45% of these jobs would be filled by people from Anglesey or within the Menai area of the mainland.

20.258 A beneficial aspect of the Wylfa Newydd Project would be an improved A5025 built to current safety standards as well as the bypass of Llanfachraeth, which would reduce traffic in this village.

20.259 During the operation of the Power Station, traffic flows are expected to be much lower than in the construction phase, therefore, the associated effects (e.g. air quality, noise and vibration) would be significantly less.

Llanynghenedl

Context

20.260 The village of Llanynghenedl is located on the western side of Anglesey either side of the A5025 between Llanfachraeth and Valley. The village is made up of a row of residential properties on the northern side of the A5025 and further residential properties and a farm shop on the junction between the A5025 and the B5109.

20.261 The elements of the Wylfa Newydd Project closest to Llanynghenedl include on-line improvements to the A5025. At Llanynghenedl we are proposing on-line improvements including road widening and junction improvements. We are also proposing to resurface the whole of the A5025 between Valley and the Power Station Site. The preferred site of the MEEG is located approximately 2.4km (1.5 miles) to the north-east of Llanynghenedl.

Consultation feedback

20.262 We received feedback from the community during the Stage One Pre-Application Consultation and the January Project Update consultation.

20.263 Concern was expressed about the increase in traffic along the A5025 and the impact it will have on communities, including Llanynghenedl. Widespread support was expressed for upgrades to the road, with the exception of some residents who were concerned about the impact of major road works.

Summary of effects

Effects during construction of the Wylfa Newydd Project

20.264 The Llanynghenedl community would be within 12km of the Power Station Site. The 11-year construction phase would create employment opportunities, including apprenticeships, for community residents, and would boost the local economy as a result of the influx of construction workers to Anglesey.

20.265 Our draft Jobs and Skills Strategy and our Education Engagement Strategy how we plan to give skills and training opportunities to local people to work on the Wylfa Newydd Project. Our draft Jobs and Skills Strategy and our Education Engagement Strategy focuses on developing activities and opportunities in north Wales to ensure that local workers have information about training that could lead to employment to support each aspect of the Wylfa Newydd Project.

20.266 The construction workforce profile shows that construction workers numbers are expected to exceed 6,000 for around four years, between mid-2021 and mid-2025, with workers exceeding 8,000 between the end of 2021 to the end of 2024. It is anticipated that during this time the most significant effects during construction would be experienced.

20.267 The A5025 would be noticeably busier during construction. During construction, it envisaged that a maximum of 40 Heavy Goods Vehicles (HGV) deliveries per hour would travel along the A5025 between the site and Valley, taking into account consolidation of loads in the proposed Logistics Centre, but this could increase to 80 HGVs an hour without consolidation. These deliveries would be within a 12 hour window per day Monday to Sunday only, but avoiding peak traffic periods, such as school pick up and peak commuting times. During normal circumstances, we would therefore limit HGV deliveries on the A5025 between 8.30am and 9am and 3.30am and 5pm, until the off-line bypasses are constructed and open. Deliveries outside of these hours may be required in exceptional circumstances however we would inform the public of this in advance. We will produce a Traffic Management Plan (TMP) which would specifically identify controls that will be implemented to mitigate the impact that HGV vehicle deliveries have on the A5025.

20.268 It is recognised that this would be directly past some homes in Llanynghenedl and we are putting in place measures to reduce effects as much as possible, including investigating the use of low noise emissions vehicles and resurfacing the highway.

20.269 Improvement works, including resurfacing, bypasses and better overtaking opportunities between Valley and the Power Station Site, would be a lasting legacy for all users along this route. These improvements would be delivered in time to support the peak of construction activities at the Power Station Site. Traffic is anticipated to increase by up to 90% on the A5025 south of the Power Station during peak construction activities.

20.270 Measures to mitigate traffic effects are described in the introduction to this chapter. Specific to Llanynghenedl, the MOLF in particular would help to reduce traffic movements on the A5025 by handling about 60-80% of materials needed during construction. The logistics centre would also help to control the flow of traffic.

20.271 There may be a slight increase in levels of air pollutants for residents closest to the A5025. Dust control and other measures during construction would reduce this impact.

20.272 There may also be a slight increase in noise and vibration for residents closest to the A5025. Of those residents living closest to the construction works, people who spend large amount of time at home during the day, including older people, disabled, and parents at home with children, are most likely to be affected. Noise limits would be adhered to during construction.

20.273 In the construction period for the Wylfa Newydd Development Area, there would also be a noticeable increase in traffic flows for the village of Llanynghenedl which would have a slight impact on walkers, car and bus users, journey times and amenity, accident risk and driver stress. Traffic would especially be noticeable for people who live along the A5025 in Llanynghenedl during peak construction, especially those houses located very close to A5025. This is in part because there would not be a bypass of Llanynghenedl.

20.274 There would be an adverse effect on the Welsh language as a result of the scale of population increase in the local area during the construction stage. The in-migration of workers, a significant proportion of whom are assumed to be non-Welsh speakers, would affect the balance of Welsh speakers by reducing the proportion of Welsh speakers. Our approach to avoiding and mitigating area-wide adverse effects on the Welsh language are summarised at the beginning of this chapter and in chapter 21 of this document.

Effects during operation of the Wylfa Newydd Project

20.275 During operation 850 new permanent jobs would be created at the Power Station. It is expected that, as a minimum, around 45% of these jobs would be filled by people from Anglesey or within the Menai area of the mainland. A proportion of these could go to residents of Llanynghenedl.

20.276 A beneficial aspect of the Wylfa Newydd Project would be an improved A5025 built to current safety standards.

20.277 In the operation of the Power Station, traffic flows are expected to be much lower than in the construction phase, therefore, the associated effects, for example, air quality and noise and vibration would be less.

Bodedern and Llanfihangel yn Nhowyn

Context

20.278 Bodedern is a small village, with a population of around 1,000, in the western part of the Isle of Anglesey. It is located about 1.3km north of the Dalar Hir site proposed for a Park and Ride facility during the construction of the Power Station. There are also some residential properties located along London Road, between the Dalar Hir Park and Ride and Bodedern. Llanfihangel yn Nhowyn is a small village located directly to the south of the proposed Dalar Hir Park and Ride site. When we refer to Bodedern as part of this assessment, we are also including the potential effects on surrounding communities of Llanfihangel yn Nhowyn and nearby properties.

20.279 The Dalar Hir site is a 28 hectare greenfield site, adjacent to the northern boundary of the A55. The closest buildings are the Cartio Mon Go Kart facility and associated Bryn Goleu farmhouse adjacent to the eastern boundary of the Park and Ride site; and Gwyddfor Residential Care Home approximately 200m from the north eastern boundary of the Park and Ride site.

20.280 The Park and Ride facility would be a key component of our ITTS. It would allow for secure vehicle parking, and the controlled transportation of workers, by bus, to the Wylfa Newydd Development Area, reducing the number of individual car trips travelling on the local road network.

20.281 It is anticipated that the Park and Ride facility would be used primarily by construction workers resident in the southern and western parts of Anglesey, as well as those commuting from the mainland. It would not be available for use by the public. At the end of the construction period, the Park and Ride facility would be removed and the site reinstated to agricultural land.

20.282 Chapter 12 provides more information on our proposals at Dalar Hir.

Consultation feedback

20.283 We received feedback from the community during the Stage One Pre-Application Consultation and the January Project Update consultation.

20.284 Local residents have previously raised concerns about the traffic impacts associated with the proposed Park and Ride facility at Dalar Hir. Horizon has subsequently given further consideration to the impact on A5 and A55. Traffic modelling has been carried out on our proposals, including the Park and Ride facility, in order to understand the potential effects on the A5 and A55.

20.285 Consultation feedback at the Stage One and January Project Update consultations also requested that Horizon consider a mainland park and ride, in addition to a facility on the island. Our traffic assessment work carried out to date does not support the need for such a facility and therefore, it does not form part of our proposals being consulted on through this Stage Two Pre-Application Consultation. Further information is provided in chapter 10 of this document.

Summary of effects

Effects during construction of the Wylfa Newydd Project

20.286 The Bodedern community could expect to benefit from the opportunities from the Wylfa Newydd Project as well as a boost to the local economy because of the influx of construction workers to Anglesey over the 11-year construction phase as well as training and apprenticeship opportunities.

20.287 The Dalar Hir facility alone would create 120 jobs during its 29 month construction and 55 jobs during its operation.

20.288 Our draft Jobs and Skills Strategy and our Education Engagement Strategy shows how we plan to give skills and training opportunities to local people to work on the Wylfa Newydd project. The strategies focus on developing training activities and opportunities in north Wales to ensure that local workers have information about training that could lead to employment to support each aspect of the Wylfa Newydd Project.

20.289 The Bodedern community may experience changes to traffic during the construction of the Dalar Hir Park and Ride, particularly those residents who use the A55, A5 and local road network, such as London Road.

20.290 During construction of the Park and Ride facility, the two way traffic flow in and out of the site would be approximately 580 vehicles per day of which 150 would be HGVs (two-way).

As a result residents may find it takes slightly longer to cross the A5 between the two new junctions and the A55 Junction 4a, and journey times might be slightly longer for people travelling along the A5 between the two new junctions and the A55 Junction 4.

20.291 During the Power Station construction, when the Park and Ride would be in use, there would be traffic increases associated with staff and deliveries, as well as buses travelling to and from the Park and Ride facility.

20.292 We anticipate that around 50 return daily bus journeys (50 there and 50 back) would be made to and from the Park and Ride facility and the Power Station Site, timed to coincide with shift patterns. These would be between 07:00 and 08:00 in the morning and 18:00 and 19:00 in the evening, to serve the day shift, and 16:30 and 17:30 in the afternoon and 03:30 and 04:30 in the early morning, to serve the night shift.

20.293 In addition, based on a typical working day, there would be movements associated with staff travelling to the site. This results in a worst case scenario of (assuming one person per car) 110 additional vehicle trips along the A55 per day (two-way) (i.e. 55 vehicles in and 55 vehicles out of the Park and Ride facility). Deliveries by Light Goods Vehicles is estimated at two vehicle movements per day (two way).

20.294 There would also be vehicle movements from workers travelling to and from the Park and Ride facility whilst not at work. These movements are included in the overall traffic modelling, and have not yet been disaggregated from the total vehicle movements anticipated to be generated by the Project. They would be reported with the Transport Assessment which would accompany the DCO application, or the applications for Associated Development.

20.295 Local residential areas in the vicinity of the site, notably the Gwyddfor residential care home, would experience increased noise during the construction of the site and during its subsequent use as a park and ride due to movement of additional traffic.

20.296 During construction of the Park and Ride facility, Horizon would reduce these effects by preparing a Noise and Vibration Management Plan, selecting an access route to the Park and Ride facility that reduces likely noise and vibration effects on nearby properties and limit movements to and from the site to daytime hours. During the use of the Park and Ride the level of traffic noise would be reduced through the careful timing of shift changes, the use of low noise emissions vehicles and the installation of noise barriers.

20.297 It is not expected that local residents would be affected by road traffic emissions or construction machinery during the construction of the Park and Ride facility.

20.298 During construction and use of the Dalar Hir Park and Ride, people in the Bodedern community, particularly those living near the site, would likely notice changes to their views and the landscape. This is because the presence of a car park, with buildings, for example, the bus transport facility building, and the increase in vehicles using the site would change the current rural character. There may be also be changes in the amenity for those residents who use the footpath near Dalar Bach or the National Cycle Route 8, as a result of the visual impact of the new facility.

20.299 We have reduced these visual effects to the Bodedern community through the proposed design of the Dalar Hir Park and Ride, with measures such as retaining field boundaries and buffer planting. In addition, a landscape management plan is being produced, to implement a landscaping scheme and planting strategy to help screen the construction

and operation of the Dalar Hir Park and Ride from surrounding communities and the A5 and A55.

20.300 There would be an adverse effect on the Welsh language as a result of the scale of population increase in the local area during the construction stage. The in-migration of workers, a significant proportion of whom are assumed to be non-Welsh speakers, would affect the balance of Welsh speakers by reducing the proportion of Welsh speakers. Our approach to avoiding and mitigating area-wide adverse effects on the Welsh language are summarised at the beginning of this chapter and in chapter 21 of this document.

Effects during operation of the Wylfa Newydd Project

20.301 During operation 850 new permanent jobs would be created at the Power Station. It is expected that, as a minimum, around 45% of these jobs would be filled by people from Anglesey or within the Menai area of the mainland. A proportion of these jobs could go to residents in Bodedern.

20.302 The Park and Ride facility is expected to remain operational until approximately one year after the start of the operation of Unit 1 of the Wylfa Newydd Power Station. The Dalar Hir site would then be reinstated to its former use as agricultural land.

20.303 Significant traffic delays are not anticipated during the operation of the Power Station as the volume of traffic will be significantly reduced, and there will be a legacy of highway improvements along the A5025.

Valley

Context

20.304 Valley is in western Anglesey about 15km south-west of the Power Station Site. Valley lies immediately to the north-west of the B4545, with development extending north of the A5 east and west of the Gorad Road. The population of Valley is approximately 2,600.

20.305 The A5025 starts on the eastern edge of Valley at the Junction of the A5 and the B4545, about 2.2 miles from the proposed Dalar Hir Park and Ride facility at which construction workers would transfer from their private vehicles onto buses/coaches to reduce the volume of traffic along the A5025. The proposals to upgrade the A5025 include a new junction with the A5 to the east of Valley and an associated new link bypassing the southernmost section of the existing A5025. This upgrade would allow construction traffic and busses transporting construction workers to and from the proposed Dalar Hir Park and Ride facility to avoid passing through the built up area of Valley.

20.306 Chapter 11 provides more information on the proposals for the upgrade to the A5025; and chapter 12 provides more information on the proposed Park and Ride facility at Dalar Hir.

Consultation feedback

20.307 We received feedback from the community during the Stage One Pre-Application Consultation and the January Project Update consultation.

20.308 Consultation feedback included concerns about the impacts of construction traffic on the A5025 and support for the proposed upgrades to this road. There were also suggestions that Horizon should consider the role that rail freight could play in managing the impact of traffic, taking advantage of the railway sidings and equipment at Valley.

Summary of effects

Effects during construction of the Wylfa Newydd Project

20.309 The community could expect to benefit from the opportunities from the Wylfa Newydd Project as well as a boost to the local economy because of the influx of construction workers to Anglesey over the 11-year construction phase as well as training and apprenticeship opportunities.

20.310 The construction workforce profile shows that construction workers numbers are expected to exceed 6,000 for around four years, between mid-2021 and mid-2025, with workers exceeding 8,000 between the end of 2021 to the end of 2024. It is anticipated that during this time the most significant effects during construction would be experienced, although changes to the landscape, for example through new buildings, structures and infrastructure including roads, would remain throughout the construction period.

20.311 Our draft Jobs and Skills Strategy and our Education Engagement Strategy shows how we plan to give skills and training opportunities to local people to work on the Wylfa Newydd project. The strategies focus on developing training activities and opportunities in north Wales to ensure that local workers have information about training that could lead to employment to support each aspect of the Wylfa Newydd Project.

20.312 The traffic effects on residents of Valley would mainly be felt during the construction of the A5025 improvements and the development of the Power Station. The construction of the A5025 improvements along its length would take approximately four years.

20.313 The number of vehicles travelling to and from each section of the Off-Line Highway Improvements during the peak period of construction in 2019 would be 210 vehicles per day for five days per week. As a consequence journey times along the A5025 (west), would be affected by a combination of increases in construction vehicles and traffic management measures.

20.314 While the A5025 road upgrades are under construction, reduced pedestrian amenity and increased journey times may particularly affect older people, children and disabled people who need to cross the A5025 to access community facilities.

20.315 During the construction of the Power Station Site, there would also be some increase in traffic along the A5 through Valley as a result of construction traffic and busses transporting workers travelling to and from the Temporary Workers' Accommodation at Kingsland and Cae Glas, the Park and Ride facility at Dalar Hir and the Logistics Centre at Park Cybi. These effects would reduce when the junction improvements and A5025 bypass to the east of Valley are in place.

20.316 People within close proximity to the A5025 and the A5 could experience increased levels of noise and vibration from these additional vehicles. Of those residents living closest to the construction works, people who spend large amount of time at home during the day, including older people, disabled, and parents at home with children, are most likely to be affected. We are seeking to reduce the effects of our buses on the local community through the use of low noise emissions vehicles.

20.317 Once completed, use of the new link road at Valley would result in the diversion of existing traffic along the A5025 (west). The effect of this would be to reduce the numbers of vehicles travelling along the southern end of the A5025 as it enters Valley. The reduction in the number of vehicles passing through this part of Valley would result in

improvements in journey times and an improvement in amenity, reductions in the risk of accidents and improvements in safety for drivers, cyclists, pedestrians and public transport users compared to the existing situation. This would have particular benefits for older people, children and disabled people in communities that are bypassed following the improvements.

20.318 There would be an adverse effect on the Welsh language as a result of the scale of population increase in the local area during the construction stage. The in-migration of workers, a significant proportion of whom are assumed to be non-Welsh speakers, would affect the balance of Welsh speakers by reducing the proportion of Welsh speakers. Our approach to avoiding and mitigating area-wide adverse effects on the Welsh language are summarised at the beginning of this chapter and in chapter 21 of this document.

Effects during operation of the Wylfa Newydd Project

20.319 During operation, 850 new permanent jobs would be created at the Power Station. It is expected that, as a minimum, around 45% of these jobs would be filled by people from Anglesey or within the Menai area of the mainland. A proportion of these could go to residents of Valley.

20.320 The Valley community are likely to experience less effects during operation of the Station, as there would be less lories travelling along the A5025 following construction at the Wylfa Newydd Development Area.

Holyhead, including Kingsland and Trearddur Bay

Context

20.321 Holyhead is the largest town on Anglesey with a population of approximately 11,500 and home to a large ferry port providing direct services to Dublin. Kingsland is the southern part of Holyhead, a predominantly suburban residential area which lies between the A55 and the urban fringe. Trearddur is a small coastal settlement and holiday resort further to the south, providing a substantial amount of holiday accommodation.

20.322 To the south of Holyhead, between Kingsland and Trearddur, are two sites (Kingsland and Cae Glas) which are preferred sites for delivery of Temporary Worker Accommodation. Both sites form part of the wider Land and Lakes development, which was granted planning permission in April 2016 (outline permission) and required both sites to be used for Temporary Workers' Accommodation prior to their conversion into permanent housing and a leisure village.

20.323 The Kingsland site comprises 18.5 hectares and lies directly to the south of Kingsland adjacent to the Holyhead Leisure Centre. It is bounded to the south by the Holyhead Golf Club. The closest residential properties are those along Kingsland Road and Mill Road to the north of the Leisure Centre.

20.324 The Cae Glas site covers an area of 109 hectares between the A55, Trearddur Country Park and inland sea (Cymran Strait). The village of Trearddur Bay is located to the south of the Cae Glas site and the nearest residential properties are located on Trearddur Road, adjacent to the south-western boundary of the site and Hunters Chase immediately to the west of the site.

20.325 The proposed development at Kingsland and Cae Glas would provide 3,500 bedspaces for a construction workers as follows:

- 360 new houses at Kingsland, which would initially be sub-divided to provide Temporary Workers' Accommodation; and
- 315 lodges at Cae Glas which would initially be sub-divided to provide Temporary Workers' Accommodation, and associated administration, canteen and leisure facilities serving both sites.

20.326 The Kingsland Temporary Workers' Accommodation would convert to permanent housing and the Cae Glas Temporary Workers' Accommodation would convert into holiday accommodation following completion of the construction of the Power Station. Chapter 15 provides more information on the proposals at Land and Lakes.

20.327 The proposed site for a temporary Logistics Centre at Parc Cybi lies immediately south of the A55 in an industrial and employment area and has outline planning permission for warehousing development. The site shares its south eastern boundary with the north western boundary of the Cae Glas site.

20.328 The logistics centre forms a key element of Horizon's ITTS to reduce HGV movements. It would be used to consolidate deliveries into fewer loads and to control and relieve the timing of traffic flow to the Power Station Site.

Consultation feedback

20.329 We received feedback from the community during the Stage One Pre-Application Consultation and the January Project Update consultation.

20.330 The majority of comments expressed at our previous consultations supported the principle of accommodating temporary workers on the Kingsland and Cae Glas sites. For example, Holyhead Town Council has expressed its support for the use of the Land and Lakes development on the basis that it would improve the local economy and create more jobs.

Summary of effects

Effects during construction of the Wylfa Newydd Project

20.331 The construction phase of the Land and Lakes development as a whole would provide approximately 420 construction jobs each year over the 8 year period, with between 110 and 170 of these jobs taken by Anglesey residents. The presence of the Temporary Workers' Accommodation sites and their residents would also boost the local economy through increased use of local services.

20.332 We anticipate that around 70 return daily bus journeys (35 there and 35 back) would be made to and from the Power Station Site and the Temporary Workers' Accommodation at Kingsland and Cae Glas, timed to coincide with shift patterns. These would be between 07:00 and 08:00 in the morning and 18:00 and 19:00 in the evening, to serve the day shift, and 16:30 and 17:30 in the afternoon and 03:30 and 04:30 in the early morning, to serve the night shift. These figures are all based on around 50 workers travelling in each bus.

20.333 We are seeking to reduce the effects of our buses on the local community through the use of low noise emissions vehicles and timing our trips so that they are outside peak travel to work and school drop off times.

20.334 Construction of the Logistics Centre would commence once theDCO for the Wylfa Newydd Power Station were granted. It is anticipated that the construction of the Logistics Centre would take up to 12 months. The Logistics Centre is located in a predominantly employment area, further away from the residential areas of Kingsland and Trearddur Bay and therefore, there is not anticipated to be significant disruption during construction or operation of this facility.

20.335 The Logistics Centre is expected to be in use until late 2024. Working hours at the Logistics Centre are expected to be a minimum 7.5 hours a day for 5 days a week to a maximum of 24 hours a day seven days a week during peak construction period. Approximately 47 staff would be employed at the Logistics Centre.

20.336 Once the Logistics Centre is in use, there would be minor increases in traffic on the A5025 east and A55 (including Britannia Bridge). During construction, it envisaged that a maximum of 40 Heavy Goods Vehicles (HGV) deliveries per hour would travel along the A5025 between the site and Valley, taking into account consolidation of loads in the proposed Logistics Centre, but this could increase to 80 HGVs an hour without consolidation. These deliveries would be within a 12 hour window per day Monday to Sunday only, but avoiding peak traffic periods, such as school pick up and peak commuting times. During normal circumstances, we would therefore limit HGV deliveries on the A5025 between 8.30am and 9am and 3.30am and 5pm, until the off-line bypasses are constructed and open. Deliveries outside of these hours may be required in exceptional circumstances however we would inform the public of this in advance. We will produce a Traffic Management Plan (TMP) which would specifically identify controls that will be implemented to mitigate the impact that HGV vehicle deliveries have on the A5025.

20.337 These numbers equate to approximately 325 vehicles arriving and 325 vehicles departing per day.

20.338 The Logistics Centre has been designed to allow up to eight HGVs to queue on the access road within the footprint before the security kiosk to reduce the risk of any adverse effects of HGVs queuing on the Parc Cybi spine road.

20.339 There could be an effect on users of the Lôn Trefignath cycle path which would be crossed by construction traffic accessing the Logistics Centre, for the duration of the construction period. The final design of the Logistics Centre would accommodate the route of the Lon Trefignath cycle path or Horizon would provide a suitable short diversion.

20.340 During construction of the Temporary Workers' Accommodation, there would be potential residual effects such as the generation of noise, dust and visual changes, particularly in relation to construction traffic. Construction noise and dust emissions would be controlled through a CEMP, which would enforce tried and tested measures including the use of dust control and monitoring, low noise and vibration machinery, and limiting of construction working hours.

20.341 The construction of the accommodation would cause changes to landscape character and views into the sites due to their previously undeveloped nature and reflecting their location within the Anglesey AONB. Vegetation screening would help reduce potential visual effects.

20.342 Pressure on facilities such as leisure and healthcare would be managed through contributions to healthcare and sport provision (including on-site) within the Cae Glas site,

although there is still likely to be increased demand for use of facilities at Holyhead Leisure Centre, which is the only leisure centre in the west of Anglesey.

20.343 There would be an adverse effect on the Welsh language as a result of the scale of population increase during construction stage. The in-migration of workers, a significant proportion of whom are assumed to be non-Welsh speakers, would affect the balance of Welsh speakers by reducing the proportion of Welsh speakers. Our approach to avoiding and mitigating area-wide adverse effects on the Welsh language are summarised at the beginning of this chapter and in chapter 21 of this document.

Effects during operation of the Wylfa Newydd Project

20.344 During operation, 850 new permanent jobs would be created at the Power Station. It is expected that, as a minimum, around 45% of these jobs would be filled by people from Anglesey or within the Menai area of the mainland. A proportion of these could go to residents of Holyhead.

20.345 Once the Wylfa Newydd Power Station becomes operational the Temporary Workers' Accommodation at Kingsland would be converted to 360 permanent houses and Cae Glas would be converted into holiday accommodation. The effects of these legacy uses were consulted upon as part of the approved planning application. The provision of a significant amount of permanent housing, a proportion of which would be affordable, would be beneficial in terms of addressing local housing need.

20.346 The Logistics Centre would be available following its use during the construction of the Power Station for an alternative warehousing (B8) use, either in connection with the Wylfa Newydd Project, or for an alternative warehousing use, or other appropriate employment use.

Llangefni

Context

20.347 Llangefni is the county town of Anglesey and with a population of around 5,000 is the second largest town on the island after Holyhead. It is a commercial and farming town located near the centre of Anglesey on the River Cefni. The principal highway into and out of Llangefni is the A5114, leading to and from Junction 6 of the A55 dual carriageway.

20.348 Llangefni is located approximately 20km (12 miles) south east of the Wylfa Newydd Development Area.

Consultation feedback

20.349 We received feedback from the Llangefni community during the January Project Update consultation. Some consultation responses, particularly from the IACC, to the January Project Update consultation suggested that Llangefni should be also considered as a suitable location for Associated Development, particularly for Temporary Workers' Accommodation. The Report on the Siting of Associated Development explains why we do not consider Llangefni a preferred location for these facilities.

Summary of effects

Effects during construction of the Wylfa Newydd Project

20.350 The effects of the Wylfa Newydd Project on Llangefni would mainly happen during construction stages. Construction of the various elements would occur over a total time period of around 11 years.

20.351 As Llangefni is relatively remote from any of the Wylfa Newydd Project, effects on this community are envisaged as mostly relating to the social and economic effects of up to 10,720 construction workers joining the Anglesey population and the effects of changes to traffic levels on the wider road network, including Britannia Bridge.

20.352 It is noteworthy that Llangefni would receive significant social and economic benefits from the Wylfa Newydd Project, even without being a host settlement for Associated Development. Workers either purchasing their own home, or living within the private rental and tourist sectors would live in Llangefni, with resultant benefits in terms of local spending. There may also be resultant adverse effects in terms of the social impact of a significant new population joining the island over the course of the construction period.

20.353 The development of the Wylfa Newydd Power Station would build on the long-established history of safe nuclear power generation on Anglesey, creating significant employment opportunities and injecting many million pounds per year into the economies of Anglesey and North Wales. Horizon is committed to working with existing training and service providers, including Coleg Menai, in Llangefni, and Bangor University, to maximise the opportunities available to residents across North Wales both in preparation and for the lifetime of the Wylfa Newydd Power Station.

20.354 An Education Engagement Strategy is being developed to support the delivery of our target for a minimum of 5% of the construction workforce being new entrants to the labour market (e.g. apprentices, graduates or trainees). We have memoranda of understanding in place with Coleg Menai (which is located in Llangefni for whom we would provide sponsorships for students at ‘A’ level who are studying science, technology, engineering and maths (STEM) subjects), and with Bangor University (covering employability, joint activity in education, sponsorships and sponsored research).

20.355 The construction workforce profile shows that construction workers numbers are expected to exceed 6,000 for around four years, between mid-2021 and mid-2025, with workers exceeding 8,000 between the end of 2021 to the end of 2024. It is anticipated that during this time the most significant effects during construction would be experienced.

20.356 The 11-year construction phase would create up to several thousand employment opportunities, including apprenticeships, for community residents, and would boost the local economy as a result of the influx of workers to Anglesey. Besides construction sector jobs, there would be additional opportunities generated for supporting businesses such as catering, facilities management and logistics. The businesses within the Llangefni community are likely to benefit from this influx of workers to Anglesey.

20.357 Our draft Jobs and Skills Strategy and our Education Engagement Strategy shows how we plan to give skills and training opportunities to local people to work on the Wylfa Newydd project. Our draft Jobs and Skills Strategy and our Education Engagement Strategy focuses on developing activities and opportunities in north Wales to ensure that

local workers have information about training that could lead to employment to support each aspect of the Wylfa Newydd Project.

20.358 The construction of the Wylfa Newydd Project would affect roads used by many in the Llangefni community. The A5025 between Valley and the Power Station Site in particular would be noticeably busier. Improvements works, including resurfacing, bypasses and better overtaking opportunities between Valley and the Power Station Site, would a lasting legacy for all users along this route. These improvements would be delivered in time to support the peak of construction activities at the Power Station Site. Traffic is anticipated to increase by up to 90% on the A5025 south of the Power Station during peak construction activities.

20.359 At peak construction, there are likely to be moderate delays at the A55 Britannia Bridge and minor delays on the remainder of the A55 and A5025.

20.360 There would be an adverse effect on the Welsh language as a result of the scale of population increase during construction stage. The in-migration of workers, a significant proportion of whom are assumed to be non-Welsh speakers, would affect the balance of Welsh speakers by reducing the proportion of Welsh speakers. Our approach to avoiding and mitigating area-wide adverse effects on the Welsh language are summarised at the beginning of this chapter and in chapter 21 of this document.

Effects during operation of the Wylfa Newydd Project

20.361 The Wylfa Newydd Project is expected to create up to 850 permanent jobs at the Wylfa Newydd Power Station and up to 1,000 additional temporary jobs during periodic outages for maintenance, presenting opportunities to draw on the experienced regional skills base in nuclear power generation and servicing. A proportion of these could go to residents of Llangefni.

20.362 In accordance with our draft Jobs and Skills Strategy and our Education Engagement Strategy we plan to give skills and training opportunities to local people to work on the Wylfa Newydd Project.

Communities near Britannia Bridge and Menai Bridge

Context

20.363 There are small communities located either side of Menai Bridge and Britannia Bridge, which both cross the Menai Straight (Afon Menai). On Anglesey these communities include:

- Llanfairpwllgwyngyll and some individual houses to the west. Llanfairpwllgwyngyll has a population of about 3,000 people; and
- Menai Bridge village which has a population of about 3,000 people immediately to the north of the bridge.

20.364 On the mainland the communities near the bridges are:

- Treborth to the east of the Britannia bridge and an industrial park, Parc Menai, which is accessed directly from the A55 North Wales Expressway;

- to the east of the Menai Bridge, a linear stretch of coastal properties on A5 Holyhead Road; and
- Penrhosgarnedd, a suburb of Bangor.

20.365 Communities near Menai Bridge and Britannia Bridge are located near the roads that would be used during construction at the Power Station Site and the Associated Development sites.

20.366 This section assumes that there would be no change to the existing Menai Bridge and Britannia Bridge.

Consultation feedback

20.367 We did not receive feedback during the Stage One Pre-Application Consultation and January Project Update Consultation that would to indicate issues specific to these communities, although responses were received which requested the provision of a mainland park and ride, in addition to a facility on the island (see above).

20.368 Some general feedback that is relevant to the communities either side of Britannia Bridge and Menai Bridge was raised during the Stage One Pre-Application Consultation. This included concern raised about vehicle movements during construction and the request to consider opportunities for movement of freight via modes other than road, including by rail or sea freight. There was particular concern about how construction traffic may adversely affect tourism in these communities, and more generally in the Isle of Anglesey.

Summary of effects

Effects during construction of the Wylfa Newydd Project

20.369 These communities could expect to benefit from the opportunities from the Wylfa Newydd Project as well as a boost to the local economy because of the influx of construction workers to Anglesey over the 11-year construction phase as well as training and apprenticeship opportunities.

20.370 Our draft Jobs and Skills Strategy and our Education Engagement Strategy shows how we plan to give skills and training opportunities to local people to work on the Wylfa Newydd project. The strategies focus on developing training activities and opportunities in north Wales to ensure that local workers have information about training that could lead to employment to support each aspect of the Wylfa Newydd Project.

20.371 Communities either side of Britannia Bridge and Menai Bridge could expect to experience traffic delays during construction of the Project. This would especially be the case on Britannia Bridge and the roads that lead onto the bridge, partly because there are already traffic congestion issues on Britannia Bridge. Traffic flows could increase by up to 8% on Britania Bridge at the peak of construction activities. There could be an increase in the risk of traffic related accidents at this location.

20.372 Due to the change in traffic on Britannia Bridge and Menai Bridge, communities on either side of the bridges may experience changes to air quality and noise during construction especially those who live close to the A55 and the A5.

20.373 There would be an adverse effect on the Welsh language as a result of the scale of population increase during construction stage. The in-migration of workers, a significant proportion of whom are assumed to be non-Welsh speakers, would affect the balance of

Welsh speakers by reducing the proportion of Welsh speakers. Our approach to avoiding and mitigating area-wide adverse effects on the Welsh language are summarised at the beginning of this chapter and in chapter 21 of this document.

Effects during operation of the Wylfa Newydd Project

20.374 The Power Station would require approximately 850 personnel to operate it over its 60 year lifespan. About 45% of the jobs would be filled by people from the Isle of Anglesey or the Menai area of the mainland. A proportion of these could go to communities near Menai Bridge and Britannia Bridge.

20.375 The effects of traffic on communities living either side of Britannia Bridge and Menai Bridge would be less noticeable during Power Station operation. There would be fewer vehicles travelling across the Britannia Bridge and Menai Bridge once construction is complete.

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21 Mitigating the effects and enhancing the benefits for the communities of Anglesey and north Wales

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21 Mitigating the effects and enhancing the benefits for the communities of Anglesey and north Wales

Introduction

21.1 At a national level, the Wylfa Newydd Power Station will deliver safe, secure and clean electricity, which is considered a benefit to the UK as a whole. However, the Wylfa Newydd Project also has the potential to deliver significant, long-term benefits to local and regional communities. These include targeted training opportunities, employment during construction and operation, and a long-term economic benefit through the demand for local goods and services. We recognise also that the Wylfa Newydd Project will result in some adverse effects to the local community and wider area and that these need to be understood and considered so that we can and avoid, reduce and mitigate them as appropriate.

21.2 Community feedback received during our Stage One Pre-Application Consultation in 2014 and in our January Project Update consultation in 2016 (as well as in our ongoing engagement) has asked for us to provide more information on the potential effects of the Wylfa Newydd Project. More information was particularly sought in respect of activities proposed around the Wylfa Newydd Development Area and around our preferred locations for Associated Development.

21.3 We are undertaking a comprehensive Environmental Impact Assessment (EIA), which will enable us to deliver this information. The EIA process is the means by which significant environmental effects are identified, and this then allows us to understand where we need to work to change designs, or provide mitigation, to ensure that effects are properly managed. Our EIA work to date is presented in our Preliminary Environmental Information (PEI) Report, which is available as part of this Stage Two Pre-Application Consultation. The PEI Report is an important stage in our EIA and is an opportunity for us to inform and consult with the public and key stakeholders about our ongoing environmental work.

21.4 Our PEI Report is supported and informed by other assessments which we are carrying out in key areas including:

- Welsh Language Impact Assessment (WLIA): our WLIA assesses effects which could affect the integrity of the Welsh language and culture on Anglesey and north Wales.
- Health Impact Assessment (HIA): our HIA looks at how our proposals may affect the health and well-being aspects of life within the communities across Anglesey.
- Equality Impact Assessment (EqIA): our EqIA assesses the potential effects of the Project on people with protected characteristics including age, disability, gender, gender reassignment, marriage and civil partnership, pregnancy, maternity, race, religion or belief, and sexual orientation.
- Habitat Regulations Assessment (HRA): our HRA will identify any likely significant effects from the Project on European Designated sites.

21.5 The current status and findings of our WLIA, HIA, EqIA and HRA are presented in a series of interim reports which are included as part of our Stage Two Pre-Application Consultation

documents, and which can be found on our website at www.horizonnuclearpower.com/consultation.

21.6 These various assessment processes, alongside our engagement processes, have also helped to shape our mitigation proposals to date, including measures to incorporate enhancements as part of the overall Wylfa Newydd Project.

21.7 This chapter presents our approach to mitigation and enhancements in relation to both the Power Station and our Associated Development. Your consultation responses will help to further shape the strategies and management plans we are developing to deliver this mitigation and enhancement. A summary table of mitigation, which draws on the effects identified to date in our PEI Report, is provided at the end of this chapter.

21.8 We have also included information in this chapter outlining the various community benefits that the Wylfa Newydd Project is expected to deliver. We set out the current status in the development of community benefits, as well as the principles of a common approach to defining and delivering community benefits, which is being developed with the Isle of Anglesey County Council (IACC).

21.9 Taken as a whole, the proposals, measures and activities presented in this chapter would contribute to a package of community benefits for those living near the Power Station Site and also more generally for communities on Anglesey and across north Wales.

21.10 We are committed to ensuring that the Wylfa Newydd Project delivers long-term benefits and enhancements for communities throughout the life of the Wylfa Newydd Power Station, including positive legacy benefits. In addition, we want to be a good neighbour in continuing to support local communities, such as through ongoing commitments to provide charitable donations, community support and sponsorship and effective stakeholder engagement.

How we mitigate the effects and deliver the benefits of the Wylfa Newydd Project

21.11 We are continuing to assess the potential effects of the Wylfa Newydd Project and a number of assessments ongoing to identify effects on the environment and communities. This will also enable us to continue to identify mitigation to ensure that effects are properly managed.

Mitigation hierarchy

21.12 The Institute of Environmental Management and Assessment's (2004) *Guidelines for Environmental Impact Assessment* identifies the following components of a strategy for mitigation:

- avoidance;
- reduction;
- compensation;
- remediation; and
- enhancement.

21.13 Compensation measures are not usually considered as true mitigation measures, but they may be used as a last resort to offset effects that cannot be mitigated in other ways.

21.14 The first preference in the mitigation hierarchy is to seek design measures that would entirely avoid or eliminate an adverse effect.

21.15 Where adverse effects remain, mitigation would seek to reduce the magnitude of a change, either by modifications to the design of the scheme itself or through the inclusion of beneficial environmental features, such as habitat creation. Mitigation measures made integral to the overall Wylfa Newydd Project are referred to as '**embedded**' mitigation measures.

21.16 Where avoidance or reduction of an environmental effect through design measures is not possible, or is only partly effective, further '**additional**' mitigation measures may be required. Additional mitigation measures fall into three broad categories:

- measures that do not remove an effect but make it less significant, for example implementing management plans;
- the like-for-like replacement of a feature that would otherwise be lost; and
- the provision of a beneficial effect that is related to the impact, but is not a like-for-like replacement of the feature to be lost.

21.17 At this stage of the Wylfa Newydd Project's development, both embedded and additional mitigation measures continue to be considered iteratively to further reduce residual adverse effects that currently remain. Embedded mitigation has been built into the design of the Wylfa Newydd Project as potentially significant adverse environmental effects have been identified. As the EIA progresses, additional mitigation will continue to be identified.

21.18 Chapters 4 to 7 of this Main Consultation Document provide design descriptions that incorporate embedded mitigation. Chapter A3 of the PEI Report describes the iterative nature of EIA further.

Securing mitigation

21.19 Embedded mitigation would be secured by virtue of being integral to the design submitted to the Planning Inspectorate as part of the DCO application or delivered as Associated Development.

21.20 Additional mitigation measures would be delivered through DCO requirements, planning conditions on planning permissions, or by section 106 legal agreements, to provide assurance that they would be implemented.

21.21 DCO requirements (or conditions on planning permissions) may secure mitigation measures in a number of ways, for example by specifying that activities are carried out in line with an agreed DCO document (for example an Outline Code of Construction Practice (CoCP). Alternatively it could require that a further approval as to details of activities must be obtained before certain works are carried out (for example approvals of cladding materials).

21.22 Regardless of the means by which mitigation measures are secured, these will be monitored and will include stakeholder engagement where appropriate.

Key mechanisms for mitigating effects and delivering enhancements

21.23 A number of strategic approaches have already been developed to provide the framework for the proposed mitigation and enhancement measures, and these are described in the earlier chapters of this document. Here we describe some of the key strategic mechanisms we will use during the delivery of the Wylfa Newydd Project to deliver enhancements and mitigation.

Business development opportunities

21.24 Our aspiration, is to maximise the opportunities for local businesses to tender for work related to the Wylfa Newydd Project. The Supply Chain Charter will require tenderers to identify the extent to which local resources can be engaged to deliver or support future works, with the extent of local engagement being included as a criterion in the assessment of all relevant tenders. In addition, we will audit suppliers on the use of local and regional businesses as part of contract monitoring.

21.25 It is anticipated that the majority of the Power Station Main Construction activities would be delivered through a single point Engineering, Procurement and Construction (EPC) contract organised by Menter Newydd[1], with oversight from Horizon. The EPC contract will be put in place when the Final Investment Decision is made (described in chapter 4 of this document). Our engineering and design activity prior to this time will be undertaken by Menter Newydd under an Early Contractor Engagement contract. Menter Newydd will be responsible for developing and maintaining its own supply chain overseen by Horizon, including provision of equipment for the Power Station and the construction activity, following the principles and behaviours established in our Supply Chain Charter. The remainder of the scope is likely to be Horizon's responsibility to deliver, including the delivery of Enabling Works at the Power Station Site such as site preparation and clearance and the provision of the power supply, and the Off-Site Power Station Facilities, but this is still to be determined. We will identify these packages of work and procure these, where appropriate, through competitive tender exercises. Some of our Associated Developments, for example Temporary Workers' Accommodation, may also be delivered through third party developers. Other activities such as utility diversions may be delivered through statutory undertakers such as utility companies.

21.26 Following the principles contained within our Supply Chain Charter launched in July 2015 (described in chapter 8), Horizon has already contracted with a number of suppliers based across north Wales and has an active programme of engagement with potential suppliers. There is also the wider aspect of local and regional supply chain opportunity linked to the other supporting services involved in the delivery of Wylfa Newydd, such as food provision, catering, general personnel management and cleansing businesses Horizon is already engaging with the IACC, Welsh Government and North Wales Economic Ambition Board, working towards maximising these broader supply chain opportunities.

[1] The construction of the Wylfa Newydd Power Station would be delivered by Menter Newydd (meaning 'new venture' in the Welsh language), a joint venture of Hitachi Nuclear Energy Europe Ltd, Bechtel Management Company Ltd and JGC Corporation (UK) Ltd, to be overseen by Horizon Nuclear Power.

Employment opportunities

21.27 The Wylfa Newydd Project has the potential to provide very significant employment opportunities on Anglesey, in particular, but also to the wider north Wales region. New jobs will provide an opportunity to curb emigration, particularly among young people, from Anglesey and other rural parts of north Wales. Our Jobs and Skills Strategy described in chapter 8 sets out our overall strategic approach to recruitment and training and provides information on the recruitment, employment and training of workers for the pre-construction, main construction, commissioning and operational phases of the Wylfa Newydd Project. In particular, the Jobs and Skills Strategy focuses on developing activities and opportunities in north Wales to ensure that local applicants have information about training that could lead to employment to support each aspect of the Wylfa Newydd Project.

21.28 At peak construction, it is expected that up to 10,720 workers would be needed for construction of the Power Station, consisting of a construction workforce of between 8,000 and 10,000. Based on current skill levels, it is estimated that around 25% of the construction workforce would be drawn from an area within 90 minutes' commuting time from the Wylfa Newydd Development Area. Our Jobs and Skills Strategy includes targeted measures to further enhance opportunities for local people to access relevant education and training, delivering transferable construction skills to support the Wylfa Newydd Power Station construction and for the future.

21.29 There would also be indirect job opportunities in areas such as catering, facilities management and logistics, as referred to above. This is in addition to the many other local goods and services that would be required over the construction stages and the opportunities for those wishing to provide construction-worker accommodation.

21.30 We will establish a Construction Skills and Employment Working Group to provide guidance and direction and participate in decisions related to employment. This will include representatives from the main stakeholder bodies including Careers Wales, the IACC and Energy Island Partnership, North Wales Economic Ambition Board, employment agencies and others who represent specific socio-economic groups.

21.31 We plan to work with chosen partners to establish an Employment and Skills Brokerage described in the Jobs and Skills Strategy (chapter 8). This brokerage would be operated on behalf of Horizon, led by the Department of Work and Pensions through Job Centre Plus working closely with the North Wales Economic Ambition Board and other key stakeholders, to support employment throughout the construction phases of the Wylfa Newydd Project.

21.32 Around 850 full-time operational staff would also be needed, providing further opportunities for long-term employment. Horizon is committed to maximising these opportunities for residents in the region through investment and partnerships with existing training providers on Anglesey and in north-west Wales.

Skills and training

21.33 In order to ensure that the right skills are available to meet the needs of the Wylfa Newydd Project, we are continuing to develop our Jobs and Skills Strategy (see chapter 8) to provide significant new skills and training opportunities in Anglesey and North Wales. Our strategy places particular emphasis on providing training and employment opportunities in collaboration with existing training providers. Memoranda of Understanding have been established with Grŵp Llandrillo Menai (particularly Coleg Menai) and Bangor University. These provide for collaboration between Horizon and these strategic partners in areas

including student and graduate employability, joint activity in the promotion of science, technology, engineering and mathematics (STEM) subjects, and career paths, sponsorships and sponsored research. Horizon continues to invest in the Cwmni Prentis Menai scheme, and we expect our commitment to grow as the Power Station moves towards operation.

21.34 The Employment and Skills Brokerage would help to identify and mitigate displacement issues linked to skills shortages, such as by recruiting trainees, which would boost worker availability and increase fully trained workers in specific trades. This approach would help to boost the availability of workers in the medium term and, over the longer term, increase the number of fully trained workers in specific trade areas. The proposed Construction Skills and Employment Working Group could also provide advice in the area of skills and training, again working closely with the North Wales Economic Ambition Board.

21.35 Measures to enhance skills and training are discussed in the following paragraphs. Horizon is supportive of a future Construction Skills Training Centre located close to the Wylfa Newydd Development Area. If built, this Centre would become a key training facility for the construction workforces. Horizon is discussing opportunities for this Centre to link with existing facilities at Llangefni, and these discussions would influence exactly where the Centre might be located. A key stakeholder in the establishment of a Construction Skills Training Centre would be the EPC Contractor, and discussions will therefore, need to continue in this area following their appointment.

21.36 Once appointed, key operational staff would embark on a structured training programme to ensure that they had the appropriate skill levels for their roles. For staff engaged in the operation of the generating facilities this structured training programme would operate from bespoke training facilities within the Power Station Site, such as the Horizon Training and Simulator Building.

21.37 In addition to the strategies and facility described above, we will continue to work with key training partners, for example Grŵp Llandrillo Menai to explore making use of existing facilities in north Wales. An example is the possible future use of parts of the existing Energy Skills Centre at Coleg Menai's Llangefni site to provide a base and training venue for engineering apprentices.

21.38 We will also continue to discuss prospects for joint involvement (including possible joint investment) in the following:

- new facilities at Coleg Menai sites, including help and support toward the construction of a new Engineering Centre at Coleg Menai;
- potential for use or development of facilities at Bangor University; and
- opportunities in relation to the proposed North West Wales Science Park development.

Schools engagement – unlocking future employment opportunities for children

21.39 Our Education Engagement Strategy complements the Jobs and Skills Strategy. This Education Engagement Strategy has been shared and developed with input from the IACC officers and key educational stakeholders representing Anglesey and north west Wales,

such as the Anglesey Energy Island Programme, Coleg Menai, and Anglesey head teachers and education agencies.

21.40 The aim of the Education Engagement Strategy is to put in place an educational programme to help inspire and guide school-age children in the region, to provide them with the best chance of being able to benefit from future opportunities arising from the Wylfa Newydd Project and other projects in north-west Wales. It involves raising awareness of the Wylfa Newydd Project, helping children understand the importance of making the right choices to benefit from future career opportunities with Horizon and other employees, including an emphasis on the importance of STEM subjects.

21.41 The new Visitor and Media Reception Centre, described in chapter 8, would also serve as an educational hub to benefit a wide age range, from primary school children to students at further and higher education levels.

Sponsorship in the further and higher education sectors

21.42 Horizon intends to enhance further education in the region, by developing a scheme to sponsor young people from the north west Wales region wishing to study a relevant academic subject at a UK university. Undergraduate students would be offered financial support for their university studies, with a good prospect of employment with Horizon (or its partners in the north Wales supply chain) on graduation.

21.43 Plans are also being developed to sponsor prospective students (including mature students) who are studying, or planning to study, in specific disciplines that have relevance to the Wylfa Newydd Project and future employment. Examples include:

- for the study of STEM vocational subjects at Coleg Menai; and
- for the study of electronic and control engineering at Bangor University.

21.44 It is expected that, for vocational (further education) sponsorships in particular, the key benefits would accrue to individuals who are living and studying in north west Wales.

Apprenticeships

21.45 Significant opportunities will exist for those wishing to gain new skills, especially in construction and related trades. These would range from basic skills to craftsperson qualifications and beyond (e.g. foundation degrees). The duration of the construction provides scope for developing and progressing in new skills and careers, and for related qualifications to be gained along the way. The most significant opportunities are expected to come via Horizon's main contractors and their supply chain, with estimates that the construction stage could support around 500 new training opportunities, the majority of which are likely to be apprenticeships.

21.46 As an enhancement measures, we plan to launch our own Horizon engineering apprenticeship scheme in north Wales from late 2016, in partnership with Coleg Menai. Initially, we anticipate the scheme will take up to 12 apprentices per year for the first four years from the local and regional area, but the intention is to increase the annual intake in future years. Horizon’s Apprenticeships Schemes Manager, based on Anglesey, will lead the work on apprenticeships.

21.47 We expect that the Wylfa Newydd Project would generate major opportunities for apprenticeships. Given the scale and duration of the Wylfa Newydd Project, the

possibilities of undertaking an apprenticeship over two to three years and then gaining employment and further work experience, all based around the Wylfa Newydd Project, are substantial.

Construction Worker Accommodation Management Portal

21.48 Our Construction Worker Accommodation Strategy (see chapter 9) proposes the establishment of a web-based Construction Worker Accommodation Management Portal (previously referred to as the 'Housing Hub'), which we expect to deliver through our Main Construction contractor. This portal would offer advice and services to accommodation providers and construction workers, as well as forming the route for individual construction workers to find accommodation to meet their needs, ideally as close as practicable to the Wylfa Newydd Development Area. The portal would also offer a way of ensuring that registered accommodation meets appropriate quality standards, offering bed spaces that are in accessible locations, as well as providing the ability to review real-time data and use it to regulate the distribution of the construction workforce across accommodation types and locations.

21.49 Our analysis suggests that about 25% of the construction workforce may commute daily from the local area. The Construction Worker Accommodation Strategy sets out a range of measures for directing the remaining 75% of the construction workforce to suitable accommodation, whilst allowing for flexibility between the different accommodation stock that could be used. It is a central part of our preferred strategy that the majority of construction workers would be directed to different types of accommodation via the Construction Worker Accommodation Management Portal. However, final numbers are to be confirmed and some of the construction workforce would be housed in suitable existing accommodation (within the open market, private rental and tourist sectors). This portal would include new-build permanent housing, empty homes that have been brought back into use and specially provided Temporary Workers' Accommodation.

Tourism

21.50 Horizon is working with the IACC and other stakeholders to ensure the potential for adverse effects on tourism during construction are mitigated where possible. For example, our Construction Worker Accommodation Strategy has been developed to include new stock and monitoring measures to ensure that tourist (and private rental) accommodation would not be saturated by the demands for construction-worker accommodation. There would also be support for landlords and homeowners who wish to provide accommodation to construction workers beyond the normal tourist season, providing additional benefits to them.

21.51 Improvements to infrastructure as a result of the Wylfa Newydd Project would provide enhanced connections and recreational benefits for local communities. These would include residual benefits from mitigation such as the A5025 Highway Improvements (incorporating resurfacing through the villages that would be bypassed by the A5025 Off-Line Highway Improvements) together with the creation of high-quality public rights of way, new sections of cycle paths, and traffic calming measures where needed.

21.52 The tourism sector could benefit significantly from construction workers using tourism accommodation during construction, and would support increased occupancy when it would otherwise be unoccupied. However, it is recognised that there is the potential for a reduction in the number of tourists to Anglesey during construction and possibly during

operation, which could offset some of the benefits realised through accommodation revenues. Chapter B1 of the PEI Report considers this in more detail.

21.53 It is expected that the Wylfa Newydd Power Station would itself become a visitor attraction in the area, and the Visitor and Media Reception Centre would provide a resource for both leisure and education to help support this aim. The Visitor and Media Reception Centre forms a significant part of a range of measures identified to support and grow the tourism sector on Anglesey. While the Visitor and Media Receptor Centre itself is not expected to generate any additional unique visits, it would add to the overall tourist offer.

Meeting the travel requirements of the Wylfa Newydd Project

Integrated Traffic and Transport Strategy

21.54 Our Integrated Traffic and Transport Strategy (ITTS), described in chapter 10, draws together the transport-related mitigation and enhancement measures being developed in response to the potential traffic and transport effects of the Wylfa Newydd Project.

21.55 The approach focuses particularly on reducing the amount of construction materials and private car use by construction workers along Anglesey's highway network by facilitating group transport options for the workforce. It also enables sea-based transport of construction materials.

21.56 The ITTS includes proposals to ensure an effective transport system to reduce potential adverse effects and enhance the benefits of the traffic-related elements of the Wylfa Newydd Project, such as:

- travel plans and the provision of travel information to the Wylfa Newydd Project workforce;
- management of parking arrangements, including a Park and Ride facility (at Dalar Hir);
- shuttle buses on fixed routes;
- a Marine Off-Loading Facility (MOLF) to facilitate bulk material delivery during construction, and potentially operation and decommissioning too;
- maximising freight movement by sea;
- a Logistics Centre (at Parc Cybi) to control and consolidate road-based freight; and
- enhancing the opportunities for rail use.

A5025 Highway Improvements

21.57 Our transport surveys, and studies undertaken between 2010 and 2015, indicate that sections of the A5025 route currently have width restrictions, bends that do not meet current highway design standards, and other constraints that affect existing traffic flows and movements.

21.58 Studies have identified that the A5025 (between Valley and the Wylfa Newydd Development Area) would need to accommodate additional traffic associated with the delivery of plant, bulk materials, heavy goods vehicles and construction workers related to the construction works at the Wylfa Newydd Development Area. Without improvement,

increases in traffic could result in further road deterioration, increased delays for road users, potentially increased accident risk and nuisance for local communities along the route.

21.59 We have therefore, designed a series of Off-line and On-line Highway Improvements collaboratively with the IACC to upgrade and improve sections of the A5025, addressing these constraints.

21.60 The highway improvement and enhancement measures would be delivered in time to support the peak of Main Construction activities at the Power Station Site. Residents who live in Llanfachraeth and Llanfaethlu would benefit from reduced traffic movements passing their homes, as bypasses would be provided to route through traffic away from these settlements. Residents in Cefn Coch and Valley would also benefit from realignment of the through route once operational, as in many cases it would increase the distance between properties and moving traffic. However, these residents are likely to be temporarily affected by adverse effects during construction of the highway improvements.

21.61 The resurfacing of the entire length of the A5025 between Valley and the Power Station Site, including the parts of the existing road that would be bypassed as a result of our proposals, would provide a lasting legacy for all users along this route. In addition, the improvements would provide enhanced overtaking opportunities at Llanfachraeth bypass, improving the flow of traffic along the principal north-to-south route on the western side of Anglesey. These proposals are now settled, having been through two public consultation and engagement processes and collaboration with the IACC on the detailed design of the road improvement works.

21.62 Mitigation measures to address any adverse effects to users of the A5025 during construction of the Highway Improvements would include a construction traffic management plan, incorporating traffic management measures.

Nanner Road improvements

21.63 A number of improvements are also proposed to Nanner Road, developed in collaboration with the IACC highway engineers, which would consist of additional and formalised suitable vehicle passing places along this alternative access to Cemlyn Bay from the A5025. The carriageway would be widened within the existing highway boundary and the road surface reconstructed or replaced, depending on survey information. The works would be completed prior to the stopping up of Cemlyn Road to ensure that a route to properties and amenities remains open.

Public access and recreation

21.64 In general terms, our preferred approach to public access and recreation surrounding the Wylfa Newydd Project is to attempt to keep public rights of way open for as long as possible. This approach will take into account of the needs of the Wylfa Newydd Project in terms of progressing construction activities, as well as the safety and security requirements of restricting public access to areas of construction. Where public rights of way need to be closed, replacement routes would be provided where feasible.

21.65 Following completion of the Power Station construction a new public rights of way network would be provided around the Power Station Site. These are incorporated into the Landscape Environmental Masterplan (LEMP) proposals for the Wylfa Newydd Development Area (refer to chapter 7 of this document).

21.66 Our proposed Visitor and Media Reception Centre would be connected into the public rights of way network and offer facilities for the public, including toilet facilities, a café and bicycle parking. Footpaths would allow access to Cemlyn Bay and Wylfa Head using a surface that would be accessible to the mobility impaired.

21.67 Around Wylfa Head, we are exploring the potential to convert a coastguard lookout that is no longer in use, to provide a shelter for bird and marine mammal watching and we would provide picnic areas, benches, recreational cycle parking and interpretation boards.

Outline Code of Construction Practice

21.68 An outline CoCP would be developed and submitted with the DCO application. This would outline the series of measures and standards of work for adoption throughout the entire construction period. The CoCP will ensure compliance with legislation and the effective planning, management and control of construction activities, with the aim of controlling adverse effects on the local community and the environment.

21.69 The CoCP will be developed by Horizon in consultation with the IACC, Natural Resources Wales and other key stakeholders. The CoCP will form part of the Project's contract documentation and Menter Newydd and the contractors will take responsibility for developing the CoCP into a detailed construction method statement that describes how the Project will be built, and a detailed environmental management plan (EMP) that describes what will be done to control adverse effects on the community and environment. The CoCP and EMP will be submitted as part of the DCO submission alongside the Environmental Statement, and will evolve further during the examination period. The CoCP will be finalised by the contractor post-grant of the DCO, and the EMP is likely to be secured by way of a DCO requirement.

21.70 The CoCP would also provide the mechanisms for Menter Newydd and the contractors to engage with the local community and their representatives throughout the construction period.

Management plans

Construction Environmental Management Plan

21.71 A Construction Environmental Management Plan (CEMP) would establish environmental management protocols regulating the construction activities of the Wylfa Newydd Project in accordance with the standards and measures in the CoCP. This would include items such as method statements, the allocation of roles and responsibilities, training and briefing procedures, risk assessments and monitoring systems as appropriate.

21.72 The CEMP would be prepared by Horizon in consultation with key stakeholders. It would be the contractual responsibility of the main contractors to ensure that the provisions of the CEMP were complied with during construction.

Overarching Environmental Management Plan

21.73 An overarching EMP would be developed to set out key environmental considerations, including regulatory requirements, which must be taken into account for the operation of the Wylfa Newydd Project. As such, the EMP will be a 'live' document that is regularly reviewed and updated throughout the operational phase on an 'as needed basis' to ensure the information is kept as up to date as possible.

21.74 The EMP is intended to give a high-level overview of the key environmental constraints that need to be considered when conducting works, and to outline the environmental standards expected in relation to works undertaken. Task-specific documentation for any works carried out on the site would be compliant with the EMP and checks and audits would be carried out to ensure this.

21.75 Both the EMP and CEMP would be informed by the findings of EIA process, as presented in the Environmental Statement to accompany the DCO application. These are described later in this chapter, drawing information from the various impact assessments described in the PEI Report and chapter 19 of this document.

Landscape Environmental Masterplan

21.76 Our LEMP, described in chapter 7, is a environmental landscape design covering the Wylfa Newydd Development Area. It describes elements such as the formation of mounds and habitat creation, targeted biodiversity mitigation and enhancement measures, temporary and permanent public footpath diversions, management of watercourses and surface water drainage, and other relevant environmental considerations.

21.77 One of the key functions of the LEMP is to describe the provision of some visual and noise screening of the Power Station Site for neighbouring communities, during both the construction and operation stages. Mounds would be formed and landscaped, helping to create an appropriate setting for the Power Station.

Community benefits – key principles

21.78 We use the term “Community Benefits” to mean the sum of the positive effects of the Wylfa Newydd Project accruing to local communities on Anglesey.

21.79 We have agreed a “Common Approach” document with the IACC outlining a shared approach to the realisation of community benefits.

21.80 The Wylfa Newydd Project will give rise to a diverse range of ‘inherent’ Project benefits without the need for any active enhancement. Examples include opportunities to enhance the skills of the local workforce, the provision of long-term employment, training initiatives and the growth of supply chains. Changes in the law and/or to government policy in the future may also increase or change the extent of Inherent Community Benefits. For example, enabling the redirection of business rates from central government to local authorities and communities hosting new nuclear power stations, which has been discussed as part of the Government’s business rates review, and could provide significant community benefit.

21.81 Whilst a large proportion of the overall Community Benefit is likely to arise from benefits that are inherent to the Wylfa Newydd Project, this section outlines the additional Community Benefits, which may be brought forward. Such Community Benefits will fall into one of the following two general categories:

- Statutory Community Benefits; and
- Voluntary Community Benefits.

Statutory Community Benefits

21.82 Statutory Community Benefits are those that would be required to make any development proposed as part of the Wylfa Newydd Project acceptable in planning terms and secured

through agreements under section 106 of the Town and Country Planning Act 1990, or related provisions under the Planning Act 2008 in respect of the DCO application. These are likely to relate to the additional mitigation of adverse effects predicted as likely to arise from the Wylfa Newydd Project that cannot be mitigated through design. Statutory Community Benefits must be:

- necessary to make the development acceptable in planning terms;
- directly related to the development; and
- fairly and reasonably related in scale and kind to the development.

21.83 Statutory Community Benefits are likely to include the provision of landscape and environmental enhancements and the delivery of transport improvements. The mitigation provisions of the employment, skills, Welsh language and education strategies described could also be secured as Statutory Community Benefits.

Voluntary Community Benefits

21.84 Voluntary Community Benefits are non-statutory Community Benefits which are not linked to the statutory planning processes, and which arise from voluntary contributions (of funds, time or resources) by Horizon to local communities.

21.85 There is no legal requirement on a developer to provide Voluntary Community Benefits, and they cannot be taken into account when determining an application for planning consent. In effect, they are "goodwill" contributions voluntarily brought forward by a developer for the benefit of communities. We already have an established programme for delivering small grants to local community groups and initiatives, with recent examples of donations including:

- Cemaes Heritage Centre – providing equipment for the newly renovated building;
- Ysgol Parc Y Bont – to develop a wildlife garden as an outdoor teaching resource at the school, located to the south west of Llanfairpwllgwyngyll;
- Môn FM – to purchase new equipment for the community radio station; and
- Cylch Meithrin Amlwch – funding equipment in the Welsh-language nursery.

21.86 Horizon is carrying out a separate consultation exercise in respect of possible future structures for the delivery of voluntary community benefits. Further details are available on our website at www.horizonnuclearpower.com/consultation.

Legacy benefits

21.87 We are committed to ensuring that the Wylfa Newydd Project delivers long term benefits and enhancements for communities through the operational period of the Power Station. Several of these will be residual long term benefits associated with the delivery of mitigation, such as the A5025 Highway Improvements. We will remain engaged with the IACC, Welsh Government, the North Wales Economic Ambition Board, and other key local stakeholders to understand how the considerable potential for legacy benefit might be realised. We are still considering opportunities that might be brought forward along the lines of those discussed at the Stage One Pre-Application Consultation, as described below:

- Highway Improvements – particularly On-line and Off-line schemes on the A5025 (refer to chapter 11) to improve highway capacity and safety and manage

environmental effects at Valley, Llanfachraeth, Llanfaethlu and Cefn Coch. Measures are also being considered as part of these works to provide improved safety for pedestrians and cyclists for the longer term.

- Health service provision – benefits of better health facilities that could, subject to the findings of the HIA process (see the HIA Interim Report), come about from the need to improve or enhance existing facilities in response to the requirements of the Wylfa Newydd Project workforce.
- Welsh language and culture – we consider the well-being of the Welsh language to be a 'golden thread' running through the Wylfa Newydd Project. There is a particular emphasis on the themes of jobs and skills, education, and aspects of community life such as population characteristics, quality of life, economy, infrastructure, social and cultural. Our WLIA Interim Report expands on our ongoing assessment in this area and identifies initial mitigation and enhancement measures, such as the development of a Welsh language and culture strategy.
- Land and Lakes development – Temporary Workers' Accommodation as part of the wider Land and Lakes development (including Kingsland and Cae Glas) was granted planning permission in April 2016. At completion of construction of the Power Station, he Kingsland Temporary Workers' Accommodation would convert to permanent housing and the Cae Glas Temporary Workers' Accommodation would convert into holiday accommodation (refer to chapter 15).
- Benefits arising from future uses for Temporary Workers' Accommodation development sites, such as Kingsland and Cae Glas, where Temporary Workers' Accommodation would be converted to permanent housing or holiday accommodation (chapter 15), or Madyn Farm, where Temporary Workers' Accommodation would be converted to permanent housing (chapter 17). Other Temporary Workers' Accommodation sites may become available after the construction phase, increasing the potential for new business development.
- Better leisure and recreational provision – such as plans for local recreational improvements and new or enhanced facilities to support construction workers occupying new accommodation stock (chapters 14 to 17). There is the potential for our proposals to deliver a beneficial legacy after construction of the Power Station is completed, for example the option to retain the sport facilities and one of the hub buildings at the Rhosgoch Temporary Workers' Accommodation.
- We remain fully committed to providing a new Visitor and Media Reception Centre (refer to chapter 18), to replace the former Wylfa Information Centre. This would not only serve as a tourist attraction, complementing and providing information about the Wylfa Newydd Power Station, but would also include classrooms and be an educational hub for school children and for students to accord with the Education Engagement Strategy.
- Enhancement of existing housing stock – an example being our proposals to facilitate the renovation of suitable houses to support the accommodation requirements of construction workers, which would then provide a positive housing legacy (see chapter 9).
- Measures to protect and enhance access and recreational facilities, including footpath and cycle routes (as part of the Public Access and Recreation Strategy introduced in chapter B2 of the PEI Report).

Mitigation route map

21.88 In order to help navigate how mitigation relied on by the various assessments would be secured across a development of the scale and complexity of the Wylfa Newydd Project, a 'mitigation route map', drawing the numerous mitigation measures together from across a number of documents, will be submitted as part of the DCO application.

21.89 By way of explanation, each of the Environment Statements for the Wylfa Newydd Project will include a summary of the mitigation measures identified in the underlying assessments and which would, therefore, need to be secured. This summary, referred to as the 'schedule of environmental commitments' will be translated into the mitigation route map provided with the DCO, along with summaries from the other assessments such as the HIA and WLIA.

21.90 The mitigation route map will provide the decision maker with a comprehensive and auditable list of proposed mitigation measures, with details of how they can be secured. For a DCO, it is usual that most would be secured through requirements set by the Examining Authority and the Secretary of State, and attached to the DCO, but this will be agreed with the relevant key stakeholders.

21.91 The mitigation route map for the Wylfa Newydd Project will be designed as a live document that can be updated during the examination period of the DCO application, or during pre-construction surveys and monitoring as required. This would enable relevant issues raised during those periods to be included in the plans to control and reduce adverse environmental effects as required by the DCO and planning permissions.

Summary table of mitigation

21.92 As described in chapter 6 of this document, some elements of the Wylfa Newydd Project design are still evolving. To present the best information currently available while the EIA and other assessments continue, our assessment teams have considered a series of maximum extents (refer to the 'Rochdale Envelope approach' described in chapter A3 of the PEI Report[2]) where some uncertainty in the design still remains.

21.93 As the design will be further refined, there are some mitigation measures presented during this Stage Two Pre-Application Consultation that may be over and above what is ultimately required to mitigate a particular adverse effect.

21.94 Therefore, the mitigation proposed at this stage is not fully developed. It reflects the latest information available at the current stage of the EIA and design processes, and may change as the Wylfa Newydd Project design evolves until the DCO is submitted, due to further assessment and feedback from consultation. As part of this Stage Two Pre-Application Consultation, members of the public are able to provide comments on the proposed mitigation.

21.95 Each volume B topic chapter in the Stage Two PEI Report has highlighted relevant embedded mitigation within the description of the Wylfa Newydd Project, demonstrating where design improvements have helped avoid or reduce potentially adverse environmental effects.

[2] The Rochdale Envelope is an approach to consenting environmental effects which allows a project description to be broadly defined but limited by a number of fixed parameters.

21.96 Mitigation measures can be inter-disciplinary in their development or their effect. For example, an Air Quality Management Plan is described in chapter B5 of the PEI Report in relation to identified air quality receptors. However, it has also been informed by the mitigation it would provide in reducing potentially significant adverse effects to receptors identified in the public access and recreation, terrestrial and freshwater ecology, marine environment, and archaeology and cultural heritage assessments.

21.97 Table 21.1 contains a summary of the mitigation drawn from the PEI Report topic assessment chapters B1 to B12 and how they inter-relate. Table 21.1 presents the current proposed mitigation measures for the Wylfa Newydd Project and denotes with a 'Y' where the proposed measure is intended to mitigate effects associated with the particular PEI Report topic (e.g. Air Quality). Table 21.1 also identifies whether the proposed mitigation measure is embedded or additional mitigation.

21.98 Associated Developments make up some of the measures required to mitigate the effects of the Power Station, such as the effect of the construction workforce on the local area and these are listed in the table below. It is, however, recognised that these discrete elements of the Wylfa Newydd Project (reported in volumes C to H of the PEI Report) would also require mitigation measures of their own that do not feature in the table below. This chapter summarises the principal mitigation measures relevant to the Wylfa Newydd Project as a whole. Our proposals to mitigate the effects of the Associated Developments themselves are provided within the relevant PEI Report chapters.

Question

We have designed many aspects of the Project with the aim of having long-term benefits within the community is more information on our current proposals for enhancing the benefits and reducing any negative effects of the Project in the Mitigation and Benefits chapter of the Consultation Document. As well, information about the effects of the Project and associated mitigation is in the Preliminary Environmental Information Report.

Do you have comments on our proposals for enhancing the benefits or reducing any negative effects of the Project, or suggestions that we should consider to develop our proposals further?

Table 21.1 Proposed mitigation for the Wylfa Newydd Power Station

Proposed mitigation measure	Development phase	Relevant PEI Report Chapter													Embedded mitigation or additional mitigation	Notes
		Socio-economics	Public access and recreation	Traffic and transport	Noise and vibration	Air quality	Soils and geology	Groundwater and surface water	Terrestrial and freshwater ecology	Coastal processes and geomorphology	Marine environment	Landscape and visual impact	Archaeology and cultural heritage	Radiological issues	Conventional waste and materials	
Air Quality Management Plan	Construction and operation		Y			Y			Y		Y		Y			Additional	An Air Quality Management Plan would be developed and agreed with the IACC and Natural Resources Wales. This plan would include measures to control dust emissions at their source, monitoring procedures, contingency plans and stakeholder engagement.
Application for Prior Consent under Section 61 of the *Control of Pollution Act 1974*	Construction				Y											Additional	A number of these applications would be made, each for different phases or packages of construction works. Each application would contain details of the works, working methods and noise and vibration control measures. They would be submitted to the IACC prior to the works taking place, in order to secure their agreement to the noise and vibration control measures detailed. The IACC may attach conditions to each consent, including a limit of duration.
Archaeological record	Construction												Y			Additional	Archaeological recording would be undertaken, in advance of, or during, construction. This would be followed by a programme of assessment, reporting, analysis, publication and dissemination commensurate with the value of the terrestrial archaeological remains removed, submission of reports to the Historic Environment Record and National Monument Record of Wales, and the preparation and submission to an appropriate repository of an ordered archive.

Proposed mitigation measure	Development phase	Relevant PEI Report Chapter													Embedded mitigation or additional mitigation	Notes
		Socio-economics	Public access and recreation	Traffic and transport	Noise and vibration	Air quality	Soils and geology	Groundwater and surface water	Terrestrial and freshwater ecology	Coastal processes and geomorphology	Marine environment	Landscape and visual impact	Archaeology and cultural heritage	Radiological issues	Conventional waste and materials	
Best Available Techniques for the management of radioactive material	Operation													Y		Additional	Various management techniques would be adopted during operation in relation to liquid discharges to the marine environment, aerial discharges and generation solid radioactive wastes.
Blasting Management Plan	Construction				Y						Y					Additional	This plan would set out good practice measures for the minimisation of air overpressure effects. These could include careful orientation of the working face in relation to local receptors, sequencing of detonation and avoiding blasting in adverse weather conditions.
Construction Environmental Management Plan (CEMP)	Construction	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y	Additional	The CEMP would be established for all environmental management protocols covering the practical execution of the construction activities of the Wylfa Newydd Project in keeping with the CoCP. This would include items such as method statements, the allocation of roles and responsibilities, training and briefing procedures, risk assessments, timing of works and monitoring systems as appropriate.
Construction Noise and Vibration Management Plan	Construction		Y		Y						Y					Additional	The CoCP would set out all of the good practice measures that are relevant to construction works. The CNVMP would provide detailed information on the following: - noise and vibration monitoring procedures, including equipment requirements, locations, duration and reporting; - contact details (24 hours, seven days a week) for on-

Proposed mitigation measure	Development phase	Relevant PEI Report Chapter														Embedded mitigation or additional mitigation	Notes
		Socio-economics	Public access and recreation	Traffic and transport	Noise and vibration	Air quality	Soils and geology	Groundwater and surface water	Terrestrial and freshwater ecology	Coastal processes and geomorphology	Marine environment	Landscape and visual impact	Archaeology and cultural heritage	Radiological issues	Conventional waste and materials		
																	site staff responsible for noise and vibration management; and - procedures to follow in the event of complaints from the public.
Construction Worker Accommodation Strategy	Construction and operation	Y														Additional	The Construction Worker Acommodation Strategy would ensure an adequate supply of accommodation that is attractive and affordable for workers and minimises travel to site, managed by the Construction Worker Accommodation Management Portal. Refer to chapter 9 of this Main Consultation Document and subsequent chapters on temporary and permanent accommodation (chapters 14 to 17).
Contamination Watching Brief and Unexpected Contamination Plan	Construction						Y									Additional	An Unexpected Contamination Plan would be prepared to support land remediation works. This plan would be in place prior to the commencement of any activities that involve ground disturbance and a 'watching brief' (by a suitably qualified person who is able to identify made ground/potential contamination) would be maintained throughout the works. The Unexpected Contamination Plan would contain clear procedures for dealing with any areas of unexpected contamination encountered on-site, including appropriate techniques to manage risks and deal with the affected material safely.

Proposed mitigation measure	Development phase	Relevant PEI Report Chapter													Embedded mitigation or additional mitigation	Notes
		Socio-economics	Public access and recreation	Traffic and transport	Noise and vibration	Air quality	Soils and geology	Groundwater and surface water	Terrestrial and freshwater ecology	Coastal processes and geomorphology	Marine environment	Landscape and visual impact	Archaeology and cultural heritage	Radiological issues	Conventional waste and materials	
Education Engagement Strategy	Construction and operation	Y													Additional	The Education Engagement Strategy would include an education programme to help inspire and guide school-age children in the region, to provide them with the best chance of being able to benefit from future opportunities arising from the Wylfa Newydd Project and other projects in north-west Wales.
Environmental compensation	Construction and operation							Y	Y							Additional	Environmental compensation would include precautionary compensation strategies regarding potential impacts to the Tre'r Gof Site of Special Scientific Interest involve securing and managing four sites on Llanbadrig Head, to the east of the Wylfa Newydd Development Area, in the event that compensation is required. These would be to create fen habitat similar to that at Tre'r Gof if required.
Environmental Emergency Preparedness and Response Procedure	Construction							Y	Y							Additional	These procedures and plans would include details of potentially polluting material locations and a plan to contain and clean up any incidents or spills to prevent significant effects on the environment. It would provide a pathway for reporting environmental pollution incidents.
Environmental or Ecological clerk of works, or suitably qualified person	Construction						Y		Y	Y	Y					Additional	A clerk of works or suitably qualified person would be provided to supervise activities to ensure compliance with strategies and permits and to promote good construction practice.

Proposed mitigation measure	Development phase	Relevant PEI Report Chapter													Embedded mitigation or additional mitigation	Notes
		Socio-economics	Public access and recreation	Traffic and transport	Noise and vibration	Air quality	Soils and geology	Groundwater and surface water	Terrestrial and freshwater ecology	Coastal processes and geomorphology	Marine environment	Landscape and visual impact	Archaeology and cultural heritage	Radiological issues	Conventional waste and materials	
European Protected Species mitigation licences if required	Construction and operation								Y							Additional	Species such as great crested newt and bats would be protected from mortality and injury, and habitat loss offset by adherence to the methods described in a European Protected Species mitigation licence application if required – in order to prevent death and injury, provide suitable compensation habitats and, ultimately, to maintain the conservation status of the great crested newt within the local area.
Freight Management Strategy	Construction and operation			Y												Additional	Horizon would seek to maximise the potential to deliver construction materials and freight by sea, with road as a secondary option. During peak periods of construction, materials would be required 24 hours a day, seven days a week, with the timing dependent on supplier delivery patterns. Therefore, materials would be stockpiled to ensure that they were available at the relevant time. The majority of construction-related deliveries by road would be controlled through the Logistics Centre. Low Level (nuclear) Waste would periodically be transported in protective flasks to the railhead at Valley, with onward rail transport to storage facilities.
Groundwater level and surface water flow monitoring	Construction and operation							Y								Additional	A programme of groundwater level and surface water flow monitoring would be carried out to ensure that adverse effects associated with dewatering are quickly identified and mitigated using contingency measures.

Proposed mitigation measure	Development phase	Relevant PEI Report Chapter														Embedded mitigation or additional mitigation	Notes
		Socio-economics	Public access and recreation	Traffic and transport	Noise and vibration	Air quality	Soils and geology	Groundwater and surface water	Terrestrial and freshwater ecology	Coastal processes and geomorphology	Marine environment	Landscape and visual impact	Archaeology and cultural heritage	Radiological issues	Conventional waste and materials		
Health and Well-being Strategy	Operation	Y														Additional	The Health and Well-being Strategy would set out how we are proposing to mitigate the effects on existing health facilities. Options being considered for meeting the health and dental care needs of our workers include the enhancement of existing services or dedicated health care provision at the Temporary Workers' Accommodation.
Highway Improvements	Construction and operation		Y	Y	Y											Embedded	A series of On-line and Off-line Highway Improvements and enhancement measures to the local road network would include a combination of bypasses and local improvements to existing alignment. The improvements would be delivered in time to support the peak of Main Construction activities at the Power Station Site. These permanent improvement schemes have been designed to mitigate related adverse effects of the Wylfa Newydd Project and provide a lasting benefit to both residents of, and visitors to, Anglesey.
Historic buildings record	Construction												Y			Additional	A record would be prepared of historic buildings and their settings by record in advance of development through a programme of recording (including photographic survey), reporting and dissemination commensurate with the value of the historic buildings effected, submission of reports to the Historic Environment Record and National Monument Record of Wales and the preparation and

Proposed mitigation measure	Development phase	Relevant PEI Report Chapter														Embedded mitigation or additional mitigation	Notes
		Socio-economics	Public access and recreation	Traffic and transport	Noise and vibration	Air quality	Soils and geology	Groundwater and surface water	Terrestrial and freshwater ecology	Coastal processes and geomorphology	Marine environment	Landscape and visual impact	Archaeology and cultural heritage	Radiological issues	Conventional waste and materials		
																	submission to an appropriate repository of an ordered archive.
Historic landscape record	Construction												Y			Additional	A record of historic landscapes would be prepared in advance of development through a programme of recording and reporting, submission of reports to the Historic Environment Record and National Monument Record of Wales and the preparation and submission to an appropriate repository of an ordered archive.
Invasive Species Strategy	Construction and operation								Y							Additional	The strategy would be part of the CEMP/EMP and would contain a plan of actions for managing invasive non-native terrestrial and freshwater plant species within the Wylfa Newydd Development Area and outlines a strategy for the control, management and removal of such species, where they are found to occur.
Jobs and Skills Strategy	Construction and operation	Y														Additional	The Jobs and Skills Strategy would include plans for the establishment of an Employment and Skills Brokerage and Construction Skills and Employment Working Group. Refer to chapter 8 of this Main Consultation Document.
Landscape and Environmental Masterplan (LEMP)	Construction and operation		Y						Y			Y	Y			Embedded	The LEMP is a fully coordinated environmental landscape design covering the Wylfa Newydd Development Area, including the formation of mounds and habitat creation, targeted biodiversity mitigation and enhancement measures, temporary and permanent public footpath diversions, management of watercourses and surface water drainage and other relevant

Proposed mitigation measure	Development phase	Relevant PEI Report Chapter														Embedded mitigation or additional mitigation	Notes
		Socio-economics	Public access and recreation	Traffic and transport	Noise and vibration	Air quality	Soils and geology	Groundwater and surface water	Terrestrial and freshwater ecology	Coastal processes and geomorphology	Marine environment	Landscape and visual impact	Archaeology and cultural heritage	Radiological issues	Conventional waste and materials		
																	environmental considerations. Refer to chapter 7 of this Main Consultation Document.
Lighting Strategy	Construction								Y		Y	Y	Y			Additional	The Lighting Strategy would form part of the CEMP and EMP to reduce the effects of lighting disturbance by using directional lighting and by setting standards for light spills.
Logistics Centre	Construction		Y	Y												Embedded	The Logistics Centre would be constructed within easy access of the A55 and the southern end of the A5025 at Valley to control road-based freight movements. This facility would be able to accommodate up to 100 large parked vehicles and is designed for a throughput of around 40 vehicles an hour. The Logistics Centre would include a range of driver welfare facilities.
Marine mammal mitigation	Construction										Y					Additional	Specific mitigation in relation to marine mammals, including the use of acoustic monitoring and marine mammal observers, marine mammal exclusion zones, vessel speed restrictions and sensitive construction methods.
Marine Non-native Species Strategy	Construction and operation										Y					Additional	The Marine Non-native Species Strategy would be part of the CEMP/EMP and would control the risk of introducing and establishing non-native species that could affect marine habitats, plants and animals. This would include: - carrying out a biosecurity risk assessment for relevant activities; and

Proposed mitigation measure	Development phase	Relevant PEI Report Chapter														Embedded mitigation or additional mitigation	Notes
		Socio-economics	Public access and recreation	Traffic and transport	Noise and vibration	Air quality	Soils and geology	Groundwater and surface water	Terrestrial and freshwater ecology	Coastal processes and geomorphology	Marine environment	Landscape and visual impact	Archaeology and cultural heritage	Radiological issues	Conventional waste and materials		
																	- adhering to international convention for control and management of ships' ballast and water sediments.
Marine Off-Loading Facility (MOLF)	Construction and operation			Y												Embedded	A MOLF would be constructed at Porth-y-pistyll, to commence shortly after the DCO, if granted, to allow it to be completed in time for the first delivery of bulk materials for construction of the Power Station. Overall, by tonnage, about 60% of all materials, other goods and waste associated with the construction of the Power Station could be transported through the MOLF, significantly reducing the impact on the road network. It is also possible that one of the two quays (the roll-on/roll-off quay) at the MOLF would be retained throughout the operational phase for occasional delivery of Abnormal Indivisible Loads and could also play role in materials transportation during the decommissioning works.
Materials Management Plan	Construction						Y							Y	Y	Additional	The Materials Management Plan would be part of the overarching Wylfa Newydd Integrated Waste Strategy and would set out a clear framework to maximise material and energy recovery potential rather than disposal.
Mitigation incorporated into the design of the Wylfa Newydd Power Station.	Design		Y								Y					Embedded	Design elements would be incorporated to avoid or reduce potentially adverse effects. Examples include: - provision of alternative public rights of way during construction;

Proposed mitigation measure	Development phase	Relevant PEI Report Chapter														Embedded mitigation or additional mitigation	Notes
		Socio-economics	Public access and recreation	Traffic and transport	Noise and vibration	Air quality	Soils and geology	Groundwater and surface water	Terrestrial and freshwater ecology	Coastal processes and geomorphology	Marine environment	Landscape and visual impact	Archaeology and cultural heritage	Radiological issues	Conventional waste and materials		
																	- the design of structures to reduce, where practicable, the footprint of structures such as the Marine Off-loading Facility; - to re-use elements of the Existing Power Station, such as parts of the existing Cooling Water outflow; - retention of environmental features, for example existing boundary hedgerows outside the perimeter fence, retention of wooded mounds, as detailed in the LEMP; and - the design of the breakwater to include a gap between the western breakwater and land to allow movement of water and fish to continue.
Operational Noise Management Plan	Operation				Y											Additional	The Operational Noise Management Plan would sit under the overarching EMP and would ensure that adequate noise control and monitoring measures are implemented throughout the operational phase of the Power Station. This plan would include the following, - good practice measures for noise control; - inspection and maintenance requirements for noise control measures; - noise monitoring and reporting requirements; - contact details for the person with responsibility for noise emissions; - complaint response procedures; and - review and audit programme.

Proposed mitigation measure	Development phase	Relevant PEI Report Chapter													Embedded mitigation or additional mitigation	Notes
		Socio-economics	Public access and recreation	Traffic and transport	Noise and vibration	Air quality	Soils and geology	Groundwater and surface water	Terrestrial and freshwater ecology	Coastal processes and geomorphology	Marine environment	Landscape and visual impact	Archaeology and cultural heritage	Radiological issues	Conventional waste and materials	
Palaeo-environmental assessment	Construction												Y			Additional	A palaeo-environmental (remains that help to provide understanding of environmental conditions in the past) assessment would be conducted and, if required, a palaeo-environmental analysis of peat samples taken from Tre'r Gof.
Park and Ride Facilities	Construction			Y												Embedded	A Park and Ride Facility for construction workers would be provided on Anglesey at Dalar Hir, immediately to the north-east of Junction 4 of the A55. This would allow transfer from private vehicles to buses before traffic joined the A5025, thus reducing the number of vehicles travelling along the A5025. For the purposes of planning, the facility has been sized to accommodate around 2,700 vehicles that could be delivered in phases to respond to changes in demand. Based on full occupancy, this would equate to around 50 return bus journeys, which would be staggered to match shift patterns.
Pollution Prevention Strategy	Construction and operation						Y	Y	Y	Y	Y					Additional	A robust Pollution Prevention Strategy, in line with the Environment Agency's Pollution Prevention Guidelines, would be part of the CEMP/EMP to minimise the effects related to sediment release to watercourses, accidental leaks and spills.

Proposed mitigation measure	Development phase	Relevant PEI Report Chapter														Embedded mitigation or additional mitigation	Notes
		Socio-economics	Public access and recreation	Traffic and transport	Noise and vibration	Air quality	Soils and geology	Groundwater and surface water	Terrestrial and freshwater ecology	Coastal processes and geomorphology	Marine environment	Landscape and visual impact	Archaeology and cultural heritage	Radiological issues	Conventional waste and materials		
Pre-construction surveys to ensure compliance with relevant ecological legislation	Construction								Y							Additional	Pre-works surveys for red squirrels, would be undertaken to assess presence of active drays in trees being felled.
Preparation of a conservation statement	Construction												Y			Additional	A tool to aid the preservation, interpretation and management of the significance of specific environmental features (such as Cestyll Gardens).
Remediation Implementation Plan	Construction						Y									Additional	The Remediation Implementation Plan would reduce the risk of harm to human health, or to the environment, from sources of contamination identified on-site. A management of land contamination procedure would set requirements on contractors where contaminated soils not suitable for use are removed from site.
Sediment Management Plan	Construction							Y	Y	Y	Y					Additional	The Sediment Management Plan would describe how sediment-laden storm water runoff within the construction areas would be managed and where it would be directed to in the construction drainage network.
Site Waste Management Plan	Construction						Y								Y	Additional	Part of the overarching Wylfa Newydd Integrated Waste Strategy, the Site Waste Management Plan would establish waste management protocols for site waste, to be incorporated into the CEMP and the EMP.
Soil Management Strategy and Soil Management Plans	Construction						Y									Additional	The Soil Management Strategy and Soil Management Plans would outline the proposed measures and standards of work that are anticipated to be applied

Proposed mitigation measure	Development phase	Relevant PEI Report Chapter														Embedded mitigation or additional mitigation	Notes
		Socio-economics	Public access and recreation	Traffic and transport	Noise and vibration	Air quality	Soils and geology	Groundwater and surface water	Terrestrial and freshwater ecology	Coastal processes and geomorphology	Marine environment	Landscape and visual impact	Archaeology and cultural heritage	Radiological issues	Conventional waste and materials		
																	throughout the construction works, adhering to industry best practice techniques.
Supply Chain Charter	Construction and operation	Y														Additional	The Supply Chain Charter has been developed to maximise the opportunities available to local businesses for all relevant aspects of the Wylfa Newydd Project. Refer to chapter 8 of this Main Consultation Document.
Temporary Workers' Accommodation	Construction	Y														Embedded	The specially provided Temporary Workers' Accommodation, designed for short term use by the construction workforce would include site-specific leisure and recreational facilities and key services. Refer to chapters 14, 15, 16 and 17 of this Main Consultation Document for further information. This would mitigate the effects on demand for GP care, leisure services, quality of tourist accommodation and availability of bed spaces.
Translocation of key ecological features	Construction								Y							Additional	Translocation of Ancient Woodland features (topsoil and coppice stools) or the trapping and translocation of species such as water vole, mud snail, fish relocation under relevant Natural Resources Wales licence with the guidance of an ecological clerk of works to secured receiving habitats.
Travel Plan	Construction and operation			Y												Additional	An overarching Travel Plan to encourage travel to the Power Station Site via more sustainable means than by private car. This would target both the construction workforce and the operational workforce. The measures

Proposed mitigation measure	Development phase	Relevant PEI Report Chapter														Embedded mitigation or additional mitigation	Notes
		Socio-economics	Public access and recreation	Traffic and transport	Noise and vibration	Air quality	Soils and geology	Groundwater and surface water	Terrestrial and freshwater ecology	Coastal processes and geomorphology	Marine environment	Landscape and visual impact	Archaeology and cultural heritage	Radiological issues	Conventional waste and materials		
																	currently being considered would include an overall Travel Plan Coordinator and Travel Plan Representatives based at each of the Temporary Workers' Accommodation sites; an internet-based accommodation booking portal to promote sustainable travel options; Travel Information Pack for new workers; dedicated bus services and routes; an internet-based worker 'car share scheme'; a 'cycle to work' scheme; and staggered shift start and finish times to avoid peak hours.
Visitor and Media Reception Centre	Construction and operation	Y	Y													Embedded	A dedicated facility that would serve as a tourist attraction as well as providing a facility for media briefings, complementing and providing information about the Wylfa Newydd Power Station, and include classrooms acting as an educational hub for school children and students. This facility would serve to provide an additional attraction to visitors, during the construction phase and in the longer operational phase. It would support the tourism sector and generate additional local expenditure.

List of acronyms

Acronym	Term
EIA	Environmental Impact Assessment
CoCP	Code of Construction Practice
DCO	Development Consent Order
CEMP	Construction Environmental Management Plan
EMP	Environmental Management Plan
EPC	Engineering, Procurement and Construction
EqIA	Equality Impact Assessment
HIA	Health Impact Assessment
IACC	Isle of Anglesey County Council
ITTS	Integrated Traffic and Transport Strategy
LEMP	Landscape Environmental Masterplan
LNMP	Local Noise Management Plan
MOLF	Marine Off-Loading Facility
PEI	Preliminary Environmental Information
STEM	Science, Technology, Engineering and Mathematics
WLIA	Welsh Language Impact Assessment

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22 Next steps and ongoing engagement

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22 Next steps and ongoing engagement

22.1 Your comments are vital to helping us refine and finalise our proposals for the Wylfa Newydd Project, including understanding its effects and identifying appropriate measures to mitigate potentially adverse environmental effects.

22.2 This chapter provides details of how you can provide your feedback and become involved in the ongoing engagement activities leading up to the preparation of the application for the Development Consent Order (DCO) and Town and Country Planning Act 1990 (TCPA) applications for Associated Development (see chapter 1 for details). It also provides an overview of the work Horizon is undertaking as part of the ongoing journey towards designing, building and operating the Wylfa Newydd Project including an outline of the principal components of the design refinement process.

22.3 This consultation is just one of a number of important processes that work together to inform the development of the final detailed proposals for the Wylfa Newydd Power Station and the necessary Associated Development.

How to provide your views

Documents available as part of this consultation

22.4 For ease of reference, the materials that form part of this consultation are as follows:

Non-technical documents

22.5 The non-technical documents provide an overview of the Wylfa Newydd Project proposals and the range of assessments that have been undertaken in order to identify the effects of the Project, as well as details of how those effects will be mitigated. These documents are provided in Welsh and English and have been written to be more accessible to the public:

- Consultation Overview Document;
- Preliminary Environmental Information Report Non-Technical Summary;
- Welsh Language Impact Assessment Non-Technical Summary;
- Health Impact Assessment Non-Technical Summary; and
- Equality Impact Assessment Non-Technical Summary.

Technical documents

22.6 The technical documents aim to present detailed information on the Project proposals, including its potential likely effects on the environment, to assist stakeholder organisations, local authorities and other statutory bodies, as well as individuals with a specific interest in one or more components of the Wylfa Newydd Project, to comment in a fully informed way:

- Main Consultation Document;
- Preliminary Environmental Information Report (PEI Report);
- Welsh Language Impact Assessment Interim Report;
- Health Impact Assessment Interim Report;
- Habitats Regulations Assessment Interim Report;
- Equality Impact Assessment Interim Report; and

Online technical resources

22.7 These comprise a series of technical notes and specialist topic reports that provide background reference material to support the technical documents:

- Associated Development Site Selection Report;
- Off-Site Power Station Facilities Site Selection Report;
- Construction Worker Accommodation Strategy;
- Traffic and Transport Technical Note;
- Planning Statement Framework; and
- Draft Master Plans (Power Station Site, Off-Site Power Station Facilities and Associated Development sites).

22.8 In addition a Consultation Summary Report has been prepared, summarising feedback received from our earlier consultation and engagement exercises.

22.9 The non-technical and technical documents, and the Consultation Summary Report, are available to view and download from Horizon's website at www.horizonnuclearpower.com/consultation and are provided in hardcopy form at all libraries across Anglesey and the Anglesey Business Centre in Llangefni. They will also be made available on request on a digital storage device at no charge.

22.10 Printed copies of the consultation documents and plans are available upon request however, there is a charge of £500 required to cover the cost of printing a full set of the Stage Two consultation documents. This charge may be waived at the discretion of Horizon.

22.11 The non-technical documents are also available on request in large text.

22.12 The online technical reports are available only on Horizon's website, but hard copies can be provided on request. Please contact us in Welsh or English on 0800 954 9516 or email us at ymholiadauwyfla@horizonnuclearpower.com or wylfaenquiries@horizonnuclearpower.com to make alternative arrangements.

Ways to provide your feedback

22.13 There are a variety of ways in which to engage in the Stage Two Pre-Application Consultation and provide your feedback, as outlined below. Comments can be submitted in either Welsh or English and your feedback must be submitted by 25 October 2016.

Events

22.14 We will be holding events across Anglesey and in locations on the mainland in north Wales to provide an opportunity for people to view details about the Wylfa Newydd Project and to speak with members of the Horizon team to ask questions and discuss the proposals. The events will include a series of public exhibitions, including a location in Tregele (at the Douglas Inn car park) that will be manned throughout the Stage Two Pre-Application Consultation period, as well as our regular monthly surgery.

22.15 In addition to accepting written feedback at the events, i-Pads will be available for completion of online feedback forms in both Welsh and English. Welsh speakers will be available at all the events. While timings and venues are subject to change, a current listing of event details will be available on our website at www.horizonnuclearpower.com/consultation.

Written comments

22.16 There are a variety of ways for you to provide your written response to the consultation, as follows:

- **Online Feedback Form** – available in either Welsh or English to complete directly on the Horizon website www.horizonnuclearpower.com/consultation;
- **Paper Feedback Form** – available in either Welsh or English to complete at one of the information events or to take home to complete and post to Horizon free of charge at FREEPOST Horizon Nuclear Power Consultation;
- **Email** – comments are invited via email to ymholiadauwylfa@horizonnuclearpower.com or wylfaenquiries@horizonnuclearpower.com; and
- **In writing** – comments are invited via letter to our Freepost address FREEPOST Horizon Nuclear Power Consultation.

Contact us

22.17 If you have any questions regarding the Wylfa Newydd Project you can contact us on our dedicated Wylfa Newydd Freephone number and email address, by calling on 0800 954 9516 (in Welsh or English) or emailing ymholiadauwylfa@horizonnuclearpower.com or wylfaenquiries@horizonnuclearpower.com. We will take a record of any comments raised this way throughout the consultation period.

Stage Two Pre-Application Consultation feedback

22.18 Horizon established a systematic process for the receipt, recording, coding and analysis of pre-application consultation feedback prior to the Stage One Pre-Application Consultation. This process is outlined in chapter 1 of this document and further details are presented in the Consultation Summary Report. Feedback received in response to the Stage Two Pre-Application Consultation will be managed in a similar manner.

22.19 Horizon will take into account responses received during the Stage Two Pre-Application Consultation and will consider those comments against our Project Vision and Objectives, outlined in chapter 2 of this document, and ongoing regulatory requirements.

22.20 The matters raised in consultation responses will be shared throughout our organisation and with our technical consultants to inform the final proposals. We will explain in our Consultation Report how consultation responses have been taken into account.

22.21 The Consultation Report will be prepared pursuant to section 37(7) of the Planning Act 2008, and will be submitted with the DCO application in 2017.

22.22 The Consultation Report will capture all of Horizon's consultation and engagement activities in respect of the Wylfa Newydd Project as a whole, explaining how feedback was sought and used to influence the final proposals.

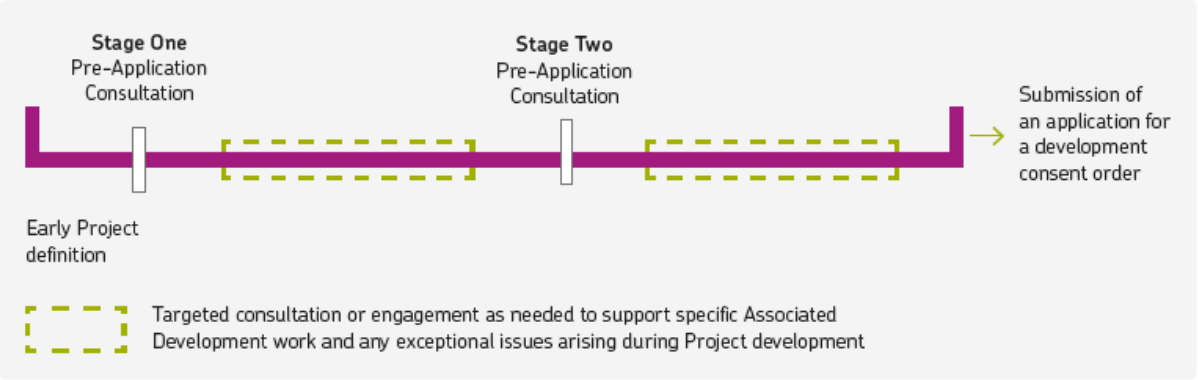
Ongoing public consultation and engagement

22.23 We published a Statement of Community Consultation (SOCC) in January 2016 explaining how we proposed to consult on our Project. This was an update of our previous SOCC, published in September 2014.

22.24 We are undertaking two main stage of consultation to support the application for a DCO, this consultation being Stage Two. We also committed to undertake targeted consultation and engagement events on specific issues or with specific groups, where appropriate, as illustrated in figure 22.1. We hosted an event in July 2015 primarily relating to Associated Development and a January Project Update consultation and series of engagement events from January to March 2016, as described in the Consultation Summary Document. Pre-application consultation events were held in May 2016, to present the draft Site Preparation and Clearance and On-Line Highway Improvements in advance of the submission of the TCPA applications in autumn 2016.

22.25 The main findings of the consultation carried out to date are summarised in chapter 4 of this document and the Consultation Summary Report. They are also referred to where appropriate in each topic-related chapter of this document to show how the consultation responses have influenced further decision making and design development.

Figure 22.1 Staged approach to consultation and engagement



22.26 We will continue throughout our consultation, and up to the submission of our DCO application, to engage with technical stakeholders on the development of our proposals, as our understanding of the environmental effects, and associated mitigation, continues to develop. Our current intention is to submit our applications for Associated Development and the Marine Licences between Autumn 2016 and early Spring 2017 and our application for the DCO in Spring 2017.

Engagement to inform Associated Development proposals

22.27 Views and comments received in response to the Associated Development proposals included in this document will be taken into account as Horizon develops and refines its proposals for each site, to be consented through the TCPA. The proposals include in particular those that have been presented as preferred and alternative options such as the proposals for Temporary Workers' Accommodation.

22.28 For those Associated Developments taken forward under the TCPA route, there will be a separate pre-application consultation process, which comprises a 28-day statutory consultation in accordance with the Town and Country Planning (Development Management Procedure) (Wales) (Amendment) Order 2016. We note the Wales Bill 2016, if enacted, would permit some Associated Development in Wales to be consented as part of the DCO.

Engagement to inform the DCO and Marine Licence proposals

22.29 As indicated in figure 22.1, the Project proposals will continue to develop up to the submission of the DCO application, incorporating any changes in response to the consultation responses received. Targeted consultation and engagement may be undertaken on discrete issues and/or with a particular stakeholder during this period. This will include the development and refinement of proposed mitigation measures emerging from ongoing environmental impact assessment (EIA) work.

22.30 This process will also be followed in relation to Marine Licence applications.

Ongoing technical stakeholder engagement

22.31 Horizon has established working relationships with relevant technical stakeholders to ensure that there are appropriate forums in place to provide updates on the evolution of the Wylfa Newydd Project and, importantly, for the discussion of emerging issues and potential solutions. These technical stakeholder engagements form an important element of the overall design refinement process for the Wylfa Newydd Project that would continue to inform the proposals for the DCO application. Specific examples of technical stakeholder engagement include:

- **Isle of Anglesey County Council (IACC)** – as the determining authority for the Associated Development TCPA applications, and host local authority for the DCO application, we are engaging regularly with the IACC on a number of matters through our Planning Performance Agreement;
- **Welsh Government** – we are in regular consultation with the Welsh Government, in particular with regard to transport and socio-economic issues;
- **Welsh Language Impact Assessment (WLIA) Steering Group** – this group is assisting Horizon and its supply chain to develop a methodology for WLIA. Members of the WLIA Steering Group have been invited to undertake periodic specialist review of emerging proposals for the Wylfa Newydd Project, such as the WLIA Interim Report in February 2016. The WLIA Steering Group has provided practical feedback to inform the identification of potential effects, both beneficial and adverse, and necessary mitigation measures in respect of the Welsh language, culture and community;
- **Health Impact Assessment (HIA) Steering Group** – similarly to the WLIA Steering Group, members of the HIA Steering Group provide specialist input to challenge and

support the development of Horizon's HIA. This has included the provision of feedback on the emerging proposals, providing local specialist knowledge to assist Horizon to clearly articulate the likely significant effects of the Wylfa Newydd Project, both beneficial and adverse, and to develop appropriate measures and mitigation proposals for the health and well-being of Anglesey residents and Horizon's construction and operational workforces;

- **Office for Nuclear Regulation (ONR) and Natural Resources Wales (NRW)** – Horizon has established a workstream structure with ONR and NRW that covers nuclear site licensing and regulation (including nuclear safety and security, plus conventional safety) and the radiological aspects of environmental permitting. This allows Horizon to provide periodic briefings on a range of matters, including: general progress updates; strategy development; the nuclear safety case and the environmental Best Available Techniques case; licence and permit condition compliance; and Horizon's organisational capability and management arrangements. The workstream structure also represents a forum for ONR and NRW to provide informal feedback, particularly during the preparation of Horizon's Site Licence Application, and Environmental Permit – Radiological Substances Regulation application. Both are planned for submission in early 2017. ONR publishes regular reports on engagement with Horizon, which are publicly available on its website at http://www.onr.org.uk/civil-nuclear-reactors/wylfa-newydd.htm;
- **NRW** – in addition to the workstream structure referenced above, Horizon engages with NRW regularly on a variety of environmental matters related to, for example, the EIA process, marine licensing and the preparation of non-radiological Environmental Permits. This engagement offers Horizon the opportunity to share emerging proposals with relevant technical officers and discuss proposed approaches to design and mitigation and also provides a forum for NRW to provide informal feedback, particularly during the preparation of Environmental Permit applications;
- **North Wales Economic Ambition Board (NWEAB)** – Horizon attends meetings with the NWEAB, which provide an opportunity for Horizon to share information about the economic opportunities arising from the Wylfa Newydd Project, as well as discussing and developing measures and activities led by the NWEAB to support business readiness within the regional supply chain;
- **Statutory Working Group** – Horizon has formed this group, which comprises a range of key statutory bodies and local authorities, particularly the Welsh Government, NRW, the IACC, ONR, the Marine Management Organisation, Gwynedd Council, and Gwynedd Archaeological Trust. This group was formed with the intention of encouraging proactive coordination and interaction between key statutory bodies in relation to the consents and permissions that will be required for the Wylfa Newydd Project. This group supports coordination between Horizon and statutory and regulatory authorities, but does not replace any of the other engagement streams; and
- **Wylfa Newydd Project Liaison Group** – this group was established in 2010 and has elected its own independent chair. Representatives of over 100 groups and organisations are invited to attend Project Liaison Group meetings, which are used by Horizon as a means of sharing information about the Wylfa Newydd Project and seeking feedback on pertinent aspects of the proposals as and when they merit discussion. Members of the public are welcome to attend, ask questions, contribute to discussions and play a full part in the meeting other than voting. The Project Liaison

Group has its own website at www.wylfaplg.com, which includes minutes of all meetings, all of which are publicly available.

22.32 The details provided above represent just some of the arrangements Horizon has in place with technical stakeholders. In addition to the working groups and regular meetings that are managed by Horizon, technical stakeholders are also invited by Horizon to respond specifically to formal pre-application consultation. Feedback received through this formal route is documented and analysed as part of the overall response and will be reported in the Consultation Report that Horizon will prepare as part of the DCO application.

Design refinement

22.33 The process of design evolution is not static and Horizon will continue to develop the proposals for the Wylfa Newydd Project, including detailed design of the Power Station, during the Stage Two Pre-Application Consultation and beyond, to inform the DCO application. Design evolution through this period will respond to a number of separate areas that must be closely integrated through development. These can be grouped generally as:

- developing the nuclear safety case;
- environmental permitting;
- environmental modelling and impact assessment;
- Wylfa Newydd Project specific engineering, design and optimisation;
- technical stakeholder engagement (described earlier in this chapter); and
- consultation feedback (described earlier in this chapter).

Developing the nuclear safety case

22.34 The GDA process, introduced in chapter 4, is officially a non-mandatory process. However the ONR and NRW will not issue permits for new nuclear power stations unless their design meets high safety, security, environmental and waste management standards. GDA provides an increased level of confidence that generic reactor designs will be licensable in the UK.

22.35 Once the UK ABWR has satisfactorily completed the GDA process, further work is required in order to develop a comprehensive site-specific safety case for the Wylfa Newydd Power Station. This site specific safety case must be submitted to the ONR for its scrutiny ahead of the pre-requisite permission being granted (in accordance with a Nuclear Site Licence) allowing Horizon to proceed with specific activities relating to the construction, commissioning and operation of the Wylfa Newydd Power Station. The site-specific safety case will eventually also cover the decommissioning activities.

22.36 A nuclear safety case is a set of documents that describes the radiological hazards in terms of a facility or site and modes of operation (including potential undesired modes), together with the measures that prevent or mitigate against harm being incurred. The safety case provides a coherent demonstration that relevant standards have been met and that risks to people have been reduced to the recognised nuclear industry term ‘As Low As Reasonably Practicable’.

Environmental permitting

22.37 A number of specific environmental permits are required under the Environmental Permitting (England and Wales) Regulations 2010. These would be issued by NRW to permit Horizon to build and operate the Wylfa Newydd Power Station, subject to complying with the series of specific conditions that would be attached to each Environmental Permit.

22.38 In addition to relevant construction permits covering various activities to be carried out during the Main Construction stage, operational permits would include:

- disposals and discharges of radioactive wastes;
- operation of combustion plant such as standby generators; and
- discharges of cooling water and liquid effluent.

22.39 In preparing applications for the Environmental Permits, Horizon would need to demonstrate that 'Best Available Techniques' (BAT) were being applied to plant, systems and processes that are subject to permitting regulation. The process of BAT assessment and demonstration would need to be carried out ahead of the finalisation of designs, such that it influences the proposals.

Environmental modelling and impact assessment

22.40 The process of EIA and the reasons for undertaking it are described in the PEI Report. The PEI Report outlines our preliminary information on what we believe the significant environmental effects of the Wylfa Newydd Project may be. Because of their preliminary nature they may be subject to change however, they are sufficiently robust to allow stakeholders to provide useful consultation feedback on the issues.

22.41 Feedback will also have an important role in the development of environmental mitigation. Horizon has already integrated some mitigation measures into the Wylfa Newydd Project (called "embedded mitigation"), which are set out in the PEI Report topic chapters and the strategic approaches to mitigation introduced in chapter 4 of this document. We have also developed initial proposals for additional mitigation The refinement of Horizon's proposals and mitigation will continue to be informed on an iterative basis by the ongoing EIA process.

22.42 Horizon will complete a range of detailed computer-based modelling activities intended to improve the certainty of EIA predictions in a range of topic areas. This includes further work on traffic modelling and marine and coastal processes modelling. As the design proposals further advance, assessment of core environmental topic area effects will be updated to reflect those refinements and the predicted significance of effects will crystallise. This updated modelling will be incorporated into the Environmental Statements for the DCO, Marine Licences and the Associated Development TCPA applications, as relevant.

Wylfa Newydd Project specific engineering, design and optimisation

22.43 A key part of Horizon's ongoing development activities in respect of the Wylfa Newydd Project is the necessary engineering and design work that must be completed to convert proposals and approaches into detailed designs from which construction activities can be

planned and implemented. The scale and nature of the Wylfa Newydd Project means that this engineering, design and optimisation work follows an iterative approach. There are complex interdependencies between the Wylfa Newydd Power Station and the specifics of the Associated Development proposals that form part of the holistic mitigation strategy for the Wylfa Newydd Project. Furthermore, it is recognised that the Associated Development proposals, as developments in their own right, may also lead to further mitigation proposals that will ultimately form part of the Wylfa Newydd Project as a whole.

22.44 Examples of areas where we will undertake further design refinement prior to the DCO include:

- confirmation of the construction techniques for all aspects of the permanent development at the Power Station Site, which will in turn inform the construction programme, the detailed schedule of construction worker requirements and the refinements to the Construction Worker Accommodation Strategy. The development of the construction techniques will be informed particularly by the GDA process, the development of the site specific safety case and through detailed discussions and planning between Horizon and Menter Newydd;
- the refinement of the Construction Worker Accommodation Strategy and programme will provide greater clarity regarding the transport requirements of the Wylfa Newydd Project. This will input into the EIA modelling; and
- once Associated Development locations and site sizes have been confirmed, detailed architectural work will continue and will be informed by detailed design briefs. Horizon intends to appoint design teams for each package of architectural work. This will offer opportunities across the supply chain in terms of producing detailed site-specific proposals for building design, landscaping and construction programming that will form the basis for the TCPA application submission packages.

The DCO process and engagement opportunities

22.45 Horizon is currently in the pre-application consultation phase of its DCO application. The next phase will commence when Horizon submits its DCO application for acceptance by the National Infrastructure Directorate of the Planning Inspectorate (PINS). Following acceptance, a statutory timetable will begin. This typically runs for approximately 16-18 months until the DCO is granted or refused. The key stages of the DCO process are outlined in table 22.1.

Table 22.1 The DCO process

DCO stage	Timing
Pre-application • Design development • Environmental assessment • Land referencing • Consultation	No time limit, normally 1-3 years
Submission and Acceptance • Developer submits application to PINS • PINS assesses adequacy of the pre-application consultation and submitted documents taking into	28 days after submission

DCO stage	Timing
account reports on adequacy of consultation from local authority • Acceptance by PINS that application meets required standards, or refusal of application	
Pre-examination • Relevant representations made • Preliminary Meeting with all interested parties including the applicant, relevant local authorities and those who have submitted representations	There is no statutory timescale for this, but PINS set a deadline for submission of representations of 6-weeks from the Preliminary Meeting
Examination • Written representations and hearings • End of Examination stage	During the Examination six months after Preliminary Meeting
Report • Recommendation by PINS to Secretary of State	three months after end of Examination
Decision • Decision by Secretary of State, grant of the DCO	three months after Recommendation submitted

22.46 Before the DCO application is formally submitted, Horizon is required to finalise its design development, environmental assessment and may carry out further consultation. During this period as high a level of agreement as possible between Horizon, local authorities and other interested parties on key issues will be sought, and formalised, where possible, in Statements of Common Ground.

22.47 The IACC will also use the pre-application period to evaluate the local impacts of the proposals, which are then set out within its Local Impact Report (LIR). Its LIR will be submitted once PINS has formally accepted the DCO application. Local authorities are encouraged to discuss and work through the issues raised by NSIP proposals with prospective applicants well before the application is submitted, and to engage with applicants in preparing Statements of Common Ground.

22.48 As outlined above, one of the key documents to be submitted with the application is the Consultation Report, which must:

- provide an account of the statutory consultation process;
- set out the consultation activities undertaken at the pre-application stage;
- present a summary of relevant responses to the themes and issues raised by the consultation; and
- provide details of the account taken of responses in developing the application from the proposed development to its final form.

22.49 The EIA will be reported in an ES, which will provide an assessment of the likely significant effects of the Wylfa Newydd Project, the proposed mitigation for those effects and the alternatives considered.

22.50 As applicants for a proposed NSIP, Horizon will be required to submit a draft DCO with the application, together with an explanatory memorandum. The draft DCO will be written in the form of a statutory instrument. The DCO will incorporate conditions, known as requirements, securing the mitigation set out in the Environmental Statement.

22.51 Once Horizon has submitted the formal application for development consent, PINS (on behalf of the relevant Secretary of State) will have a 28 day period to determine whether the application meets the requirements for formal examination, particularly in terms of the adequacy of the pre-application consultation.

22.52 Before the formal examination stage begins, statutory and local organisations, members of the public and other interested parties will be able to register with PINS and submit a summary of their views about the application in writing. A preliminary meeting will be held and chaired by an Examining Authority from PINS; the Examining Authority will comprise a panel of experienced planning inspectors. Interested parties will be given the opportunity to say how they consider the application should be examined and identify the key issues. This stage of publicising the application and gathering representations will take approximately three months.

22.53 During the six month examination period, the Examining Authority will invite interested parties to submit their views, will hold hearings, issue a series of written questions and deadlines for responses, and carefully consider and test all of the evidence submitted. The examination process will be focused on written representations rather than a public inquiry, with hearings on specific issues only being held where necessary. The approach is inquisitorial (based on questioning by the Examining Authority) rather than adversarial (the process followed in courts and normal planning inquiries, where there is typically cross-examination of witnesses).

22.54 Within three months of the end of the examination period, the Examining Authority will prepare a report on the application and submit it to the Secretary of State, including a recommendation on whether development consent should be granted. The final decision on granting a DCO rests with the Secretary of State, based on advice from the Examining Authority, which will be made within three months unless extended by special procedure.

22.55 Following the Secretary of State's decision, there will be a six week period within which third parties can challenge the decision in the High Court by way of Judicial Review. If the challenge is not lodged or not upheld, the Secretary of State's decision to grant consent cannot be challenged further. Works will commence once Horizon has satisfied a number of DCO requirements.

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Figure 22.2 License Information

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CONTACT US:
If you have any questions or feedback regarding the Wylfa Newydd Project you can contact us on our dedicated Wylfa Newydd Freephone hotline and email address, by calling on **0800 954 9516** or emailing **wylfaenquiries@horizonnuclearpower.com**

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Printed copies of the consultation documents and plans are available upon request however, there is a charge of up to £500 required to cover the cost of printing a full set of the Stage Two pre-application consultation documents. This charge may be waived at the discretion of Horizon.

WN034-S9-PAC-REP-00016