



## Wylfa Newydd Project

### 6.1.4 ES Volume A - Introduction to the project and approach to the EIA A4 - Strategic alternatives

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## 4 Strategic alternatives

### 4.1 Introduction

- 4.1.1 This chapter outlines the need for the Wylfa Newydd Project and the reasons for its proposed location. It describes the strategic thinking that has shaped the development of the Wylfa Newydd Project.
- 4.1.2 Sections 4.2 and 4.3 explain how the alternatives to nuclear power and alternative sites for new nuclear power stations have been assessed strategically by the UK Government.
- 4.1.3 The consideration of alternatives in relation to the Off-Site Power Station Facilities and the Associated Development has been carried out by Horizon. In the case of the Off-Site Power Station Facilities, this was limited to consideration of alternative locations only, as the facilities would be integral to the operation of the Power Station and therefore must be provided. However, for the Associated Development, alternative solutions and alternative sites were considered before the current proposals were finalised, with the identified solutions helping to avoid or mitigate some of the environmental issues that would arise in alternative scenarios.
- 4.1.4 This chapter is intended to provide a high-level overview of the key environmental issues relevant to the consideration of alternatives, as context to the Environmental Statement.
- 4.1.5 This chapter is not concerned with alternative site layouts or construction methods and techniques. More information on the reasoning behind the selection of sites and their layouts is provided in the alternatives and design evolution chapters D2 (Application Reference Number: 6.4.2), E2 (Application Reference Number: 6.5.2), F2 (Application Reference Number: 6.6.2), G2 (Application Reference Number: 6.7.2) and H2 (Application Reference Number: 6.8.2) of this Environmental Statement. Information is also provided in the respective Site Selection Reports (Application Reference Numbers: 8.24.1 to 8.24.7).

### 4.2 Alternatives to nuclear and large-scale electricity generation

- 4.2.1 “Horizon is applying to the Secretary of State (SoS) for a Development Consent Order (DCO) under the Planning Act 2008, to construct, operate and maintain a new nuclear power station on the land west of Cemaes on Anglesey (Wylfa Newydd Project). As the Wylfa Newydd Project is anticipated for deployment after 2025, the Government considers that it should be considered under section 105 of the Planning Act 2008. Decisions under Section 105 need to be taken having regard to any Local Impact Report and matters that the SoS thinks are both important and relevant. These would include the policies contained in NPS EN-1 and NPS EN-6, which is confirmed in the recent Ministerial Statement on Energy Infrastructure (December 2017). This further clarifies continued Government support for nuclear power, and

specifically at Wylfa. NPS EN-1 and NPS EN-6 therefore remain the primary basis for decision making.”

4.2.2 Within the *Overarching National Policy Statement for Energy (EN-1)* (NPS EN-1) [RD1] the UK Government has considered the alternatives to the need for new large-scale electricity generation infrastructure (including nuclear power), including; reducing overall demand, more intelligent use, and additional interconnection of electricity systems. NPS EN-1 concludes that, although all of the above measures should and will be actively pursued, their effect on decreasing the need for new large-scale energy infrastructure will be limited, particularly given the likely increase in demand for electricity for domestic and industrial heating and transport.

4.2.3 NPS EN-1 states at paragraph 3.3.4 that:

“There are benefits of having a diverse mix of all types of power generation. It means we are not dependent on any one type of generation or one source of energy or power and so helps to ensure security of supply. In addition, as set out briefly below, the different types of electricity generation have different characteristics which can complement each other:

- fossil fuel generation can be brought on line quickly when there is high demand and shut down when demand is low, thus complementing generation from nuclear and the intermittent generation from renewables. However, until such time as fossil fuel generation can effectively operate with Carbon Capture and Storage, such power stations will not be low carbon;
- renewables offer a low carbon and proven (for example, onshore and offshore wind) fuel source, but many renewable technologies provide intermittent generation; and
- nuclear power is a proven technology that is able to provide continuous low carbon generation, which will help to reduce the UK’s dependence on imports of fossil fuels. Whilst capable of responding to peaks and troughs in demand or supply, it is not as cost efficient to use nuclear power stations in this way when compared to fossil fuel generation.” [RD1]

4.2.4 NPS EN-1 states at paragraphs 3.5.1 and 3.5.2 that:

“For the UK to meet its energy and climate change objectives, the Government believes that there is an urgent need for new electricity generation plant, including new nuclear power. Nuclear power generation is 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 [RD1, paragraph 3.5.1].

It is Government policy that new nuclear power should be able to contribute as much as possible to the UK’s need for new capacity” [RD1, paragraph 3.5.2].

4.2.5 NPS EN-1 states at paragraph 3.1.3 that:

“The IPC [now Planning Inspectorate and the Secretary of State] should... assess all applications for development consent for the types of infrastructure covered by the energy NPSs on the basis that the Government has demonstrated that there is a need for those types of infrastructure and that the scale and urgency of that need is as described for each of them in this Part”.  
[RD1]

### 4.3 Wylfa Newydd Power Station site location

4.3.1 In 2009, the area of land surrounding the Existing Power Station was nominated in the UK Government’s Strategic Siting Assessment (SSA) process as a site potentially suitable for the deployment of a new nuclear power station. In implementing the SSA process, the then Department of Energy and Climate Change assessed candidate sites against a wide range of factors.

4.3.2 The candidate site at Wylfa was selected as it has adequate space for the development of a new nuclear power station, an existing National Grid connection and hard rock foundations. It is sufficiently high above sea level to avoid serious flood risk and has good access to sea water for cooling purposes. The nuclear heritage of Wylfa on Anglesey and Trawsfynydd in nearby Snowdonia has given rise to a strong skills and knowledge base necessary for the construction and operation of a new nuclear power station on Anglesey.

4.3.3 *National Policy Statement for Nuclear Power Generation (EN-6)* (NPS EN-6) [RD2] (specifically covering nuclear power generation) states the view of the UK Government that the Wylfa NPS Site (as shown on figure A1-2, Application Reference Number: 6.1.10) is potentially suitable for the deployment of a new nuclear power station. Also shown on figure A1-2 (Application Reference Number: 6.1.10) are the Wylfa Newydd Development Area and the Power Station Site. The Wylfa Newydd Development Area is larger than the Wylfa NPS Site, as it includes areas to be used during construction, including marine working areas. Paragraph 2.3.5 of NPS EN-6 recognises that other elements may need to be located outside of the NPS site boundaries. The Power Station Site does not cover as much land as the Wylfa NPS Site, although it does extend into the marine environment.

4.3.4 As the SSA considered alternative sites for new nuclear power stations and led to NPS EN-6 identifying the Wylfa NPS site, it was not necessary for Horizon to consider alternative sites for the Power Station.

4.3.5 Chapter A5 (overarching environmental legislation, policy and guidance) (Application Reference Number: 6.1.5) provides more information on the National Policy Statements relevant to the Wylfa Newydd Project.

4.3.6 Chapter D2 (Application Reference Number: 6.4.2) describes the main components of the proposed Power Station within the Wylfa Newydd Development Area, including marine works, and explains how certain features, such as landscape elements, have been included in the design in order to mitigate potential environmental effects.

## **4.4 Off-Site Power Station Facilities**

- 4.4.1 Off-Site Power Station Facilities would be required as part of Horizon's emergency planning arrangements in order to provide resilience against extreme events with very low probabilities.
- 4.4.2 The Off-Site Power Station Facilities consist of a Mobile Emergency Equipment Garage (MEEG), an Alternative Emergency Control Centre (AECC) and an Environmental Survey Laboratory (ESL). These facilities would be integral to the safe operation of the Power Station.
- 4.4.3 The AECC 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 at the Power Station Site were not available.
- 4.4.4 The MEEG would enable the managed storage of vehicles and equipment for response during the extremely unlikely event that the primary facilities at the Power Station Site were not available.
- 4.4.5 The ESL would be required for normal operation of the Power Station and would provide facilities to manage environmental surveys in the local area, including equipment for the analysis of samples.
- 4.4.6 The ESL would be located on the same site as the MEEG and AECC, in order to reduce the required number of development sites, to reduce the overall volume of development with some sharing of facilities, and to take advantage of a previously developed site rather than a greenfield location.
- 4.4.7 The selected location for the Off-Site Power Station Facilities meets the locational criteria required by the Office of Nuclear Regulation, as outlined below:
- located at a point immediately adjacent to, and which provided straightforward access to, the main road network (A5025, A55, A5);
  - located in an area upwind of the Power Station Site;
  - located in a zone of low seismic activity; and
  - located in a radius between 1.5km and 7.5km from the Power Station Site.
- 4.4.8 Two other potential sites were considered for the AECC and ESL, at Cefn Coch and Llanrhyddlad. However, these have been discounted in order for the Off-Site Power Station Facilities to be brought together with the MEEG on the single site at Llanfaethlu.
- 4.4.9 Further detail on the locational criteria and the site selection process is described in chapter E2 (Application Reference Number: 6.5.20) and the Off-Site Power Station Facilities Site Selection Report (Application Reference Number: 8.24.3).

## **4.5 Site Campus**

- 4.5.1 Horizon's approach to accommodating its construction workers seeks to avoid excess demand being placed on existing accommodation provision on



Anglesey and disruption to local communities, while also attracting a productive workforce. As explained in chapter C1 (socio-economics) (Application Reference Number: 6.3.1), the construction workforce is anticipated to peak at around 8,500 workers.

- 4.5.2 Consideration has been given to whether it would be better to disperse workers across Anglesey or to locate them in a single location. This led to a decision that the environmental and social effects of the construction workforce on the local community would be best managed by providing a single, temporary, purpose-built campus as close as possible to the Power Station Site (called the Site Campus). This would reduce daily vehicle trips on the local road network as much as possible and would provide a single, managed site with the facilities required by workers, including leisure and healthcare, in one place. Chapter D2 (Application Reference Number: 6.4.2) provides more information on the alternative sites that were considered for temporary workers' accommodation, with more detail in the Site Selection Report (Application Reference Number: 8.24.2).
- 4.5.3 The Site Campus would have capacity for up to 4,000 workers. Construction workers not staying at the Site Campus would stay in existing accommodation on Anglesey, in private-sector, rental-sector and tourism-sector properties. More detail on the proposed approach to temporary workers' accommodation is provided in the Workforce Accommodation Strategy (Application Reference Number: 8.4).
- 4.5.4 Horizon considered two locations for the Site Campus within the Wylfa Newydd Development Area. The proposed location was chosen because it maximises the distance of the accommodation from the active construction site while avoiding constraints on construction activities. The Site Campus would not be directly adjacent to neighbouring communities and would be partially screened by new landscaping.
- 4.5.5 Chapter D1 (Application Reference Number: 6.4.1) provides more information on the layout of the Site Campus.

## 4.6 Transport

### *Integrated Traffic and Transport Strategy*

- 4.6.1 An Integrated Traffic and Transport Strategy (ITTS) (Application Reference Number: 6.3.20) has been prepared for the Wylfa Newydd Project. Appendix 10-1 to the ITTS provides an assessment of alternative freight transport routes, including road, rail and by sea. The strategy covers both the construction and operation of the Wylfa Newydd Project and considers movements of workers and of materials. The strategy has five stated objectives, as follows:

- enhanced highway capacity and safety;
- integration with public transport services;
- improved transport links to the Power Station;
- encouraging sustainable travel; and

- reduced need to travel.

### ***Overview of measures to improve transport***

- 4.6.2 Approximately 5.5 million tonnes of materials would be transported to and from Anglesey during the construction phase to support the construction of the Power Station, Marine Works, other on-site development, Off-Site Power Station Facilities, and Associated Development. The Logistics Centre and the Marine Off-Loading Facility (MOLF) are proposed to reduce the potential number of delivery vehicles on the road network and to control the movement of those vehicles that remain necessary.
- 4.6.3 As an alternative to reliance on road transport for all deliveries of construction materials, the MOLF is proposed to enable deliveries of a significant proportion of construction materials by sea.
- 4.6.4 For construction workers, the provision of a Park and Ride and car share facilities; and the provision of the Site Campus would encourage sustainable travel and reduce the need to travel each day.
- 4.6.5 Workers would be given information about walking, cycling and public transport to help them to make sustainable travel choices during both construction and operation. For construction workers not living at the Site Campus, it is expected that car sharing and buses would be at the heart of workers' daily routines, and a database would be made available to allow workers to find colleagues as close to their accommodation as possible.
- 4.6.6 The proposed A5025 Off-line Highway Improvements would deliver enhanced highway capacity and safety between Valley and the Power Station Access Road.
- 4.6.7 The proposed Logistics Centre would manage delivery vehicle movements to and from the Wylfa Newydd Development Area during construction

### ***Park and Ride***

- 4.6.8 The Park and Ride facility at Dalar Hir is identified in the ITTS as a measure to mitigate transport-related effects during the construction of the Wylfa Newydd Project.
- 4.6.9 The Park and Ride facility would act as a transport hub and its location, immediately to the north-east of Junction 4 of the A55, would allow construction workers and other staff arriving from elsewhere on the island and from the mainland to transfer into shared cars before joining the A5025, thus reducing the number of vehicles travelling along the A5025.
- 4.6.10 The Park and Ride would be located on Anglesey rather than on the mainland because the majority of workers are expected to be based on Anglesey. 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. Horizon would also implement a car-sharing strategy to help minimise trips over the bridges.
- 4.6.11 The number of parking spaces required on Anglesey has been reduced from approximately 5,800 to approximately 3,800 as a result of the decision to

provide accommodation for construction workers at the Site Campus rather than at alternative locations and through increased car-sharing. The number of spaces required at the Park and Ride has reduced from a potential 2,700 to the 1,900 now proposed, allowing more green space to be retained.

- 4.6.12 Chapters F1 (proposed development) and F2 (Application Reference Numbers: 6.6.1 and 6.6.2) describe the proposed Park and Ride facility, including information on how the site was selected and how the site layout has been designed, taking into account environmental considerations. Further information is provided in the Site Selection Report (Application Reference Number: 8.24.5)
- 4.6.13 In addition to the Park and Ride, Horizon propose to provide shuttle buses for home-based workers and workers in existing accommodation to and from the Wylfa Newydd Development Area, and to provide shuttle buses to and from key transport links at peak times.

### ***A5025 Off-line Highway Improvements***

- 4.6.14 Construction traffic would access the Wylfa Newydd Development Area via the A5025 from Valley. The proposed A5025 Off-line Highway Improvements, which would be provided in five locations, have been designed to mitigate the effects of those vehicle movements by diverting traffic around villages.
- 4.6.15 Chapters G1 (proposed development) and G2 (Application Reference Numbers: 6.7.1 and 6.7.2) describe the proposed A5025 Off-line Highway Improvements, including how they have been designed to take account of environmental considerations. Further information is provided in the Site Selection Report (Application Reference Number: 8.24.7)

### ***Logistics Centre***

- 4.6.16 Materials transported by road would be controlled by means of a Logistics Centre, from where vehicle movements to the Wylfa Newydd Development Area would be managed in order to reduce congestion. In addition, suppliers would be required to consolidate loads in order to reduce the potential number of heavy goods vehicles using the road network.
- 4.6.17 The Logistics Centre would be sited close to the A55, in order to manage the controlled flow of vehicles along the A5025 to the Wylfa Newydd Development Area and so to reduce the potential for congestion.
- 4.6.18 Chapters H1 (proposed development) and H2 (Application Reference Numbers: 6.8.1 and 6.8.2) describe the proposed Logistics Centre and explain how environmental considerations have influenced its location, layout and use. Further information is provided in the Site Selection Report (Application Reference Number: 8.24.6).

## 4.7 References

**Table A4-1 Schedule of references**

ID	Reference
RD1	Department of Energy and Climate Change. 2011a. <i>Overarching National Policy Statement for Energy (EN-1)</i> . London: The Stationery Office.
RD2	Department of Energy and Climate Change. 2011b. <i>National Policy Statement for Nuclear Power Generation (EN-6)</i> . London: The Stationery Office.