HORIZON NUCLEAR POWER

WYLFA NEWYDD

ENERGY WORKING FOR BRITAIN

Wylfa Newydd Project

Imperative Reasons of Overriding Public Interest (IROPI) Report

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This report presents Horizon Nuclear Power Wylfa Limited's (Horizon's) Imperative Reasons of Overriding Public Interest (IROPI) case for the Wylfa Newydd Project (the Project), in line with requirements of The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations) [RD1]. It is the first part of Stage 4 of Horizon's Shadow Habitats Regulations Assessment (HRA) process but is provided on a precautionary basis only; in that the outcome of Horizon's Stage 2 Appropriate Assessment – assessment of adverse effects on site integrity (AEOI) due to the Project – is that adverse effects would not arise and, further, without prejudice to this position, Horizon's Stage 3 HRA Report has determined that there are no alternative solutions that would meet the Project need and have a lesser environmental effect. The second part of Stage 4 of the Shadow HRA process relates to the provision of compensation.

The term "Project" refers to all the works and activities to be consented by the Wylfa Newydd Development Consent Order (DCO), Marine Licence and Environmental Permits.

The HRA Process

The HRA process follows a four-stage approach, as detailed in Planning Inspectorate (PINS) Advice Note 10 [RD3]:

1. Screening for Likely Significant Effects (LSE).
2. Appropriate Assessment.
3. Assessment of Alternative Solutions.
4. Demonstration of IROPI and the provision of compensation.

Stage 1 LSE

The Shadow HRA (APP-050&051) concluded that LSE could arise due to the Project for a number of the qualifying features (including migratory fish, breeding and migratory birds, designated habitats and marine mammals) of a number of European Designated Sites in the Project's zone of influence (ZOI). Therefore, a Stage 2 Appropriate Assessment was undertaken.

Stage 2 Appropriate Assessment

Following Appropriate Assessment, the Shadow HRA (APP-050&051) and Shadow HRA Addendum (AS-010) concluded that there would be no adverse effects resulting from to the Project on the integrity of the qualifying features of any European Designated Sites (including the Morwenoliaid Ynys Môn/Anglesey Terns Special Protection Area (SPA) and Dee Estuary SPA) in the Project's ZOI. Therefore, based on the established HRA process, no further assessment (i.e. Stages 3 and 4) needs to be undertaken.

However NRW, as the Statutory Nature Conservation Body (SNCB) advising the Examining Authority (ExA) on the DCO determination and as SNCB for determination

of the Marine Licence, has confirmed that it considers that an adverse effect on site integrity cannot be excluded in respect of the Morwenoliaid Ynys Môn/Anglesey Terns SPA (due to construction phase disturbance) and the Dee Estuary SPA (due to potential effects on the Morwenoliaid Ynys Môn/Anglesey Terns SPA).

Horizon does not agree with the position for the reasons presented in the Shadow HRA [APP-050] and Shadow HRA Addendum [AS-010], and given the suite of mitigation measures committed to. As such, this report is provided without prejudice to the ExA's final recommendation, in response to Further Written Question 2.5.10 which asks that Horizon set out the reasons that there would be IROPI for the proposed development.

Stage 3 Assessment of Alternative Solutions

The Stage 3 Alternative Solutions Assessment concludes that there are no feasible 'alternative solutions' to the Project proposals in the context of the Habitats Regulations [RD1] and predicted effects on the qualifying features of the Morwenoliaid Ynys Môn/Anglesey Terns SPA.

Stage 4 IROPI

This report presents the IROPI case for the Project. The delivery of appropriate compensation is addressed in a parallel document.

Nuclear power can play a vital role in meeting the challenge of maintaining secure energy supplies for the UK. It can also help to tackle the global threat of climate change by contributing to cutting greenhouse gas emissions by at least 80% by 2050, compared to 1990 levels (as required by the *Climate Change Act 2008* [RD14]). The Government's recent Ministerial Statement [RD26] confirms its commitment to new nuclear power, stating that *"new nuclear power generation remains key to meeting our 2050 obligations"*.

NPS EN-1 [RD7] reflects the requirement to maintain security of supply while also meeting greenhouse gas emission commitments, acknowledging that in the shorter term the UK will require an additional 59GW of new build electricity capacity by 2025 relative to the 2011 baseline. The need for the Wylfa Newydd Project, therefore, is summarised as the urgent need for new nuclear power, in order to help meet the UK's requirement for at least 59GW of new build electricity capacity by 2025. This need is imperative and overriding.

The delivery of low carbon electricity at Wylfa in the long term would provide social and economic benefits to the UK and support human health and public safety. Moreover, it would help the UK to meet its critical decarbonisation targets.

There is, therefore, a clear IROPI case for the Project.

1 Introduction

1.1 Purpose and scope of this document

1.1.1 On 1 June 2018 Horizon Nuclear Power Wylfa Limited (Horizon) applied for a Development Consent Order (DCO) for the Wylfa Newydd Project (the Project) from the Planning Inspectorate, and made parallel applications for the following licences and permits from the Ministers of the Welsh Assembly (with licensing delegated to Natural Resources Wales (NRW)) and NRW respectively, to which this report is relevant:

- A Marine Licence for the marine construction works and for dredging and dredged material disposal (two licence applications are to be made, but a single Marine Licence is to be issued for all of the marine works).
- An Environmental Permit under Schedule 21 of the Environmental Permitting (England and Wales) Regulations 2016 (EPR16) for water discharge activities that will occur during the construction phase of the Project.
- An Environmental Permit under Schedule 21 of the EPR16 for a water discharge activity during the commissioning and operational phases of the Project.
- An Environmental Permit under Schedule 1 of the EPR16 for a combustion activity during the commissioning and operational phases of the Project.

1.1.2 This report presents Horizon's Imperative Reasons of Overriding Public Interest (IROPI) case for the Project, in line with the requirements of The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations) [RD1] which implement Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (the Habitats Directive; [RD2]) in England and Wales. It is the first part of Stage 4 of Horizon's Shadow Habitats Regulations Assessment (HRA) process but is provided on a precautionary basis only at this stage; in that the outcome of Horizon's Stage 2 Appropriate Assessment (that is, the assessment of adverse effects on site integrity (AEOI) due to the Project) is that adverse effects would not arise. Further, it has been demonstrated in Horizon's Stage 3 HRA Report that there are no alternative solutions to the Project proposals in the context of the Habitats Regulations [RD1] and predicted effects on the qualifying features of the Morwenoliaid Ynys Môn/Anglesey Terns Special Protection Area (SPA) and the Dee Estuary SPA.

1.1.3 The term "Project" in this report refers to all the works and activities to be consented by the DCO, Marine Licence and Environmental Permits described above. The General Glossary for the Project (APP-006) defines terms used within this report.

1.1.4 The provision of compensation, the second and final component of Stage 4 of the HRA process, is addressed in a parallel document (also submitted for Deadline 5).

1.2 The Wylfa Newydd Project

1.2.1 For ease of reference, text from chapter 2 of the Shadow HRA (APP-050&051) is reproduced to describe the Project.

1.2.2 Fundamentally the Project consists of:

i. The Power Station: the proposed new nuclear power station at Wylfa, including two UK Advanced Boiling Water Reactors, the Cooling Water System (CWS), supporting facilities, buildings, plant and structures, radioactive waste and spent fuel storage buildings and the Grid Connection.

ii. Other on-site development: including landscape works and planting, drainage, surface water management systems, public access works including temporary and permanent closures and diversions of public rights of way, new Power Station access road and internal site roads, car parking, construction works and activities including construction compounds and temporary parking areas, laydown areas, working areas and temporary works and structures, temporary construction viewing area, diversion of utilities, perimeter and construction fencing, and electricity connections.

iii. Marine Works, comprising:

- Permanent Marine Works: the CWS, the Marine Off-loading Facility (MOLF), breakwater structures, shore protection works, surface water drainage outfalls, waste water effluent outfall (and associated drainage of surface water and waste water effluent to the sea), fish recovery and return system, fish deterrent system, navigation aids and dredging; and
- Temporary Marine Works: temporary cofferdams, a temporary access ramp, temporary navigation aids, temporary outfalls and a temporary barge berth.

iv. Off-site Power Station Facilities: comprising the Alternative Emergency Control Centre (AECC), Environmental Survey Laboratory (ESL) and a Mobile Emergency Equipment Garage (MEEG).

v. Associated Development: the Site Campus within the Wylfa Newydd Development Area (WNDA); temporary Park and Ride facility at Dalar Hir for construction workers (Park and Ride); temporary Logistics Centre at Parc Cybi (Logistics Centre); the A5025 Off-line Highway Improvements and wetland habitat creation and enhancement works

as compensation for any potential impacts on the Tre'r Gof Site of Special Scientific Interest (SSSI) at the following sites:

- Tŷ Du;
- Cors Gwawr; and,
- Cae Canol-dydd.

1.3 Report structure

1.3.1 Following this introduction to the Project and the purpose and scope of this report, **Chapter 2** provides of the outcomes of Horizon's Stage 1, 2 and 3 HRA.

1.3.2 **Chapter 3** establishes the legislative and guidance framework for Horizon's Stage 4 HRA IROPI case.

1.3.3 **Chapter 4** sets out why the UK needs electricity**.**

1.3.4 **Chapter 5** sets out why the UK needs new low carbon generating capacity.

1.3.5 **Chapter 6** sets out why nuclear generating capacity is urgently required as part of the low carbon energy mix.

1.3.6 **Chapter 7** sets out why new nuclear is relevant at Wylfa.

1.3.7 **Chapter 8** provides a conclusion regarding the extent to which the Wylfa Newydd Project meets the IROPI test.

1.3.8 **Chapter 9** provides details of the references used.

2 Background

2.1 The HRA process

2.1.1 The HRA process follows a four-stage approach, as detailed in Planning Inspectorate (PINS) Advice Note 10 [RD3]:

1. Screening for Likely Significant Effects (LSE).
2. Appropriate Assessment.
3. Assessment of Alternative Solutions.
4. Demonstration of IROPI and the provision of compensation.

2.1.2 This chapter summarises the outcomes of Horizon's HRA Stages 1, 2 and 3.

2.2 Stage 1 LSE

2.2.1 The Shadow HRA (APP-050&051) concluded that LSE could arise due to the Project for a number of the qualifying features (including migratory fish, breeding and migratory birds, designated habitats and marine mammals) of a number of European Designated Sites in the Project's zone of influence (ZOI).

2.2.2 NRW, the Planning Inspectorate and the Isle of Anglesey County Council (IACC), constituting the HRA Working Group alongside Horizon, concurred with this conclusion. Therefore, a Stage 2 Appropriate Assessment needed to be undertaken.

2.3 Stage 2 Appropriate Assessment

2.3.1 Following Appropriate Assessment, the Shadow HRA (APP-050&051) and Shadow HRA Addendum[1] (AS-010) concluded that there would be no adverse effects resulting from to the Project on the integrity of the qualifying features of any European Designated Sites (including Morwenoliaid Ynys Môn/Anglesey Terns Special Protection Area (SPA) and Dee Estuary SPA) in the Project's ZOI. Therefore, based on the established HRA process, no further assessment (i.e. HRA Stages 3 and 4) needs to be undertaken.

2.3.2 However NRW, as the Statutory Nature Conservation Body (SNCB) advising the Examining Authority (ExA) on the DCO determination and as SNCB for determination of the Marine Licence, has confirmed that it considers that an adverse effect on site integrity cannot be excluded in respect of the Morwenoliaid Ynys Môn/Anglesey Terns SPA due to construction phase disturbance and the Dee Estuary SPA due to the connection between it and the Morwenoliaid Ynys Môn/Anglesey Terns

[1] Produced in light of a recent ruling (April 2018) by the Court of Justice of the European Union (CJEU) referred to as *People Over Wind and Sweetman v Coillte Teoranta* (C-323/17) that *"…it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site"*.

SPA relating to passage Sandwich tern. Where an adverse effect on site integrity cannot be excluded, a project can only be granted if:

- it is demonstrated that there are no alternative solutions which would have no or a lesser effect on the sites' integrity; and,
- that IROPI can be shown and necessary compensation measures can be secured.

2.3.3 Horizon does not agree with the position for the reasons presented in the Shadow HRA [APP-050] and Shadow HRA Addendum [AS-010], and given the suite of mitigation measures committed to. As such, this report is provided without prejudice to the ExA's final recommendation, in response to Further Written Question 2.5.10 which asks that Horizon set out the reasons that there would be IROPI and no alterantive solutions for the proposed development, and to provide an update on the development of compensation (also provided for Deadline 5).

2.4 Stage 3 Assessment of Alternative Solutions

2.4.1 The Stage 3 Alternative Solutions Assessment concludes that there are no feasible 'alternative solutions' to the Project proposals in the context of the Habitats Regulations [RD1] and predicted effects on the qualifying features of the Morwenoliaid Ynys Môn/Anglesey Terns SPA and the Dee Estuary SPA.

2.5 Stage 4 IROPI and compensation

2.5.1 Once IROPI has been established – the subject matter of this Report – the HRA process requires that an assessment of compensatory measures must be provided by the Applicant and *"the appropriate authority must secure that any necessary compensatory measures are taken to ensure that the overall coherence of Natura 2000 is protected"* [RD1].

2.5.2 The position paper submitted for Deadline 5 on compensation demonstrates that, should the ExA determine that compensation is required, compensation sites can be delivered ahead of the main construction phase.

3 Stage 4 IROPI

3.1 Legislation

3.1.1 In accordance with regulation 64 of the Habitats Regulations [RD1], if the competent authority is satisfied that, there being no alternative solutions, the plan or project must be carried out for imperative reasons of overriding public interest, it may agree to the plan or project notwithstanding a negative assessment of the implications for the European site.

3.1.2 In such circumstances, in accordance with regulation 68 of the Habitats Regulations [RD1], necessary compensatory measures must be secured to ensure the overall coherence of the *Natura 2000* network.

3.2 Relevant guidance

3.2.1 This assessment of IROPI has been undertaken in accordance with the following:

- the European Commission's (EC's) *Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive*. Brussels (2019/C 33/01) (2019, [RD4]);
- the EC's *Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC* (2012, [RD5]);
- Defra guidance on the application of Article 6(4) *Alternative solutions, imperative reasons of overriding public interest (IROPI) and compensatory measures* (2012, [RD6]); and,
- the Planning Inspectorate's Advice Note Ten: *Habitat Regulations Assessment relevant to Nationally Significant Infrastructure Projects* (2017, [RD3]).

3.2.2 PINS Advice Note 10 [RD3] provides that, where adverse effects on the integrity of European site(s) are predicted to arise as a result of the project (alone or in combination with other plans or projects) and it can be demonstrated that there are no alternative solutions to the project that would have a lesser effect or avoid an adverse effect on the integrity of the European site(s), the project may still be carried out if the competent authority is satisfied that the scheme must be carried out for IROPI.

3.2.3 For European sites designated under the Habitats Directive [RD2], the IROPI grounds on which a plan or project can proceed depend on the nature of the site that would be affected. In cases where priority natural habitats or species (a "priority feature")[2] would be affected by the development, the IROPI justification must relate to either:

[2] Some Annex I habitats and Annex II species are defined as being of 'priority' because they are considered to be particularly vulnerable and are mainly, or exclusively, found within the European Union. The importance of these priority habitat types is emphasised at several places in the Directive (Articles 4 and 5 and Annex III), not only in terms of the selection of sites, but also in the measures required for site protection (Article 6) and surveillance (Article 11). An effect is not predicted on a priority feature in this case; either by Horizon or NRW.

- human health, public safety or beneficial consequences of primary importance to the environment; or
- having due regard to any opinion from the European Commission, any other imperative reasons of overriding public interest

3.2.4 In all other cases (i.e. in the absence of priority features, or where priority habitats and species are present on a European site but they would not be affected by the project) the competent authority can consider IROPI that include those relating to social or economic benefit, in addition to those matters set out above.

3.2.5 In respect of the Wylfa Newydd Project, priority habitats are present on a relevant European site, but they would not be affected by the Project.

3.2.6 The Defra Guidance [RD6] – which itself is based on the EC's Guidance [RD5] on Article 6(4) of the Habitats Directive [RD4] – identifies that consideration of the objective of the plan or project is central to the determination of IROPI. The objective of (need for) the Wylfa Newydd Project is defined in chapter 3 of the Stage 3 HRA Report (submitted for Deadline 5) as: *the urgent need for new nuclear power, with Wylfa Newydd representing one of the few new stations that can be brought forward now, in order to help meet the requirement for 59GW of new build electricity capacity by 2025*. As set out in that Stage 3 HRA Report, this need is not changed by Hitachi Ltd's decision to suspend the project.

3.2.7 The Defra Guidance [RD6] also states that when identifying 'IROPI' a competent authority should consider the different defining elements of the term as follows:

- **Imperative**: it must be essential (whether urgent or otherwise), weighed in the context of the other elements below, that the plan or project proceeds.
- **Overriding**: the interest served by the plan or project must outweigh the harm (or risk of harm) to the integrity of the site(s) identified in the appropriate assessment.
- **Public Interest**: a public benefit must be delivered rather than a solely private benefit. This can occur at a national, regional or local level and should be long term. Plans and projects which enact or are consistent with national policy statements are more likely to show a high level of public interest.

3.3 Approach to IROPI

3.3.1 The shadow Appropriate Assessment for the Project concludes that an adverse effect on site integrity would not arise. For the purposes of this report however, Horizon has adopted, but not accepted, NRW's, conclusion that an adverse effect on integrity cannot be excluded. Because Horizon's Stage 2 appropriate assessment has identified no AEOI of a European site, Horizon recognises that NRW has alleged that there are AEOI and has used NRW's alleged effects, for the purposes

considering 'alternatives', 'IROPI' and 'compensation'. This Stage 4 assessment has been undertaken that context and has assessed the IROPI for the Project in the context of:

- social or economic benefit; and/or
- human health and public safety; and/or
- overriding beneficial consequences of primary importance for the environment.

3.3.2 The IROPI position in respect of the Project is premised on its social and economic benefit, with appropriate recognition that the Project will also deliver:

- consistent and reliable energy supply, which is essential to maintaining a good standard of human health and public safety; and
- low carbon energy, which is of benefit to the environment generally.

3.3.3 The following matters establish that the Project has long term benefits which are imperative and overriding, and that there is a public interest in it proceeding despite the effects alleged by NRW on the conservation objectives of the SPA envisaged by NRW (not withstanding Horizon's Stage 2 no AEOI conclusion):

- the urgent need for electrical energy;
- the need for new low carbon generating capacity;
- the urgent need for nuclear generating capacity as part of the UK's renewable energy mix; and
- the need for new nuclear be provided at Wylfa Newydd.

3.3.4 These topics are considered in turn in chapters 4 to 7. The information presented updates (and does not repeat) the information presented at the time of the DCO application as part of the WFD compliance assessment (APP-445) and is of more direct relevance to the Habitats Regulations [RD1].

4 The need for electricity

4.1 Introduction

4.1.1 Electrical energy underpins almost every aspect of life in the western world. It provides heat and light; it powers the production, storage and transport of food; it powers the distribution of essential water supplies and safely removes our waste; and it allows us to safely travel around the world by (by providing power for air traffic control, lighting and pumping fuel), amongst many other contributions.

4.1.2 In the UK electricity is generated through the operation of a number of geographically dispersed power stations of various types and technologies that are situated around the UK [RD7]. Currently the main sources of electric power generation in the UK are from nuclear, fossil fuels (natural gas and coal), hydro (pump storage) and renewables (offshore and onshore wind, tidal stream, biomass and solar). Other mixed sources make up a tiny proportion of overall generation and include oil (a fossil fuel), hydro (stream) and wave energy [RD7].

4.2 Increasing demand

4.2.1 The demand for electrical energy continues to grow and pathway modelling undertaken by the former Department of Energy and Climate Change (DECC) in 2010 suggested that this trend would continue [RD8]. This is despite efforts to promote better energy conservation and improvements in energy efficiency. The National Policy Statement (NPS) on Energy (EN-1) [RD9] explicitly identifies the urgent need for new (and particularly low carbon) electricity Nationally Significant Infrastructure Projects (NSIPs) in the UK within the next 10-15 years, i.e. 2011 – 2025 (paras 3.3.1 to 3.3.5). It states:

"3.3.14 […] [E]ven with major improvements in overall energy efficiency, we expect that demand for electricity is likely to increase, as significant sectors of energy demand (such as industry, heating and transport) switch from being powered by fossil fuels to using electricity. As a result of this electrification of demand, total electricity consumption (measured in terawatt hours over a year) could double by 2050."

and:

"2.2.22 Looking further ahead, the 2050 pathways show that the need to electrify large parts of the industrial and domestic heat and transport sectors could double demand for electricity over the next forty years. It makes sense to switch to electricity where practical, as electricity can be used for a wide range of activities (often with better efficiency than other fuels) and can, to a large extent, be scaled up to meet demand. To meet emissions targets, the electricity being consumed will need to be almost exclusively from low carbon sources."

4.2.2 The current BEIS forecast is that electricity demand will increase by approximately 20% by 2035 [RD10].

4.2.3 The Future Energy Scenarios presented by the National Grid also conclude that greater generation of electricity will be required in the near future [RD11] and, while the National Audit Office (NAO) publication 'Nuclear Power in the UK' [RD12] makes clear that long term demand forecasts are inherently uncertain and that there are material differences between the estimates of different forecasters, it highlights the potential for a 20% increase in demand for electricity over the next two decades because of demographic changes, economic growth and the electrification of heat and transport.

4.3 Decreasing supply

4.3.1 A significant amount of electricity capacity is set to be retired by 2035, including almost 90% of existing coal and nuclear capacity (which together contribute almost 50% of UK's current power needs) [RD13]. Specifically, under UK Government policy, all coal plants will be closed by 2025 [RD14]. Furthermore, the UK currently has eight operational nuclear plants with a combined capacity of 8.9GW, and all but one of these is scheduled to close by 2030. That is, according to the projections presented by the NAO [RD12], only 3.6GW of existing nuclear capacity will remain operational in 2030.

4.3.2 In the period 2016 to 2035 the NAO [RD12] estimates that *c.*64GW (i.e. over 60% of current UK generating capacity) will be lost due to plant retirements. Looking to 2035, the NAO has analysed the expected generation capacity shortfall arising from increased demand in the context of shrinking supply [RD12]. Figure 3-1 illustrates that at least 31GW of additional capacity over and above existing resources will be needed to meet the minimum generating capacity required in 2035.

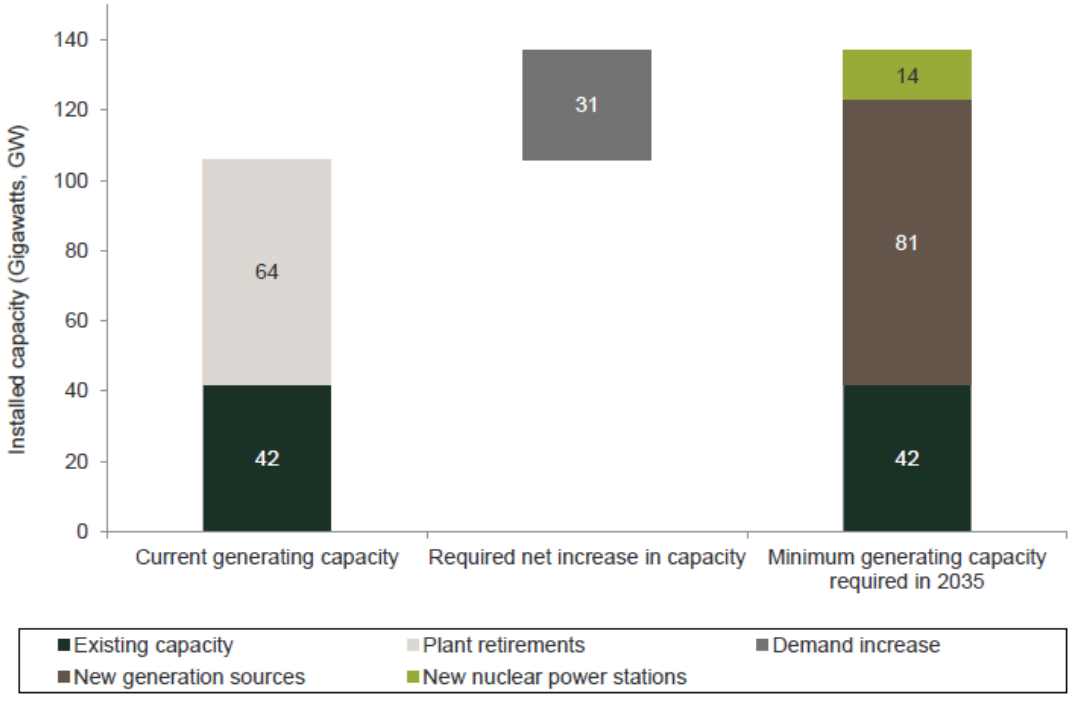

Figure 3-1NOA on the UK's energy challenge to 2035 [RD12]

4.3.3 Consequently, there will be a generation shortfall which, according to the NAO, will amount to 95GW by 2035 (i.e. 70% of UK's forecast energy needs in 2035) [RD12].

4.4 The need

4.4.1 A regular, reliable and guaranteed supply of electrical energy throughout the day is essential to maintain the full range of critical services that modern society relies upon – from hospitals to food production, from cash machines to data storage [RD7]. Moreover, to reduce climate change impacts and the environmental consequences arising from these, it is increasingly necessary that this energy supply comes from low carbon sources. In recent years, this has been thought of in terms of the "energy trilemma" – security of supply, affordability and low carbon.

4.4.2 The UK will continue to need baseload generation (that is, power that can be guaranteed to provide the minimum levels of electricity required, such as that provided by nuclear plants) as well as flexible power supply to manage demand more effectively at times of lower generation and provide extra supply at times of greater demand, as more power from renewable energy comes on stream. A future increased reliance on renewable, but intermittent, generating technologies means that the UK's total generating capacity may need to be even greater, to ensure that peak demand can always be met.

4.4.3 In a more immediate timeframe, as outlined in NPS EN-1 [RD9] and reflecting the requirement to maintain security of supply while also meeting greenhouse gas emission commitments, the UK will require an additional 59GW of new build electricity capacity by 2025 relative to the 2011 baseline, which translates to at least 113GW of total electricity generating capacity.

4.4.4 This represents the context within which the Wylfa Newydd Project new nuclear development should be considered; particularly given its intent to deliver power within this timeframe. That is, the Wylfa Newydd Project would generate up to 3.1GW of low carbon energy for decades once operational. This is enough energy to power 5,000,000 homes.

4.4.5 As domestic and economic life in the UK relies very largely on electricity it is difficult to overestimate the extent to which human health and public safety, the quality of the environment and our quality of life is dependent on having long term access to adequate and secure electrical energy supplies; and this is reflected in the NPS EN-1 and EU, National and Welsh energy policies [RD7, RD9, RD16].

5 The need for new low carbon generating capacity

5.1 Introduction

5.1.1 Notwithstanding the substantial progress that can be (and has been) made with energy efficiency and demand management, the UK clearly still needs significant new generating capacity to be provided. In addition, to achieve carbon commitments and renewable energy targets, there must be a further step change in the power that obtained from low carbon sources. Under the Climate Change Act 2008, the UK is committed to reducing its greenhouse gas emissions by at least 80% by 2050 relative to 1990 levels [RD16; RD9 paras 3.3.14, 3.3.15)]. It is therefore necessary for the UK to reduce its use of fossil fuels, particularly in the four largest sectors for emissions: transport, industry, heating for buildings, and electricity generation[3] [RD17].

5.1.2 Switching away from fossil fuels in these sectors is expected to be achieved, in part, through electrification, such as increased use of electric vehicles (EVs). That is, the National Grid's 2017 projections demonstrated that a rapid uptake of EVs alone could increase peak demand by *c.*8 to 15GW by 2035 [RD10][4,5]. To ensure that electrification does reduce overall emissions, electricity has to be generated from low-carbon sources. DECC considers the increase in the supply of low carbon electricity as an 'essential prerequisite' to meeting the UK's emissions targets [RD9], and the continued need for low carbon electricity is further stressed in the 2015 Paris Agreement[6].

5.1.3 The provision of low carbon energy also has a bearing on the environment and biodiversity, and implications for human health and public safety, as unfettered climate change is predicted to have far reaching effects [RD7].

5.2 Policy to decarbonise

5.2.1 NPS EN-1 [RD9] explains the two key policy goals that drive the need for new electricity generation. The first is the need to decarbonise the economy. The second is that it is critical that the UK continues to have secure and reliable supplies of electricity as its makes the transition to a low carbon economy.

[3] Specifically, according Ofgem in 2017 [RD13], transport accounts for 26% of emissions, industry for 22%, heating for buildings for 19% and electricity generation for 17%.
[4] In total National Grid estimates that by 2050 peak electricity demand will have risen by up to c. 40% relative to 2016 [RD11].
[5] National Grid's 2018 estimates, however, have revised this prediction, stating that if 'vehicle to grid' (V2G) charging is used effectively, along with smart charging, this would put less pressure on the grid than previously thought; boosting peak electricity demand by 3-8GW in 2030 and 3-13GW in 2050 rather than by 6-30GW (the 2017 prediction) [RD11].
[6] The 2015 United Nations Framework Convention on Climate Change ('UNFCCC') Paris Agreement.

5.2.2 NPS EN-1 states that *"Continuation of global emissions, including greenhouse gases like carbon dioxide, at current levels could lead average global temperatures to rise by up to 6°C by the end of this century. This would make extreme weather events like floods and droughts more frequent and increase global instability, conflict, public health-related deaths and migration of people to levels beyond any recent experience. Heat waves, droughts, and floods would affect the UK. To avoid the most dangerous impacts of climate change, the increase in average global temperatures must be kept to no more than 2°C, and that means global emissions must start falling as a matter of urgency. To drive the transition needed the Government has put in place the world's first ever legally binding framework to cut emissions by at least 80% by 2050, that will deliver emission reductions through a system of five-year carbon budgets that will set a trajectory to 2050"*.

5.2.3 The long-term decarbonisation of the economy and a reduction in greenhouse gases is critical to securing ecosystem resilience (identified as a priority in Wales' Natural Resources Policy [RD18]) and, thereby, providing beneficial consequences of primary importance for the environment.

5.2.4 In line with International, UK and Welsh policy commitments to reduce carbon emissions to slow down or avert climate change, the proportion of energy from renewable sources has steadily been increasing. For instance, Welsh Government announced a policy target (in September 2017) for Wales to generate 70% of its electricity consumption from renewable energy by 2030 [RD7]. Government polices reflect both the need for more electricity and the growing role and expectation that renewables will form an increasingly large proportion of the component energy mix.

5.3 Energy security

5.3.1 Continuity and reliability of supply are also important considerations in the context of energy security, which requires the provision of a diverse energy mix over the long-term. To meet the UK Government's objective to maintain or enhance levels of energy security [RD9], there is therefore a clear need to deploy low carbon and renewable technologies.

5.3.2 In order to replace electricity energy capacity and to meet expected increases in demand for electricity generation and the very challenging statutory decarbonisation targets in the UK, to maintain security of energy supply and reduce the potential harmful impacts on human health and public safety resulting from interruptions to electricity supply (and from climate change), it is important that no viable low carbon technology is ruled out[7]. The option of not doing so is not tenable [RD7].

[7] Noting that on the 25 June 2018 BEIS ruled out the potential for tidal lagoon generated energy in the UK at the current time on a value for money basis [RD17].

5.3.3 However, greater reliance on renewable, but intermittent, generating technologies such as wind and photovoltaics in the future means that total generating capacity may need to be even greater, to ensure that peak demand can always be met. The NOA [RD12] note that: *"an increasing proportion of generation coming from intermittent sources such as wind and solar power [means that] the total generating capacity needs to be higher to ensure that there is sufficient capacity to meet demand".*

6 The urgent need for nuclear generating capacity as part of the low carbon energy mix

6.1 The Government commitment

6.1.1 There is strong legislative and policy support for new nuclear power in the UK. In 2008 *Meeting the Energy Challenge - A White Paper on Nuclear Power* [RD20] announced that nuclear energy should have a role to play in the generation of electricity, alongside other low carbon technologies.

6.1.2 The principle of the need for new nuclear power stations, and that this need is urgent, is firmly established in NPS EN-1 [RD9] and NPS EN-6 [RD21].

6.1.3 NPS EN-1 [RD9] establishes the urgent need for new energy infrastructure to meet energy security and carbon reduction objectives, to replace closing electricity generating capacity, and to support an increased supply from renewables and future increases in electricity demand.

6.1.4 The required scale of nuclear new build was confirmed by the Energy Research Partnership, which shows that 20GW–25GW of nuclear is required to meet the UK's emission targets, even if the National Renewable Energy Action Plan target for wind is met [RD15].

6.1.5 NPS EN-6 [RD21] specifically sets out the Government's policy on the urgent need for nuclear power. Annex A of EN-6, for example, states that a significant number of existing power stations will be coming to the end of their natural operating lives around the end of 2025 (paragraph A.2.3). Acting as a policy influence alongside this reduction in supply is the lack of proven alternatives to new nuclear generation that can be deployed at the required scale to meet the capacity shortfall, while remaining consistent with the Government's commitment to decarbonisation and ensuring security of supply [RD13].

6.1.6 According to industry research by Bloomberg [RD22], weather conditions in the UK are such that solar could perhaps account for only 8% of the UK's generation by 2040. Moreover, while wind speeds in the UK appear 'favourable', the proportion of electricity demand that needs to be met by generation sources other than wind and solar by 2040 is still forecast to be as high as 50% (and up to 80% at certain times of the year) [RD22]. The research also predicts that: *"70GW of dispatchable resources (generation, storage, flexible demand, interconnectors) are needed in 2040 to meet peak demand during periods of low wind and solar generation"* [RD22]. The NAO has consequently drawn attention to the reliability of nuclear power, stating that it is a 'firm' source of electricity that can be relied upon to deliver during periods of high demand [RD23].

6.1.7 In October 2017, the Clean Growth Strategy [RD24] confirmed the Government's continued support for developing low carbon sources of electricity, specifically including a continued commitment to nuclear energy.

6.2 Urgency

6.2.1 It is equally important to note that the UK Government believes that new nuclear power stations need to be developed much earlier than the end of 2025 (paragraph 2.2.2 of NPS EN-6[8] [RD21]) and critically by 2035.

6.2.2 The urgent need for nuclear power also features in industry research. For example, the Energy Research Partnership has stated that: *"A significant amount of new zero carbon firm capacity is essential to decarbonisation but leading technologies such as nuclear and CCS [carbon capture and storage] require long lead times. Therefore meeting emissions targets for 2030 requires action today"* [RD15].

6.2.3 To this end the Government consulted on the proposed siting criteria and the process for the development of a new NPS applicable to nuclear power plants deployed after 2025 and capable of deployment by the end of 2035. The Consultation on Siting and Process [RD25] report (published on 7 December 2017) stated that: "*Currently all but one of the existing fleet of nuclear reactors are due to cease generating before 2030[9], so the need for new nuclear power remains significant […] it is important that there is a strong pipeline of new nuclear power to contribute to the UK's energy mix and security of supply in the future*".

6.2.4 The consultation document [RD25] went on to say that, subject to the outcome of the consultation, the Government proposes to carry forward the sites listed in NPS EN-6 (that have not yet applied for a DCO, amounting to seven) into the new NPS.

6.2.5 The Statement on Energy Infrastructure (the 'Ministerial Statement') [RD26], issued on the same date as the consultation document, makes it clear that the Government continues to support new nuclear power generation – *"[n]ew nuclear power stations have an important role to play […] nuclear is a vital part of our [UK] energy mix […] it is important that there is a strong pipeline of new nuclear power to contribute to the UK's future energy system"*. It also gives the Government's strong in principle support to project proposals at those sites listed in NPS EN-6.

6.2.6 The Government's Response to the consulation document [RD25] was published in July 2018 [RD27] and confirmed the above.

6.2.7 Further work carried out by Oxera in 2018 (appendix G of the Planning Statement (APP-406) [RD13]) on the available evidence pertaining to the need for new nuclear power, beyond that considered in the current NPS EN-1 and EN-6, has established that the need for new nuclear power stations remains urgent. Oxera conclude that, if anything, the requirement for new nuclear is now even stronger than before, as a result of the expected increase in electricity demand, retirement of electricity generating plant capacity, the lack of proven alternatives to nuclear power generation, and the constraints imposed by emission reduction obligations.

[8] Where NPS EN-6 was drafted for the period to 2025.
[9] And the remaining one is due to cease operating within five years of 2030.

6.2.8 For example, given that lost coal capacity will need to be replaced by low carbon sources, the importance of developing substantial quantities of generation capacity from non-intermittent sources appears to be particularly high [RD13].

6.2.9 National Grid's analysis implies that the need for new nuclear generation is acute if the 2050 emissions targets are to be met [RD11]. Its 'Two Degrees' scenario, the only scenario of the Future Energy Scenarios report where the 2050 emissions targets are met, assumes 14.5GW of nuclear new build by 2035. Since Hinkley Point C will provide only 3.2GW of capacity and all existing nuclear generation is expected to close by 2035, a significant amount of new nuclear capacity is urgently needed to meet the 2050 emissions targets.

6.2.10 Indeed, the need for new nuclear power may prove to be greater and more urgent if the potential delay and uncertainty in the development of other low-carbon technologies is realised. In particular, the 'Two Degrees' scenario [RD11] assumes that 74GW of low-carbon generation will be available by 2025. However, a recent publication from HM Treasury [RD28] indicates that only 48GW of low- carbon generation will be available by that date [2025]. This implies a further 26GW gap in required low-carbon capacity. Furthermore, even if all of the interconnector projects currently envisaged by Ofgem successfully start operations on time (reducing the need by *c.*12GW), this would leave a further capacity gap equivalent to approximately four Hinkley Point C plants [RD29].

6.2.11 Projections produced by DECC for its '2050 pathways calculator' [RD30] reveal that, if new nuclear power plants are not installed, the UK is expected to miss its 2050 emissions targets by at least 3% and by up to 25%.

6.3 A recent challenge

6.3.1 In July 2018 the National Infrastructure Commission (NIC) released its National Infrastructure Assessment [RD31] which suggests that sustaining progress on reducing emissions requires Government to show ambition. The crucial first step of which, in the NIC's view, is to enable an increasing deployment of 'renewable' energy (as distinct from low carbon nuclear energy).

6.3.2 The NIC's modelling has shown that a generation mix that relies heavily on renewables is a low cost option for the energy system [RD31]. It suggests that the cost (to develop additional renewables) between 2030 and 2050 would be broadly comparable to investing in further nuclear power plants (after Hinkley Point C, based on the assumption that there is very little prospect of other new nuclear coming on line before 2030) and cheaper than implementing carbon capture and storage with the existing system. However, its' assessment is based wholly on a balance sheet assessment.

6.3.3 Figure 5.1 (from [RD31]) shows slightly lower average costs for a scenario with 90% renewable and less than 10% nuclear, compared to a scenario with 40% renewable and around 40% nuclear, regardless of whether heat

is predominantly electrified using heat pumps or provided through low carbon hydrogen in the future. The higher cost of managing the variable nature of many renewables ('balancing') is offset by the lower capital cost, which translates into lower costs in the wholesale market [RD31].

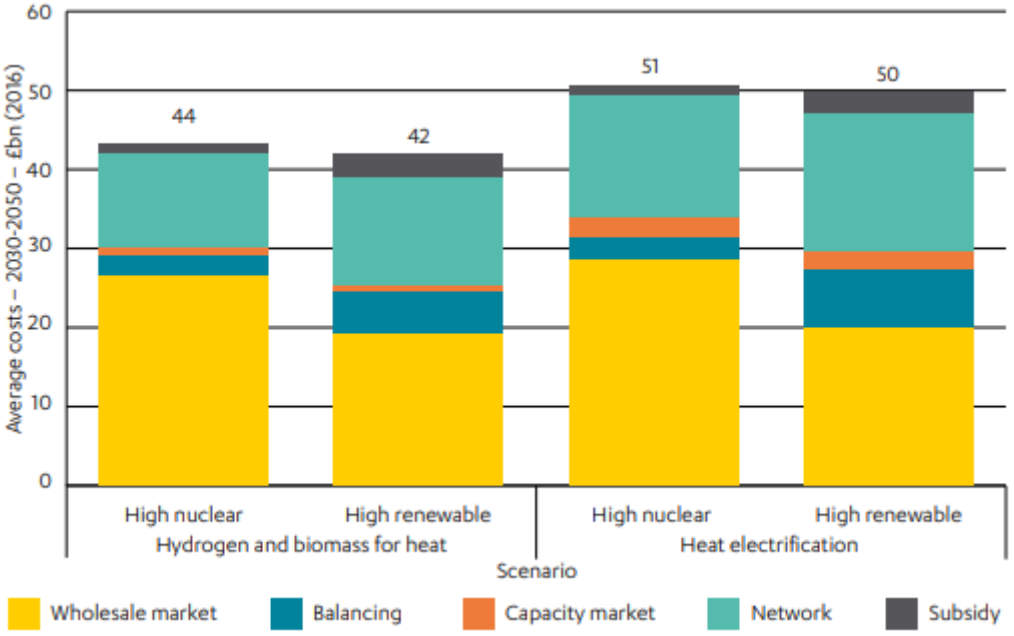

Figure 5-1 Average cost of the electricity system each year for different proportions of renewables/nuclear and heat decarbonisation pathways [RD31]

6.3.4 The NIC conclude that the electricity system should be running off at least 50% renewable generation by 2030, as part of a transition to a more strongly renewable energy generation mix. Significantly it also concludes that Government should not agree support for more than one nuclear power station beyond Hinkley Point C before 2025 [RD31].

6.3.5 According to the NIC, given the balance of cost and risk, a renewables based system looks like a safer bet at present than constructing multiple new nuclear power plants. But they admit that a large amount of uncertainty does remain and changes that will need to be made to enable the increase in renewables, including increased system flexibility to balance variations in weather [RD31]. No country has yet built an electricity system with very high levels of variable renewables. Therefore, it will be important to develop a better understanding of how such a system performs under adverse weather conditions, particularly given that climate change itself makes such conditions harder to predict [RD31]. The risk is that the extra services required to accommodate large amounts of renewables may be harder, or more expensive, to source than envisaged.

6.3.6 Given these uncertainties, in its July 2018 report [RD31] the NIC recommends a 'one by one' approach to new nuclear plants, as opposed to the current Government policy to develop a large fleet. In its view this would be preferable to a 'stop start' approach. It would allow the UK to

maintain (but not expand) a skills base and supply chain, and pursue a high renewables mix without closing off the nuclear alternative [RD31].

6.3.7 The NIC admit that estimates over such a long time period, and with considerable technological change, are inevitably uncertain; specific figures should not be given undue weight [RD31].

6.3.8 Regarding the NIC's suggestion that the cost to develop additional renewables between 2030 and 2050 would be broadly comparable to investing in further nuclear power plants, this is based on the assumption that there is very little prospect of other new nuclear coming on line before 2030. However, the Wylfa Newydd Power Station (should it receive consent) could be operational by 2028/29. Moreover, the need surrounding electricity supply is not limited to the need for low cost electricity; it includes the urgent need for a reliable source of electricity (ideally prior to 2030).

6.3.9 As set out above, DECC's projections [RD30] are that, if new nuclear power plants are not installed, the UK is expected to miss its 2050 emissions targets by up to 25%.

6.3.10 In terms of the NIC's assessment, however, the Wylfa Newydd Project remains the next new nuclear project in the pipeline.

7 The need for new nuclear at Wylfa, Anglesey

7.1 Policy support

7.1.1 There is strong legislative and policy support for new nuclear power in the UK. The Wylfa Newydd Project Planning Statement (APP-406, built on in REP2-003) provides further details and NPS EN-1 [RD9] and NPS EN-6 [RD21] set out the Government's policy on the urgent need for nuclear power.

7.1.2 NPS EN-6 includes Wylfa as a potentially suitable site for the deployment of a new nuclear facility before the end of 2025, subject to certain matters that require further consideration through the DCO application (see Annex C: Site Assessments in Volume II of EN-6). The UK Government (in including Wylfa in NPS EN-6) concluded that none of these factors were sufficient to prevent the site from being considered potentially suitable.

7.2 EN-6 site assessment

7.2.1 The site assessments included in Annex C of Volume II of EN-6 set out in detail why the selected sites, including Wylfa, have been found to be potentially suitable. They set out the analysis and conclusions drawn against the Government's Strategic Siting Assessment (SSA) criteria and reflect advice received from specialists and the regulators. They also reflect key points made during the opportunity for public comment in Spring 2009, consultation on the original draft Nuclear NPS from November 2009 to February 2010, and consultation on the revised draft Nuclear NPS from October 2010 to January 2011 [RD21 – Annexes]. Table 5-1 summarises the outcomes of the site assessment for Wylfa [derived from [RD21] Annex C, Wylfa].

Table 5-1 Wylfa assessment of suitability against SSA criteria [RD21]

SSA Criteria	Assessment outcome	Notes
Demographics	Pass	Relating to exceedance of semi-urban criterion.
Proximity to military activities	Pass	
Flooding, storm surge and tsunami	Pass – low risk of flooding	
Coastal processes	Pass – low level of risk	
Proximity to hazardous industrial facilities and operations	Pass	
Proximity to civil aircraft movements	Pass	
Size of site to accommodate operation	Pass	An applicant would need to consider siting elements of a station away from public footpaths, or realignments, to meet the requirements of a nuclear site licence.
Access to suitable sources of cooling	Pass	

SSA Criteria	Assessment outcome	Notes
Internationally designated sites of ecological importance	As for the majority of proposed new nuclear sites examined, the Appraisal of Sustainability (AoS) site report, based on the HRA for Wylfa, identified that the potential for adverse effects on sites and species of European nature conservation importance existed. The HRA proposed a suite of avoidance and mitigation measures to be considered as part of any project level HRA. Given that the HRA did not rule out adverse effects, the Government carefully considered (against this criterion) whether it was appropriate to include this site in this NPS. The Government concluded that there is an IROPI that favours the inclusion of Wylfa in EN-6 despite the inability to rule out adverse effects on European Sites.	Significant strategic effects on biodiversity could not be ruled out as a result of potential impacts on water resources and quality, habitat (and species) loss and fragmentation/coastal squeeze, disturbance (noise, light and visual) and air quality. The Government noted the need for more detailed studies. The Government's conclusion took into account the need for suitable sites for new nuclear to be available for potential deployment by the end of 2025, the lack of alternatives, and the consideration given to the availability of compensatory measures. It was determined, therefore, that Wylfa passed on the basis of this criterion.
Nationally designated sites of ecological importance	The AoS identified potential impacts on nationally designated sites of ecological importance and highlighted the proximity of the Tre'r Gof Site of Special Scientific Interest (SSSI). Given the scope for mitigation of the biodiversity effects identified, however, the Government concluded that it may be possible to avoid or mitigate impacts to an extent. Given the need to ensure sufficient sites are available for development to meet the Government's energy policy objectives, as described in Part 2 of NPS EN-6, it concluded that the site met this criterion.	In view of the need for sites set out in Part 2 of NPS EN-6 and the limited number of potentially suitable sites, the Government concluded that the issues in relation to this criterion were not sufficient to justify not including the site in the NPS. The Government also noted that there would be further assessment of any proposal for the site at project level.
Areas of amenity, cultural heritage and landscape value	Given the likely scale of the development and the fact that a small part of an Area of Outstanding Natural Beauty (AONB) was included in the nominated site boundary, the AoS found that there are likely to be some long lasting adverse direct and indirect effects on landscape character and visual impacts on the AONB. Whilst scope for total avoidance and mitigation of impacts on the National Park was determined to be limited, the site was deemed to pass this criterion.	This took into account the fact that the nature, scope and scale of any impacts were uncertain and dependent on the exact form of development proposed. Albeit the Government recognised that there could be remaining effects on the AONB. However, as explained in Part 2 of the NPS, there is a need to ensure sufficient sites are available for development to meet the Government's energy policy objectives. In view of this and the limited number of potentially suitable sites, the Government did not think the issues in relation to this criterion were sufficient to justify not including Wylfa in NPS EN-6.

7.2.2 The conclusion of the Government's site assessment for Wylfa was that the site was potentially suitable. This conclusion was based on the site meeting the SSA criteria, and the evidence from, inter alia, the public, regulators, AoS and HRA site reports. The assessment outlined a number of areas that would need further consideration by the applicant and/or the regulators should an application for development consent come forward, including (amongst other things) its effect on the AONB and Heritage Coast, on four national and internationally protected nature conservation sites (namely the Cemlyn Bay Special Area of Conservation (SAC) and the Yns Feurig, Cemlyn Bay and Skerries SPA) and on the Tre'r Gof SSSI[10]. However, the Government concluded that none of these factors were sufficient to prevent the site from being considered as potentially suitable.

7.3 Beyond 2025

7.3.1 The consultation document published by the Government in December 2017 [RD25] stated that, subject to the outcome of the consultation and provided the sites meet the final criteria, the Government proposes to carry forward all of the sites listed in NPS EN-6 not yet developed, including Wylfa. The Government's Response to the consulation document was published in July 2018 [RD27] and confirmed this.

7.3.2 According to Oxera [RD13], the fact that additional nuclear generating capacity at Wylfa is listed in EN-6, indicates that it is clear that it continues to benefit from strong in principle policy support.

7.3.3 Moreover, Oxera [RD13] suggest that the delays and cost overruns that have beset the Flamanville-3 project in France and the Olkiluoto (OL3) project in Finland are unlikely to apply to the Wylfa Newydd installation. This is because, inter alia, Flamanville-3 and OL3 are first of a kind (FOAK) installations of the new European Pressurised Reactor design, whereas the Advanced Boiling Water Reactor (ABWR) at Wylfa Newydd is a Nth of a kind (NOAK) (i.e. not first of a kind[11]).

7.4 Project need

7.4.1 The need for the Wylfa Newydd Project, therefore, can be summarised as the urgent need for new nuclear power to help meet the UK's requirement for at least 59GW of new build electricity capacity by 2025 and 95GW by 2035. This need is imperative and overriding. The need for new nuclear power does not reduce because of the recent project suspension.

7.5 Other benefits

7.5.1 The benefits of the Project for energy delivery and security in the UK are clear. In addition, other benefits would include economic benefits and job

[10] Notably these issues have been examined in detail in the Project's Environmental Statement (EL Reference APP-120 to 238) and Shadow HRA (EL Reference APP-050&051).
[11] The ABWR was approved by the United States Nuclear Regulatory Commission for production as a standardised design in the early 1990s. Numerous ABWRs have since been built in Japan and elsewhere worldwide.

creation, infrastructure improvements and support for education (see section 5.4 of APP-445).

Economic benefits and job creation

7.5.2 The significant level of investment to be made as part of the Wylfa Newydd Project would benefit the economies of both Anglesey and north Wales; and this investment would filter through the wider economy through payment to employees, contracts with local businesses and investment in infrastructure.

7.5.3 It is expected that, at the peak of construction, up to 9,000 workers would be required. During this period approximately 2,000 home-based workers would be employed from the Daily Construction Commuting Zone (DCCZ), which would provide a signficant benefit to employment in the construction sector in this zone. An estimated 1,260 of these home-based workers are expected to be from Anglesey, which would have beneficial effects on the local labour market.

7.5.4 The construction phase would also have a beneficial effect on the Welsh economy. It is estimated that 60% of the £10+ billion Wylfa Newydd Project construction value would be spent in the UK. If between 2% and 4% of this was to be spent in north Wales, this would equate to an investment of between £200 million and £400 million over the construction period and would provide or safeguard between 1,200 and 3,500 job years over the investment period; equivalent to 120 to 350 Full Time Equivalent jobs (see APP-088).

7.5.5 During the operation of the Power Station it is estimated that a workforce of 850 would be required. This would also make a significant contribution to local employment and the long-term population stability on Anglesey.

7.5.6 The total value of the operating expenditure over the lifetime of the Power Station is predicted to be equivalent to £1.8 billion in present value terms, equivalent to around £30 million per year[12]. The annual average direct, indirect and induced increase in income is estimated to be around £20 million on Anglesey alone, from staff costs at the Power Station. This is equivalent to an increase of 2.1% over baseline levels.

Infrastructure improvements

7.5.7 In addition to the delivery of the nuclear power station, the Project would deliver the A5025 On-line and Off-line Highways Improvements. As a consequence, motorised and public transport users would experience significant decreases in traffic flow on the existing A5025 at various stages of the Project. The A5025 Offline Highways Improvements would, for example, reduce existing traffic levels within Llanfachraeth by more than 60%. The highway improvements would also reduce traffic noise and air pollution in the communities of Valley, Llanfachraeth, Llanfaethlu and Llanrhuddlad (at Cefn Coch).

[12] Excluding staff costs, fuel, business rates, other financial contributions, National Grid fees or other trading costs.

7.5.8 In addition, the development of the logistics centre at Parc Cybi would deliver an employment use which could be available in the long term, subject to achieving the necessary local consents.

Education

7.5.9 The Wylfa Newydd Project would create real opportunities for young people in the communities local to the development sites.

7.5.10 Horizon has committed to funding (among other things) a Jobs and Skills Contribution which will provide up to £12 million in skills training for local people to ensure there is early action that enables the local community to upskill to fill existing skills shortages. In addition, commitments to apprenticeship targets and pre-16 education programmes ensure that young people will be assisted to understand and develop the skills needed for the Project; and specific Welsh language immersion teacher funding is provided. (In each case as set out in the draft Section 106 agreement; where the most recent version has been submitted at deadline 5).

8 Conclusion: IROPI

8.1.1 This report sets out Horizon's IROPI case for the Wylfa Newydd Project in accordance with the requirements of the Habitats Regulations [RD1]. The Wylfa Newydd Project is demonstrably:

- **Imperative** - it is both essential and urgent that it proceeds. That is, this report demonstrates that:
  - The demand for electricity in the UK continues to grow (with 20% forecast by 2035 [RD10]), despite energy conservation and efficiency; while significant electricity capacity is set to be retired by 2035.
  - Consequently, there will be a generation shortfall which will amount to 95GW by 2035 [RD12] and NPS EN-1 [RD9] identifies the urgent need for new (low carbon) electricity in the UK within the next 10-15 years.
  - The required scale of nuclear new build has been confirmed by the Energy Research Partnership, which has shown that 20GW–25GW is required, even if the National Renewable Energy Action Plan target for wind is met [RD15].
  - Under the Climate Change Act 2008, the UK is committed to reducing its greenhouse gas emissions by at least 80% by 2050 relative to 1990 levels [RD16]. The Government's projections [RD30] are that, without new nuclear power plants, the UK is expected to miss its 2050 emissions targets by up to 20%.
  - Continuity and reliability of supply – which nuclear energy delivers – are important considerations for energy security, which requires a diverse energy mix.
  - The urgent need for new nuclear power stations in this mix is firmly established in NPS EN-1 [RD6] and EN-6 [RD21]. The Government's continued commitment to nuclear energy is confirmed in the Clean Growth Strategy (October 2017) [RD24] and the Government's response to the consultation on the siting criteria and process for a new NPS for nuclear power beyond 2025 [RD27].
  - New nuclear power stations need to be developed much earlier than the end of 2025 and critically by 2035 [RD21].
  - The Consultation on Siting and Process [RD25] report states that the Government proposes to carry forward the sites listed in NPS EN-6 not yet developed (including Wylfa) into the new NPS.

- The Wylfa Newydd Project remains the next new nuclear project in the pipeline.
- That there is an urgent need for new nuclear power in the UK, including at Wylfa.

- **Overriding** - the national, regional and local interests served by the Project (as described above) outweigh the harm (or risk of harm) to the integrity of the site(s) identified in the appropriate assessment.

  It is noted that in developing NPS EN-6 it was determined that the IROPI test could be met for Wylfa despite the Government's inability (at the time) to rule out adverse effects on European Sites [RD21].

- **In the Public Interest** - the provision of nuclear generating capacity as part of the low carbon energy mix required by the UK clearly would be in the public interest. That is:
  - It would deliver up to 3.1GW of energy for the UK, enough to power around 5 million homes;
  - it can be delivered in a relatively short timeframe in the context of the 2025 need;
  - it would provide reliable baseload, low carbon energy, which would assist the UK in meeting its greenhouse gas emissions reduction commitments, with beneficial consequences of primary importance for the environment;
  - wider economic benefits would arise during construction and operation for North Wales.

  The provision of new nuclear generating capacity at Wylfa would be for 30 years as a minimum and ,consequently, would support the UK's transition to low carbon electricity and help it to meet its longer term climate change commitments.

8.1.2 Moreover, the Alternative Solutions Assessment undertaken concludes that there are no feasible 'alternative solutions' to the Project proposals and predicted effects on the qualifying features of the Morwenoliaid Ynys Môn/Anglesey Terns SPA and the Dee Estuary SPA.

8.1.3 The strategic case for a new nuclear power station at Wylfa was assessed by the UK Government. The site at Wylfa was included within NPS EN-6 [RD21] as a potentially suitable location for new nuclear power, having satisfied the Strategic Siting Assessment process. The Ministerial Statement on Energy Infrastructure (Written Statement December 2017) [RD26] says that the Government continues to give its strong in principle support to project proposals at those sites listed. Further, the consultation on sitting and process report [RD25] states that the Government proposes to carry forward the sites listed in NPS EN-6 not yet developed (including

Wylfa) into the new NPS and this is confirmed in the Government's Response [RD27].

8.1.4 This report demonstrates that, in respect of the Wylfa Newydd Project, significant public interest exists which weighs in favour of allowing the Project to proceed despite its [potential] harm; that is, imperative reasons of overriding public interest support it. The Project would deliver social and economic benefits UK-wide and support good human health and public safety through the provision of baseload electricity. It would have a vital role in the provision of safe and secure low-carbon electricity supplies for which there is a nationally recognised and urgent need. Moreover, it would help the UK to meet its challenging decarbonisation targets, which is of primary importance for the environment.

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