

Wylfa Newydd Project

8.18 Health Impact Assessment

Non-Technical Summary

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2 Health Impact Assessment non-technical summary

2.1 Introduction

- 2.1.1 Horizon Nuclear Power Wylfa Limited (Horizon) is a UK energy company developing the next generation of nuclear power stations. Horizon aims to build and operate a nuclear power station, Wylfa Newydd on the north coast of Anglesey, near the village of Cemaes and next to the former Magnox nuclear power station, the Existing Power Station.
- 2.1.2 The proposed Power Station would deliver safe and secure electricity for around five and a half million homes. It would create 850 permanent jobs, with a construction workforce of around 4,000 rising to around 9,000 workers at the peak of construction. It would also bring benefits to north Wales and local communities not only through employment and training opportunities but also from the demand for local goods and services.
- 2.1.3 As a responsible developer, Horizon is fully committed to delivering world-class levels of health and safety on the Wylfa Newydd DCO Project. Horizon also believes it should encourage well-being in local communities.
- 2.1.4 When large projects such as this are built in Wales, it is good practice and suggested by national and local policy to complete an assessment to understand how the project may affect the health and well-being aspects of life – this is called a Health Impact Assessment. The findings of the Horizon Health Impact Assessment are described in the Health Impact Assessment Report (Application Reference Number: 8.19) included in the application for development consent. This document is a non-technical summary of that report.
- 2.1.5 The focus of the Health Impact Assessment is on community health and well-being and not on workplace health and safety.

2.2 The Wylfa Newydd Project

- 2.2.1 Horizon is proposing to construct and operate the Wylfa Newydd Project, which comprises the Wylfa Newydd DCO Project, the Licensable Marine Activities and the Enabling Works. Each of these elements is described further below. The Wylfa Newydd DCO Project will be consented under a DCO and the Licensable Marine Activities will be consented under a Marine Licence. There is some overlap between the two; the Marine Works (see below) will be consented under both the DCO and the Marine Licence.

Wylfa Newydd DCO Project

- 2.2.2 The Wylfa Newydd DCO Project comprises those parts of the Wylfa Newydd Project which are to be consented by a DCO, namely:

The Nationally Significant Infrastructure Project (NSIP)

- Power Station: the proposed new nuclear power station at Wylfa, including two UK Advanced Boiling Water Reactors, the Cooling Water System, supporting facilities, buildings, plant and structures, radioactive waste and spent fuel storage buildings and the Grid Connection;
- 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;
- Marine Works comprising:
 - Permanent Marine Works: the Cooling Water System, the Marine Off-loading Facility, 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;
 - Temporary Marine Works: temporary cofferdams, a temporary access ramp, temporary navigation aids, temporary outfalls and a temporary barge berth;
- Off-site Power Station Facilities: comprising the Alternative Emergency Control Centre (AECC), Environmental Survey Laboratory (ESL) and a Mobile Emergency Equipment Garage (MEEG);

Associated Development

- the Site Campus within the Wylfa Newydd Development Area;
- 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;
- 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;
 - Cae Canol-dydd

2.2.3 The following terms are used when describing the geographical areas related to the Wylfa Newydd DCO Project and the Licensable Marine Activities:

- Power Station Site – the indicative areas of land and sea within which the majority of the permanent Power Station, Marine Works and other on-site development would be situated; and
- Wylfa Newydd Development Area – the indicative areas of land and sea including the Power Station Site and the surrounding areas that would be used for the construction and operation of the Power Station, the Marine Works, the Site Campus and other on-site development (WNDA Development).

Licensable Marine Activities

2.2.4 The Licensable Marine Activities comprise the Marine Works and the disposal of material from Dredging at the Disposal Site.

Enabling Works

2.2.5 The Enabling Works comprise the Site Preparation and Clearance Proposals (SPC Proposals) and the A5025 On-line Highway Improvements.

2.2.6 Horizon has submitted applications for planning permission for the Enabling Works under the Town and Country Planning Act 1990 to the Isle of Anglesey County Council (IACC).

2.2.7 In order to maintain flexibility in the consenting process for the Wylfa Newydd DCO Project, the SPC Proposals have also been included in the DCO application. The A5025 On-line Highway Improvements are not part of the DCO application.

2.3 The Health Impact Assessment process

Purpose of the Health Impact Assessment

2.3.2 The Health Impact Assessment helps to identify and increase the positive effects of the Project on people's health and well-being. These are known as the 'potentially significant beneficial effects'.

2.3.3 The Health Impact Assessment also helps to identify, and deal with, the negative effects of the Project on people's health and well-being. These are known as the 'potentially significant adverse effects' of the Project.

2.3.4 It also looks at how the effects of the Project might vary across different communities – these differences are known as health inequalities.

2.3.5 The Health Impact Assessment summarises the likely significant health effects that have been identified for particular communities during the construction and operation stages of the Project. This information has been used to make decisions about the design of the Project, with a view to reducing the adverse effects of the Project on health and well-being, and increasing the health benefits to local communities as well as taking steps towards reducing inequalities in health.

2.3.6 The comprehensive Health Impact Assessment Report (Application Reference Number: 8.19) (a type of Health Impact Assessment that is more in-depth as it is based on data collection and evidence reviews) explains how Horizon will take opportunities to improve health and well-being, as well as any steps to address any potentially significant adverse effects of the Project on health and well-being.

Steering Group

2.3.7 An independently chaired Health Impact Assessment Steering Group, made up of local, regional and national stakeholders (including representatives from the Welsh Government and the Isle of Anglesey County Council), has helped Horizon develop the methodology used to complete this assessment. This Steering Group has given advice on how to undertake the assessment and provided feedback on drafts of the reports.

2.3.8 The Health Impact Assessment Steering Group includes:

- Betsi Cadwaladr University Health Board;
- Public Health Wales;
- Welsh Government;
- Wales Health Impact Assessment Support Unit;
- Isle of Anglesey County Council;
- Project Liaison Group (representing local community interests); and
- Horizon.

2.3.9 Natural Resources Wales, Public Health England and the Office for Nuclear Regulation have also been invited to observe the work of the Steering Group.

What are health and well-being?

2.3.10 Health means our physical, mental and social well-being. Health is positive. It is about much more than not being ill.

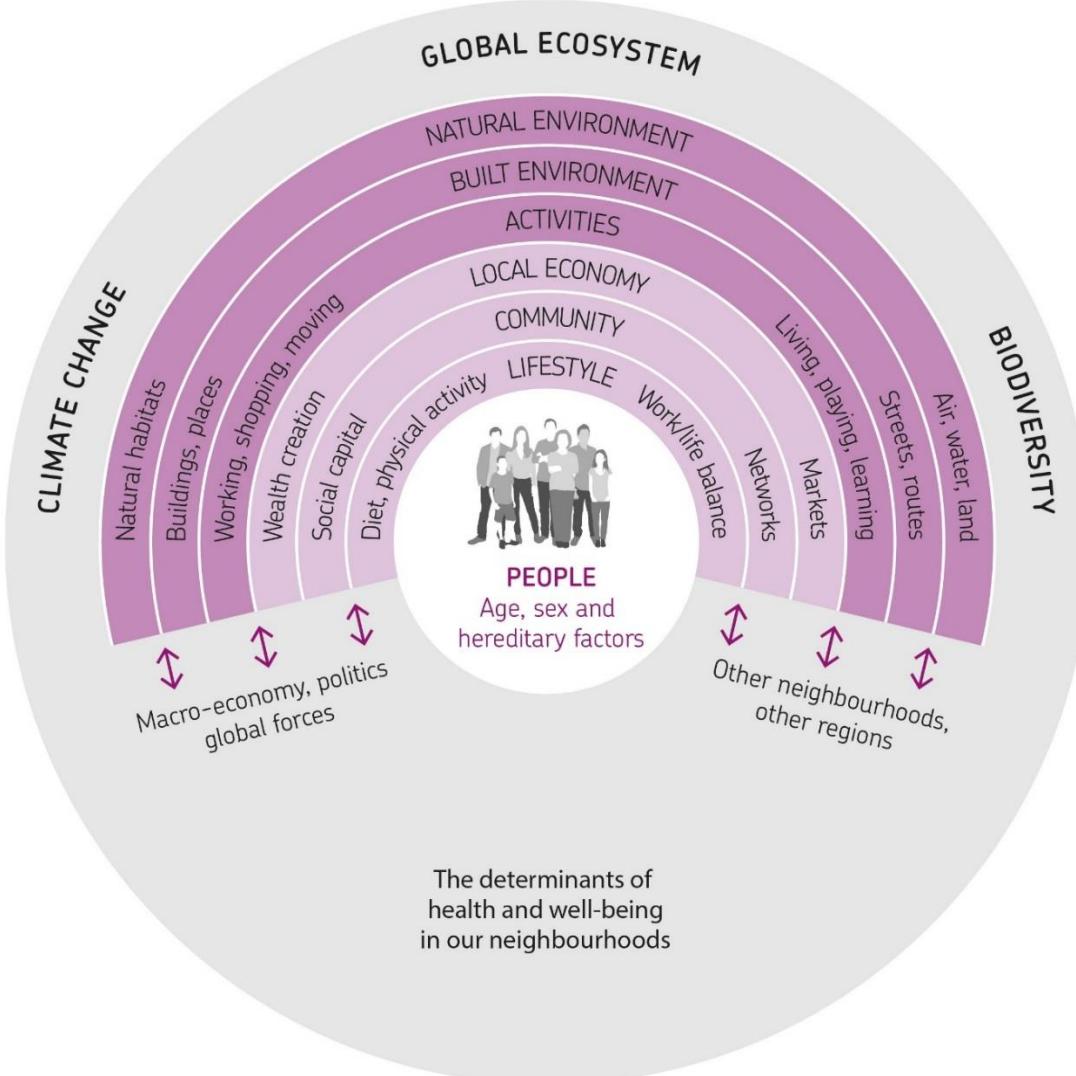
2.3.11 Well-being looks at the ability of every individual to realise their potential, as well as their capacity to cope with the normal stresses of life, to work productively and to contribute to their community.

What can affect health and well-being?

2.3.12 Health and well-being are influenced by a range of factors.

2.3.13 Diet, smoking, drinking and exercise can all affect our health and well-being as individuals. At a community level, health and well-being can be affected by how friendly and supportive we are to each other. In the wider society, the availability of jobs and how we protect the environment can influence health. Changes in any of these, and other, factors can either improve and protect our health and well-being or be harmful. These effects can be felt on both our physical and mental health.

Figure 2-1 Examples of common influences on our health and well-being



Source: Based on the Whitehead and Dahlgren diagram as amended by Barton and Grant

What does the Health Impact Assessment cover?

2.3.14 At the same time as the Stage One Pre-Application Consultation in 2014, Horizon also consulted on the Health Impact Assessment Scoping Report. This explained the issues on which the assessment proposed to focus. Following on from this, a range of factors were assessed related to health and well-being, including:

- demand for medical and health services;
- employment, income and economic development;
- education and training;
- community identity, social networks and culture;
- physical activity;
- lifestyle and behaviour;

- air quality and noise;
- housing;
- transport;
- public understanding of risk; and
- reliable, affordable and low-carbon energy generation.

2.3.15 The Health Impact Assessment looks at six primary communities based on how close they are to the Power Station Site and other related works, namely communities living:

- near the Wylfa Newydd Development Area;
- near or beside the local road network (A5025, A55, A5 and A487);
- near Dalar Hir;
- near or in Holyhead and near Parc Cybi;
- on Anglesey and in north Wales; and
- in Wales and beyond the borders of Wales.

2.3.16 The Health Impact Assessment also looks at the effects of the Project on four groups of people who are sensitive to change:

- children and young people;
- older people;
- people with poor health (physical and mental health); and
- people who are deprived, including those on low incomes.

What does the Health Impact Assessment not cover?

2.3.17 The Health Impact Assessment Scoping Report also identified issues assessed by other reports (such as the Environmental Statement) that would not be considered in the Health Impact Assessment, for example water quality and odour.

2.3.18 The Health Impact Assessment team has had a watching brief on issues related to water. This has concluded that the Licensable Marine Activities should continue to be outside the scope of the Health Impact Assessment.

2.3.19 Government policy sets out the way in which decisions are made on applications to develop nuclear power stations. The Government states that the application should be determined on the basis that regulation would adequately mitigate radiation exposure to workers, the public and the environment. Based on this clear direction, the Health Impact Assessment does not assess actual radiological effects. The potential radiological effects of the Project are examined in the Environmental Statement radiological assessment (Application Reference Numbers 6.2.14 and 6.4.14), as well as in technical documents for licensing and regulating nuclear power stations. From design to construction and through to operation, the Power Station has been, and would continue to be, scrutinised by independent regulators. The Power Station has been designed to avoid risks to the public. Permission to operate would be dependent on licensing and continual monitoring. These steps

reduce risks to health and well-being. The remaining, or residual, risks are either:

- low in probability (such as unplanned events); or
- low in magnitude (such as regulated emissions).

2.3.20 The electrical infrastructure on the Wylfa Newydd Development Area (e.g. an electrical substation at the Site Campus) is not expected to affect local communities. The power line connection to the Power Station is considered by National Grid in their Health Impact Assessment work for the north Wales Connection Project. The potential for electromagnetic fields effects from such power lines is not part of our Health Impact Assessment.

2.4 Health effects, mitigation and enhancement

Effects of the Project on health and well-being

2.4.2 As part of the assessments, Horizon has been working to identify the likely significant health and well-being effects of the Project.

2.4.3 Measures to help reduce adverse effects (mitigation), as well as those to help improve beneficial effects, are discussed in different documents across the application. The Health Impact Assessment has taken all these measures into account and summarises those included in the Project due to the Health Impact Assessment work. A Mitigation Route Map (Application Reference Number: 8.14) is included in the application so that readers can see all the measures and can locate them in the different documents.

Benefits

Employment

2.4.4 Working improves mental and physical health.

Construction

2.4.5 At its peak, the Project would create up to 9,000 jobs on Anglesey and will employ at least 2,000 local people. The construction activity, and the arrival, and presence, of the construction workers will create additional markets for goods and services on Anglesey.

Operation

2.4.6 The expected 60-year operation of the Wylfa Newydd Power Station would provide long-term benefits from the 850 permanent jobs expected to be created. These are expected to be high quality with good career progression and pay. The local health opportunity is from maximising employment of existing residents.

2.4.7 There will also be outage periods when each reactor would be shut down for maintenance and refuelling. This will require a workforce of approximately 1,000 for short-term periods during operation.

2.4.8 The Project will employ hundreds of people, including as many local people as possible, and it will bring economic benefits to Anglesey and north Wales.

Mitigation commitments

2.4.9 Mitigation relating to employment includes promoting local employment opportunities during construction and during operation.

Investment

2.4.10 A project of this size brings investment to the local area, the region and the country, which creates direct and indirect jobs and economic opportunities. This includes the benefits of the provision of goods and services to construction workers.

2.4.11 Horizon conducted a community survey to ask people's views on the Project. A market research company spoke, by telephone, with just over 500 people across Anglesey. In this survey most people (83%) agree that the Power Station would provide opportunities for local people. There is a high level of expectation amongst respondents for the Project to bring local economic benefits. This expectation underpins the support and good will for the Project on Anglesey and demonstrates the central requirement for the processes of design, mitigation and enhancement to deliver these opportunities.

2.4.12 The Project would benefit working people, their dependants and the wider economy. This investment is also an opportunity to improve the health and well-being of people living on Anglesey and in the wider north Wales area, for example by reducing levels of deprivation.

Mitigation commitments

2.4.13 Mitigation relating to investment includes promoting local employment opportunities during operation.

Jobs, skills and education

Construction and operation

2.4.14 As explained in the Jobs and Skills Strategy, Horizon plans to be active in engaging local people to fulfil many of the job roles expected to be available as part of the Project. This would create many types of opportunities for local workers, young people, school leavers and graduates, as well as the currently under-employed. Supporting education and training would make a big difference to the long-term health and well-being of the communities of Anglesey, e.g. through the ability to get higher skilled and higher paid employment. This will allow greater spend on goods and services that are good for health.

Mitigation commitments

2.4.15 Mitigation relating to jobs, skills and education includes the following:

- encouraging education in, and recruitment into, professions that are relevant to the Project;

- supporting science, technology, engineering and mathematics (STEM) subjects and related improvements to secondary school infrastructure;
- promoting local education, upskilling and training during construction and operation; and
- supporting local young people from disadvantaged backgrounds.

Local environment

Construction and operation

2.4.16 The Project would bring improvements to the local environment in the short, medium and long term. For example, Horizon's proposed highway works would upgrade parts of the A5025 to make the road safer to travel for everyone. The highway improvements would also reduce traffic noise and air pollution in the communities of Valley, Llanfachraeth, Llanfaethlu and Llanrhuddlad (at Cefn Coch). In a few locations, the A5025 Off-line Highway Improvements would bring traffic closer to dwellings, for example at Parc Llynnon in Llanfachraeth. In such cases there may be some ongoing small reduction in air quality and some annoyance due to traffic related noise.

Mitigation commitments

2.4.17 Mitigation relating to the local environment includes the following:

- plans for monitoring respiratory health; and
- information on air quality and noise levels for residents.

The Power Station

Operation

2.4.18 When operational, the Power Station would help to bring a stable supply of low-carbon electricity to Wales and the UK. This has many direct and indirect effects on health and well-being, for example, at the most basic level, electricity enables people to heat and light their homes and to cook food. A stable power supply helps health and social care services to operate, jobs and economic activity to continue, and technology to function. Low-carbon energy generation can also help to reduce climate change and its many adverse effects on physical and mental health and well-being.

2.4.19 In the community survey most people (71%) stated that they supported having nuclear power on Anglesey. As might be expected, communities living alongside the Wylfa Newydd Development Area are familiar with living next to a nuclear facility. Academic studies in other areas suggest such communities have a detailed understanding of the hazards and risks of generating electricity, and tend not to see them as something out of the ordinary. Most people (62%) agree that nuclear power stations are safe and reliable, while 16% disagree and 21% express no firm opinion. Most people (68%) also stated that they feel positive about the Wylfa Newydd Power Station.

Mitigation commitments

- 2.4.20 Being an inherent benefit of the Project, there is no requirement for mitigation or additional enhancement with regards to generating electricity.
- 2.4.21 Horizon will disseminate information about construction and operational safety.

Long-term benefits

Operation

- 2.4.22 The Project is expected to deliver the benefit of better roads. Horizon would also work with community groups to strengthen community identity and networks. Additionally, Horizon is discussing the provision of healthcare services with healthcare providers and emergency services. Horizon aims to ensure improvements are designed to meet both local and workforce needs, while leaving an appropriate level of care once construction is complete. The Welsh Language Impact Assessment (Application Reference Number: 8.2) notes that this would include appropriate access for Welsh speakers to receive health services in their first language.

Mitigation commitments

- 2.4.23 Mitigation relating to long-term benefits includes supporting the Isle of Anglesey County Council and Betsi Cadwaladr University Health Board to develop their own Workforce Strategy.

Adverse impacts

Air quality and noise

Construction

- 2.4.24 During construction activities, people living closest to the Wylfa Newydd Development Area and the local road network may experience a change in air quality, for example due to dust generated by construction activities or emissions from construction vehicles and machinery.
- 2.4.25 Residents in properties located nearer to the Wylfa Newydd Development Area and the local road network (A5025, A55, A5 and A487) could also hear construction noise effects, which could potentially cause sleep disturbance or annoyance.

Mitigation commitments

- 2.4.26 Mitigation relating to air quality and noise includes the following:
 - plans for monitoring respiratory health and sleep disturbance;
 - information on air quality and noise levels for residents; and
 - support and a communication channel for those experiencing increased emissions and disturbance.

Housing

Construction

2.4.27 The arrival of the construction workers may mean that some landlords increase rents above existing levels. A small number of people in rented properties across Anglesey (including near the Wylfa Newydd Development Area and in or near Holyhead) could be affected by any such rent increase. This could result in some people moving to accommodation that is further from existing jobs, schools and friends.

Mitigation commitments

2.4.28 Mitigation relating to housing includes the following:

- developing a sensitive lettings policy.
- plans for monitoring pressures on the housing market; and
- registering all construction workers with the Worker Accommodation Management Service.

Transport

Construction

2.4.29 Increased numbers of vehicles on the local road network, particularly the A5025 which has less existing capacity, could generally increase accident risk. Horizon's A5025 Off-line Highway Improvements, Marine Off-Loading Facility, Logistics Centre, Park and Ride facility and bus services for workers would all contribute to reducing the effects of Project-related traffic. Despite this, congestion could affect healthcare related journey times across Anglesey and onto the mainland.

Mitigation commitments

2.4.30 Mitigation relating to transport includes the following:

- promoting road safety, car sharing and travel planning.
- supporting pedestrian access from Tregele to the proposed new alignment of the Wales Coast Path; and
- plans for monitoring of accident hotspots.

Labour churn

Construction

2.4.31 The growth, and then the reduction, of this workforce will have implications for employers on the Isle of Anglesey. At its peak, in year 5, the Project will require up to 690 security, site services and clerical staff for work on- and off-site. This could create competition with some local public sector employers (e.g. health and social care community services) which could, in turn, place a strain on local services.

Mitigation commitments

2.4.32 Mitigation relating to labour churn includes supporting IACC and BCUHB to develop their own Workforce Strategies which would allow for the growth of the construction workforce, and its legacy, to be planned for.

Workforce

Construction

2.4.33 At its peak, the Project would create around 9,000 jobs on Anglesey and will employ at least 2,000 local people who already live across Anglesey and parts of the mainland, and who would commute daily. This means that, at peak, around 7,000 people will require accommodation. Horizon's Workforce Accommodation Strategy sets out proposals to house them. In short there will be:

- a Site Campus at the Wylfa Newydd Development Area that would provide temporary accommodation, at peak, for up to 4,000 construction workers (and day-to-day supporting facilities); and
- around 3,000 construction workers who would use existing accommodation across Anglesey and parts of the mainland (e.g. private rental or hotels, benefiting the local economy).

2.4.34 The influx of temporary workers would likely have an effect on local communities. In the community survey (undertaken prior to the Site Campus proposals, but when similar Temporary Worker Accommodation was proposed in the area) most people (81%) reported that that their place of residence would not mean less to them if the Wylfa Newydd Power Station is built. Nevertheless, Horizon recognises that there may be changes in social networks and culture due to the new mix of people, as well as negative influences on how healthy and safe communities are (e.g. alcohol and tobacco use or anti-social behaviour). The relatively isolated and self-contained nature of the Site Campus is expected to greatly reduce the potential for adverse effects. Furthermore, workers using existing accommodation would be dispersed across Anglesey and parts of the mainland so are not likely to create an undue burden on individual communities. Even so, Horizon will be working closely with communities to avoid or reduce, wherever possible, activities that could have an adverse effect. This issue is also discussed in the Welsh Language Impact Assessment in relation to the potential change in the balance of Welsh and non-Welsh speakers in communities.

2.4.35 The workforce is expected to be professional, hardworking and law-abiding. Nevertheless, Horizon has policies for workforce behaviour/conduct, a Workforce Management Strategy and a Workforce Accommodation Strategy that will provide a clear standard for all workers. Horizon will require contractors to put in place similar arrangements, and to enforce an equal standard of behaviour/conduct.

Mitigation commitments

2.4.36 Mitigation relating to the workforce includes the following:

- appropriate healthcare provision or contributions for the construction workforce;
- appropriate occupational health and hygiene services for the construction workforce;
- appropriate provision of emergency services for the construction workforce;
- plans for monitoring the construction workforce access to community healthcare services;
- registering all construction workers with on-site medical and healthcare services;
- management of any worker behaviour/conduct issues, promotion of community cohesion and supporting the integration of incomers into host communities;
- plans for monitoring of community lifestyles and behaviour;
- promoting occupational health and hygiene and good worker behaviour/conduct;
- training on community relations, language, culture, health, safety and environmental issues;
- all personnel and contractors would receive a copy of the Code of Conduct with which they would be required to comply;
- plans for monitoring of safeguarding with regard to vulnerable adults and children; and
- safeguarding the welfare of Horizon's employees and its supply chain and, in relation to the activities of its construction workforce, the general public.

Community identity

2.4.37 Construction works associated with the Project would change the views and landscape character of the local area, as well as the community makeup of the area, which in turn could affect community identity, social networks, language and culture. This is most likely when considering the Wylfa Newydd Development Area (including the Site Campus).

2.4.38 Social networks are important. They exist in the connections between people, in the places that people think of as home, and in the range of activities that take place in communities from local planning meetings and summer fairs to celebrations of local history and cultural traditions. Changes to the landscape, or to footpaths, and other disruptions to existing ways of doing things can affect these social networks. This can change people's sense of their place in sometimes profound and unpredictable ways. In the community survey it came through clearly that people on the Isle of Anglesey get along well with each other, have strong social networks and value the Welsh way of life. Horizon recognises that social networks are particularly important in supporting the youngest and the oldest members of society and Horizon is continuing to work

on ways to celebrate local culture, support local identity (including in relation to Welsh language) and maintain community networks.

Mitigation commitments

2.4.39 Mitigation relating to community identity includes initiatives to enhance and celebrate local identity.

Walking and cycling

2.4.40 Walking, cycling and other active pursuits are important for physical and mental health. The communities nearer to the Wylfa Newydd Development Area are likely to notice the most change, as the network of footpaths and cycle routes that they use for physical activity would be subject to closures or diversions that would reduce the appeal to walk or cycle because of disruption, perceived lack of safety and reduced tranquillity.

Mitigation commitments

2.4.41 Mitigation relating to walking and cycling includes the following:

- promoting local walking, cycling, public transport and leisure facilities; and
- supporting and enhancing active travel access for people using the Copper Trail at Tregele.

Accountability for mitigation measures

2.4.42 Horizon will establish and chair a Health and Well-being Monitoring Group that will include members of the health and emergency services to monitor the implementation of the HIA mitigation and provide advice on its delivery. When appropriate Horizon would enable the analysis of routinely collected public health data, relevant to the Project. This would inform discussion by the Health and Well-being Monitoring Group. If appropriate the Group will discuss the need for additional mitigation or follow-up investigation.

2.4.43 Horizon will appoint a bi-lingual Community Involvement Officer to develop and implement many of the HIA mitigation measures during construction and operation of the Project. The Community Involvement Officer will be a key interface between the local community, key stakeholders and Horizon management. The Community Involvement Officer will be involved with implementation of HIA measures as well as relevant Environmental Statement, Welsh Language Impact Assessment (Application Reference Number: 8.21) and Equality Impact Assessment (Application Reference Number: 8.22) mitigation. Responsibilities will include implementing mitigation during construction and operation.

Effects of the Off-Site Power Station Facilities and the Associated Development on health and well-being

2.4.44 Horizon considered the ways in which the Off-Site Power Station Facilities and the Associated Development might affect health and well-being. This was done by undertaking separate Health Impact Assessment exercises for each. The exception to this approach is the Site Campus, which due to its cross-cutting

relevance of health and well-being topics, has been assessed in the comprehensive Health Impact Assessment work as a component of the activities at the Wylfa Newydd Development Area (Application Reference Number: 8.19).

- 2.4.45 Horizon used the Wales Health Impact Assessment Support Unit questions to help decide whether or not an assessment should be carried out. This is called screening. Following best practice, the early consideration of potential health effects allowed any potentially significant adverse effects to either be designed out or reduced through Project wide mitigation.
- 2.4.46 The screening for each rapid Health Impact Assessment therefore concluded that neither the Off-Site Power Station Facilities nor the Associated Development would have significant effects on health requiring further assessment. Some health effects of the Off-Site Power Station Facilities and the Associated Development link into the wider Project health effects and have therefore been considered, when relevant, in the main topic sections of our Health Impact Assessment (Application Reference Number: 8.19).

Overall effects on health and well-being

- 2.4.47 Table 2-1 and table 2-2 show a range of beneficial and adverse effects for the different geographic areas and the vulnerable population groups that may be affected by the Project.
- 2.4.48 To get an idea of the overall, or cumulative, effect of the Project the assessment looked across the whole Project and at other projects that have taken place, or that can reasonably be foreseen. This indicates that the overall effect for population health, taking account of differing effects across vulnerable groups and geographic levels, of the Wylfa Newydd Project is considered to be beneficial.
- 2.4.49 Minor to major beneficial effects are expected to occur predominantly at the local, regional, national and international geographic levels, with many such benefits also extending to site-specific communities. Minor to moderate adverse effects are expected to occur mainly for some site-specific communities, but also in some cases for the local and regional level. The majority of adverse effects would be during the construction stage. Many of the beneficial effects would start in the construction stage and most would carry on into the operation stage.

Table 2-1 Summary of health and well-being effects for geographic population groups

	Geographic population groups					
	Site specific	Site specific	Site specific	Site specific	Local and regional	National and international
	Communities living near the Wylfa Newydd Development Area	Communities living near or beside the local road network (A5025, A55, A5 and A487)	Communities living near Dalar Hir	Communities living in or near Holyhead and near Parc Cybi	Communities living on Anglesey and in north Wales	Communities living in Wales and beyond the borders of Wales
Description of health and well-being effect	<p>Health and well-being effects relate to the combined influences from:</p> <p><u>Construction</u> (medium term effects lasting years)</p> <ul style="list-style-type: none"> air quality, dust and noise emissions on the Wylfa Newydd Development Area (including some short-term and very short-term emission peaks); the use of community NHS services by construction workers contributing to pressure on NHS capacity near Cemaes; the presence of off-shift construction workers near Cemaes contributing to less healthy or less safe communities (e.g. change in use of alcohol and smoking, and/or change in sexual activity), or to changes in social networks and culture; visual, economic and cultural changes to local context and identity (including night-time lighting); changes in physical activity due to both adverse effects of diversions (e.g. walking and cycling routes) and beneficial effects of alternative opportunities being provided; and <p><u>Operation</u> (long term effects lasting decades)</p> <ul style="list-style-type: none"> mental health linked to understanding of risk, how the risk and benefit of the Wylfa Newydd Power Station are understood and the expectations of people about the Wylfa Newydd Power Station. 	<p>Health and well-being effects relate to the combined influences from:</p> <p><u>Construction</u> (medium term effects lasting years)</p> <ul style="list-style-type: none"> reduced road safety, as well as additional air quality and noise emissions from Project vehicles on the local road network; benefits to road safety from the A5025 Highway Improvements, as well as the use of the Park and Ride and Logistics Centre in reducing additional vehicle movements on the A5025; benefits from the A5025 Highway Improvements in bypassed communities on the A5025 from reduced traffic noise, improved road safety and promoting stronger social networks and greater social support; and <p><u>Operation</u> (long term effects lasting decades)</p> <ul style="list-style-type: none"> wider benefits from the A5025 Highway Improvements to improved journey times for the rural community when accessing healthcare, schools and services in larger settlements. 	<p>No likely significant population health effects are expected at this location.</p>	<p>Health and well-being effects relate to the combined influences from:</p> <p><u>Construction</u> (medium term effects lasting years)</p> <ul style="list-style-type: none"> the use of community NHS services by construction workers and HGV drivers contributing to pressure on NHS capacity near Holyhead; the presence of off-shift construction workers and HGV drivers in Holyhead contributing to less healthy or less safe communities, or to changes in social networks and culture; and beneficial economic effects of workers spending locally in Holyhead. 	<p>Health and well-being effects relate to the combined influences from:</p> <p><u>Construction</u> (medium term effects lasting years)</p> <ul style="list-style-type: none"> reduced road safety and longer health related journey times due to Project vehicles on the local road network; the use of community NHS services by construction workers contributing to pressure on NHS capacity (alternatively, there may be benefits if we align with the NHS to build local capacity); the presence of construction workers contributing to housing competition, communicable disease, less healthy or less safe communities and to changes in social networks and culture; beneficial effects from supporting local people to upskill and access construction stage jobs, as well as a potential adverse effect due to labour churn in health and social care community services; and beneficial economic effects of construction workers spending locally. <p><u>Operation</u> (long term effects lasting decades)</p> <ul style="list-style-type: none"> beneficial effects from supporting local people to upskill and access operational stage jobs; and beneficial economic effects of an improved highway network following the A5025 Highway Improvements. 	<p>Health and well-being effects relate to the combined influences from:</p> <p><u>Operation</u> (long term effects lasting decades)</p> <ul style="list-style-type: none"> mental health linked to understanding of risk, how the risk and benefit of the Wylfa Newydd Power Station are understood and the expectations of people about the Wylfa Newydd Power Station; the national health benefit of an uninterrupted and affordable electricity supply; and the global health benefit from reducing the effects of climate change.

	Geographic population groups					
	Site specific	Site specific	Site specific	Site specific	Local and regional	National and international
	Communities living near the Wylfa Newydd Development Area	Communities living near or beside the local road network (A5025, A55, A5 and A487)	Communities living near Dalar Hir	Communities living in or near Holyhead and near Parc Cybi	Communities living on Anglesey and in north Wales	Communities living in Wales and beyond the borders of Wales
Significance of health and well-being effect	For the general population (the majority of people) near the Wylfa Newydd Development Area, the overall residual population health effect from the Project is considered to be minor adverse . For relevant vulnerable groups, the combination of proximity to environmental and social change and increased sensitivity to such changes may result in up to a moderate adverse effect (this takes into account the effects described in the columns for local (Anglesey), regional (north Wales) and national effects (Wales) that would also be experienced at this site-specific location).	For the general population (the majority of people) beside the local road network, the overall residual population health effect from the Project is considered to be negligible . For relevant vulnerable groups, the combination of proximity to roads and increased sensitivity to traffic effects may result in up to a minor adverse effect (this takes into account local, regional and national effects that would also be experienced at this site-specific location).	As likely significant site-specific population health influences are not expected, the overall residual population health effect relates to distributed local and regional effects. The effect is considered to be negligible for the general population and up to a minor beneficial effect for relevant vulnerable groups.	For the general population (the majority of people) in or near Holyhead and near Parc Cybi, the overall residual population health effect from the Project is considered to be negligible . For relevant vulnerable groups (despite some short-term peaks in adverse effects at the busiest construction times), the combination of economic opportunities from workers spending locally and high levels of existing deprivation in and near Holyhead may result in up to a minor beneficial effect (this takes into account local, regional and national effects that would also be experienced at this site-specific location).	For the general population (the majority of people) of Anglesey and north Wales, the overall residual population health effect from the Project is considered to be up to minor beneficial . For relevant vulnerable groups (despite some short-term peaks in adverse effects at the busiest construction times), the combination of local and regional economic opportunities and increased sensitivity to their benefits may result in up to a moderate beneficial effect (this takes into account both site-specific and national and international influences).	For the general population (the majority of people) of Wales and beyond the borders of Wales, the overall residual population health effect from the Project is considered to be up to minor beneficial . For relevant vulnerable groups, the combination of affordable, uninterrupted, low-carbon electricity and increased sensitivity to its benefits may result in up to a moderate beneficial effect (this takes into account both site-specific and local and regional influences).

Table 2-2 Summary of health and well-being effects for potentially vulnerable groups within geographic populations

	Potentially vulnerable groups			
	Children and young people	Older people	People with existing poor health (physical and mental health)	People who are deprived, including those on low incomes
Description of health and well-being effect	<p>Health and well-being effects relate to the combined influences from:</p> <p><u>Construction</u> (medium term effects lasting years)</p> <ul style="list-style-type: none"> air quality, dust and noise emissions on the Wylfa Newydd Development Area (including some short-term and very short-term emission peaks); reduced road safety, as well as additional air quality and noise emissions from Project vehicles on the local road network; the presence of construction workers contributing to communicable disease, less healthy or less safe communities and to changes in social networks and culture; 	<p>Health and well-being effects relate to the combined influences from:</p> <p><u>Construction</u> (medium term effects lasting years)</p> <ul style="list-style-type: none"> air quality, dust and noise emissions on the Wylfa Newydd Development Area (including some short-term and very short-term emission peaks); reduced road safety, as well as additional air quality and noise emissions from Project vehicles on the local road network; the presence of construction workers contributing to communicable disease and to changes in social networks and culture; a potential adverse effect due to labour churn in health and social care community services; 	<p>Health and well-being effects relate to the combined influences from:</p> <p><u>Construction</u> (medium term effects lasting years)</p> <ul style="list-style-type: none"> air quality, dust and noise emissions on the Wylfa Newydd Development Area (including some short-term and very short-term emission peaks); longer health related journey times as well as additional air quality and noise emissions from Project vehicles on the local road network; the presence of construction workers contributing pressure on NHS capacity 	<p>Health and well-being effects relate to the combined influences from:</p> <p><u>Construction</u> (medium term effects lasting years)</p> <ul style="list-style-type: none"> the presence of construction workers contributing to housing competition; a potential adverse effect due to labour churn in health and social care community services; mental health linked to understanding of risk, how the risk and benefit of the Wylfa Newydd Power Station are understood and the expectations of

	Potentially vulnerable groups			
	Children and young people	Older people	People with existing poor health (physical and mental health)	People who are deprived, including those on low incomes
	<ul style="list-style-type: none"> visual, economic and cultural changes to local context and identity (including night-time lighting); changes in physical activity due to both adverse effects of diversions (e.g. walking and cycling routes) and beneficial effects of alternative opportunities being provided; benefits to road safety from the A5025 Highway Improvements, as well as the use of the Park and Ride and Logistics Centre in reducing additional vehicle movements on the A5025; benefits from the A5025 Highway Improvements in bypassed communities from reduced traffic noise; beneficial effects from supporting local people to upskill and access construction stage jobs; <p><u>Operation</u> (long term effects lasting decades)</p> <ul style="list-style-type: none"> beneficial effects from supporting local people to upskill and access operational stage jobs; beneficial wider economic effects of an improved highway network following the A5025 Highway Improvements; and the national health benefit of an uninterrupted and affordable electricity supply. 	<ul style="list-style-type: none"> visual, economic and cultural changes to local context and identity (including night-time lighting); changes in physical activity due to both adverse effects of diversions (e.g. walking and cycling routes) and beneficial effects of alternative opportunities being provided; benefits to road safety from the A5025 Highway Improvements, as well as the use of the Park and Ride and Logistics Centre in reducing additional vehicle movements on the A5025; benefits from the A5025 Highway Improvements in bypassed communities from reduced traffic noise, improved road safety and promoting stronger social networks and greater social support; <p><u>Operation</u> (long term effects lasting decades)</p> <ul style="list-style-type: none"> beneficial wider economic effects of an improved highway network following the A5025 Highway Improvements both to the economy and from improved journey times for rural community when accessing healthcare; and the national health benefit of an uninterrupted and affordable electricity supply. 	<p>(alternatively, there may be benefits if we align with the NHS to build local capacity);</p> <ul style="list-style-type: none"> a potential adverse effect due to labour churn in health and social care community services; changes in physical activity due to both adverse effects of diversions (e.g. walking and cycling routes) and beneficial effects of alternative opportunities being provided; benefits from the A5025 Highway Improvements in bypassed communities from reduced traffic noise, improved road safety and promoting stronger social networks and greater social support; <p><u>Operation</u> (long term effects lasting decades)</p> <ul style="list-style-type: none"> wider benefits of an improved highway network following the A5025 Highway Improvements both to the economy and from improved journey times for rural community when accessing healthcare; and the national health benefit of an uninterrupted and affordable electricity supply. 	<p>people about the Wylfa Newydd Power Station.;</p> <ul style="list-style-type: none"> beneficial effects from supporting local people to upskill and access construction stage jobs; beneficial economic effects of workers spending locally; benefits from the A5025 Highway Improvements in bypassed communities from promoting stronger social networks and greater social support; <p><u>Operation</u> (long term effects lasting decades)</p> <ul style="list-style-type: none"> beneficial effects from supporting local people to upskill and access operational stage jobs; beneficial wider economic effects of an improved highway network following the A5025 Highway Improvements; the national health benefit of an uninterrupted and affordable electricity supply; and the global health benefit from reducing the effects of climate change.
Significance of health and well-being effect	<p>Due to developmental stage and other factors (e.g. more time spent outdoors and resting during the day), children and young people are more sensitive to air pollution and sleep disturbance. Children and young people are also sensitive to changes in road safety risk, both as road users (pedestrians/cyclists) and as passengers in vehicles. Young people may benefit directly from employment and educational opportunities and indirectly as dependants.</p> <p>The overall residual population health effect from the Project for this potentially vulnerable group is expected to be up to minor beneficial. This takes account of effects across geographic levels (site-specific, local, regional, national and international (beyond the borders of Wales).</p>	<p>Older peoples' vulnerabilities relate to biological and social factors (e.g. lower bone density and being more prone to injuries from falls, or greater reliance on social networks based on the existing social or landscape context). Older people are less likely to benefit directly from employment and educational opportunities, although they may benefit indirectly from those providing care gaining good quality employment locally.</p> <p>The overall residual population health effect from the Project for this potentially vulnerable group is expected to be up to minor adverse. This finding takes account of effects across timescales and geographic levels (site-specific, local, regional, national and international). This finding also acknowledges that, for older people, the potential adverse effects during the construction stage may have a greater influence than the potential benefits during the operational stage.</p>	<p>People with existing poor health may be more sensitive to changes in air quality and noise (e.g. worsening asthma or reduced mobility increasing time spent at home). People with multiple or complex long-term health conditions are particularly reliant on, or more frequently use, medical and health-care services.</p> <p>The overall residual population health effect from the Project for this potentially vulnerable group is expected to be up to minor adverse. This finding takes account of effects across timescales and geographic levels (site-specific, local, regional, national and international). This finding also acknowledges that, for people with existing poor health, the potential adverse effects during the construction stage may have a greater influence than the potential benefits during the operational stage.</p>	<p>People living in deprivation (including those on low incomes) may be particularly sensitive to housing rental and purchase prices. Beneficial effects are expected for people living in deprivation from employment and educational opportunities. Importantly, such opportunities have the potential to reduce inequalities.</p> <p>The overall residual population health effect from the Project for this potentially vulnerable group is expected to be up to minor beneficial. This takes account of effects across geographic levels (site-specific, local, regional, national and international).</p>

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2.5 What happens next

- 2.5.1 Submission of the Health Impact Assessment (Application Reference Number: 8.19) as part of the application for development consent is an important milestone, but is not the conclusion of Horizon's work on health and well-being with local stakeholders.
- 2.5.2 Health stakeholders will be involved throughout the application determination process and, if the Project is approved by the Secretary of State, throughout the Project itself. Health stakeholders would be involved in the planning and implementation of measures to support local healthcare and communities, as well as in monitoring the Project. Recognising the importance of ongoing health stakeholder involvement, a Health and Well-being Monitoring Group will be set up.
- 2.5.3 The next step in work with health stakeholders will be during the period when the application for development consent is being considered by the Secretary of State. During that time, Horizon will work with health stakeholders and the main contractor (who would build the Power Station) to confirm the practical details needed to implement the mitigation and enhancement measures described in the Health Impact Assessment.
- 2.5.4 If the Project is approved, the Health and Well-being Monitoring Group would be a point of contact and forum for discussing monitoring results, community concerns and further opportunities for health and well-being, for example the changing needs of young people or the need for additional focus on inclusion or empowerment for certain minority groups.

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