

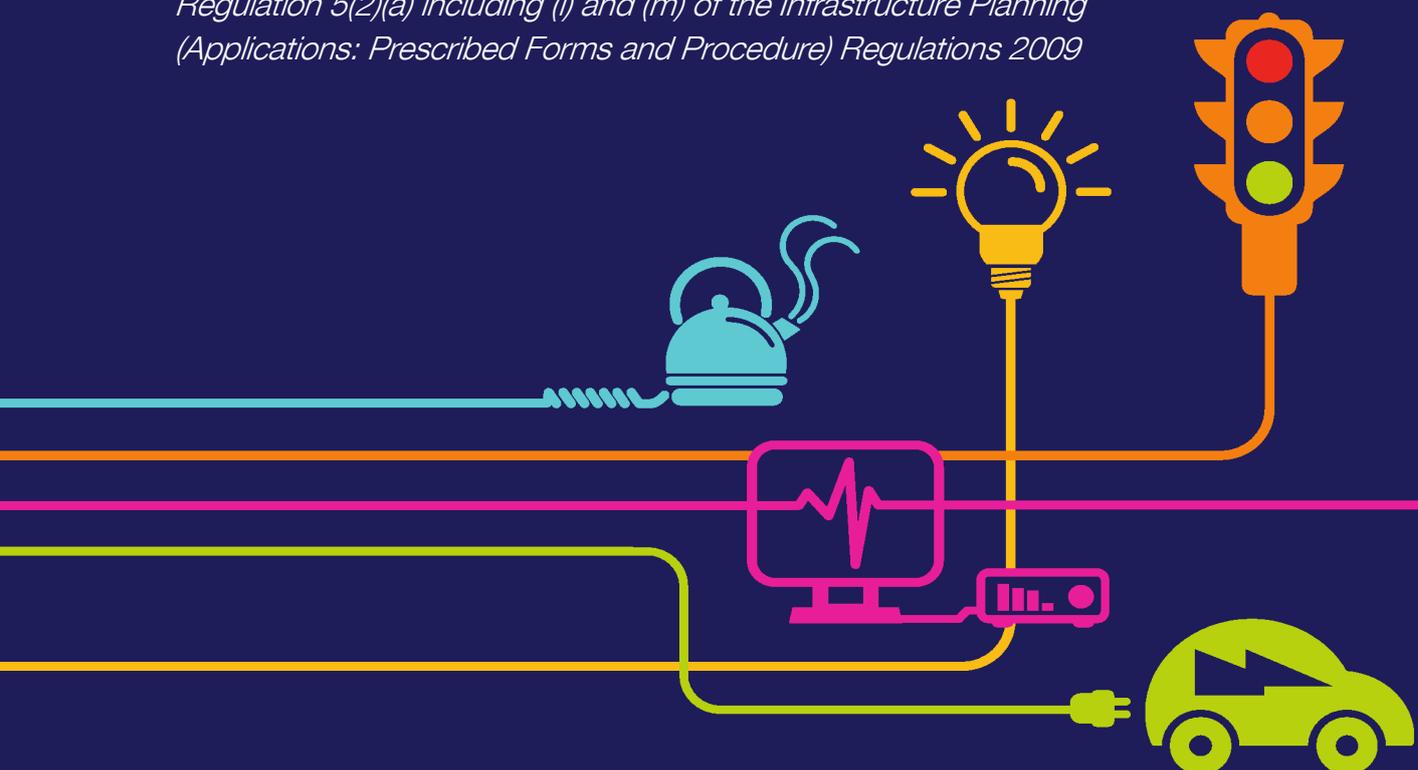
DOCUMENT 5.20.2.2

Project Descriptions

Chapter 20 – Appendix 2

National Grid (North Wales Connection Project)

Regulation 5(2)(a) including (l) and (m) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009



national**grid**

North Wales Connection Project

Volume 5

5.20.2.2 Appendix 20.2 Project Descriptions

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1 Inter-Project Descriptions

The following sections provide a description of the other projects considered in the inter-project cumulative assessment (**Document 5.20**) with the exception of Wylfa Newydd which is described in Appendix 20.1 (**Document 5.20.2.1**). The locations of the projects that are described below are shown on Figure 20.2 (**Document 5.20.1.2**).

1.1 WYLFA NUCLEAR POWER STATION DECOMMISSIONING

Development Description

1.1.1 The Health and Safety Executive (HSE) now the Office of Nuclear regulation (ONR) granted consent, subject to certain conditions in September 2013 to decommission Wylfa Power Station.

1.1.2 The decommissioning project at Wylfa is divided into three phases as follows:

- Care and Maintenance Preparations is the first phase of decommissioning and is estimated to take around 10 years. During this phase most of the radioactive and non-radioactive plant and buildings on the site (other than the reactor building) will be dismantled and cleared.
- Care and Maintenance is the second phase of decommissioning which could potentially last for some decades, during which no significant dismantling will be carried out. The site will continue to be managed, monitored and maintained.
- Final Site Clearance is the last phase and is expected to take less than 10 years. This involves the dismantling of the remaining structures on the site, including the reactors and the clearance of any residual radioactivity to the applicable standard.

Development Boundary

1.1.3 Wylfa is located on the north coast of the Isle of Anglesey at Wylfa Head, near Cemaes Village. Magnox is the licensee of Wylfa under the Nuclear Installations Act 1965 (as amended). The UK Government's Nuclear Decommissioning Authority (NDA) owns the site and Magnox manages the site under contract to the NDA.

- 1.1.4 The nuclear licensed site at Wylfa covers approximately 21 hectares (ha) and can be considered as two parts:
- the area within the Inner Security Barrier (ISB); and
 - the conventional area.
- 1.1.5 Other than these two general areas, outside of the outer security fence are: the jetty, the information centre, simulator training building, reception centre, contractors car park, the off-site emergency control centre, emergency equipment storage compounds and the 132 kilovolt (kV) and 400 kV electricity substations. These substations provide the electrical connection to the power station site and are owned by National Grid Company. They are located in close proximity to the outer security fence, on land owned by NDA and leased to National Grid Company; the substations are not part of the decommissioning project.
- 1.1.6 The Wylfa Learning & Development Centre is located at Coleg Menai and it is not part of the decommissioning project.
- 1.1.7 The area within the ISB includes a number of buildings with internal plant and structures some of which are either radioactive themselves or which are contaminated with radioactive substances. The main buildings and plant within the ISB are the:
- reactor building;
 - three primary dry storage cells (DSCs) and waste storage vaults;
 - two secondary DSCs;
 - primary and diverse discharge fuel routes; and
 - active effluent treatment plant (AETP) (located within the reactor building).
- 1.1.8 The conventional area (outside the ISB but within the outer security fence) contains mostly non-radioactive plant and buildings. The main plant and buildings in this area are as follows:
- turbine hall;
 - cooling water pump house;
 - water treatment plant;
 - radioactive waste incinerator;

- carbon dioxide storage tanks;
- carbon dioxide plant (including vaporisation facilities);
- gas turbine plant;
- mechanical workshops, stores and engineering facilities; and
- administration block and offices.

Proposed Development Construction Timeframes and Durations

- 1.1.9 Care and Maintenance Preparations - Estimated to take around 10 years commencing in 2015. The site is now in the defuelling phase, following which work will then be undertaken to take the site into Care and Maintenance.
- 1.1.10 Care and Maintenance - It is proposed that this stage will last until 85 to 105 years after final shutdown. The care and maintenance entry point is currently planned to be 27 May 2026.
- 1.1.11 Final Site Clearance - expected to take less than 10 years.
- 1.1.12 It should also be noted that it will require in the order of 100 years to fully decommission Wylfa with the first phase of this process being completed by 2025.

1.2 PENRHOS LEISURE VILLAGE

Development Description

- 1.2.1 In April 2016 a hybrid planning application was granted which included:
- 1.2.2 Outline with all matters reserved except for means of access, for:
- a leisure village at Penrhos Coastal Park, London Road, Holyhead comprising:
 - up to 500 new leisure units including new lodges and cottages;
 - central new hub building comprising reception with leisure facilities including indoor sub-tropical water park, indoor sports hall, and cafes, bars, restaurants and retail;
 - central new Farmer's Market building;
 - central new spa and leisure building;

- a new café and watersports centre at the site of the former Boathouse;
- demolition of the Bathing House and the construction of a restaurant at its former location;
- demolition of other existing buildings including three agricultural barns and three residential dwellings;
- providing and maintaining 29 ha of publicly accessible areas with public car parking and enhancements to the Coastal Path, including:
 - managed walkways within 15 ha of woodland, the retention and enhancement of Grace's pond, Lily Pond, Scout's pond with viewing platforms, the Pet Cemetery, War Memorial, the Pump House and picnic area with bird feeding stations and hides with educational and bilingual interpretation signage created throughout;
 - creation of a new woodland sculpture trail and boardwalks and enhanced connection to the Coastal Path;
 - the beach will continue to be accessible to the public providing safe access to the shallow shelving water;
- a Combined Heat and Power Centre.
- land at Cae Glas: The erection of leisure village accommodation and facilities which have been designed to be used initially as a temporary construction workers accommodation complex for Wylfa B at land at Cae Glas, Parc Cybi, Holyhead comprising:
 - up to 315 lodges which will be initially sub divided for nuclear workers accommodation;
 - central hub building providing reception and canteen ancillary to accommodation;
 - a Park and Ride facility comprising up to 700 car parking spaces;
 - a new hotel;
 - a lakeside hub comprising restaurant, café, retail and bar;
 - new grass football pitch and cricket pitch; and

- a Combined Heat and Power Centre.

To be subsequently converted (post Wylfa B construction) into an extension to the Penrhos Coastal Park Leisure Village comprising:

- refurbished lodges and facility buildings to create high quality holiday accommodation (up to 315 family lodges);
 - a Visitor Centre and Nature Reserve allowing controlled public access; and
 - heritage Centre with visitor parking.
- land at Kingsland: The erection of a residential development which has been designed to be used initially as temporary construction workers accommodation at land at Kingsland, Kingsland Road, Holyhead comprising: Up to 320 new houses to be initially used as temporary construction workers accommodation. To be subsequently converted (post Wylfa B construction) into a residential development comprising: Up to 320 residential dwellings set in high quality landscaping and open spaces. Each phase of development will have ancillary development comprising car parking, servicing areas, open spaces and plant.
 - full detail for the change of use of the existing Estate buildings at Penrhos Coastal Park, London Road, Holyhead including the change of use for:
 - the Bailiffs Tower and outbuildings at Penrhos Home Farm from a cricket clubhouse to a visitors information centre, restaurant, café, bars and retail;
 - home Farm Barn and Cart Buildings from farm buildings to cycle and sports hire centre;
 - the Tower from residential to a Managers accommodation and ancillary office; and
 - Beddmanarch House from residential to a visitors centre.

Development Boundary

- 1.2.3 The Site lies at the south-eastern edge of Holyhead, and comprises c. 208 ha.

1.2.4 Development is proposed on three areas: Kingsland, Cae Glas and Penrhos.

1.2.5 The Penrhos site is approximately 80 ha located to the north east of the Anglesey Aluminium plant and along the coastline. The Cae Glas site is approximately 109 ha, located to the south of the Aluminium plant to the north-east of Trearddur Bay adjoining the inland sea coastline to the east. The Kingsland site is approximately 18.5 ha and is located to the south of Holyhead.

Proposed Development Construction Timeframes and Durations

1.2.6 Pre-construction survey works and investigative groundworks (phase 1) were commenced in April 2017.

1.2.7 The construction process was anticipated to commence in 2014, however approval was received in 2016. It has therefore been assumed that the construction programme outlined in the planning information has shifted by 2 years and is likely to be as set out below:

Penrhos

1.2.8 Advanced planting on headland is likely to take place in 2016/2017, with lodge and central facilities development taking place between approximately 2017 and 2020. It is anticipated that the development will be partially operational from 2018.

Cae Glas

1.2.9 It is proposed that the advanced planting, bunding to the A55 and creation of the cricket pitch will take place in 2017, with the overall lodge and facilities construction taking place between 2019 and 2021.

Kingsland

1.2.10 Advanced planting is anticipated in 2018 before construction begins in 2019. Workers would begin to occupy the site during the construction period once units are completed, likely to be from 2020 onwards. Houses would be refurbished following worker occupation between with houses being available by 2029 – 2031.

1.2.11 Some of the properties at Kingsland would, in the first instance, be built with an internal configuration appropriate for multiple occupation, with the layout reconfigured to provide typical family living accommodation once the occupation by nuclear workers has ceased. This will entail two stages of construction, the detail of which will be set out in future reserved matters applications.

1.3 ANGLESEY ECO PARK

Development Description

- 1.3.1 Outline Planning permission is in place for the Eco Park and Energy Centre. The permission includes a biomass plant, prawn growing facility, large soil less indoor vegetable growing facility, home compostable food packaging facility, the Combined Food and Power (CFP) Centre of excellence, research and development and a deep water jetty for bulk import. The Ecopark is expected to be operational by 2017.
- 1.3.2 Planning permission to construct and operate a 299 megawatts (MW) biomass fuelled generation station at Penrhos Works, Holyhead was granted in April 2014. The Development comprises:
- one or more boilers;
 - one or more steam turbine generators;
 - hybrid cooling towers;
 - covered fuel storage area;
 - ancillary plant and equipment; and
 - the necessary buildings (including administration offices, workshops and stores) and civil engineering works.

Development Boundary

- 1.3.3 The site is located on the Isle of Anglesey south of Penrhos Beach, approximately 2 kilometres (km) south-east of the Port of Holyhead, and 2.3 km north-east of Trearddur Bay. The indicative site boundary encompasses approximately 38 ha of land within the Anglesey Aluminium Metal Ltd (AAM) landholding.

Proposed Development Construction Timeframes and Durations

- 1.3.4 Orthios is currently preparing the Eco Park site for construction. Demolition and site clearance on site was started in 2016. The final phase is due for completion by spring 2018 with the site then being ready for its sustainable regeneration.
- 1.3.5 The first phase of the aquaculture centre is due to be commissioned in 2017 following planning consent. The first phase of the hydroponics facility and packaging centre are planned for commissioning in 2018. It is anticipated

that full development of the Holyhead Eco Park will run through to 2020/2021.

- 1.3.6 All planning conditions for the (up to 299 MW) biomass-fuelled combined heat and power station have now been discharged and work has commenced on the site.

1.4 PARC CYBI

Development Description

- 1.4.1 In 2005 an outline application for a mixed use development comprising employment (B1, B2 and B8) to include offices, industrial use and hotel together with the construction of a new vehicle access was approved. In 2010 full planning consent was obtained for the erection of 3 office units and 4 industrial warehouse units together with infrastructure and parking provision on Plot 1 and 7. In 2013 two outline planning applications for the construction and operation of a transport hub and ancillary servicing facilities and the construction and operation of a logistics depot were approved. A full application for the construction of an extension to the consented transport hub was approved in 2015. Planning Conditions have been satisfied and construction of the truck stop was completed and opened in 2015.
- 1.4.2 Detailed planning permission was granted in November 2017 for an 80 bedroom hotel (Premier Inn) with a restaurant and bar on the 3 acre gateway plot. Part of site will also be used as the Horizon Logistics Centre. The Horizon Logistics Centre has been assessed as part of the Wylfa Newydd Project see Appendix 20.1.

Development Boundary

- 1.4.3 The site comprises 47.6 ha of land located to the immediate south of the A55 North Wales Expressway on the Isle of Anglesey. The site lies approximately 1.5 km to the south-east of Holyhead Town Centre.

Proposed Development Construction Timeframes and Durations

- 1.4.4 To date the internal spine road running through the centre of Parc Cybi site have been completed. Plots are available on either side of the spine road. The truck stop to the south of the spine road has been completed and opened in 2015.
- 1.4.5 Construction of the hotel will commence early in 2018 and is expected to take approximately ten months.

1.5 RHYD-Y-GROES RE-POWER

Development Description

- 1.5.1 Planning permission was granted in July 2016 to replace the existing, consented Rhyd-y Groes wind farm which consists of 24 wind turbines with a tip height of 46 metres (m), with a development comprising the erection of 11 wind turbines with a total installed capacity of 9.9 MW. Of the 11 wind turbines, 6 would have a maximum hub height of up to 55 m, rotor diameter of up to 52 m, and a maximum upright vertical tip height of up to 79 m, and 3, a maximum hub height of up to 45 m, rotor diameter of up to 52 m, and a maximum upright vertical tip height of up to 70 m, and 2 a maximum hub height of up to 45 m, rotor diameter of up to 52 m, and a maximum upright vertical tip height of up to 66 m, above ground together with the creation of crane pads, foundations, underground electricity cables, improvements to parts of the existing track, works to the highway, the creation of new access tracks, an extension to the existing 33 kV substation, the erection of a new 11 kV substation, the erection of an anemometer and temporary construction and storage compounds and batching plant (which would also entail the de-commissioning of the existing wind farm) at Rhyd y Groes Wind Farm, Rhosgoch.

Development Boundary

- 1.5.2 Located at the existing Rhyd y Groes Wind Farm on Anglesley, between Cemaes and Amlwch.

Proposed Development Construction Timeframes and Durations

- 1.5.3 The construction period for the whole of the proposed development is envisaged to last for 12 months, from commencement of construction through installation and commissioning of the turbines, ending with site reinstatement. Mobilisation and the installation of access and site tracks is anticipated to take 2 months, with the construction of the substation and control building and foundations taking place between month 2 and 7. Hardstanding would be constructed between month 2 and 3. The installation of the cabling and turbine erection is expected to take place in months 7 and 8 followed by three months of commissioning (months 9-11). Reliability testing and restoration works will take place in month 11 and demobilisation will take place in month 12. The proposed decommissioning phase of the existing wind farm could take up to 6 months; however it is likely that this period will overlap with the 12 month construction period as work may be undertaken in phases.
- 1.5.4 Construction works have commenced on site.

1.6 HOLYHEAD WATERFRONT REDEVELOPMENT

Development Description

- 1.6.1 An outline planning permission was granted in February 2014 for a mixed-use development consisting of a new marina, residential properties, a hotel, commercial, leisure and retail uses together with associated land reclamation and service infrastructure at Holyhead Waterfront, Holyhead.
- 1.6.2 The proposal would comprise the following specific accommodation schedule: Development Sub-Zoning:
- 500 berth marina;
 - 380 new dwellings (a mix of 1 and 2 bed apartments, and 2, 3, 4, and 5 bed houses);
 - circa 280 visitor parking spaces;
 - circa 380 private parking spaces;
 - 4,040 square metres (m²) of commercial/leisure uses;
 - 80 bed leisure/business hotel;
 - 300 m² Sail Training/Youth Centre;
 - public Beach area with community changing/welfare facilities;
 - a new 900 m² maritime museum with a new 1,050 m² visitor centre (within the existing Soldier's Point House);
 - new maritime workshops;
 - circa 250 space overflow car park.
- 1.6.3 The proposals are divided into three distinct 'development zones'. Moving east to west, these zones are as follows:
- Zone 1 – The Marina and Promenade;
 - Zone 2 – Porth-y-Felin; and
 - Zone 3 – Soldier's Point and the Great Breakwater.
- 1.6.4 Zone 1: The Marina and Promenade is located within the eastern section of the development boundary. The proposal seeks to integrate a new marina

and complementary facilities alongside the existing marina and Holyhead Sailing Club. Development in this zone would comprise:

- 500 berth marina – including a new breakwater and floating pontoons;
- relocation of the existing (circa 150) moorings;
- 191 No. 1 and 2 bed apartments housed within 3-5 storey blocks constructed along the new breakwater, with discrete surface parking;
- 8 No. 2-storey retail/leisure/commercial facilities on reclaimed land along the Newry Beach waterfront;
- reinstatement of Victorian sunken gardens and model boating lake;
- enhanced access and facilities to Newry Beach;
- preservation of existing marina and yacht club with direct links to new marina;
- new area of accessible beach adjacent to Mackenzie Landing; and
- new youth/sailing centre at the existing maritime museum (former lifeboat station);
- improved linkage from the marina promenade through to the Great Breakwater Country Park.

1.6.5 Zone 2: Porth-y-Felin is centred on the re-instatement of the currently derelict Listed Building: Porth-y-Felin House. Development in this zone would mostly be on land reclaimed from the sea and would predominantly comprise:

- restoration and extension of the listed building 'Porth-y-Felin House' as an 80-bed hotel with business/conference facilities and foreground landscaping;
- 115 No. 1 and 2-bed apartments housed within 3-4 storey apartment blocks along the newly reclaimed waterfront;
- 68 No. 2 and 3-bed 2-3 storey townhouses;
- 6 No. 4-bed detached properties; and
- improved vehicular/pedestrian access to Soldier's Point and the Breakwater Country Park.

1.6.6 Zone 3: Soldiers Point and the Great Breakwater is focused on bringing the currently derelict Soldier's Point buildings back into beneficial use and comprises:

- restoration of listed building 'Soldier's Point' as a tourist/leisure/training facility, to include the relocated maritime museum and workshop, together with new, subterranean visitor centre with dramatic views across the harbour;
- improved pedestrian/vehicular access to the Great Breakwater;
- new marine engineering/boat maintenance facilities at the existing industrial buildings, adjacent to Soldier's Point;
- enhanced public/overflow parking provision at the Great Breakwater; and
- enhanced physical linkages from Marine Square through to the Great Breakwater.

Development Boundary

1.6.7 The site is approximately 34 ha of partially-developed, seafront land, which stretches approximately 1.3 km east to west, on the northern edge of Holyhead town, facing into Holyhead Harbour and towards the Great Breakwater.

Proposed Development Construction Timeframes and Durations

1.6.8 The detailed design and reserved matters application for the development is in preparation.

1.6.9 It is anticipated that the scheme would take approximately 7 years to be completed in its entirety. However, this is likely to occur on a phased basis, influenced by prevailing commercial conditions.

1.7 GLYN RHONWY PUMPED STORAGE

Development Description

1.7.1 The Glyn Rhonwy Pumped Storage Generating Station Order 2017 was made on the 8 March 2017 for the construction and operation of a pumped storage scheme with an output capacity of 99.9 MW at the Glyn Rhonwy and Chwarel Fawr quarries, near Llanberis.

1.7.2 Pumped storage projects comprise of seven main elements:

- a headpond - upper reservoir;
- a tailpond - lower reservoir;
- a power house - containing the combined pump/turbines;
- a penstock - the pipe connecting the headpond to the power house;
- a tailrace - the pipe connecting the power house to the tailpond;
- pumping station; and
- spillway infrastructure – a discharge point from the headpond and a joint discharge/abstraction point from the tailpond.

1.7.3 The Development at Glyn Rhonwy comprises of the following permanent features:

- one headpond, its dam, access shaft and spillway to the Nant Y Betws;
- one tailpond, its dam, access shaft and spillway to Llyn Padarn;
- a pumping station at Llyn Padarn;
- a power house at Glyn Rhonwy Industrial Estate Platform 5 with an underground turbine hall housing turbines with an electrical output of up to 99.9 MW;
- a penstock; and
- a tailrace.

1.7.4 The Development also incorporates temporary features such as temporary construction compounds and lay down areas.

Development Boundary

1.7.5 Located on the slopes of Cefn Du mountain in the Dyffryn Peris valley, the Development utilises a series of disused slate quarries and is approximately 1.5 km north-west of Llanberis and 11 km south-east of the town of Caernarfon.

Proposed Development Construction Timeframes and Durations

1.7.6 The construction of the Development is expected to last up to 4 years with large scale plant and machinery used in the construction of the dams, reprofiling the quarries and tunnelling of the penstock pipes.

- 1.7.7 Enabling works (access roads, construction compounds and site clearance) will be undertaken in quarter 1 and 2 of year 1 followed by dewatering of the quarries scheduled to take place in quarter 2 and 3 of year 1.
- 1.7.8 Reservoir works which includes access to quarry floor, reprofiling, removal of spoil mounds, construction of dams, scour towers, valves, spill, inlet/outlet works and chambers, placement of excess material and construction of spillway infrastructure will be undertaken between quarter 3 of year 1 and quarter 1 of year 3. The filling of the reservoir from abstraction and rainfall will be carried out between quarter 2 of year 3 and quarter 3 of year 4.
- 1.7.9 Construction of the pumping station is scheduled between quarter 2 of year 2 and quarter 1 of year 3. Penstock construction is scheduled between quarter 3 of year 1 and quarter 1 of year 4. The power house will be constructed between quarter 3 of year 1 and quarter 4 of year 3, with testing and commissioning taking place in the first three quarters of year 4.
- 1.7.10 De-mobilisation including the removal of construction compounds and reinstatement of access roads will be undertaken in quarters 3 and 4 of year 4.
- 1.7.11 Glyn Rhonwy Pumped Storage Generating Station is expected to be operational by 2019.

1.8 UNDERGROUND GRID CONNECTION BETWEEN GLYN RHONWY PUMPED STORAGE DEVELOPMENT AND PENTIR SUBSTATION

Development Description

- 1.8.1 Permission was granted in July 2016 for the installation of underground 132 kV grid connection cables between the Glyn Rhonwy Storage Facility and Pentir Substation.
- 1.8.2 The route of the 132 kV grid connection is approximately 10 km long and runs from the switchgear at the Development in a north-east direction towards the Pentir 132 kV Substation and is routed along the A4086, A4244 and B4547. The grid connection is completely underground and will not include any overhead lines or pylons and will be located predominantly within the verges of the adopted highway network.
- 1.8.3 In order to construct the grid connection, a 0.6 m wide by 1.2 m deep trench will be excavated in the highway verges of the A4086, A4244 and B4547, where the cables will be installed within protective ducting at a sufficient depth of approximately 0.75 m. The grid connection will require the crossing of the A4244 bridge and Afon Rhythallt.

Development Boundary

- 1.8.4 The route of the 132 kV grid connection is approximately 10 km long and runs from the switchgear at the Development in a north-east direction towards the Pentir 132 kV Substation and is routed along the A4086, A4244 and B4547.

Proposed Development Construction Timeframes and Durations

- 1.8.5 The installation of the grid connection is expected to take less than a year and will be in a sequential pattern along the existing road network. Some sections will require traffic management where the verge is not sufficient to maintain the working width for safety reasons.

1.9 WEST ANGLESEY DEMONSTRATION ZONE

Development Description

- 1.9.1 The Morlais Project seeks to establish Anglesey as a marine energy hub whilst adding value to the local community and economy. The Project will be in the West Anglesey Demonstration Zone (WADZ) agreement for lease (AfL) area. The West Anglesey Demonstration Zone is an area which has been identified by the Crown Estate as being a suitable location for the installation of marine energy devices in the short to medium term. An Agreement for Lease (AfL) for the development of the West of Anglesey Demonstration Zone was obtained by Menter Môn from The Crown Estate (TCE) in July 2014.
- 1.9.2 The application for the Morlais Demonstration Zone will include the following components;
- **tidal energy devices** - As the aim of the Morlais Project will be to install multiple technology types, the consent application will be based on a design envelope (Rochdale Envelope), which will be determined through knowledge of existing technology and the direction of future developments.
 - **offshore electrical infrastructure** - Individual developers, depending on their devices, may need to construct offshore energy hubs as part of their array. In addition, there will be a need for offshore electrical hubs for the conversion of energy into an exportable format.
 - **offshore inter-array cables** - Inter-array cables will be used to connect individual devices within the array as well as connecting arrays to an offshore electrical hub. Developers will be responsible for

connections to the offshore hub as cabling requirements may differ between technologies.

- **landfall and onshore cable route** - The land fall is expected to be at Penrhos Beach to the east of Holyhead. The offshore cable will be brought a short distance onshore and will then be connected to an onshore cable within a transition pit. The onshore cable route will then join the offshore infrastructure with the onshore substation.
- **onshore substation** - The location and design of the onshore substation has not been determined, although it is predicted that the substation will be located in the vicinity of the Anglesey Aluminium Metal works.
- **grid connection** - Link between the substation and grid connection either by SPEN or National Grid Plc. The grid connection point will be determined

Development Boundary

- 1.9.3 The WADZ comprises of 37 square kilometres (km²) and is generally based around the promontory of Holy Island.
- 1.9.4 The landfall for the export cable from the WADZ is expected to be at Penrhos Beach, which is an expanse of sandy beach between Penrhos and Holyhead.
- 1.9.5 The area between the landfall and the potential onshore substation location is largely open land, with some area of development and rough open ground.
- 1.9.6 The current location of the substation has not been determined, however, an area within which the substation is expected to be located has been identified, generally this area lies between the landfall location and the A55.

Proposed Development Construction Timeframes and Durations

- 1.9.7 Marine and land planning consent is not currently in place. Minesto's lease agreement with The Crown Estate allows for a maximum operational period of 32 years and an overall Project life of 35 years, notwithstanding the two year period allocated to decommissioning works.

1.10 HOLYHEAD DEEP

Development Description

- 1.10.1 A marine licence application was approved in April 2017 for the installation and operation of a 0.5 MW deep Green Power plant in Holyhead Deep off the coast of Anglesey. The Project includes construction, installation, commissioning, operation and maintenance, and decommissioning activities. It will involve the installation of a single 0.5 MW Deep Green Utility (DGU) unit, its foundation and associated surface moored barge (or similar such surface platform) with an electricity meter. The DGU will be deployed within a specific subsection of the Area for Lease (AfL) area, referred to as the Project Development Area (PDA). The DGU is likely to be installed in the south of the PDA and will be attached to one of four foundation options: a concrete gravity base structure, a monopile, a tripod structure, or a mud mat foundation. During the Project, a barge (or similar) will be present on site to monitor, calibrate and optimise the DGU. During operation, the device will 'fly' in the water column, generally at depths between 20 to 60 m. The device will at all times maintain a depth greater than 12.5 m below the sea surface. Following an initial commissioning period, the DGU will be attached to a foundation on the seabed. However, during the initial testing and commissioning the DGU can also be operated in 'upside-down mode', with the tether attached to the bottom of the barge. The DGU unit can operate in the same area of the water column regardless of the attachment point.
- 1.10.2 The electricity produced by the DGU will be transmitted directly to an electricity meter on the barge via a subsea umbilical cable, where it will be monitored and then dissipated, most likely using a sea water cooled resistor.
- 1.10.3 The principal purpose of this Project is to deploy, monitor and optimise a single full scale device ahead of a potential, larger project comprising an array of devices, which will be covered under a separate application.
- 1.10.4 Minesto currently holds a lease agreement for a 10 MW installation. Following the first phase, Minesto submitted a scoping report in February 2017 to scale the development up to 80 MW (up to 160 devices)

Development Boundary

- 1.10.5 The Project will be located approximately 6.5 km off the coast of Holy Island, Anglesey.

Proposed Development Construction Timeframes and Durations

- 1.10.6 Commissioning of the demonstrator is planned for 2018. The single 0.5 MW DGU unit which will be installed and operated for up to five years.
- 1.10.7 At the end of the 5 year period, the single device will either be decommissioned or incorporated into the larger scheme, subject to the relevant permissions.
- 1.10.8 Minesto's lease agreement with The Crown Estate allows for a maximum operational period of 32 years and an overall Project life of 35 years (following the single device monitoring period), notwithstanding the two year period allocated to decommissioning works.

1.11 A487 CAERNARFON TO BONTNEWYDD BYPASS

Development Description

- 1.11.1 The bypass proposals were approved in May 2018 by the Welsh Government. The scheme would be a 9.7 km long bypass, taking traffic away from the A487 at Bontnewydd at the southern end of the scheme and Caernarfon at the northern end and would comprise of a wide single 2+1 road. This would provide two lanes in one direction and one lane in the opposite direction throughout the scheme.
- 1.11.2 The scheme would provide a total of 4.60 km of overtaking length in the northbound direction and 4.57 km of overtaking length in the southbound direction. This route would be made up of three sections of wide single 2+1 standard carriageway separated by new at-grade roundabouts at Meifod and Cibyn. All the proposed alignment would be offline from the existing A499/A487(T) Goat roundabout to the existing A487(T) Plas Menai roundabout.
- 1.11.3 It will involve constructing 22 structures including culverts and 7 bridges. The bridges will be: a crossing over the Welsh Highland Railway, a viaduct over Afon Seiont, a viaduct over Afon Gwyrfai and its flood plains and 4 bridges carrying existing roads under or over the new road.
- 1.11.4 New or diverted Public Rights of Way and private means of access would be provided to replace those affected by the scheme.
- 1.11.5 Road drainage would be provided through 'over the edge' drainage which would discharge into attenuation ponds along the scheme.

Development Boundary

1.11.6 The Scheme is located between the Plas Menai Roundabout north of Caernarfon and the Goat Roundabout south of Llanwnda along the A487 Trunk Road.

Proposed Development Construction Timeframes and Durations

1.11.7 It is currently anticipated that the construction activities for the scheme would commence in November 2018. It is anticipated to be a 30-month contract, with an anticipated completion date in spring 2021. The works would be planned to ensure that the construction activities and traffic management would have minimal disruption to road users.

1.12 MENAI SCIENCE PARK

Development Description

1.12.1 An outline planning application was submitted in November 2014 for the demolition of the existing farm outbuildings, erection of a science park, creation of a car park together with the creation of a new vehicular access at Junction 7 of the A55 (wrth ymyl/near Cefn Du), Gaerwen. The application was approved in May 2015.

1.12.2 The application included the demolition of the existing farm outbuildings, retention of the existing farmhouse and development of new floorspace to create a Science park, comprising the following elements:

- 22,703 m² Gross External Floor Area, split across eight buildings being 2 and 3 stories in height. The Floor area was allocated amongst the 3 Development Zones, with 5,000 m² being allocated within Zone 1;
- associated access and gatehouse;
- car parking; and
- landscaped open space.

1.12.3 The types of unit that will be allocated across the site include offices and labs to be categorised by: accelerator, grow-on, incubator and clean work space units.

1.12.4 A reserved matters application was submitted in January 2016 and approved in July 2016 for the appearance, landscaping, layout and scale of the first phase (Development Zone 1 as indicated on the approved drawings) of development of a Science Park, comprising 5950 m² gross

external floor area of new Use Class B1, and including ancillary buildings and associated hard and soft landscape. The proposals also include landscape proposals (interim and permanent) for areas of the site falling outside zone 1.

Development Boundary

1.12.5 The site is approximately 7-8 ha located off junction 7 of the A55 towards the north-eastern end of the village of Gaerwen and is bounded on all sides by roads: the A55 to the north, the A5152 to the east, the A5 to the south and an access road to the west.

Proposed Development Construction Timeframes and Durations

1.12.6 Work on the site is on-going, with the new roundabout, car park and the road between the new roundabout and the first building and the erection of road signage complete. The first building is nearing completion and landscaping is underway. The Park building (Development Zone 1) is expected to be ready early in 2018. It is anticipated that remainder of the development will take approximately 10 years to complete and will be phased in response to market demand.

1.13 THIRD MENAI CROSSING

Development Description

1.13.1 The Welsh Assembly Government Transport Wales (WAGTW) proposes to construct a Third Menai Crossing.

1.13.2 A Strategic Outline Business case was completed in spring 2016 which confirmed the need for a Third Menai Crossing to improve capacity, reliability and journey times, improve network resilience, improve opportunities for non-motorised users and improve safety.

1.13.3 A route selection study will be undertaken to assess various options to address congestion on the existing Britannia Bridge.

1.13.4 The route alignment Options have been identified and will be further developed. Several options to provide increased road capacity and other general highway improvements are being considered:

1.13.5 Beige Option:

- closing junction A55 8A and providing alternative links between the A55 and A5; and

- standalone Option, or tie in with Purple or Orange Options.

1.13.6 Pink Option:

- widening of Britannia Bridge to include new traffic lanes; and
- improvements at A55 junction 9 and 8A.

1.13.7 Red Option:

- new bridge directly to the west of Britannia Bridge; and
- improvements at A55 junction 9 and 8A.

1.13.8 Orange Option:

- new bridge directly to the east of Britannia Bridge; and
- improvements at A55 junction 9 and 8A.

1.13.9 Purple Option:

- new bridge to the east of Britannia Bridge; and
- improvements at A55 junction 9, 8A and 8.

1.13.10 All Options will contain facilities for pedestrians and cyclists, consideration for the local landscape, ecological requirements and human environmental factors. The study includes reviewing the speed limit on the A55, local road access and arrangements at junctions.

Development Boundary

1.13.11 The area under consideration of the options centres on the existing bridge.

Proposed Development Construction Timeframes and Durations

1.13.12 Consultation on the options ended on the 9 March 2018. It is anticipated that the announcement of the preferred route will be in the summer of 2018. Construction is expected to be between 2020/2021 and 2022/2023.

1.14 A55 JUNCTION 15 AND 16 IMPROVEMENTS

Development Description

1.14.1 The WAGTW proposes to build new junctions to replace the roundabouts at Llanfairfechan (Junction 15) and Penmaenmawr (Junction 16) to improve safety and journey times along the A55 and make maintenance easier. The

roundabouts will be replaced with height separated junctions, with side roads going either under or over the main A55 and traffic joining the A55 trunk road via a slip road instead of a roundabout.

Development Boundary

- 1.14.2 The development boundary includes the A55 corridor incorporating junctions 15 and 16.

Proposed Development Construction Timeframes and Durations

- 1.14.3 Options for the junctions have been reviewed and the process of appointing an early contractor involvement (ECI) contractor has commenced. The contractor will develop the design of the preferred options in order to prepare draft orders for the scheme.
- 1.14.4 The options and design development is anticipated to take until summer 2019, with the statutory process and public inquiry expected to be in summer 2019 to autumn 2022. Detailed design and construction is expected to be between autumn 2020 and autumn 2022.

1.15 A55 ABERGWYNGREGYN TO TAI'R MEIBION IMPROVEMENT

Development Description

- 1.15.1 The WAGTW proposes an improvement to the A55 trunk road between Tai'r Meibion property and the Abergwyngregyn interchange, in the County of Gwynedd, north-west Wales. This will improve the safety on this section on the A55 and include drainage improvements to reduce the risk of flooding.
- 1.15.2 This consists of the upgrading of a 2.2 km section of the A55(T) between Junctions 12 and 13 to include online and off line works and addressing sub-standard side roads/access issues.

Development Boundary

- 1.15.3 The proposed improvement is situated in a rural area comprising mainly of improved agricultural grazing land with associated farms and farm buildings. There are also small areas of mixed woodland and a small number of private non-agricultural dwellings.
- 1.15.4 The land use within the A55 corridor is predominantly pastoral and the fields consist almost entirely of improved pasture within a fertile coastal strip. The proposed access route from Tan-yr-Allt to Wig crosses some smaller fields at the interface between the coastal strip and the uplands to the south.

Proposed Development Construction Timeframes and Durations

- 1.15.5 Draft Statutory Orders and an environmental statement were published in August 2017. It is anticipated that construction work would commence in the spring of 2018 and be completed by the winter/spring of 2019/20, taking 18 to 24 months to complete.

1.16 NANT Y GARTH LANDFILL SITE

Development Description

- 1.16.1 The application to vary existing conditions was approved in May 2016. The proposal re-configures the profile of the landfill with the deposit of further waste material within the limitations of the existing consent as part of the closure plan for the site. The application varied conditions on the existing grant of permission to make provision for the backfill of material along the line of the access track (east to west), in the formation of a berm up to the embankment of the existing landfill.
- 1.16.2 The landfill will encroach up to the embankments of the adjoining river and effectively decommission the existing access track as the sequence of operations progress from east to west. The proposal also includes a planting schedule of deciduous trees together with measures for the control of non-native invasive species such as buddleia.
- 1.16.3 The proposal to alter the profile of the landfill embankment will provide a short-term solution for the disposal of an additional 60,000 tonnes of inert waste to supplement the existing void space available at the site. Consequently, the lifespan of the facility will be extended for a further two to three years from 2018 up until 2020/21.

Development Boundary

- 1.16.4 The site, approximately 1 mile north-east of Y Felinheli is a former limestone quarry associated with the Faenol Estate which has been used as a landfill facility since the grant of the original permission for the deposit of inert soil materials arising from civil engineering works in 1993. A more recent application ref. C01A/0392/18/LL to extend the current tipping area and re-locate the stream was approved subject to conditions on the 6 July 2003. A tree preservation order has been placed on the belt of woodland which extends eastwards from the boundary of the landfill, along the line of the river habitat towards Fodolydd Lane.

Proposed Development Construction Timeframes and Durations

- 1.16.5 The duration of the use of the site as an inert landfill site will be time-limited to the end of July 2021.

1.17 CAERNARFON BRICKWORKS QUARRY

Development Description

- 1.17.1 Two planning applications (one temporary and one permanent) were approved in June 2017. One for works associated with the construction of the proposed A487 Caernarfon to Bontnewydd bypass including; use of land as an extension to the existing site compound area and provision of a maintenance shed, office accommodation, welfare and car parking facilities, fuel store, sewage storage tank, mobile concrete batching plant, mobile asphalt batching plant and construction of a haul route (temporary use) and one for the construction of a new haul road on the northern boundary of the existing quarry with temporary connection to the proposed A487 Caernarfon to Bontnewydd bypass route during the construction period, continued extraction of minerals, removal of material from a mineral working deposit and existing stockpile of materials, construction of a hardstanding and siting of plant machinery for the processing and screening of materials and disposal of inert waste materials for long-term quarry engineering/restoration works.

Development Boundary

- 1.17.2 The site lies immediately to the south of the town of Caernarfon and consists of an existing clay quarry, large areas of hard surfaced yard on both sides of the River Seiont and an area of pasture to the east. Existing road access to the quarry is from Pont Seiont roundabout and Seiont Mill Road.

Proposed Development Construction Timeframes and Durations

- 1.17.3 The temporary planning application would be implemented soon after it was granted and following the award of the bypass construction contract to the joint venture contractors. It is anticipated that the bypass would take 2 years to complete and that the construction compound would be removed following completion with final elements removed 5 years later.
- 1.17.4 It is estimated that following completion of the bypass the completion of the quarry sump filling, soiling of the slopes and restoration of the quarry will take 5-10 years and will be subject to the availability of the restoration materials.

1.18 AMLWCH LIQUID NATURAL GAS (LNG)

Development Description

- 1.18.1 An application was submitted in March 2013 to renew the planning permission (APP No. 11C122E/EIA/ECON) granted on 28 March 2008 for 'Construction and operation of a Liquid Natural Gas (LNG) Plant'. The decision on the application is still pending. The 2008 permission expired at the end of March 2013 although the development has not yet commenced.
- 1.18.2 The scheme would provide the capacity to re-gasify LNG direct from an offshore vessel at a rate of 3 billion cubic feet (bcf) per day and transport the resultant gas to the National (Gas) Transmission System ('NTS'). The gas pipeline connection from the island of Anglesey to the NTS in Lancashire is to be the subject of a separate application.
- 1.18.3 Tankers would import liquid gas to a mooring 3 km from the Amlwch coast. The gas would then be transferred by an undersea pipeline from the mooring platform to the site near the town of Amlwch, where it would be converted back to natural gas and sent into the UK gas network.

Development Boundary

- 1.18.4 The application site is known as 'Former Great Lakes', and is located to the north-west of the town of Amlwch at the easterly end of the north coast of the isle of Anglesey. The site is adjacent to the coast approximately 390 m from the edge of the town and 410 m from the harbour. The site is vacant having previously been used for the production of bromine from sea water. Production ceased in 2003, however, some of the plant and buildings used in connection with this use remain.

Proposed Development Construction Timeframes and Durations

- 1.18.5 The construction period is expected to run for two to two and a half years.

1.19 GREEN WIRE

Development Description

- 1.19.1 Greenwire Transmission Pentir Ltd, proposes a subsea and underground cable interconnector (with associated converter stations) between the existing electricity grids in Ireland and the UK. A Connection Agreement is in place to connect 2 GW of capacity into the Pentir substation at the end of 2020.

- 1.19.2 Feasibility work to identify suitable locations for the required infrastructure have been undertaken and a preferred site has been identified. Infrastructure proposed on the site includes underground DC cables, a temporary construction compound, converter station and landscaping.

Development Boundary

- 1.19.3 The site for the above ground infrastructure is to the east of Pentir Substation situated on agricultural fields.

Proposed Development Construction Timeframes and Durations

- 1.19.4 Connection Agreement to connect 2GW of capacity into the Pentir substation at the end of 2020.

1.20 LLANBADRIG SOLAR FARM

Development Description

- 1.20.1 A full application for the construction of a 49.99 MW Solar array farm together with associated equipment, infrastructure and ancillary works on land adjacent to Rhyd Y Groes, Rhosgoch was consented in December 2017.
- 1.20.2 The application proposes the installation of free standing, ground-mounted solar PV arrays measuring 1 m x 1.65 m at an angle of 15-30 degrees and maximum 3 m in height which will connect to the national grid (approximately 200,000 panels in total). The application site area is 89.4 ha, with the solar panel arrays covering an area of approximately 36 ha. The development includes solar panels and associated infrastructure including gravel access roads, solar PV inverter substations, a substation compound which includes battery stores, inverter units, grid connection equipment, switchgear and ancillary equipment and cables.
- 1.20.3 Operational access for maintenance will be achieved via the new access point near Rhyd-y-Groes Farm (this will be the primary access point during operation) and the access point at Buarth-y-foel will also be retained for use as required.

Development Boundary

- 1.20.4 The site is located at Rhyd-y-Groes farm, near Llanbadrig, Cemaes Bay in open countryside on land roughly halfway between the settlements of Cemaes and Amlwch, approximately 1.5 km south-east of Cemaes Bay on the coast of North Anglesey. The land is included within a Special

landscape Area, the AONB lies 245 m to the north (nearest point) on the opposite side of the A5025.

- 1.20.5 The land surrounding the site predominantly comprises agricultural holdings and a few rural dwellings: Tyn-y-Gors adjoins the western site boundary (and Nant- y-Frân lies 450 m north-west of this); Rhyd-y-Groes adjoins the south of the site; Hafodllin Bach and Hafodllin Fawr are close to the south-east of the site; while Buarth-y-Foel and Tregynrig Fawr are close to the most northern part of the site.
- 1.20.6 The site is currently in use as agricultural grazing land. However, part of the existing Rhyd-y-Groes Wind Farm is within the application site boundary.

Proposed Development Construction Timeframes and Durations

- 1.20.7 It is anticipated that the development will be completed in a single construction phase, lasting approximately 6 - 9 months subject to the approval of details required through pre-commencement conditions.
- 1.20.8 The lease agreement for the site extends for 30 years and includes the installation of the solar array and associated works.

1.21 CODLING WIND PARK

Development Description

- 1.21.1 Consent is in place for 220 turbine offshore wind farm at Codling Bank 13 km off the east coast of Ireland between Greystones and Wicklow. The development would include an anemometer, an offshore substation, and buried cabling between the turbines and the substation, and between the substation and shore. Turbines would have an installed capacity of at least 2.5 MW each and potentially upwards of 5 MW, and would have a maximum height between mean sea level and turbine blade tip of 160 m. The wind park would cover a total area of 55 km². Two alternative cable routes have been identified from the offshore substation to shore: one to the north of Greystones; one to the south of Killiney Bay (north of Bray).
- 1.21.2 An application for the expansion of the Wind Park has also been submitted. The application is for the construction of a further 200 wind turbine generators giving a potential capacity of up to 1 Gigawatts (GW).
- 1.21.3 On-land elements of the cable route and onshore grid connection would form the subject of a separate planning application by ESBNG

Development Boundary

1.21.4 The main part of the development including turbines, foundations and the offshore substation, would be located off the east coast of Ireland between Greystones and Wicklow. The turbines would be located to the east of the shallow waters of the Codling sand bank, and would be located 13 km off the east coast of Ireland off Co. Wicklow, south of the Dublin Array). The proposed expansion would be directly south of the first phase.

Proposed Development Construction Timeframes and Durations

1.21.5 The site would be constructed over 3 - 7 phases, each phase completed over a single construction season. Each construction season would last between April and October. Each phase would be fully commissioned and producing electricity by the end of each working season.

1.21.6 The following activities would take place during the first construction season:

- installation of the offshore sub-station;
- laying of site to shore cabling; and
- building and commissioning of onshore grid connection facilities.

1.22 GRŴP LLANDRILLO MENAI LLANGFNI CAMPUS

Development Description

1.22.1 A hybrid planning application was submitted in September 2016 for full planning of the New Engineering Centre (NEC) development and outline for residential and hotel proposals (Sites 1-5) (all matters reserved except access). The application was approved in July 2017. A further full application to retain the training modular building and compound for a further 5 years and change of use from Class B1 (offices) to an Alternative Emergency Control Centre (AECC) as a Sui Generis use has been submitted. A decision on this application is pending.

1.22.2 The application for the NEC will cover 3.92 ha. The NEC will be accommodated on three floors, providing skills and training for students in traditional engineering skills such as electrical engineering, plumbing and building services. The parking will be accommodated to the east, in an area already allocated for car parking and having received outline planning approval in 2015. The parking layout has since been revised and detailed since this outline planning approval and now accommodates 254 parking bays, 3no blue badge bays and 8 bus parking bays, with a landscape buffer

to the south of the car park which will allow for future expansion for use by buses for an additional 10 No. bus parking bays.

- 1.22.3 The residential proposals would be spread over four development plots totalling circa 157 dwellings on land adjacent to the existing college campus.
- 1.22.4 Illustrative proposals for site 1 (1.33 ha) comprise 23, 3 bed residential properties. The remaining land is reserved as a potential car park for users of the adjacent Ysgol y Graig school and a children's play area for the local community.
- 1.22.5 Sites 2 (0.57 ha) and 3 (1.23 ha) are two connected parcels of vacant green field land to the west of the college campus car park and south of Plot 1. Illustrative proposals are for 60 No. dwellings comprising of 28, 3 bed houses and 32 apartments accommodated in 4 No. apartment blocks.
- 1.22.6 Site 4 (1.67 ha) lies to the south of the college campus. The illustrated proposals are for 74 dwellings with a range of 3, 4 and 5 bed house types. The proposals ensure the retention of the woodland to the south and south west of the site, allowing future community benefit as a public open space provision.
- 1.22.7 The proposals for site 5 (1.67 ha) are to provide a 60 bed-roomed hotel development with a food and beverage outlet in an adjacent building, with associated car parking. The food and beverage outlet is strongly linked to the hotel provision and will also be used as a teaching resource for students. The intention is that it will also be open to the public.

Development Boundary

- 1.22.8 The existing Llangefni campus is located approximately 1 km east of Llangefni Town Centre along Penmynydd Road. The campus is accessed from the north off Talwrn Road via an access road that serves the main campus and car parking area and forms the northern connection to the new Llangefni Link Road.

Proposed Development Construction Timeframes and Durations

- 1.22.9 The start of construction was anticipated for Q1 2017, with Q4 2017 assessed as the 'opening year' for the full application elements. The timescales for the full build out of the site are currently unknown.

1.23 DINORWIG CABLES

Development Description

- 1.23.1 The existing Dinorwig cables are in need of replacement due to their condition. Currently there are two circuits to Dinorwig, one from Pentir via the lake and into the mountain tunnel and the second from Penisarwen. The cables will be replaced like-for-like. An extra bay will be required at Pentir.

Development Boundary

- 1.23.2 Dinorwig is situated in Snowdonia National Park in Gwynedd, North Wales.

Proposed Development Construction Timeframes and Durations

- 1.23.3 Construction is programmed for 2019 with completion expected in 2025.

1.24 HOLYHEAD PORT EXPANSION

Development Description

- 1.24.1 An application for a Harbour Revision Order (HRO) to authorise the expansion of Holyhead port through the reclamation of three intertidal/subtidal areas and the dredging of an approach channel. This would provide new berths and associated landside areas for port-related use.

Development Boundary

- 1.24.2 Holyhead Port is located on Holy Island (Ynys Gybi) on the western side of the Isle of Anglesey.

Proposed Development Construction Timeframes and Durations

- 1.24.3 Timescales and durations are currently unknown.

