



LLŶR

Llŷr 1

Floating Offshore Wind

Harnessing Welsh Energy

Public Consultation Brochure

15 January 2024 – 11 February 2024

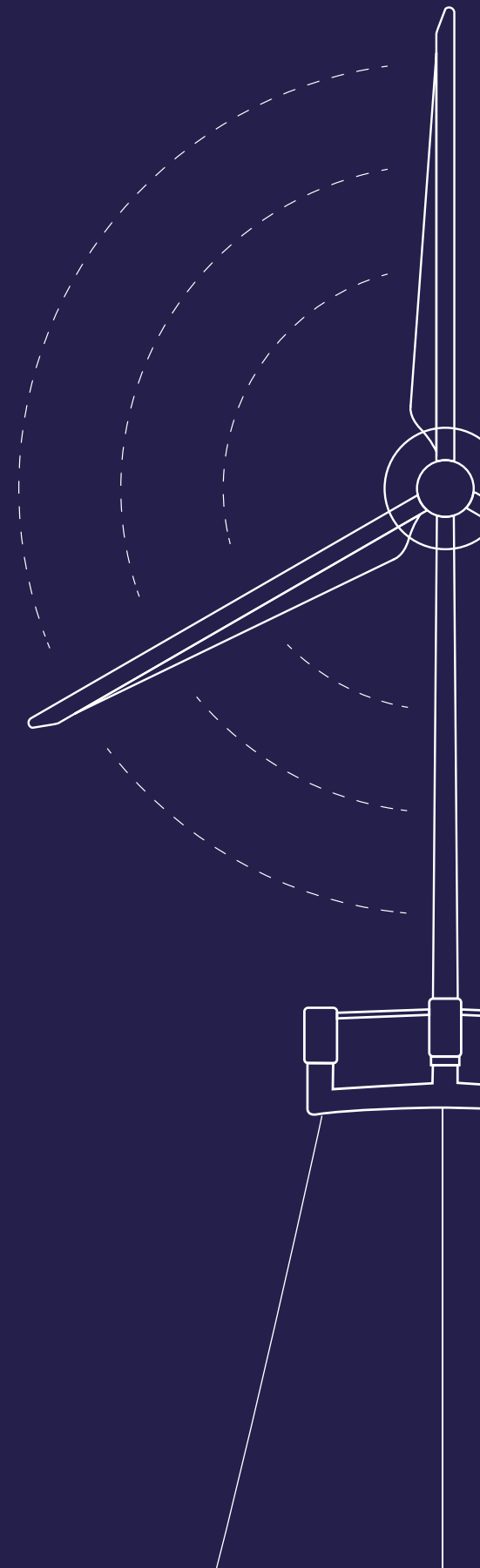


FLOVENTIS
ENERGY



Contents

Welcome	3
Why are we consulting?	4
About us	5
Developing floating offshore wind	6
Unlocking the potential of the Celtic Sea	7
Our offshore proposals	7
The platforms and mooring systems	9
Inter array cables	9
Offshore export cable	9
Offshore Development Area	10
Our onshore proposals	11
Onshore cable route	12
Onshore Development Area	16
Understanding our environmental impact	17
Construction	22
Commissioning and decommissioning	25
Community benefit	26
Gaining consent	29
Next steps	29
Find out more	30



Welcome

Thank you for your interest in Llyr 1 – an innovative floating offshore wind farm in the Celtic Sea. This consultation is your opportunity to help inform the design of Llyr 1 and our applications for consent.

Llyr 1 is a test and demonstration floating wind farm array situated in the Celtic Sea, off the Pembrokeshire coast.

The output of Llyr 1 is expected to power just over 100,000 homes with clean, green energy¹.

We are contributing to accelerating the development of the UK floating offshore wind industry as a pathfinder project, piloting the development, construction, installation and operation of floating offshore wind at a large scale in UK waters.

This consultation focuses on our proposals for the first project, Llyr 1 and we'll consult on the second project, Llyr 2, once we have further developed our proposals.

Llyr 1 and Llyr 2 will set a new standard for cost reduction pathways for large scale floating offshore wind developments, they will:

- Act as a pathfinder to accelerating floating offshore wind development.
- Provide the opportunity not only to better understand the benefits and challenges but also to identify opportunities to enhance the local environment.
- Maximise the local supply chain and employment opportunities thereby contributing to the local and regional economy.

¹ Based on R-UK statistics <https://www.renewableuk.com/page/UKWEExplained/Statistics-Explained.htm>

Why are we consulting?

The project is currently in the pre-application phase. This means we are working to prepare the detail required to support the submission of our applications for consent to construct and operate Llŷr 1.

The feedback received during this consultation will inform our detailed design of Llŷr 1. We want to know if you think there are any particular issues we should consider – both offshore and onshore – as part of this work.

We'll summarise all the feedback in a Consultation Report, which will form part of our applications for consent.

How can I provide feedback?

We want to hear your views on our proposals, and you can provide feedback in the following ways:



ONLINE: Fill in our online response form at www.llyrwind.com



IN PERSON: Fill in a response form at one of our consultation events:

- Pembroke Dock Community Learning Centre, Albion Square, SA72 6XF | Thursday 25 January | 12:00 – 16:00
- Foundry House, Orange Way, Pembroke, SA71 4DR | Friday 26 January | 11:00 – 15:00
- Hundleton Sports Pavilion, Hundleton, SA71 5RD | Tuesday 30 January | 15:00 – 19:00



EMAIL: Write to us or send your completed response form to our project email: info@llyrwind.com



POST: Write to us or send your response form to: Floventis Energy Limited, Office 20, Bridge Innovation Centre, Pembrokeshire Science and Technology Park, Pembroke Dock SA72 6UN



Please submit your feedback by **23:59** on **11 February 2024**

About us

LLYR 1 is being promoted by Floventis Energy Limited – a joint venture between SBM Offshore and Cierco Limited.



FLOVENTIS
ENERGY

Floventis Energy

In 2021, Cierco and SBM Offshore formed the joint venture company Floventis Energy Limited, with the goal of becoming a market leader in offshore floating wind power. The joint venture brings together complementary skills and expertise to produce the know-how required to develop and deliver complex technology projects successfully in the offshore environment. Already driving demonstration projects in California and the UK, Floventis is building a portfolio of projects to take floating offshore wind, through a stepwise process, increasing project size to full scale commercial development proposals by 2030.



C I E R C O

Cierco Energy

Cierco is an independent renewable energy project development company established in 2001 with a simple goal to engage in the field of offshore floating wind power and to drive technologies and projects to reach cost levels competitive with those of conventional power. The Cierco team is comprised of individuals from a broad range of backgrounds but with one thing in common – a drive to change the way we think about the low carbon energy transition. Our teams based in the UK and USA combine power industry leadership experience with British entrepreneurship.



SBM Offshore

SBM Offshore is a leader in the design, supply, installation, operation, and life extension of floating production solutions for the offshore energy industry over the full lifecycle. Knowing how to harness the energy above, in, and below the world's oceans is what positions SBM Offshore as a company with an important role to play in the global energy development. SBM Offshore is headquartered in Amsterdam, The Netherlands.

Developing floating offshore wind

The UK and Welsh governments have each set legally binding commitments to become net-zero by 2050. Offshore wind can play an important part in this, with the UK government identifying a target of 50 gigawatts of wind energy by 2030, enough to power every home in the UK.

Currently, most wind turbines are secured to the seabed using large, deep drilled, pile foundations which can generally only be installed in shallower waters (less than 50 metres). Floating offshore wind instead uses turbines based on floating structures, fixed to the seabed by a mooring system

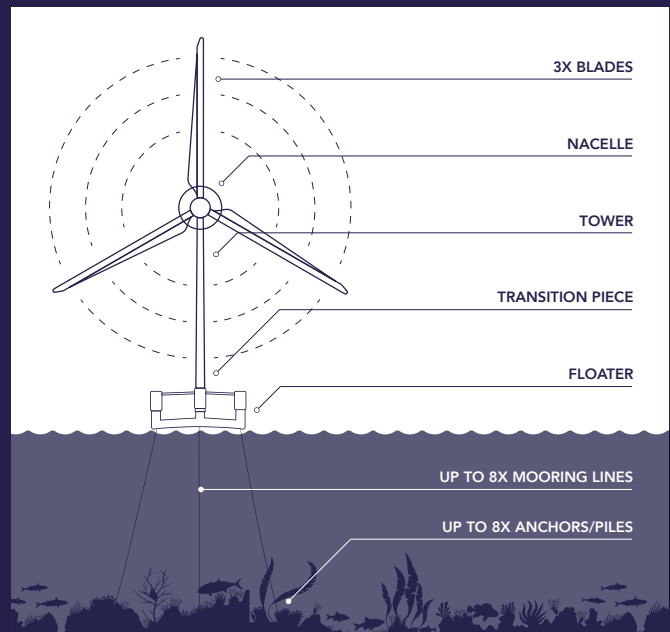
– this means they can be located in water depths not feasible for fixed bottom turbines. Floating wind technology has the potential to unlock new areas and provide a significant contribution to an increase in offshore wind power.

What is Net Zero?

Net zero refers to the balance between the amount of greenhouse gas (GHG) that's produced and the amount that's removed from the atmosphere. To meet the government's net zero target, the GHG emissions produced by the UK would need to be equal or less than the emissions removed by the UK from the environment.

Why develop floating offshore wind?

- Potential to unlock new areas for offshore wind in deeper waters where traditional fixed turbines are not viable.
- Reduced visual impact compared to wind farms closer to the shore.
- Contribute to net zero by 2050 target.
- Diversify and secure the UK's energy supply.
- Potential for major employment and supply chain opportunities.



Unlocking the potential of the Celtic Sea

Llŷr 1 will be located in the Celtic Sea. At its closest point, the projects will be approximately 45km from the Welsh coastline, 55km from Lundy Island and 72km from the Devon coastline.



Why the Celtic Sea?

- Consistently high average wind speeds.
- Different weather patterns to the North Sea, bringing resilience to the grid.
- Several National Grid connection points near the adjacent coastline.
- Good access to local ports and supply chain for construction and operations.

Our offshore proposals

Our offshore infrastructure would include:

- Up to 10 Wind Turbine Generators (WTGs).
- Up to 10 floating platforms.
- Mooring infrastructure.
- Up to 11 Inter-array cables to connect the WTGs.
- Up to two electricity export cables, within one export cable corridor to the landfall location at Freshwater West.

As is common with major infrastructure projects, we have adopted a 'design envelope' approach where we will use maximum parameters to assess the effects of the project. This provides some flexibility and enables the project to capitalise on technology developments.

The turbines

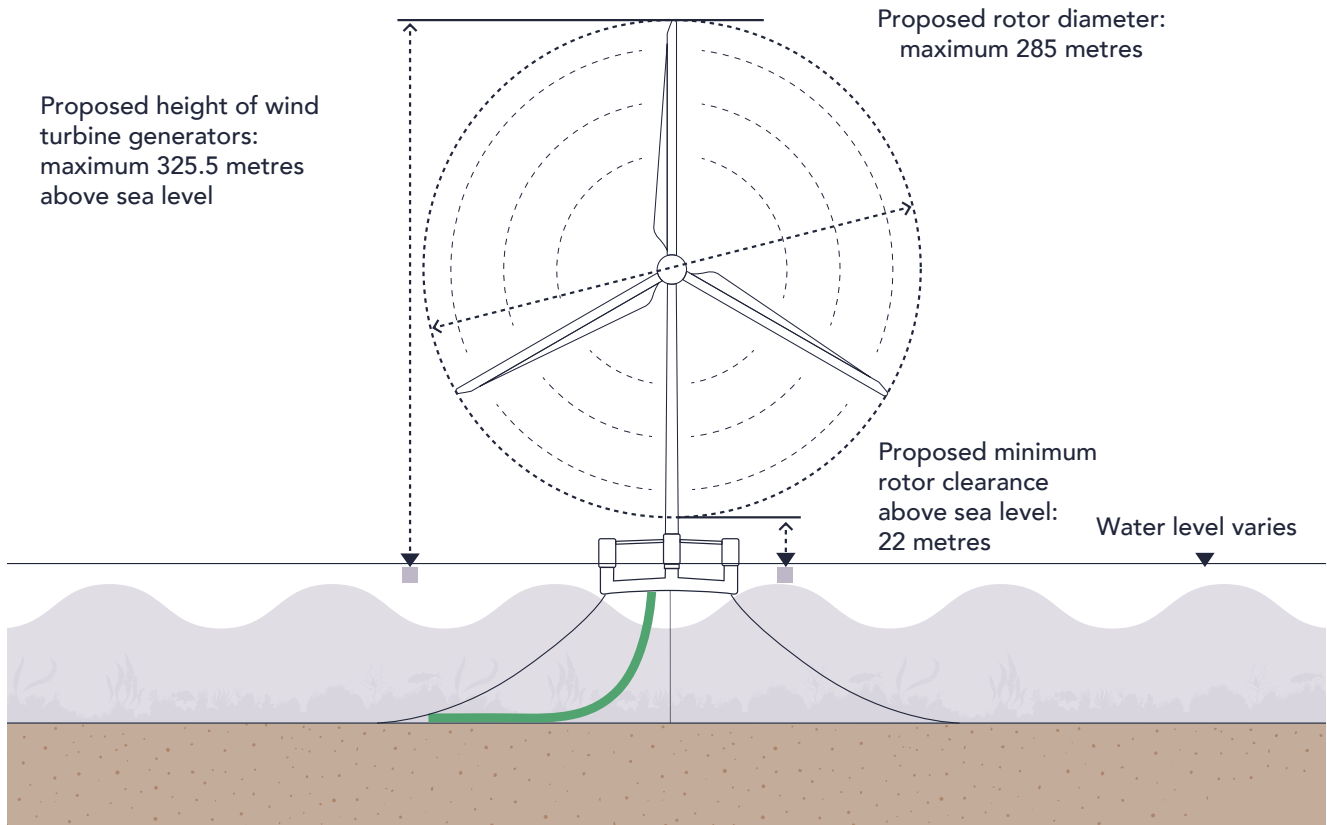
The turbine designs will be similar to 'conventional' offshore wind turbines.

The turbines operate by facing the rotor blades into the predominant wind direction, rotating to maximise power output depending on wind speed. Each turbine operates independently and will be monitored and controlled through a remote computer system.

The table on the right shows the maximum parameters of our turbines. The diagram below is indicative and for illustrative purposes only.

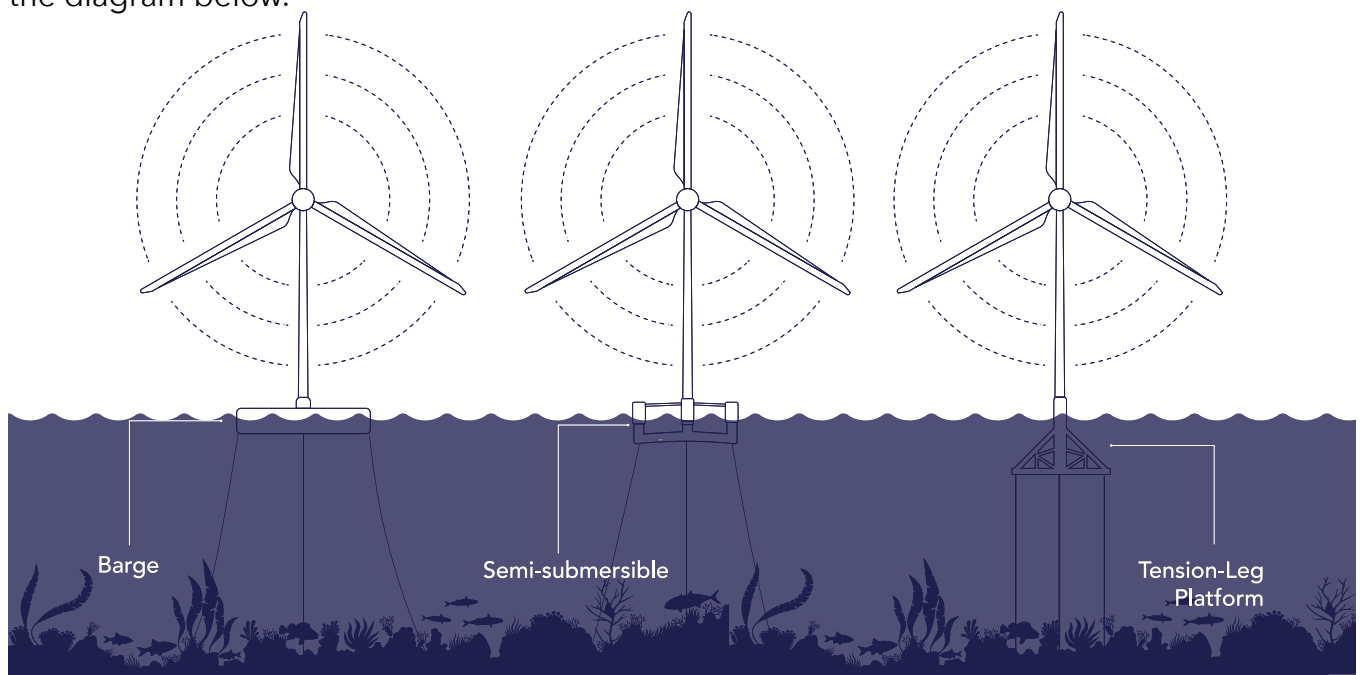
We'll determine the turbine array layout post-consent, following consideration of a number of factors, including stakeholder feedback, site conditions, efficiencies in installation and operation.

Feature	Parameter
Number of blades	3
Tower type	Tubular steel
Direction of rotation	Clockwise
Maximum rotor diameter	285m
Maximum tip height above sea level	325.5m
Minimum blade clearance above sea level	22m
Maintenance and operational access	Boat and helicopter



The platforms and mooring systems

As Llŷr 1 is a test and demonstration project, we're still deciding which platform and mooring technologies we will use. We're considering one of the following types as shown in the diagram below.



Inter-array cables

The WTGs will be connected to each other by inter-array cables (IACs). The IACs will be dynamic due to the floating platforms, however there will be sections of each inter-array cable which may touch the seabed, called 'touchdown' points, approximately 150m away from the WTG platform. We will aim to bury the IACs at touchdown points, however if burial is not possible (for example due to ground conditions) external protection may be required. The total length of all IACs will be up to 17.5km. There may also be a subsea connector, connecting the last WTG to the first WTG, placed on the seabed with dimensions of up to 30 x 12 x 8m. The locations, conditions and dimensions of all offshore infrastructure will be communicated to the UK Hydrographic Office and KIS-ORCA Project (Kingfisher Information Services Offshore Renewables and Cable Awareness) following completion of construction.

Offshore export cable

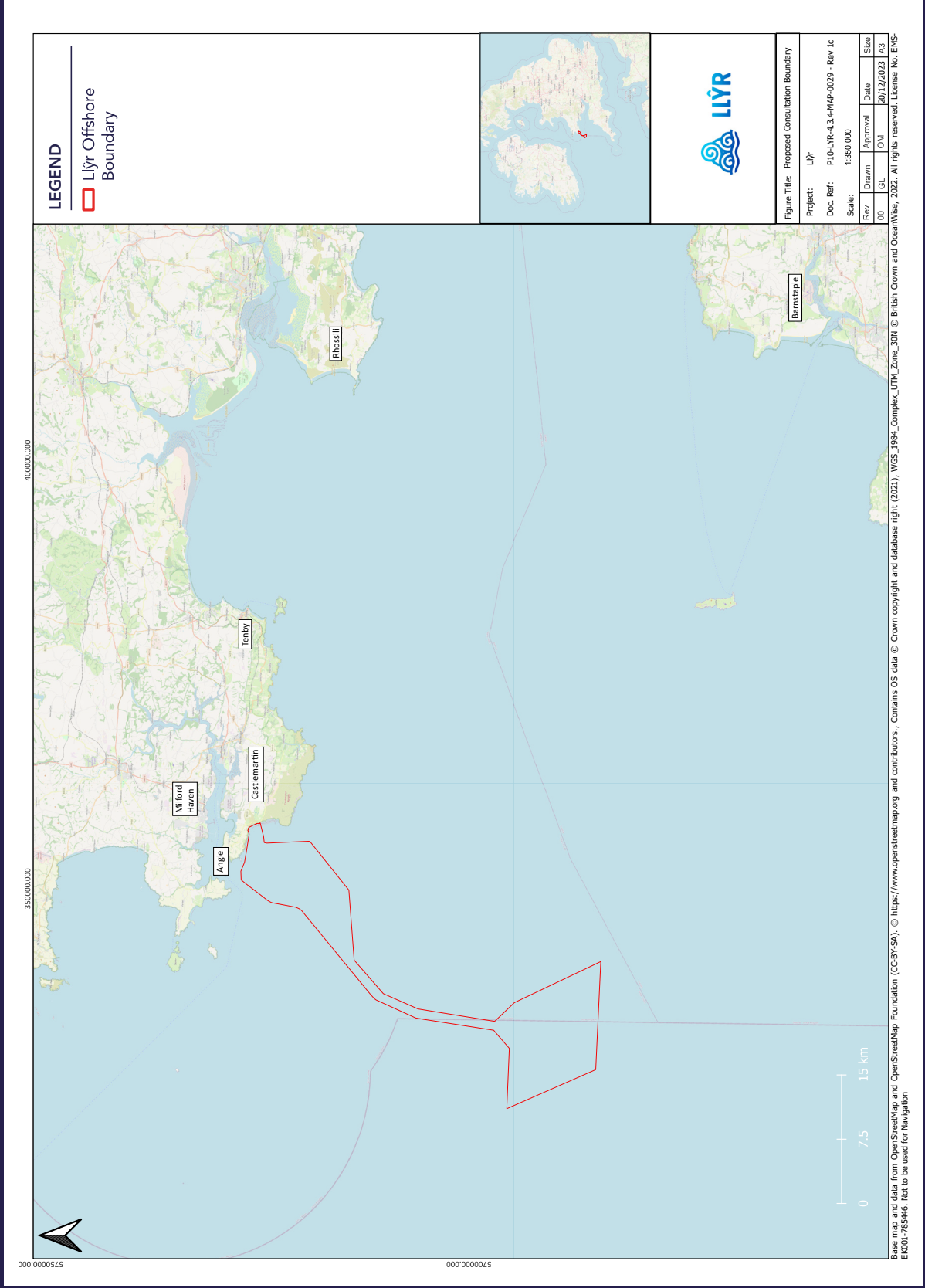
Once the power has been generated, it needs to be transported to the shore. We will use up to two cables to do this. The route these offshore export cables will follow has been determined by the landfall location (the point at which the cables come ashore), as well as environmental constraints.

The proposed offshore export cable corridor is shown on page 10, within which the export cable will be located.

To protect the offshore export cables from damage and entanglement, they will be buried. The target depth of burial is 1 metre. However, if target depth of burial cannot be achieved, alternative protection methods may be used. Further information is available on page 23 of this brochure.



Offshore Development Area



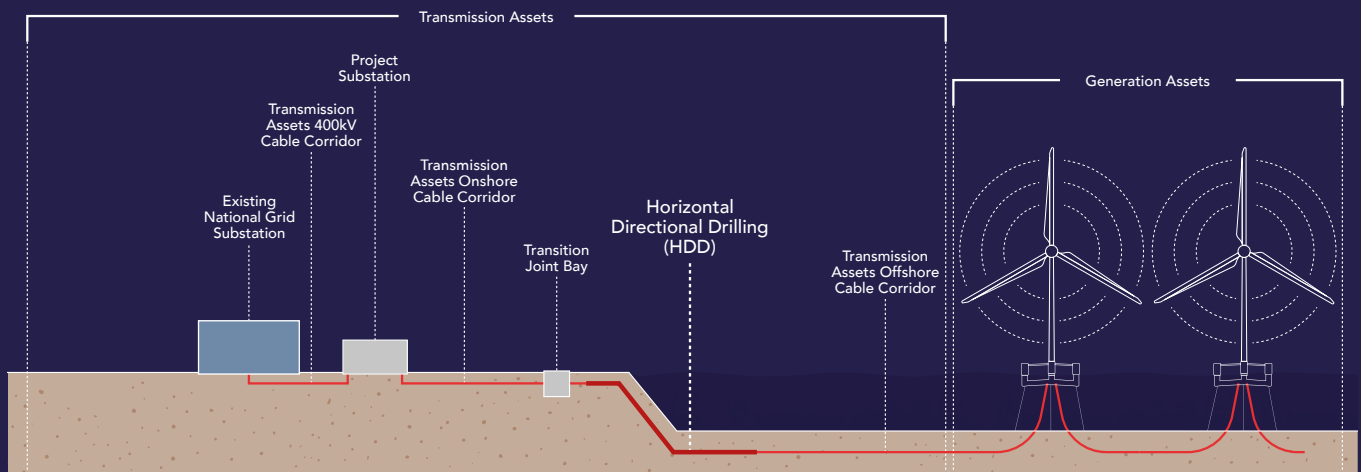
Our onshore proposals

The offshore export cables will bring the power to the shore. It then needs to be transported to the point at which we can connect to the National Grid. The closest connection point is adjacent to Pembroke Power Station and we have applied to National Grid Electricity System Operator (NGESO), the organisation responsible for connections to the National Grid, to connect here.

To connect the wind farm to the grid, we need to construct onshore infrastructure.

Our onshore works would include:

- Up to two onshore export cables between the landfall location (shore) at Freshwater West and the project substation.
- A connection point for each export cable between the offshore and onshore infrastructure within a transition joint bay.
- Project substation building.
- Up to two export cables between the project substation and the grid connection point.
- Temporary works to allow us to construct the onshore infrastructure.



We have identified areas where this onshore infrastructure could be located and are currently carrying out environmental and technical assessment work to assess any potential impacts and how they could be mitigated.

This consultation is a critical part of that process, feedback received helps in understanding if there is anything else that we need to consider.

Onshore cable route

Landfall

To connect into the connection point, we needed to identify where we can bring the cables onshore (known as landfall).

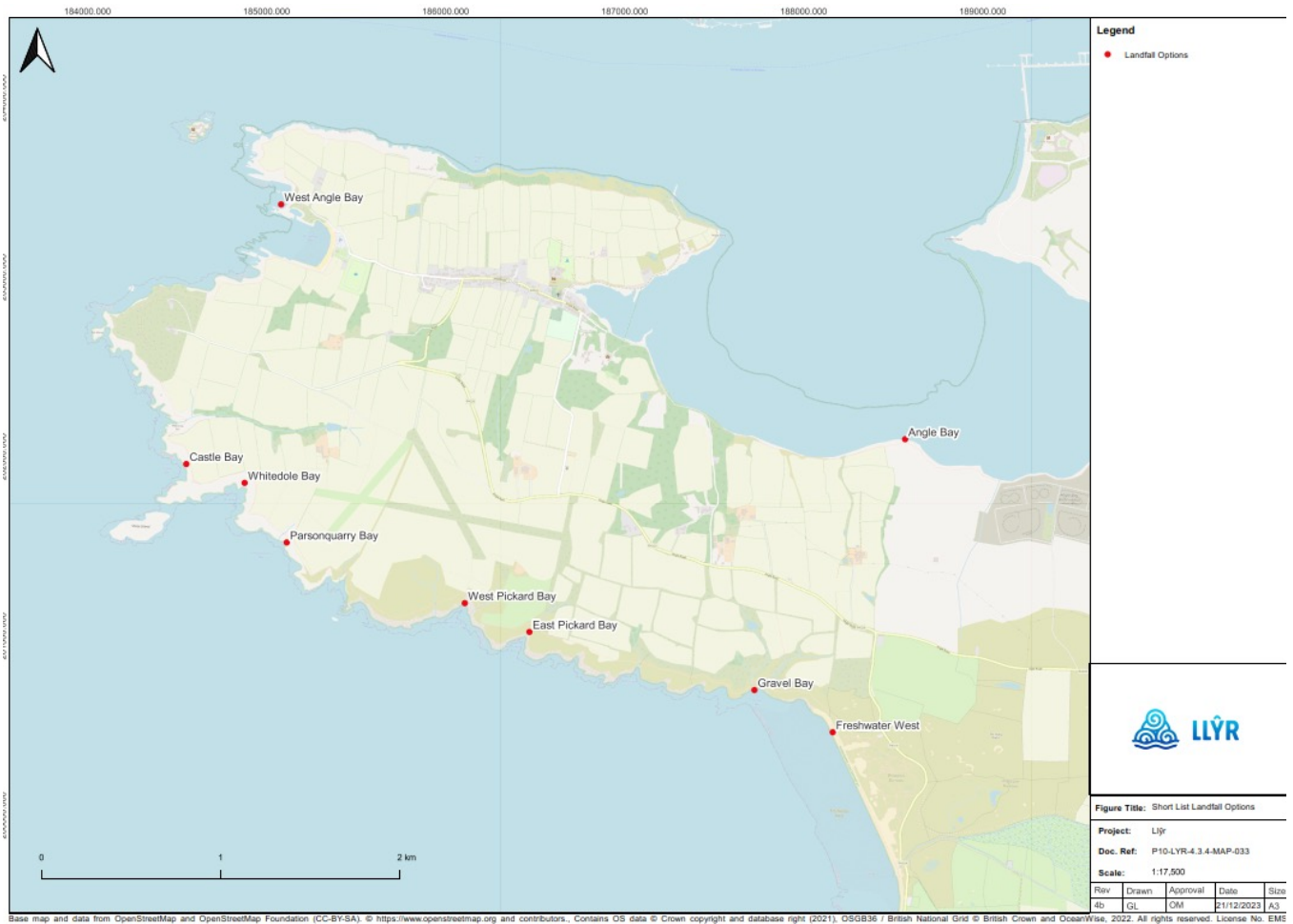
To select the landfall location, a regional technical study was conducted that considered a search area to take account for different potential grid connection locations across South Wales and Devon. Pembroke was identified as the preferred grid connection

point and an application was submitted to NGENSO. The potential landfall was narrowed down to 7 locations between Freshwater West and West Angle Bay, which were subject to a detailed landfall study.

These 7 sites were investigated further against information such as environmental designations; location and accessibility; geology; landownership information; utilities; shipping lanes and other sea users. The 7 sites are shown in the table below:

Location	Coordinates (X, Y)		Length of indicative offshore route (km)	Length of indicative onshore route (km)
West Angle Bay	185260.00	203367.00	43	11
Castle Bay	184589.00	201938.00	42	10
Whitedole Bay	184884.00	201843.00	42	10
Parsonquarry Bay	185164.00	201518.00	42	10
West Pickard Bay	186148.00	201275.00	43	8
East Pickard Bay	186624.00	201120.00	43	8
Freshwater West	188063.00	200532.00	45	7

Short list Landfall options



This investigation resulted in 6 landfall options from West Angle Bay to Freshwater West being removed from consideration as a result of constraints on accessibility, the presence of geological conditions and other key environmental constraints. Following this study, we have selected the landfall site at Freshwater West.

In addition to the constraints considered, the potential landfall locations at Freshwater West are closer to the proposed connection point, meaning that the onshore cable route from this site is shorter, reducing the overall extent of disruption to the local community.

Transition Joint Bay

Each offshore export cable will be connected to an onshore export cable near the landfall point at a Transition Joint Bay (TJB). A TJB is an underground chamber made of reinforced concrete that is used to join the offshore and onshore export cable circuits to the offshore export cables on the landward side of the beach, providing a secure and stable environment for the cable joints. Once constructed, the only visible sign of the TJB will be a link pillar to provide access to the TJB for inspection and maintenance.

We will need to construct up to two TJBs (one per export cable) and they will be located at landfall, behind the dune system.

We are proposing to use a trenchless construction method to bring the cables to the TJB, minimising disruption and impact to the beach and dunes. Further information on construction methods is available on page 22.

Onshore export cable corridor

At the Freshwater West landfall, we will install up to two onshore export cables between the TJB and the project substation. The two onshore export cables will be buried in separate trenches and within the onshore export cable corridor shown on the map on page 16. We will not construct overhead lines for this connection.

In selecting an onshore export cable corridor, we looked to avoid, or minimise impact on features such as identified and potential sensitive ecological resources like hedgerows, woodlands and water crossings as well as considering existing infrastructure such as roads, electrical infrastructure, planned developments and telecoms and built-up areas.

We are currently speaking to owners of land within the onshore export cable corridor and will continue discussions as we progress and refine the design. As part of this consultation, we want to hear your views on the onshore export cable corridor and anything else you think we should take account of, as we progress the definition of the onshore export cable route itself.

Further detail on how we plan to construct the project can be found on page 22 of this brochure.

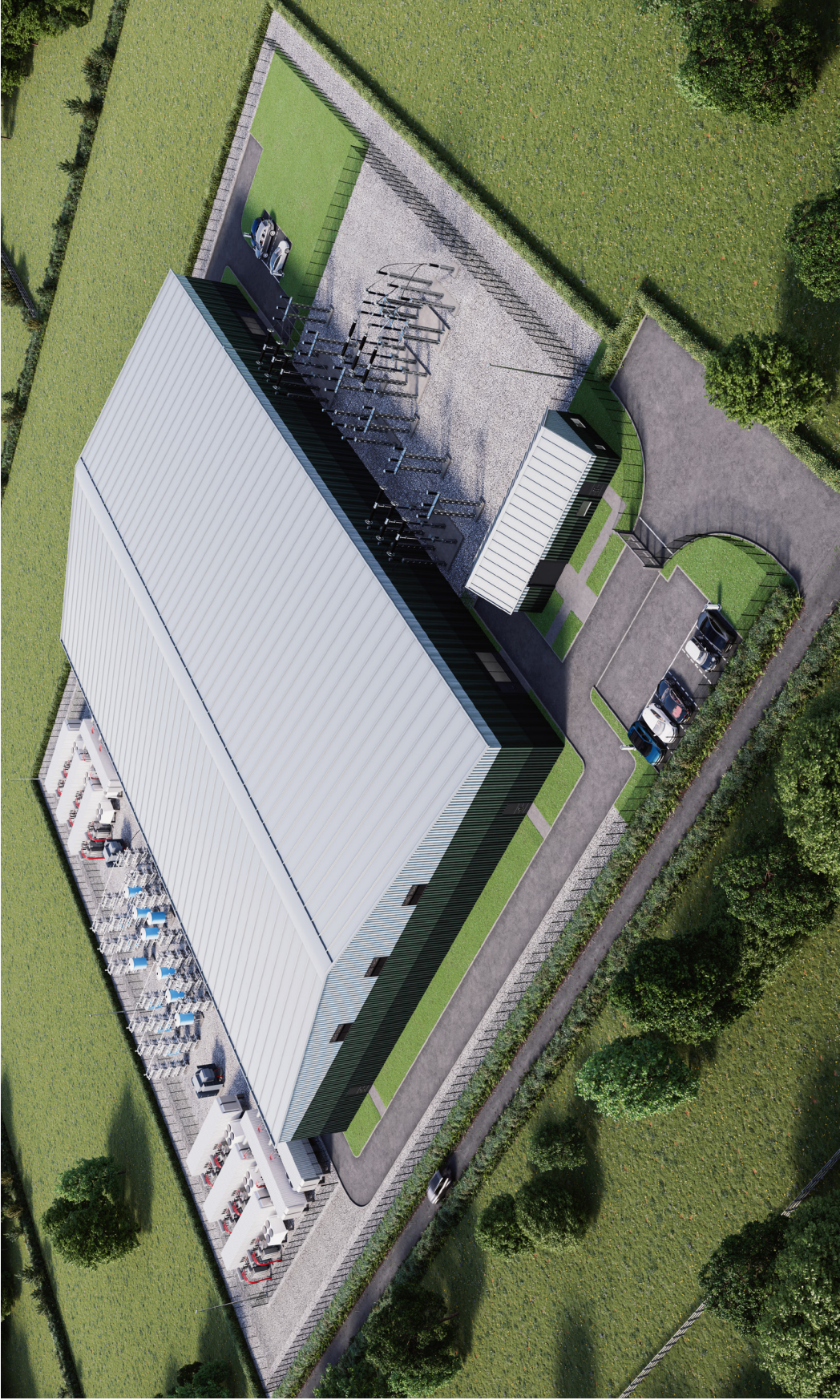
Substation and control building

We will build a substation to transform the power from 66kV or 132kV to 400kV (the voltage of the NGET connection point) to allow it to be connected to the grid. Potential substation locations have been established within a 2km radius area of search from the Pembroke Power Station. An initial list of 8 potential substation locations were evaluated within this area of search, considering landowner feedback from the local community, environmental features and existing and planned infrastructure, among other constraints.

The three locations which are shown on the map on page 16 are the resulting short list of options which we are looking to consult on, before selecting one for the application. We would welcome your views on these areas as part of this consultation.

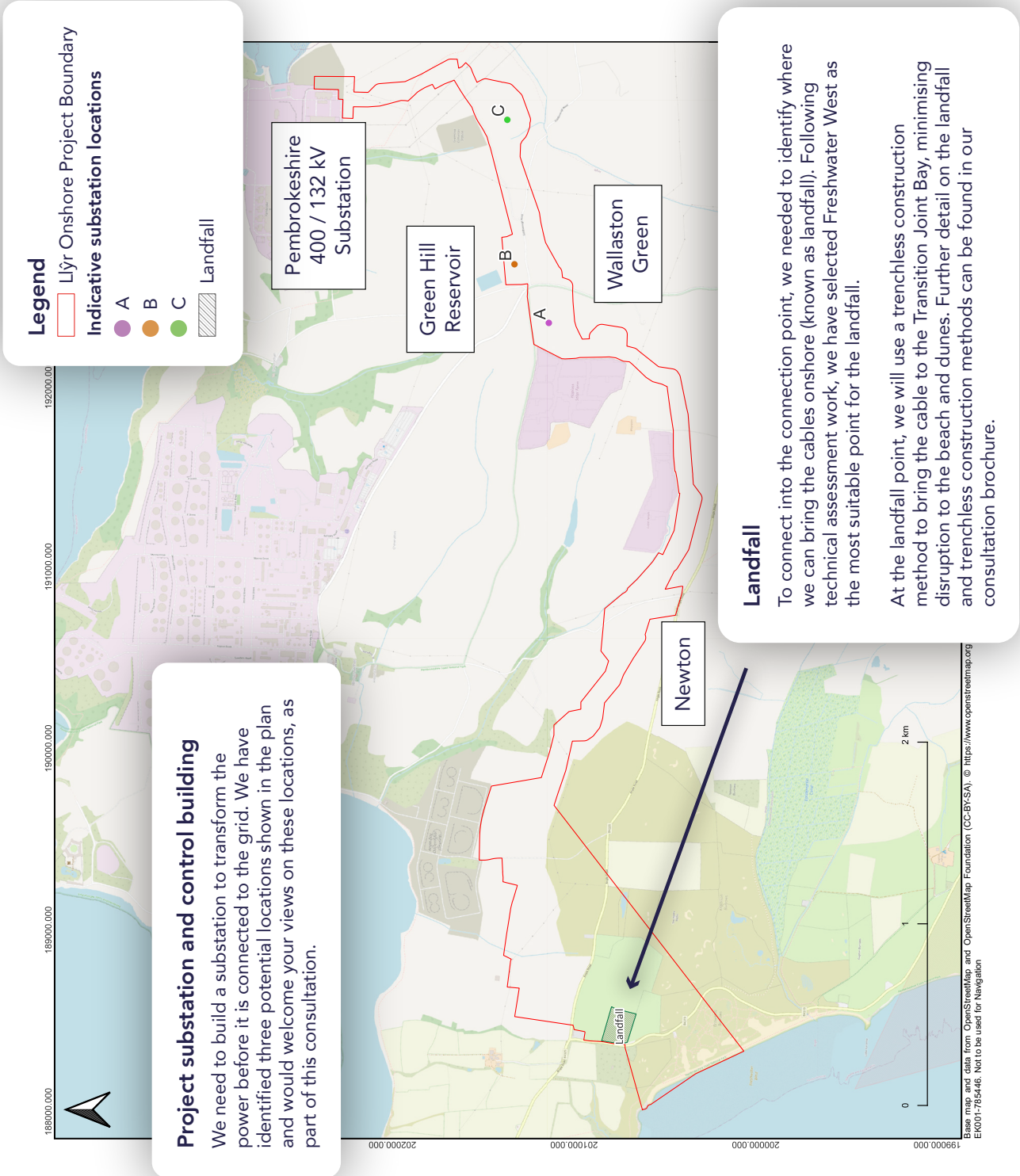
The overall compound for the substation will be a maximum of 126m by 106m. The substation building however will be up to 95m x 63m with a maximum height of 15m. There will also be space for parking for up to 8 cars and a small office and welfare building for staff on site. An indicative visualisation of what the substation could look like is available on the next page.

Indicative visualisation of proposed substation





Onshore Development Area



Understanding our environmental impact

We're currently undertaking an Environmental Impact Assessment (EIA) to understand the potential effects of the project on the environment and local communities and to identify ways in which any impacts could be avoided or mitigated.

The findings of our EIA will be presented in a document known as an Environmental Statement (ES) which will be submitted as part of our applications for consent. The EIA considers impact pathways for all relevant activities and infrastructure during all phases of the project.

To help inform this consultation, we have undertaken a preliminary assessment of the likely significant effects, and these are shown below. Our assessments are ongoing and a complete assessment will be provided in our Environmental Statement.

Offshore

Topic	Preliminary assessment of effects
Physical Environment	<p>The evaluation of the physical environment involves studying meteorological and oceanographic conditions (wind, waves, and tides), coastal geomorphology, seabed geomorphology, and sediments and geology. Consultation is ongoing with Natural Resources Wales (NRW) Advisory with regards to the assessment and modelling being undertaken.</p> <p>Subject to suitable mitigation measures, no significant adverse effect is predicted.</p>
Benthic Ecology	<p>Benthic ecology assessment focuses on critical habitats and species within the offshore export cable corridor and Array Area. Key habitats in the vicinity of the offshore development area include sandbanks, stony and bedrock reefs, biogenic reef and others. We are in the process of refining our offshore export cable route within the offshore export cable corridor, with particular consideration of benthic habitats. The assessment of impacts will evaluate this route, and the significance of effects will be determined in the ES along with identification of mitigation measures.</p>
Fish and Shellfish Ecology	<p>This assessment considers potential impacts on pelagic, demersal, elasmobranch, shellfish, and migratory fish species in the study area.</p> <p>Assessment work is not yet complete, however based on assessment work done to date, no significant adverse effect is predicted.</p>

Topic	Preliminary assessment of effects
Marine Mammals	<p>Assessment focuses on key marine mammal species like grey seals, harbour porpoises, common dolphins, bottlenose dolphins, and minke whale. Consultation has been carried out with NRW and Joint Nature Conservation Committee (JNCC) among other stakeholders.</p> <p>Assessment of project-alone impacts indicates that there should be no significant adverse effects arising from the project on its own.</p>
Ornithology (birds)	<p>Wales has many important seabird colonies, including those on the Pembrokeshire coast. The assessment focuses on the key seabird species including those on Grassholm, Skomer, and Skokholm, such as gannets, Manx shearwaters, guillemots, razorbills, puffins, and kittiwakes. Pre-application consultation has been carried out with NRW, JNCC, Pembrokeshire Coast National Park Authority, the Wildlife Trust and Royal Society for the Protection of Birds among other stakeholders.</p> <p>Assessment of project-alone impacts indicates that there will be no significant adverse effects arising from the project on its own.</p>
Marine Archaeology	<p>This assessment focusses on known and potential archaeological remains and historic assets. Consultation has been undertaken with the Royal Commission on the Ancient and Historical Monument of Wales.</p> <p>Subject to appropriate mitigation measures being implemented, no significant adverse effects are predicted.</p>
Shipping and Navigation	<p>The assessment considers potential effects on shipping vessels as a result of construction, operation or decommissioning activities. A Navigational Risk Assessment has been completed, and extensive consultation completed with the Maritime and Coastguard Agency, Trinity House, Chamber of Shipping, Port of Milford Haven among other stakeholders, including a Hazard Workshop.</p> <p>Under the Formal Safety Assessment (FSA) approach, the frequency of occurrence and severity of consequence has been determined for each shipping and navigation impact.</p> <p>No significant adverse effect is predicted.</p>
Commercial Fisheries	<p>Subject to developing a Fisheries Liaison and Co-existence Plan to which will detail mitigation measures the project is committing to where relevant, no significant effect is predicted.</p>

Topic	Preliminary assessment of effects
Other Sea Users	<p>This assessment considers potential impact on other sea users e.g. recreational users and offshore energy/military infrastructure.</p> <p>No significant adverse effect is predicted.</p>
Aviation and Radar	<p>This assessment characterises aviation and radar activity and presents the assessment of the potential effects of the project on aviation and radar.</p> <p>Subject to the implementation of mitigation measures for the Burrington radar, no significant effects are predicted.</p>
Seascape, Landscape and Visual	<p>This assessment considers potential effects of the project with respect to seascape, landscape and visual amenity.</p> <p>No significant adverse effect is predicted from all phases of the proposed offshore elements of the project.</p>

Onshore

Topic	Preliminary assessment of effects
Landscape and Visual	<p>There is the potential for localised visual impacts during construction and operation of the onshore elements of the project. However, it is anticipated that impacts on most receptors and on the overall landscape character and visual amenity will not be significant, subject to mitigation measures. Consultation has been carried out with Pembrokeshire County Council (PCC), Pembrokeshire Coast National Park Authority (PCNPA) and other stakeholders.</p>
Ecology and Biodiversity	<p>It is recognised that construction of Llŷr 1 and its associated onshore infrastructure will lead to disruption to existing habitats and wildlife along the route. Appropriate measures of mitigating these impacts have been incorporated and will be taken forward to ensure impact is minimised during construction.</p> <p>No significant adverse effect is predicted during operation of the project.</p>
Historical Environment and Cultural Heritage	<p>This assessment considered impacts on archaeological and cultural heritage resources during construction, operation and maintenance and decommissioning phases of the proposed project.</p> <p>Subject to suitable mitigation measures, no significant adverse effect is predicted.</p>
Water Environment	<p>Subject to suitable mitigation measures, no significant adverse effect is predicted.</p>
Geology and Hydrogeology	<p>This assessment considers potential effects on geology and hydrogeology (groundwater). Consultation has been carried out with the PCC Sustainable Drainage Approval Body.</p> <p>Subject to suitable mitigation measures, no significant adverse effect is predicted.</p>
Agriculture and Soils	<p>The potential impact on agriculture and soils during the construction stage of the project will be due to the temporary loss of Best and Most Versatile (BMV) Agricultural Land. However, as the land used temporarily for installing the cables and related infrastructure will be reinstated to its same condition in agricultural use, the area of BMV land required permanently is not likely to lead to a significant effect.</p>

Topic	Preliminary assessment of effects
Traffic and Transport	The assessment has conservatively assumed that all proposed construction traffic will use all roads within the study area. On balance, pre and post mitigation, environmental effects associated with construction traffic are therefore expected to be localised, temporary and not significant.
Air Quality	No significant adverse effect is predicted.
Noise and Vibration	Subject to suitable mitigation measures, no significant adverse effect is predicted.
Socio-economics, Recreation and Tourism	A significant beneficial effect related to employment creation in the installation phase is predicted. No significant adverse effects are predicted.

Project-wide

Topic	Preliminary assessment of effects
Climate Change	Some GHG emissions during the installation and decommissioning of the project are anticipated. These will arise from the use of materials (embodied GHGs) and fuel use during installation and from electricity and increased vehicle usage for the additional staff employed during operation and maintenance activities. Overall, the project has the potential to contribute to national and international carbon reduction and net zero targets and contribute to the decarbonisation of the UK's energy system by providing offshore renewable wind energy generation.
Cumulative Effects	The approach to this assessment will be set out in a separate appendix, and the cumulative effects assessment (those of the project and those of other relevant developments) presented within each topic chapter. The approach for cumulative assessment has been consulted on and will be agreed with NRW and other statutory consultees.
Major Accidents and Disasters	With implementation of standard and project specific mitigation the project avoids significant risks associated with major accidents and disasters.



Construction

Should the project receive consent and proceed to construction, we would be committed to minimising the impact of our works on the community and the environment.

As part of this consultation, we are keen to hear your views on how we can minimise disruption and impacts during the construction period.

The turbines and floating platforms

Unlike fixed foundation offshore wind turbines, the majority of assembly work will happen onshore in a port or harbour. Typically, the activities detailed to the right are required for assembly, all of which may take place within the same compound or facility. We are currently working with our supply chain to identify the best locations for these hubs. Our preference is that this activity happens in South Wales.

Turbine assembly

We will source the turbines from an established offshore wind turbine manufacturer. The various components will be transported by sea to a central assembly facility.

Floating platform assembly

The floating platform elements may be a modular design to enable the main significant components to be manufactured and transported as prefabricated units to the central assembly site.

Turbine and platform integration

Once the platforms are complete, the turbine needs to be connected to the floating platform. Once connected, a sequence of testing and pre-commissioning activities will be completed at the quayside. The complete floating platform and turbine will then be anchored at a temporary location until it is installed.

Once assembled, the platform and turbine units will be towed out to the Array Area, where they will be installed and secured in place via mooring lines and anchors.

The offshore export cables

Dedicated cable laying vessels will install and where possible, bury the offshore export cables along the offshore export cable corridor the seabed. There are a number of different methods of installation that we are considering. These include:

Ploughing

This method uses a subsea cable plough towed on the seabed behind a cable laying vehicle. The cable is laid by passing through the plough, lifting the sediment, and being placed underneath, laying it into the trench within the seabed. The trench will then be backfilled with sediment, to a target depth of burial of 1m.

Jetting

This method buries the cable using water jetting. The export cable is first laid within a trench in the seabed, and a jet trenching machine injects water at high pressure into the sediment surrounding the cable, loosening the seabed and allowing the cable to sink into the trench. This technique minimises seabed disturbance, reduces the risk of cable damage and offers a relatively efficient installation process.

External cable protecting measures

The project is committing to maximise burial wherever possible however, cable protection may be required where seabed conditions or the presence of existing infrastructure mean that target cable burial depth cannot be achieved. The cable protection in this instance will enable the target depth of cover to be achieved.

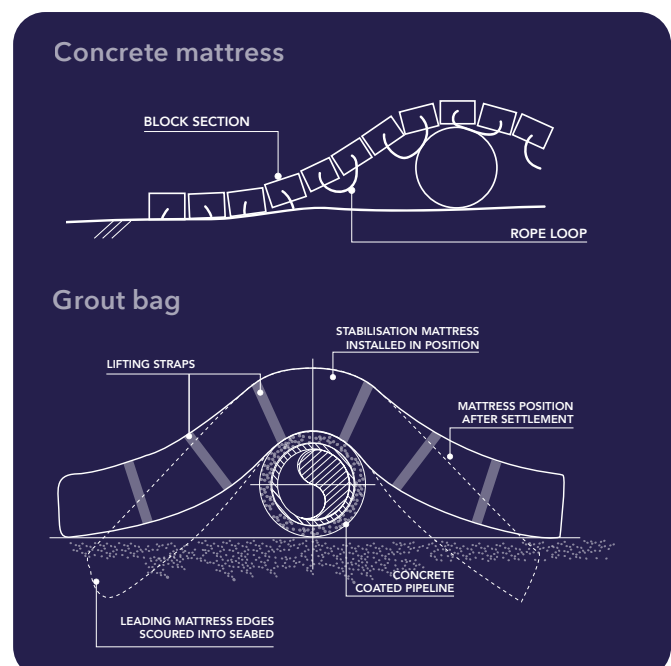
The target depth of burial for the offshore export cables is 1m. The worst case scenario for the proportion of the offshore export cable requiring protection is 31%.

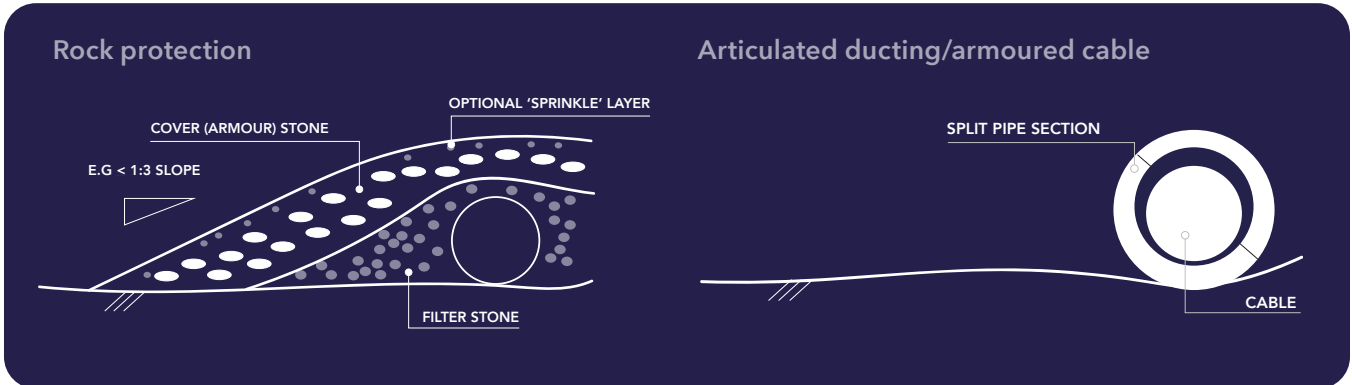
The achieved proportion of burial is likely to be much higher. Following completion of a geotechnical survey post-consent, a Cable Burial Risk Assessment will be produced which will provide more detail on depths of burial throughout the offshore export cable routes.

The type of cable protection which could be used include:

- Concrete mattresses (pre-formed mattresses comprising a mesh of concrete block that are placed across the cables).
- Rock protection (industry grade rock which is placed at a 1:3 slope ratio to form a berm over the cable to achieve the required depth of cover);
- Grout bags (bags of hardened gravel, sand/cement grout or concrete placed over the cable); or
- Articulated ducting/armoured cable (a manufactured product that provides a protective 'sleeve' around the cable).

Examples of cable protection measures



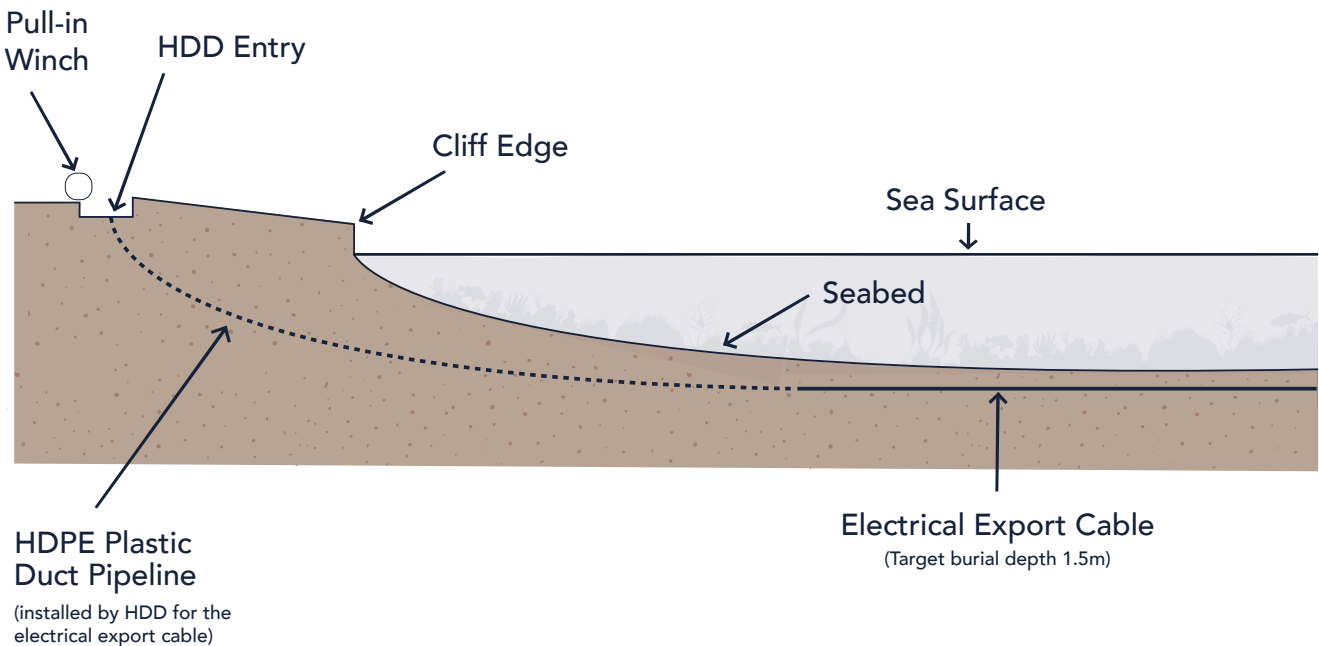


The onshore export cable

For most of the onshore export cable route, we will use open cut trenching to install the cables. This is where the trenches are excavated along the route, the cables are laid in each trench and then filled in. We will then restore the land to its original condition over the trench to bury the onshore export cable. Where there are obstacles (such as major roads, rivers or other infrastructure) we may install ducts using 'trenchless' methods, to avoid digging a trench.

Where the onshore export cable reaches landfall, we plan to use a method called Horizontal Directional Drilling (HDD), where a cable duct is installed onshore, and the exit point is below the water. The cable is then fed through the ducts. This allows us to minimise disruption to the beach and dunes.

Horizontal Directional Drilling at landfall diagram



The substation

Flat bed trucks will bring the majority of the infrastructure and materials required for the substation construction onto the selected substation site. This will allow most assembly to be completed on site. Where larger items are required to be assembled off site and brought in, over-sized load traffic management will be implemented, and detailed in a Construction Traffic Management Plan (CTMP), post-consent. A permanent short access road will be constructed to provide an entry/exit point for staff from the nearest main road.

A sustainable drainage systems pond will be installed next to the substation building to establish a drainage system for water run-off, in line with local guidance as agreed with Pembrokeshire County Council Sustainable Drainage Approving Body officer and other key stakeholders.

Construction on the substation compound is expected to be restricted to daylight hours, 7am to 7pm Monday to Saturday where possible. Should other works be required to take place outside of these hours, specific approval from the LPA would be obtained in advance of the work being undertaken.

Following completion of construction of the substation infrastructure, landscape and ecological mitigation measures will be installed such as planting of hedgerows. These mitigation measures will be established in the relevant ES chapters (Terrestrial Ecology and Landscape & Visual) and further detailed in a Landscape Ecological Management Plan (LEMP) submitted post-consent.

Commissioning and decommissioning

Commissioning process

After the WTGs have been installed offshore, they will undergo testing and commissioning. This is expected to last up to six months.

The WTGs will then be operational for a period of up to 30 years. The ES will include assessments of impacts during all phases of the project, including those during the operational phase.

Decommissioning process

The decommissioning process will essentially reverse the process used for the installation of the floating infrastructure, with the potential activities and required works being the same or likely less in duration, extent and scale than those of the construction phase. The platforms will be returned to a port for disassembly and disposal. Final details of the proposed decommissioning will be agreed towards the end of the 30 year operational life of the project, in line with the applicable legislation and guidelines at that time. It is assumed that all buried infrastructure will be left in situ to minimise disruption and disturbance, however the details of decommissioning process will be determined in a Decommissioning Plan, which will be subject to consultation. The decommissioning is expected to take up to 12 months.

Community benefit

Llŷr 1 represents a major investment opportunity for the local area, Pembrokeshire and Wales and we want the local community to benefit from our investment. We are currently working with local stakeholders to examine how we can secure the best possible economic, social and environmental benefits from the project and as part of this consultation, we want to hear your views on how the projects can benefit the community.

Some of our work to date includes:

Supply chain development

Independent reports suggest that the first GW of floating wind power in the Celtic Sea would create as many as 3,000 jobs and almost £700m in supply chain opportunities for Wales and Cornwall in the coming decade alone.

We are committed to developing a supply chain in Wales for the Floating Offshore Wind Sector. Our Supply Chain Director has been actively engaging with Welsh companies to understand their capability and capacity, and to identify barriers. We are working to create a commercial environment where Welsh companies can operate comfortably, with reasonable payment terms and sensible bonds/guarantees.

Floventis Energy in partnership with ORE Catapult has launched the Fit4OR Wales programme, F4OR Wales is the first F4OR programme focused primarily on floating offshore wind and is designed to support companies make the transition into floating wind. F4OR is a programme designed with input from the offshore renewable energy industry to help the UK supply chain get ready to bid for work in the sector.

We have also engaged with relevant industry groups and will deliver presentations in conjunction with these bodies to ensure member companies are informed.



If you are interested in being a potential supplier and supplying services to the project, register your details on Supply Chain Register on our website receive direct communication about supply chain events and key activity:

www.llyrwind.com

Case study – Wales in France

Led by the Welsh government with the support of Floventis, 19 delegates from supply chain companies, ports and industry membership bodies took part in a recent fact finding and trade mission to Fos-sur-Mer. This is SBM Offshore's fabrication facility near Marseille that assembled the floating wind platforms for Provence Grand Large, the first of France's pilot floating windfarms.



Education and outreach

Offshore wind is a growing sector in the UK and as a region, we want to assist in educating and up-skilling the younger generation to prepare them for future employment opportunities in renewables.

To date, we have proactively engaged with our education partners in Wales to see how we can add value to educational programmes.

We are currently collaborating with 14 local schools, in partnership with the Darwin Centre in Pembroke, providing STEM (Science, Technology, Engineering and Mathematics) workshops and interactive activities for students. Additionally, we are working with See Science to support Discovery Days for students and sponsoring Milford Haven Comprehensive School's First Lego League challenge to inspire the next generation of engineers and technicians.



Our focus includes identifying opportunities for girls to engage in STEM subjects, so we are working with Chwarae Teg to identify opportunities specifically for girls to engage in these subjects.

Case study

Floventis Energy is working with the Darwin Centre with a bespoke offshore wind design challenge for local primary schoolchildren. The workshops consist of an overview of climate change, fossil fuels and the benefits of renewable energy with a focus on mitigating climate change and future job opportunities. Schools have the option to choose between two different workshops – one that focuses on platform design and construction and the other focussing on climate change and wind turbine design. Educational resources are provided to the participating schools.



The offshore wind design challenge followed our 'Love the Celtic Sea' competition, which was open to all Pembrokeshire children in years 3 to 6 and kick-started our partnership with the Darwin Centre. The aim of the competition was for children to provide artwork which demonstrated why they love the Celtic Sea and what it means to their generation. Competition winners were invited to meet their local MP with an exciting tour of the Houses of Parliament, and all entries were displayed in the Senedd at an event with the local MS and the Minister for Education and the Welsh Language.

Skills and training

The Floating Offshore Wind industry presents innumerable careers options for our local workforce, and we are committed to working with stakeholders to ensure that it is our local communities that benefit the most.

As a member of the Pembrokeshire County Council led Energy Skills Network, we are working with local providers to build the skills pipeline needed to take advantage of the forthcoming opportunities.



We are engaging individuals on the right courses to meet the skillsets needed in preparation for the jobs that will arise. To outline the types of roles available in the industry, we hosted a webinar in May 2023 with Careers Wales and engaged with advisers across schools in West Wales to direct our young people and signpost them to support their future career development.

Apprenticeships will play a key role in supporting the expansion of the industry and we are exploring options with Pembrokeshire College and other providers to ensure apprenticeships are a viable training opportunity, whether that be for young people starting their career journey or those looking to change career or return to the workplace.

Environmental research

Llyr 1 will be able to support environmental research supporting how floating wind interacts at a large scale with the natural environment and enabling better understanding of the benefits and challenges and identify opportunities to enhance the local environment. As part of this consultation, we want to hear your views on what local environmental initiatives you think we could support.



Community involvement

We are working with local community groups and interested parties to assist in engaging young people to build a sustainable talent pipeline for the future. We provide opportunities for young people to take part in programmes that share their experiences and assist in making a difference to their lives and future career choices.



Gaining consent

To build and operate Llŷr 1, we will need to apply for the following consents:

Section 36 consent under the Electricity Act 1989: This would allow us to build and operate an offshore generating station (the wind farm) and would also include deemed planning permission for the onshore works. This means that consent for our onshore works would be considered as part of the section 36 application. Planning and Environment Decisions Wales (PEDW) administering on behalf of the Welsh Ministers is responsible for determining this type of application.

Marine Licence under Part 4 of the Marine and Coastal Access Act: This would allow us to carry out certain activities in the marine environment, such as works on the seabed and the establishment of moorings. Natural Resources Wales administer Marine Licence applications on behalf of the Welsh Ministers.

Whilst Pembrokeshire County Council and Pembrokeshire Coast National Park Authority are not the decision makers on either of the applications, they will be statutory consultees on both applications.

Next steps

February 2024	Review of consultation feedback and use to finalise applications for consent.
Spring 2024	Anticipated s36 and Marine Licence application submissions. At this stage, there will be an opportunity for you to make a representation on the application. Information on how to do this will be provided at this point.
Late 2026 to Mid 2028	We anticipate a 6 to 8 month construction period for the onshore cabling works, within this time frame, subject to consents.

Find out more

Our consultation will run from **15 January to 11 February 2024**. We would like to hear your views about our plans.

Your views will shape our proposals, helping to secure infrastructure that will generate enough renewable electricity to power in the region of 100,000 homes. There are a number of ways you can view our proposals, ask questions and get involved in our consultation.

Online:

You can visit our virtual exhibition at:
www.llyrwind.com

This can be accessed at any time during the consultation period. The virtual exhibition room contains all consultation information. Once you access the link above, you will be given instructions so you can navigate the room.

Consultation events:

One of the best ways to find out more about our proposals is to visit us at one of our consultation events. Here, you will be able to speak to members of the project team and find out more about the project.

We will be holding three consultation events, at the following locations, dates and times:

- Pembroke Dock Community Learning Centre, Albion Square, SA72 6XF
| Thursday 25 January |
12:00 – 16:00
- Foundry House, Orange Way, Pembroke, SA71 4DR | Friday 26 January |
11:00 – 15:00
- Hundleton Sports Pavilion, Hundleton, SA71 5RD | Tuesday 30 January |
15:00 – 19:00

Information points:

You can collect free copies of this brochure or the response form, at the following locations, during their usual opening hours:

Pembroke Dock Library:

Water Street, Pembroke Dock, SA72 6DW

Pembroke Library:

Commons Road, Pembroke, SA71 4EA



LLYR

Have your say

We would like to hear your views on our proposals for Llyr 1. You can respond to this consultation in the following ways:



ONLINE: Fill in our online response form at www.llyrwind.com



IN PERSON: Fill in a response form at one of our consultation events



EMAIL: Write to us or send your completed response form to our project email: info@llyrwind.com



POST: Write to us or send your response form to: **Floentis Energy Limited, Office 20, Bridge Innovation Centre, Pembrokeshire Science and Technology Park, Pembroke Dock SA72 6UN**



Please submit your feedback by **23:59** on **11 February 2024**.

Get in touch

If you would like to get in touch with our project team, during or outside of the consultation period, please use the contact details below:

EMAIL: info@llyrwind.com

PHONE: 01646 689275

POST: Floentis Energy Limited, Office 20, Bridge Innovation Centre, Pembrokeshire Science and Technology Park, Pembroke Dock SA72 6UN



FLOENTIS
ENERGY



Floventis Energy Limited

Office 20, Bridge Innovation Centre
Pembrokeshire Science and Technology Park
Pembroke Dock
SA72 6UN

info@llyrwind.com
www.llyrwind.com