MarramWind

MarramWind Offshore Windfarm

Consultation Three Booklet

2025

Contents

Welcome

MarramWind is a proposed floating offshore windfarm located off the north-east coast of Aberdeenshire. This exciting project, one of the largest floating offshore windfarms in development in the world, has the potential to deliver up to three gigawatts (GW) of renewable electricity, which could power the equivalent of more than 3.5 million homes.

In January 2022, Crown Estate Scotland awarded ScottishPower and Shell an Option to Lease Agreement for the MarramWind offshore windfarm and since then we have been developing our proposals. In 2024, we held two rounds of statutory consultation, presenting our early proposals and project designs, enabling the local community and wider stakeholders to submit their feedback. We have continued to refine the project to account for this feedback and are now presenting our updated proposals as part of our third round of statutory consultation, which runs from 18 August to 9 September 2025.

This third round of statutory consultation is another key milestone in the preparations for our Environmental Impact Assessment (EIA) and consent applications, which we intend to submit before the end of 2025. We now invite you to read through this booklet to learn more about our updated proposals and share your views. Your feedback is important and will help us to develop a final project design for submission as part of our consent applications to the relevant authorities.

Information on how to respond to this consultation can be found in the ‘Have Your Say’ section of this booklet.

Working Together for a Cleaner Future

ScottishPower and Shell have over 70 years' combined experience in Scotland's offshore environment, with over 50 years' experience offshore in the North Sea. We also have over 15 years of combined experience in floating offshore wind energy. As world-leading energy developers, we bring together decades of experience working offshore, a long history of working in Scotland, and an innovative approach to delivering offshore energy projects.

About ScottishPower

ScottishPower is part of Iberdrola Group, a global energy leader and a major producer of wind energy. Responsible for progressing Iberdrola Group's renewable energy projects in the UK, ScottishPower manages the development, construction and operation of windfarms throughout the world and currently has 40 operational windfarm sites generating over three gigawatts (GW) of renewable energy.

ScottishPower continues to be one of the leading renewables developers in the UK and is investing up to £24 billion between 2024-28 across networks, offshore and onshore wind and solar generation, increasing home grown green electricity generation in the UK to support energy security.

Focused on wind energy, smart grids and driving the change to a greener future, ScottishPower is the first integrated energy company to generate 100% green electricity in the UK.

About Shell

Shell has a history in the UK that dates back 125 years, with over 50 years' experience delivering complex offshore projects in the North Sea. Shell is committed to ensuring the future success of wind projects in the UK.

Shell aims to continue to be a major investor in the UK energy system in the years ahead, providing the fuels that people rely on today, such as oil and gas, while pushing forward with the low and zero carbon products and services that our customers will need in the years to come.

Shell contributes to supporting energy security and economic value with a target to become a net zero emissions energy business by 2050.


MarramWind
Offshore Project Updates

About MarramWind Floating Offshore Windfarm

The proposed MarramWind floating offshore windfarm will consist of between 126 - 225 floating wind turbines. Situated in deep waters approximately 75km off the north-east coast of Scotland at its nearest point, the wind turbines will be barely visible from shore.

The renewable electricity generated by MarramWind will play a pivotal role in achieving Scottish and UK net zero targets for 2045 and 2050 respectively, while also supporting energy security and promoting energy innovation.

Optimising Sustainability

We are adopting a strategic approach, reflective of ScottishPower and Shell's sustainability targets. We have identified four sustainability key priority areas:

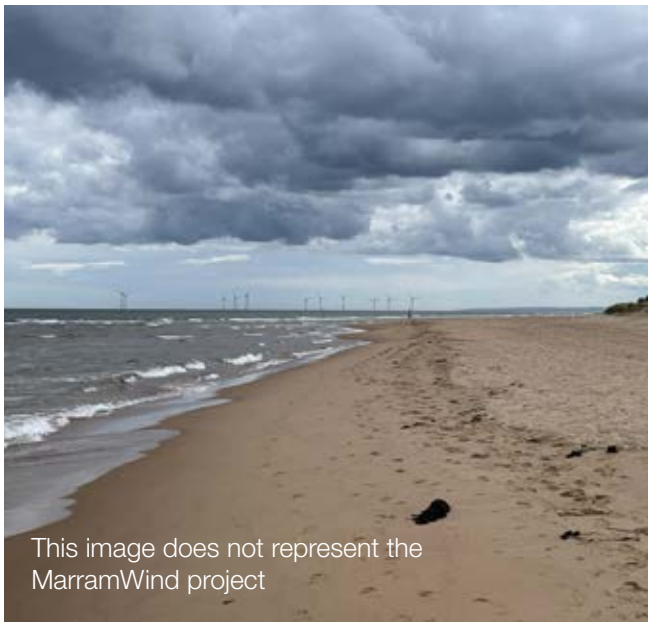
1. **Emissions Reduction:** we are committed to minimising, monitoring and measuring our greenhouse gas emissions where feasible.
2. **Embedding Circularity:** our ambition is to use resources and materials efficiently and optimise reuse and recycling across the project lifecycle.
3. **Nature Positive Development:** we are committed to ensuring negative effects on biodiversity are avoided where possible or mitigated effectively and that the project has an overall positive benefit on biodiversity.
4. **Optimising Social and Economic Performance:** we will seek to maximise the project's net economic effect while supporting local and regional economic priorities, including employment and skills development and associated business/supply chain opportunities.

We are adopting a holistic approach to sustainability, with all key priorities considered together. For each key priority we are reviewing options for enhancing sustainability, including exploring existing design options, new technologies and partnership opportunities. We will undertake studies to further explore and select which options can be taken forward. By adopting this approach, we will strive for an optimised sustainability performance that will benefit the environment and local communities.

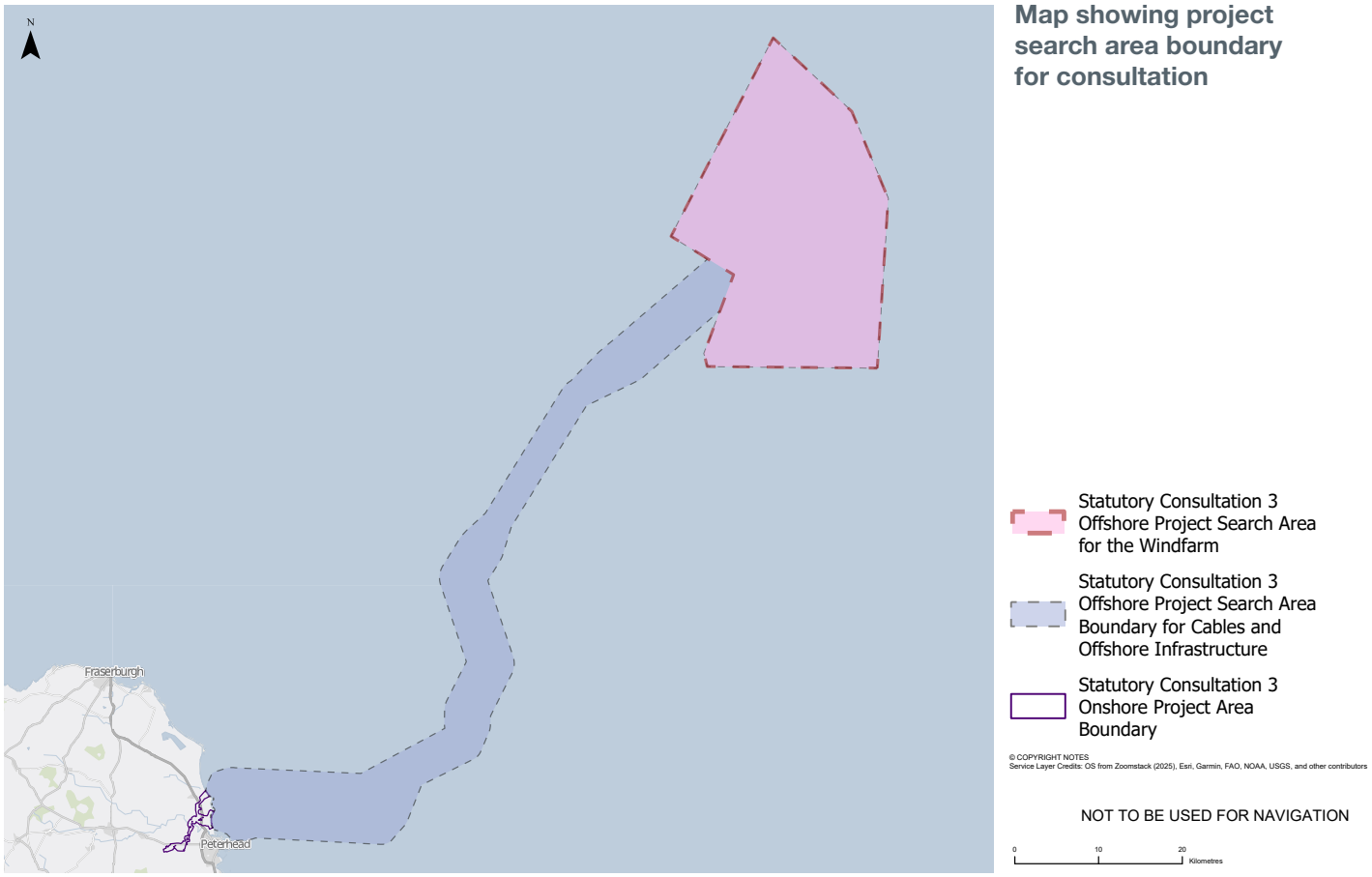
MarramWind is being developed with sustainability embedded as a core value, from development through to construction, operation and maintenance, and decommissioning.

MarramWind has defined a project search area boundary, shown in the map below, which has been gradually refined in response to stakeholder feedback and other technical and commercial considerations over the last three years. The expectation is that the onshore boundary and the offshore cable corridor boundary will be further refined in the future, as the best locations for the infrastructure are identified.

The current project search area ensures that we can adjust the project design through our design development, environmental assessments, and stakeholder feedback. Further information about the refinements made to the offshore and onshore project area boundary can be found in the 'Offshore Project Updates' and 'Onshore Project Updates' sections of this booklet.


This image does not represent the MarramWind project

MarramWind, generating up to 3GW of power, will connect to the national grid via the proposed Scottish and Southern Electricity Network's (SSEN) Netherton Hub substation to the west of Peterhead. This was confirmed by National Grid in their Holistic Network Design (HND) report and subsequent follow up exercise. While the HND is a crucial step for renewable energy connection, it is part of a larger picture. The Beyond 2030 Report builds on the HND, aiming for a clean, secure, and affordable energy future throughout the 2030s. This ambitious plan aligns with the UK Government's ambition to have a fully decarbonised electricity system by 2035 and will support delivery of the projects leased via ScotWind.



Map showing project search area boundary for consultation

Consents and Project Programme

The consenting process

Under the Scottish Government's National Planning Framework 4, MarramWind is classified as a National Development. This means that the need for the project has been established through Government policy, but planning consent, marine licences and other permissions are still required for construction and operation. We will need to make separate applications for the following key consents for both the onshore and offshore elements of the project:

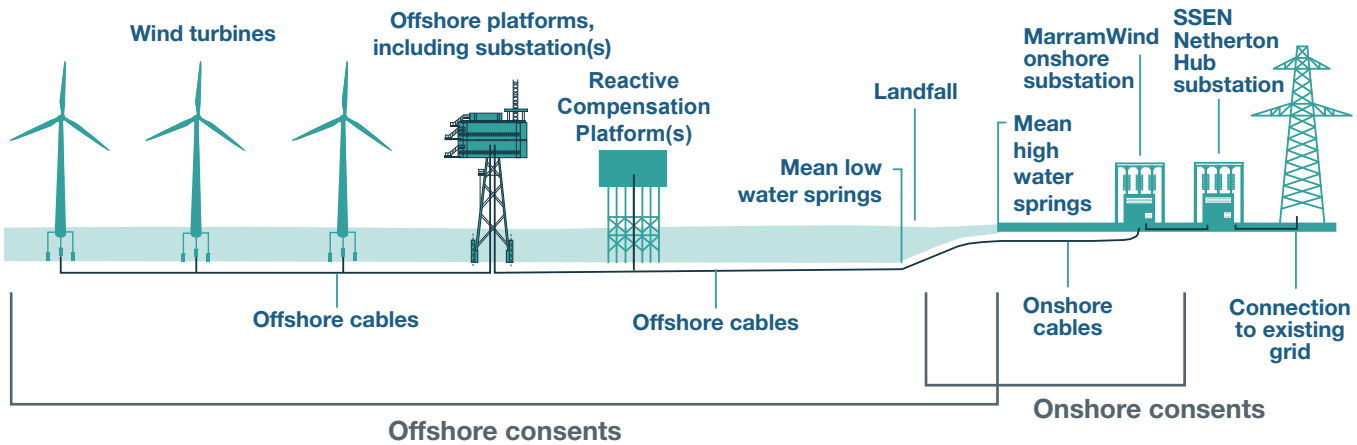
- **Section 36 consent,** under the Electricity Act 1989 (S36), is required for the offshore windfarm site. Permission is granted by the Marine Directorate (on behalf of Scottish Ministers).
- **Marine licences,** under the Marine (Scotland) Act 2010 (0-12 nautical mile) and the Marine and Coastal Access Act 2009 (12-200 nautical mile), the Project is seeking marine licences. This is to undertake marine licensable activities, including the installation of cables or other infrastructure on or within the seabed. Permission is granted by the Marine Directorate.
- **Onshore planning permission,** under the Town and Country Planning (Scotland) Act 1997 (TCPA) is required for all infrastructure located above the average level of low tide (known as Mean Low Water Springs (MLWS) and is granted by the local planning authority, Aberdeenshire Council.

Some consents and licences overlap between the Mean High Water Springs (MHWS) and MLWS – this area is known as the intertidal zone. This consultation presents the project as a whole, including onshore, intertidal and offshore infrastructure.

We held two rounds of statutory consultation in 2024 and will hold an additional two rounds of statutory consultation in 2025, fulfilling the requirements under the TCPA and relevant marine licences. Our consultation activities in 2025 provide further opportunity for stakeholders to feedback on proposed mitigations and to express their views on our refined project design.

We will also be undertaking an EIA, which is the process of assessing the likely significant effects the project could have on the environment. In addition, we will prepare reporting to support a Habitats Regulations Appraisal (HRA). Further information on our EIA and HRA can be found in the 'Environmental Impact Assessment' and 'Habitats Regulations Appraisal' sections of this booklet.

The diagram below shows the infrastructure that may be required for the onshore and offshore elements of MarramWind, as well as which sections of the project are related to the different consents we need to apply for. Further information on the onshore and offshore infrastructure is provided in the 'Offshore Key Infrastructure' and 'Onshore Key Infrastructure' sections of this booklet.



Project programme

Developing MarramWind involves significant work, but our priority is to deliver a project that minimises effects on local communities and the environment, while delivering renewable energy. The programme below sets out the process and anticipated timeline towards developing MarramWind.

2022

ScottishPower and Shell were awarded rights to develop MarramWind within Plan Option NE7 of Scotland's 'Sectoral Marine Plan - Offshore Wind Energy (2020)' as part of Crown Estate Scotland's ScotWind leasing round. Environmental surveys and data gathering commenced in the marine and terrestrial environments to inform the EIA and project design.

2023

The MarramWind Scoping Report was submitted to Aberdeenshire Council and the Marine Directorate. The Scoping Report is available on the project's website **www.marramwind.co.uk**.

A Public Drop-In-Day event was held in Peterhead for stakeholders to learn about the project. A supply chain event was also held for local businesses and suppliers to raise awareness of future contract opportunities.

2024

Two rounds of public consultation were held, each including public events and online Q&A sessions, providing stakeholders with opportunities to view and feedback on the project proposals during the development stage.

Launch of STEM outreach programme to help raise awareness of future career opportunities in offshore wind.

2025

Two additional rounds of public consultation to view progress and provide feedback on the final project proposals.

Submission of necessary applications and consents to the consenting authorities: Aberdeenshire Council and the Marine Directorate. During the subsequent determination period, stakeholders will have further opportunity to comment on MarramWind's proposals.

2026

Anticipated planning decisions to be made for the offshore and onshore consents. Updated Supply Chain Development Statement submitted to Crown Estate Scotland.

Early 2030s

Start of phased construction subject to consent.

Early to mid 2030s

First generation of power from phase 1.

Offshore Key Infrastructure

The offshore infrastructure includes floating wind turbines, cables that connect the turbines together, offshore platforms, and cables that transmit the power generated to shore.

Electricity transmission

The electricity generated by our wind turbines will be transmitted by cables to the shore where they will connect to the onshore infrastructure and continue to a substation site and ultimately the national grid. We are currently reviewing different options for the transmission of the electricity generated by the offshore windfarm. These include High Voltage Alternating Current (HVAC) and High Voltage Direct Current (HVDC) transmission technologies, or a combination of the two.

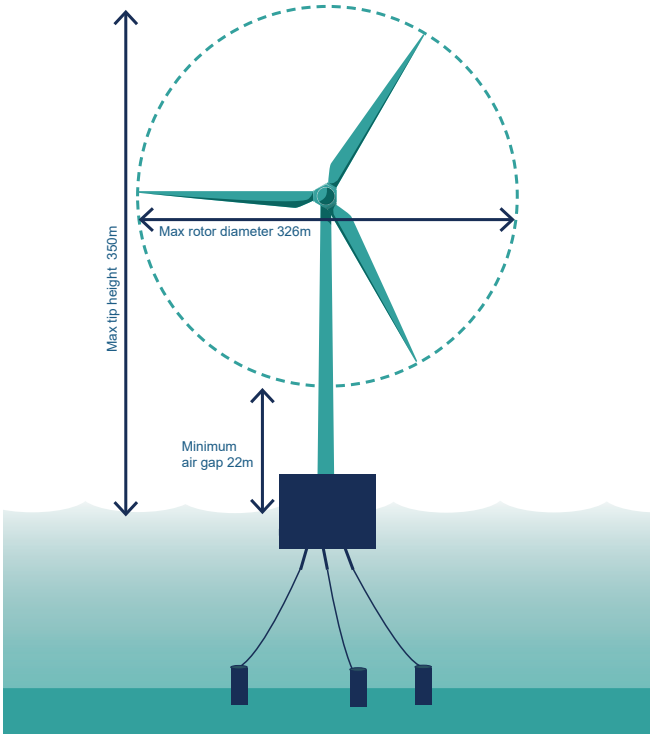
The wind turbines will generate HVAC electricity, which is the electricity distributed by the national grid. It is common for offshore windfarms closer to shore to transmit electricity using HVAC transmission. As the transmission distances get longer, electrical losses increase. At a certain point, it becomes more effective to convert the HVAC transmission to HVDC transmission as HVDC cables do not experience electrical losses of the same magnitude as HVAC cables. The electricity is then converted back to HVAC at a converter substation onshore.

The infrastructure required for both options is broadly similar, but HVDC transmission requires specific equipment for converting HVAC to HVDC electricity. This is done using an offshore converter station before being converted back to HVAC at an onshore converter station. The electricity is then connected to the national grid.

HVAC transmission in comparison may require up to two Reactive Compensation Platforms approximately midway between the offshore substation and the onshore substation site to house electrical equipment needed to stabilise the voltage of the electricity generated. Other differences include the number and size of the cables needed to deliver power to the national grid.

The floating wind turbines

The wind turbines have not yet been selected because turbine technology is advancing quickly and the models available at the time of construction will be more powerful and efficient than those available today. It is currently proposed that each wind turbine will individually have the capacity to produce up to 25 megawatts (MW) of power.



Depending on the final size of the wind turbines, the windfarm is expected to have between 126 and 225 turbines. The wind turbine specifications will vary depending on the size, as follows:

- Each wind turbine could have a **blade tip height up to 350m** from the water's surface, but as the windfarm will be located approximately 75km offshore at its nearest point, they will be barely visible from shore. The maximum rotor blade tip height depends on which turbine sizes are selected.
- **The maximum rotor diameter for a 25 MW wind turbine is expected to be around 326m**. Smaller turbine generating capacities are likely to have smaller rotor diameters. For the purposes of the EIA, MarramWind is assuming a maximum rotor diameter of 236m to 326m, depending on turbine size.
- Each wind turbine will have three blades, irrespective of turbine size. **The maximum rotor blade width is 5.1-10m and the maximum rotor blade length is 115-155m** depending on the selected turbine sizes.
- **Navigational lighting will be installed** on the wind turbines and floating units to reduce navigational and aviation risk in low light conditions. The specifics of this will be in line with relevant regulations and agreed with the Civil Aviation Authority and the Maritime and Coastguard Agency prior to installation.

Mooring and anchoring systems

Each wind turbine will sit on a floating unit that will be held in place by a mooring and anchoring system. The design of the mooring and anchoring system will depend on the size of wind turbine and floating unit used. A maximum of eight mooring lines will be required per floating unit. The exact number will depend upon the preferred mooring design for each floating unit type. The anchor type will also depend on the soil conditions and the maximum loads that the anchor needs to be able to withstand. Studies will be undertaken to identify mooring and anchor designs suited to the site conditions and floating unit design. This will include geotechnical surveys to determine the locally specific soil conditions. Further information on the options being considered will be available in the EIA when we submit our application. The chosen mooring system will comply with regulations, including navigational safety, and consider effects on the seabed and marine life.

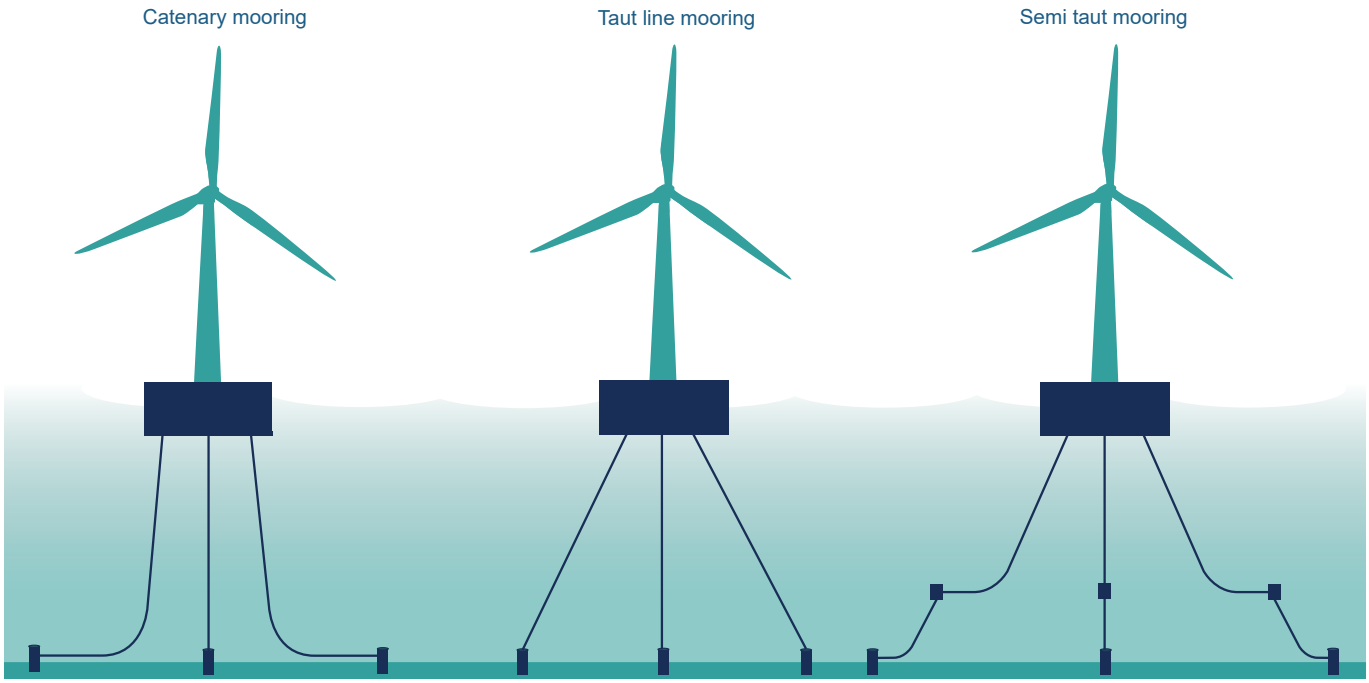
The mooring options currently being explored are catenary mooring, taut line mooring, and semi-taut mooring. The maximum worst case for the total mooring footprint will be calculated from the number of wind turbines, number of mooring lines, and anchor type dimensions. This will inform the assessments of benthic ecology, fish and shellfish ecology, and commercial fisheries.

Catenary moorings are more slack than other options, which make them suitable for areas where the water depth changes e.g. due to low or high tides. However, this option may involve the moorings resting directly on the seabed.

Taut line moorings are the tightest mooring lines. They take up less seafloor space and are better at keeping the wind turbine stable.

Semi-taut moorings are a combination of the taut mooring system and catenary mooring system. This option has shorter mooring lines and requires less seafloor space than the catenary system.

Decisions on the most appropriate anchoring and mooring solutions are yet to be made as product development is advancing quickly and the future supply chain at the time of construction will have moved on from current product availability.



Offshore platforms and substations

Up to four offshore platforms will be necessary within the windfarm site to house electrical infrastructure, such as substation equipment or controls, and operational systems.

It is at these offshore platforms that the cables connecting the floating wind turbines connect to the cables that will transmit electricity to shore. The number of substations required for MarramWind will depend on whether the project chooses HVAC or HVDC technology (or a combination of both), and the layout of the windfarm site. If HVAC technology is used, additional equipment might be required to support electricity transmission. This equipment will be located on a maximum of two offshore platforms located at the approximate mid-point between the offshore substation and the onshore substation site.

Offshore accommodation options are being considered for project and operational personnel. This could be provided in a number of different ways, for example in a module within the offshore substation, on a walk to work vessel, or an accommodation barge/jack-up vessel.

Offshore and landfall cables

Electricity will be transmitted through offshore cables that connect the offshore windfarm with the onshore substation site and then the national grid. The voltage, number and size of the cables required will depend on whether HVAC or HVDC technology (or a combination of both) is used.

The offshore cables will be protected by burying them below the seabed for most of their length to landfall. In the few areas where cable protection cannot be achieved by cable burial, other methods will be used to protect them. This may include rock armour or concrete mattresses, the type, location and dimensions of which are yet to be determined and will be detailed in the EIA and marine licence application.

The maximum grid transmission route length offshore is 130-140km, depending on the precise locations of the landfall(s) and the offshore substation. The offshore cable corridor surveyed to date is typically 1-2km wide along most of its length. However, the final cable corridor width is dependent on the water depth and will therefore be narrower in shallower water depths closer to the shore. The cables will be laid by a cable laying vessel in sections and joined together. The cable laying vessel buries the cables 1-2m beneath the seabed wherever possible.

Offshore Project Updates

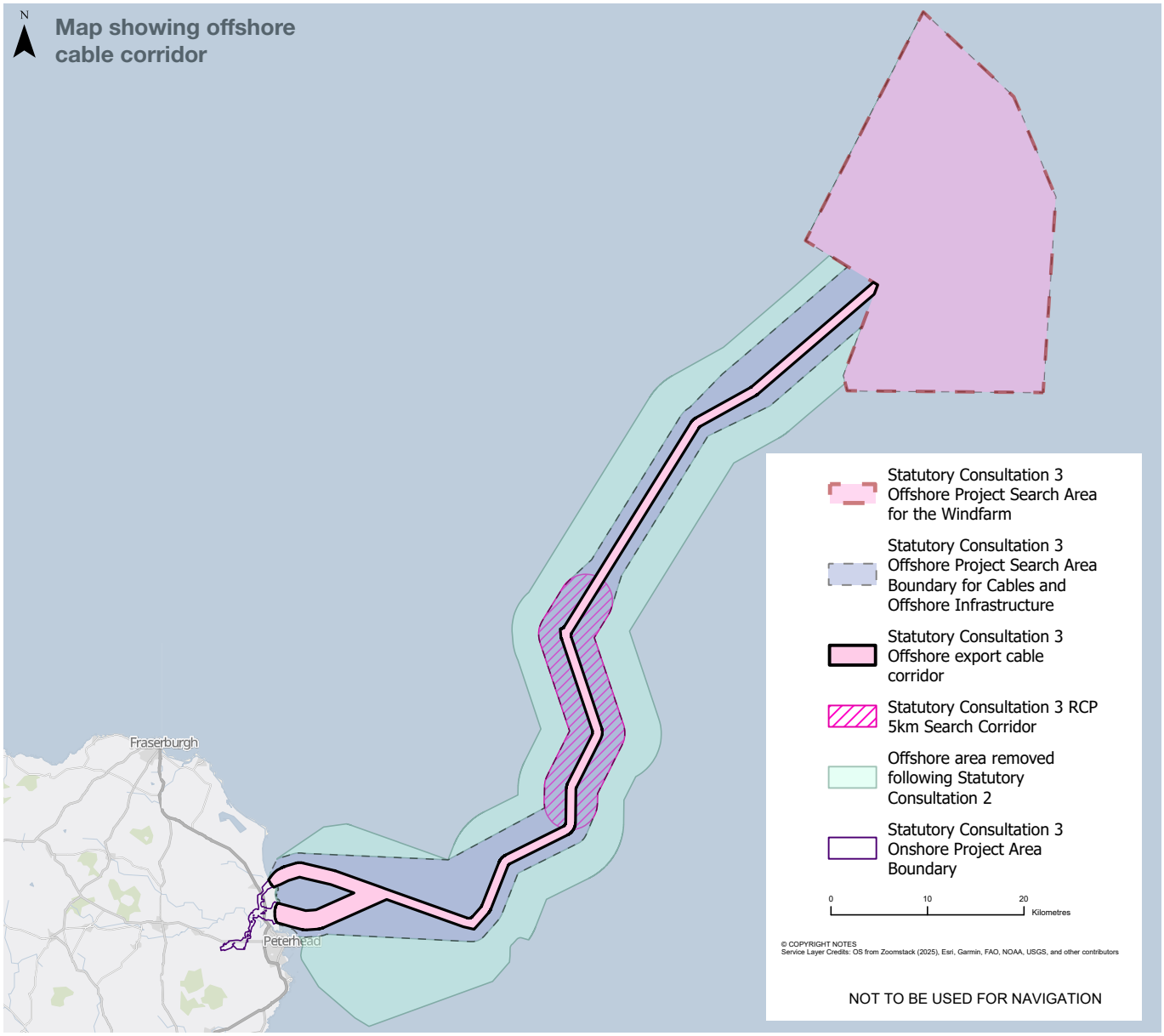
Since our first round of consultation, we have been working to refine our offshore project design. We have also been preparing to undertake collision risk modelling to determine the risk to seabirds from the wind turbines and analysing geophysical and environmental data obtained from the surveys we undertook in 2022 and 2023 to better understand the marine environment.

The offshore boundary includes the windfarm site itself and a broad potential offshore cable corridor for cables and offshore infrastructure between the windfarm and the coast, as shown on the map below. This corridor sits within a wider offshore project search area, which will allow space for potential changes to the offshore cable corridor as a result of further assessments.

The windfarm site

The windfarm site covers the area of Plan Option NE7, which was identified for development by the Scottish Government's Sectoral Marine Plan - Offshore Wind Energy in 2020. The windfarm site is 684km² and has water depths ranging between 87m and 134m. Work is ongoing to determine the windfarm site layout and exact locations of the required infrastructure. We are considering environmental sensitivities, marine users, seabed conditions, water depths, and the presence of existing infrastructure. The layouts are also being reviewed to enable co-existence with other planned windfarm / infrastructure projects in the region.

Map showing offshore cable corridor



Offshore cable corridor

Cable routing work is also ongoing to identify the optimal route for the offshore cables between the windfarm site and landfall(s) on the coast. This considers environmental sensitivities that need to be avoided as well as factors that could limit the technical feasibility of installation. We are engaging closely with technical stakeholders, such as NatureScot, commercial fisheries groups, and the Maritime and Coastguard Agency to understand how MarramWind's construction and operation could interact with other marine users in Scottish waters and what we can do to reduce effects and maintain navigational safety.

Landfall

At our first round of consultation, three potential search areas were presented where landfall(s) could be located:

- Scotstown Beach, north of Peterhead;
- Lunderton, north of Peterhead; and
- Sandford Bay, south of Peterhead.

Taking into consideration stakeholder feedback and the results of additional environmental and technical assessments, we discounted the Sandford Bay landfall option and the onshore and offshore cable routing associated with Sandford Bay. This is due to the proximity of the landfall to the Buchan Ness to Collieston Coast Special Protection Area (SPA) - a designated breeding ground for seabirds. Another key consideration that also informed this decision is the number of other projects in the vicinity that will limit space for routing the offshore and onshore cables and associated landfall infrastructure.

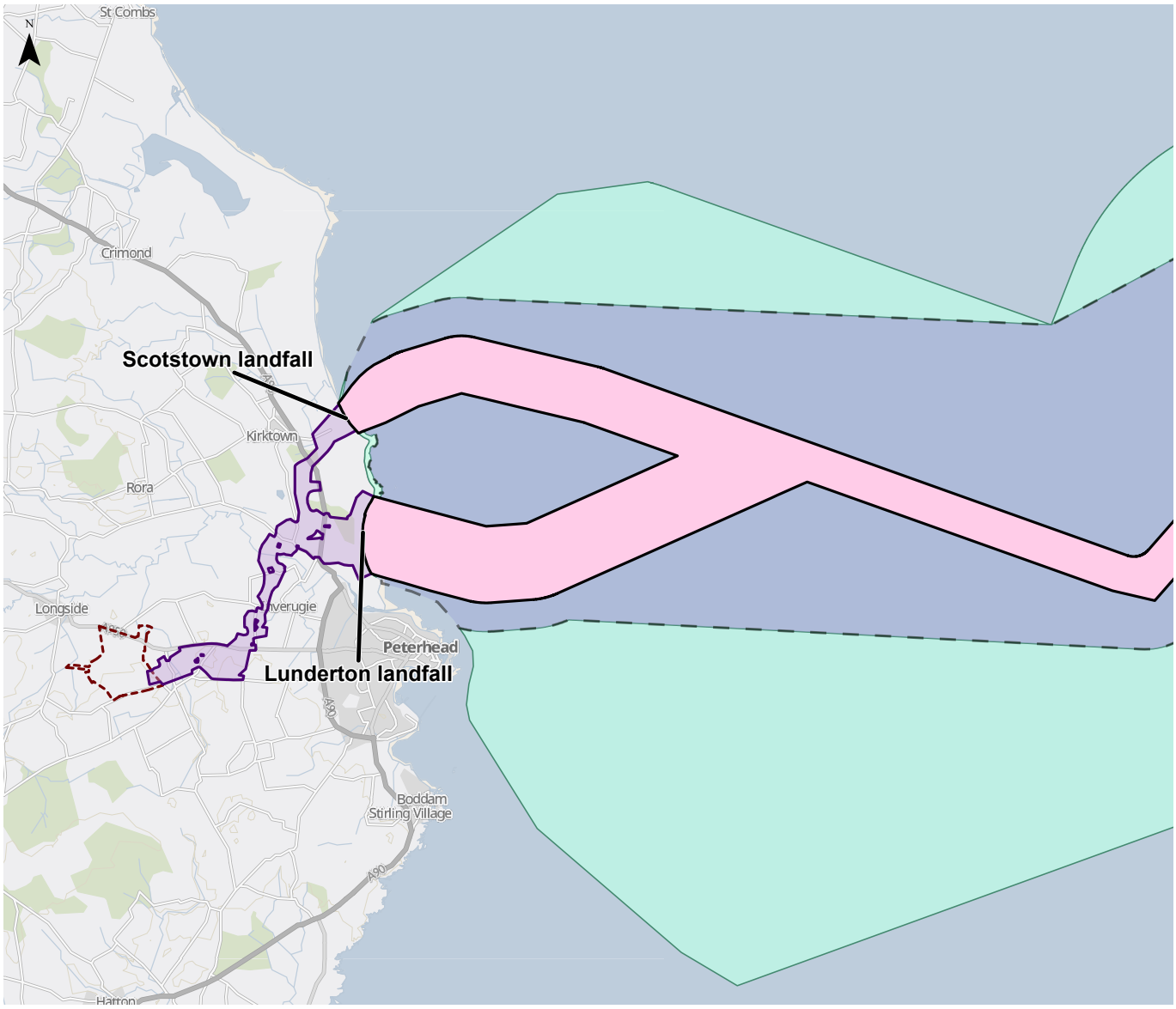
The offshore project search area boundary has also been refined further since our second round of consultation. A southerly cable corridor route that could connect to the Lunderton landfall near Peterhead was assessed further. This involved a feasibility assessment, that included, but not limited to associated impact of routing cables parallel to the shore, alongside a more detailed review of the survey output at Lunderton and Scotstown nearshore locations to better understand the constraints (incl competitive landscape).

Following the review, Scotstown Beach and Lunderton continue to be viewed as suitable locations for landfall(s) from environmental and technical perspectives, enabling the routing of the offshore and onshore cables and associated infrastructure.

The preferred solution is a single landfall site, however it is not possible to confirm this at this time. A final decision will be based on:

- competing needs (or coordination) across different developments in the area
- consideration of adequate space for cables coming onshore
- adequate space for onshore infrastructure required for the onward power transmission, such as construction compounds
- further engineering, environmental considerations and technical surveys
- stakeholder engagement.

The inclusion of multiple landfall options is intended to provide the project with the flexibility needed to secure sufficient space, in appropriate locations, to construct the landfall and associated onshore and offshore export cables necessary to facilitate a 3GW Project, whilst ensuring any cumulative environmental impact is kept to a minimum.



Map of potential offshore cable corridors and landfall zones

Onshore Key Infrastructure

The onshore infrastructure includes an onshore substation site and onshore cables. The onshore cables run from landfall(s) to the onshore substation site and subsequently to the point of connection at the SSEN Netherton Hub substation.

The Project requires three onshore substations co-located on one site. There will be one onshore substation for each of the three Project phases.

Onshore cables

The cables will be laid underground within a cable corridor up to a maximum depth of 1.5m. Points of access will be required along the cable route for maintenance of the cables during operation. It is expected that the width of the temporary onshore cable construction corridor for the underground cable from landfall to the onshore substation site will be approximately 89m. From the onshore substation site to the point of connection at SSEN's Netherton Hub, the width of the temporary onshore cable construction corridor will be approximately 99m. Where HDD crossings are required, work areas will be up to 300m wide. Following cable installation the project will require permanent access rights for maintenance purposes.

Cable installation on the East Anglia Hub

Onshore substation site

The onshore substation site is a key part of the project's transmission system. This is the point where the voltage level of the electricity generated by MarramWind is transformed to the voltage level required for the national grid.

The substations will be either fully or partially enclosed; the final configuration will be determined based on ongoing stakeholder consultation, detailed engineering design, and the outcome of the Environmental Impact Assessment. Illustrative images of a fully and a partially enclosed substation site are shown on page 15. These images are not site specific and are illustrative only indicating the project requirements. The final design and layout will be determined as the project design evolves.

The substation infrastructure will comprise permanent access road(s), outdoor and/or indoor high voltage electrical equipment, such as transformers, switchgear and, if necessary, equipment to convert HVDC into HVAC.

A transformer is electrical equipment that helps change the level of electricity voltage. Switchgear is electrical equipment that helps connect and disconnect the circuits from the electricity network.

The substation infrastructure will vary in height, with a maximum approximate height of up to 30m. Indoor equipment will be installed in several buildings. Work is ongoing to identify the best technical and environmental solutions, which will determine final equipment requirements and the substations' size.

The substation site could cover up to 15 hectares of land. A temporary construction area of approximately three hectares will also be required. Subject to the substation design, additional land will be required for drainage, environmental mitigation and landscaping.

Visual screening

In our ongoing efforts to minimise the visual effects of the substation on sensitive views, we have carefully considered the use of tree planting as a natural screening method. By strategically planting trees around the substation site, it would be possible to create a green buffer that blends with the surrounding landscape as the trees grow. This approach not only helps to soften the industrial appearance of the substation site but also enhances the overall aesthetic of the area.

For this approach we would select native tree species that are well-suited to the local environment, ensuring that they thrive and contribute positively to the ecosystem. These trees would grow over time to provide an effective visual barrier, reducing the substation site's visibility from key viewpoints. Additionally, the introduction of these green spaces would also support local wildlife and improve air quality, further demonstrating our commitment to environmental stewardship.

Illustrative conceptual design for a partially enclosed substation site (without visual screening)

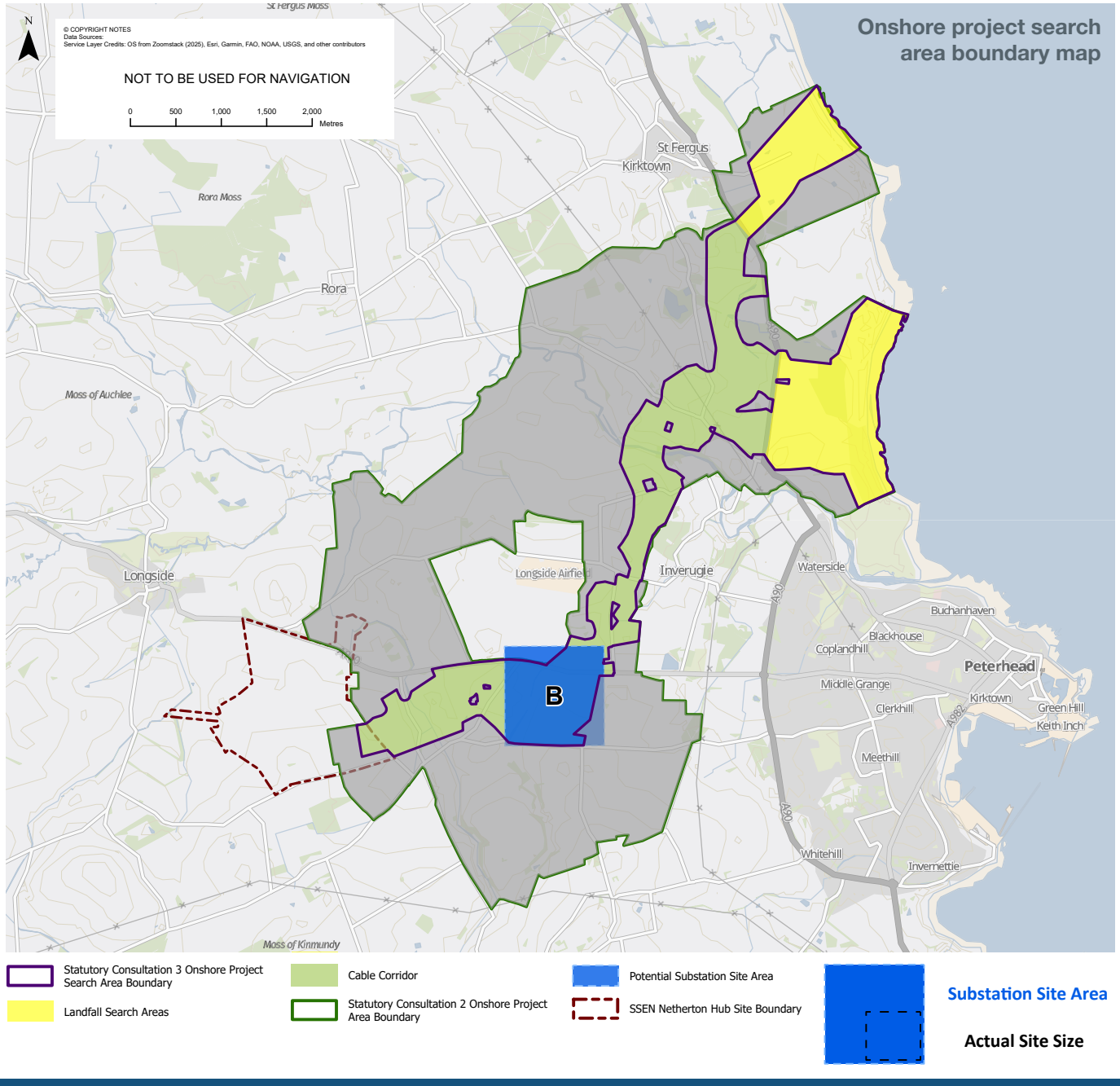
Illustrative conceptual design for a fully enclosed substation site (without visual screening)

Onshore Project Updates

We have been engaging closely with technical stakeholders, such as the Scottish Environment Protection Agency, Historic Environment Scotland, NatureScot, and Aberdeenshire Council to understand the potential effects from MarramWind's construction and operation on the local area and what we can do to avoid or reduce these effects.

The current onshore project search area boundary has been significantly refined following two rounds of public consultation in 2024. This reflects:

- that onshore substation site B has been selected from the five options presented in the first round of consultation;
- the removal of Sandford Bay as a possible landfall;
- confirmation that the project grid connection point will be in the southeastern corner of the SSEN Netherton Hub site; and
- refinement of the onshore cable corridor connecting landfall(s) to the substation site and subsequently to the SSEN Netherton Hub.



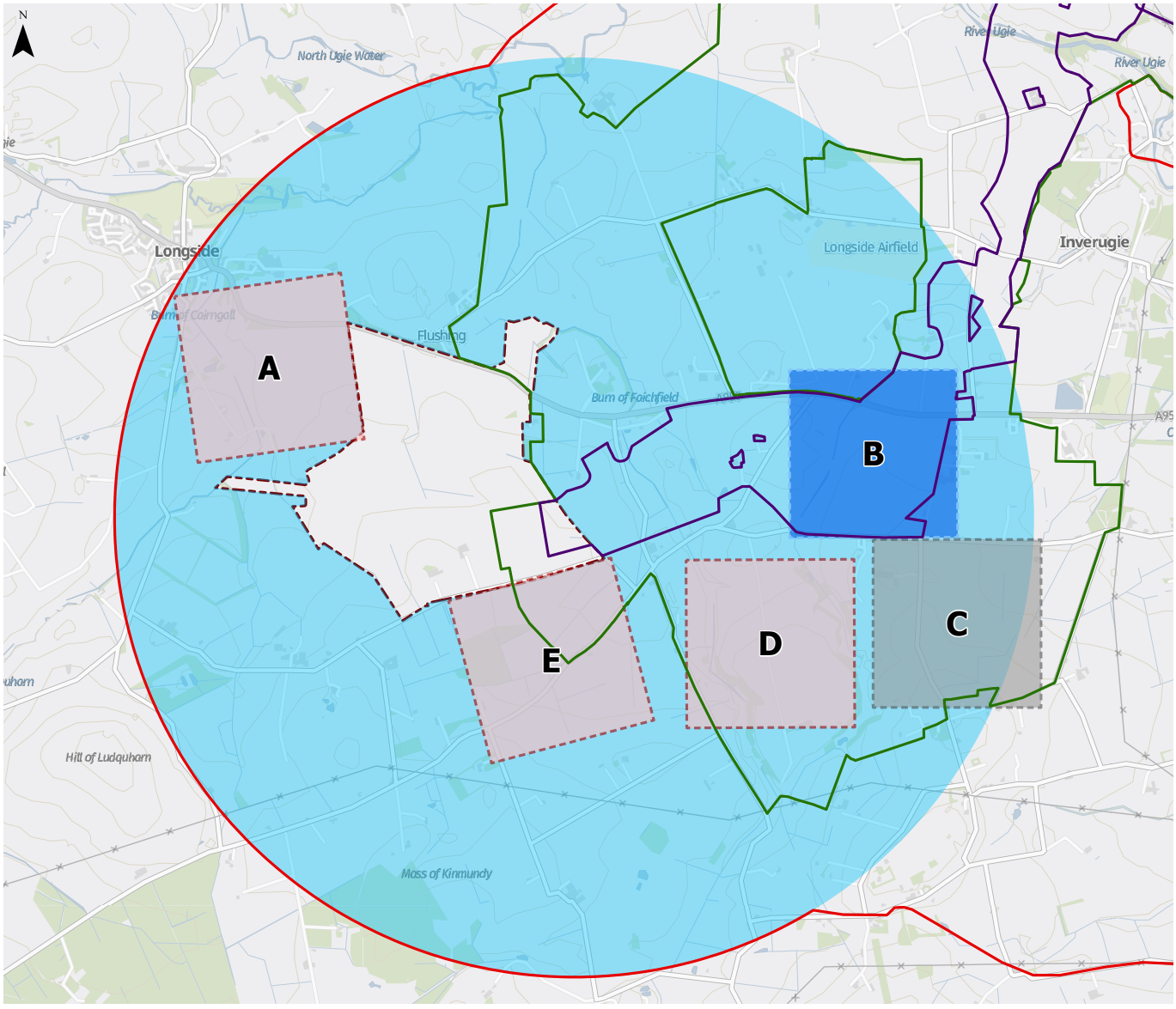
The map below shows the extent of the search area around the grid connection point at the proposed SSEN Netherton Hub, as well as the previous five site options.

The actual land required for the substation site will be smaller in size than shown by the dark blue square.

Substation sites A, D and E were removed as potential locations following our first round of statutory consultation in 2024 taking into consideration stakeholder feedback and environmental and technical assessments.

Substation site C has now been discounted following the second round of statutory consultation in 2024 and further work to identify the most appropriate site.

Option B is being taken forward as the preferred onshore substation for construction and operation. The outcome of this iterative design and site selection process will be reported on in the Environmental Impact Assessment Report.



Map showing onshore substation search area around the proposed SSEN Netherton Hub

- Statutory Consultation 3 Onshore Project Search Area Boundary
- Statutory Consultation 1 Onshore Project Area Boundary
- SSEN Netherton Hub Site Boundary
- Statutory Consultation 1 Onshore Substation Search Area
- Progressed Potential Substation Site Area
- Discontinued Potential Substation Site Areas (Statutory Consultation 3)
- Discontinued Potential Substation Site Areas (Statutory Consultation 2)
- Statutory Consultation 2 Onshore Project Area Boundary

Substation Site Area

Actual Site Size

0 500 1,000 Metres

NOT TO BE USED FOR NAVIGATION

Onshore cable corridor

With the removal of Sandford Bay as a landfall, there is no requirement for an onshore cable corridor from Sandford Bay to the onshore substation. The decision to use onshore substation site B has resulted in an cable corridor connecting the two landfall options to the north of Peterhead to onshore substation option site B. This is shown in green and brown respectively on the onshore project search area boundary map on page 16.

The preffered cable corridor takes into consideration stakeholder feedback and further assessment of local environmental and technical constraints. This allows us to develop a design that connects the chosen landfall(s) and the SSEN Netherton Hub substation, via the chosen MarramWind onshore substation site.

For illustrative purposes only.

Environmental Impact Assessment (EIA)

What is an Environmental Impact Assessment?

Before we can build MarramWind, we need to carefully consider the potential effects on the environment and local communities. To do this, we are completing a detailed EIA that will be presented within two EIA Reports - one focusing on onshore infrastructure (including onshore cables and onshore substations) and the other focusing on offshore infrastructure (including wind turbines, subsea cables, and any ancillary offshore equipment).

The EIA helps us understand any potential environmental effects from MarramWind, and how we can avoid or reduce them. The EIA is essential to Aberdeenshire Council and the Marine Directorate, so that they can understand what is proposed before making their determination on the necessary consents.

Approach to assessments

In January 2023, we submitted our EIA Scoping Report to Aberdeenshire Council and the Marine Directorate, which outlined the environmental assessments we proposed to undertake to identify the potential significant effects from the project. The Council and Scottish Ministers consulted with specialist stakeholders on the Scoping Report, covering various environmental topics and their feedback in their Scoping Opinion has been used to refine our assessment approach. The Scoping Report can be found on the MarramWind website at **www.marramwind.co.uk**.

We have undertaken an extensive programme of surveys to better understand current environmental conditions. Where available, we have provided information on the emerging baseline data findings in the section below. Alongside our surveys, we are also engaging with key stakeholders, including government and statutory consultees, on the various assessments we are undertaking (as detailed in the following section). This allows these stakeholders to influence how we undertake the assessments so that the EIA meets their expectations.

The EIA assesses the likely significant effects of MarramWind for all project phases, including construction, operation and maintenance, and decommissioning. This is informing the siting and design of the onshore and offshore infrastructure. We are considering all potential significant effects to ensure that they are either avoided where possible or mitigated.

Full details of the survey work, the approach and findings of the assessments, and the proposed mitigation measures will be published in the publicly available EIA Reports that will form part of our application. The EIA Reports will allow Aberdeenshire Council and Marine Directorate, who will consider our applications, to make a well-informed decision on whether the project should be given permission to go ahead.

Approach to mitigation

From the outset, the environment has been central to the design of the Project. MarramWind is seeking to achieve a sustainable and environmentally appropriate design, one that will meet operational requirements at the same time as limiting the environmental effects of the Project as far as practicable.

In line with best practice MarramWind is applying the ‘mitigation hierarchy’ to address likely environmental impacts in sequential order: avoid, prevent, reduce/mitigate or, lastly, offset impacts. The resulting embedded environmental measures are being incorporated within the Project and will be detailed in a Commitments Register which will be submitted in support of the consenting applications. These measures are being developed with input from key stakeholders, technical standards, policies and guidance. Relevant commitments will be secured through conditions attached to any consents and licences granted for the Project.

Offshore wildlife and habitats

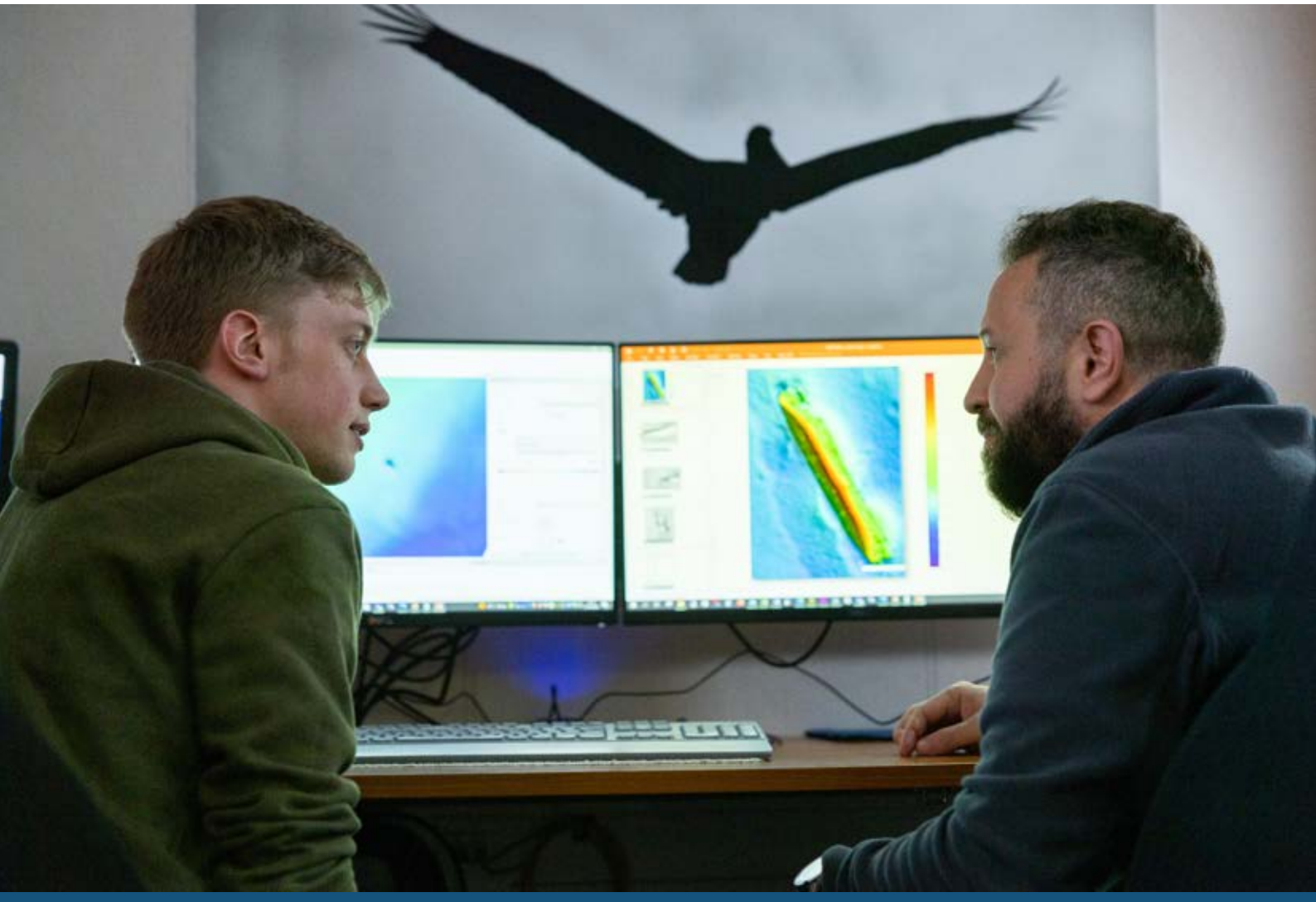
We have already undertaken various offshore surveys and studies to understand the distribution of marine habitats and local marine wildlife. This has included:

- Digital Aerial Surveys to better understand the seasonal distribution of birds and marine mammals. This involved two years of offshore surveys using planes equipped with ultra-high-definition cameras;
- a Marine Environmental Survey to map seabed habitats and species. We will design the offshore wind turbines layout and cables to avoid environmentally sensitive areas; and
- as part of our environmental surveys, we've been trialling new techniques like environmental DNA (eDNA) sampling. By testing water for traces of DNA, we can detect a range of species — including fish, vertebrates, and invertebrates — without needing to capture them.

We have further studies to undertake to inform the EIA, which include:

- underwater noise modelling, undertaken in the coming year to study sound levels during construction and operation, helping us minimise effects on marine mammals;
- fish and shellfish data analysis which, along with engagement with key organisations, will ensure our EIA is comprehensive;
- wave modelling to model potential changes to waves caused by the windfarm; and
- working with experts to understand the effects of electro-magnetic fields (EMF) on marine species like fish, crabs, and lobsters, to help us develop mitigation measures if needed. EMFs are invisible areas of electrical energy associated with the use of electrical power.

Good practice measures will be followed to minimise potential effects on water quality during construction. Measures will be described in bespoke environmental management documents which provide details on how to manage, monitor, control and report any incidents.



Commercial Fisheries

Respondents to our first round of statutory consultation rated commercial fisheries in the top five most important offshore topics that we should be considering

To understand the activities of commercial fishing operations in the region and the views of fishing representatives, the project meets on a quarterly basis with various fishing organisations. We also met with the Scottish Fishermen's Federation, the Scottish Pelagic Fishermen's Association, and individual inshore fishers during our first and second round of statutory consultation. These meetings highlighted an interest in understanding the potential for electro-magnetic fields around buried cables to influence crustacean distribution. The fishing representatives shared their knowledge of certain areas that are good grounds for scallopers, lobster pots, and trawling for white fish and prawns.

We continue to engage with fishing organisations on a regular basis to provide project updates and invite feedback on our approach.

Shipping and navigation

We carried out vessel traffic surveys in August 2022 and January 2023. To keep our data up to date, we also completed additional surveys in July, August and November 2024. These surveys have helped us understand the patterns of other maritime users who pass through the windfarm site. This information is important as we prepare our Navigational Risk Assessment, following the guidelines set by the Maritime and Coastguard Agency. The assessment will include detailed baseline data from our vessel traffic surveys, ensuring the safety and coordination of all maritime activities in the area.

We will be engaging with key stakeholders to understand any potential hazards to users of the sea, including commercial, fishing and recreational vessel operators. The Navigational Risk Assessment will provide mitigation measures required to ensure the project is safe for all users. Additionally, during construction and later during decommissioning, exclusion zone(s) will be used to protect operations and other marine users. The extent of the exclusion zone(s) will be subject to operational needs and stakeholder engagement at the time of exclusion zone(s) application.

Onshore landscape and visual

Respondents to our first two rounds of consultation rated onshore landscape and visual considerations as a key topic that we should be considering.

We have undertaken onshore landscape and visual surveys in the project area boundary to better understand the local landscape character, key characteristics, landscape elements and visually sensitive areas.

We are moving forward with onshore substation site B as our preferred location. This site was chosen because it sits closer to existing infrastructure, which helps it blend more naturally into the surrounding landscape and reduces its overall visual impact. Site B also offers better opportunities for planting and landscaping, both on and off the site, which will help screen the substation site from view over time, with most effects expected to be significantly reduced within 10 to 15 years. The layout of the site allows for careful placement of buildings to minimise visibility from nearby roads and homes, using thoughtful design and landscaping techniques.

Onshore wildlife and habitats

Respondents to our first round of consultation rated onshore wildlife, including birds and environmental protection (for both onshore and landfall), as important topics for consideration.

Over the past two years, we have conducted a comprehensive ecological study, including both desk research and field surveys, to inform the potential siting of onshore infrastructure. Surveys have been undertaken to identify local habitats and animal species, including two years of breeding and winter geese surveys, and collation of protected species data for otter, water vole, bats, and fish habitats.

Wherever possible, we will avoid identified resting, roosting, commuting or foraging sites of protected or notable species, as well as sensitive seasonal periods for wildlife. For instance, seasonal restrictions could be implemented to restrict our works if they are considered to cause significant disturbance to waterbirds that use agricultural land close to landfall(s). Habitats of high value, such as certain types of woodland, wetland or river habitats, and dune habitats will be avoided wherever possible.

In addition to these measures, a Nature Positive Strategy (NPS) has been developed, which sets out how MarramWind intends to measure, monitor and enhance biodiversity. The NPS will be used to develop an a Nature Positive Plan (NPP), which will describe the measures to be developed, implemented, monitored and reported throughout the project life cycle.

Water vole

River Ugie

Onshore water environment

The project area features various water bodies, including rivers, ditches and ponds. It is also home to a Drinking Water Protection Area, and the River Ugie, whose tributaries are designated as important surface water bodies. These water bodies must maintain a good status by addressing ecological and chemical conditions.

We have identified several private water supplies, such as springs and wells, as well as flood risk zones and Water Framework Directive (WFD) water bodies. We have also undertaken ecological surveys to map aquatic habitats.

During construction, we will follow industry good practice for pollution prevention and will avoid construction works close to watercourse channels. For sensitive areas, such as the River Ugie, we will use techniques such as Horizontal Directional Drilling (HDD) to install cables below watercourses. HDD is a trenchless construction method for installing cables used where it is necessary to cross sensitive features, such as watercourses or roads without disturbing them. The cables are then pulled through via entry and exit pits. We are also committed to maintaining the existing field drainage systems during construction and reinstating them once work is complete.

Cultural heritage

Archaeology and cultural heritage continue to inform the ongoing design changes. We are dedicated to protecting cultural heritage assets and aim to avoid or minimise any potential harm to these important sites, both onshore and offshore. Any new discoveries we make will be shared with the public, contributing to a better understanding of Scotland's history and archaeological resources.

We have been undertaking surveys to obtain data crucial for identifying and protecting cultural and heritage assets offshore, ensuring that sensitive and significant sites are avoided. Our survey methods include the use of sound waves to create detailed images of the seabed and what lies on and below it.

We also monitor magnetic fields (magnetometry) to detect objects containing iron, such as shipwrecks. Additionally, sub-bottom imaging helps us uncover environmental information about submerged landscapes before sea levels rose thousands of years ago.

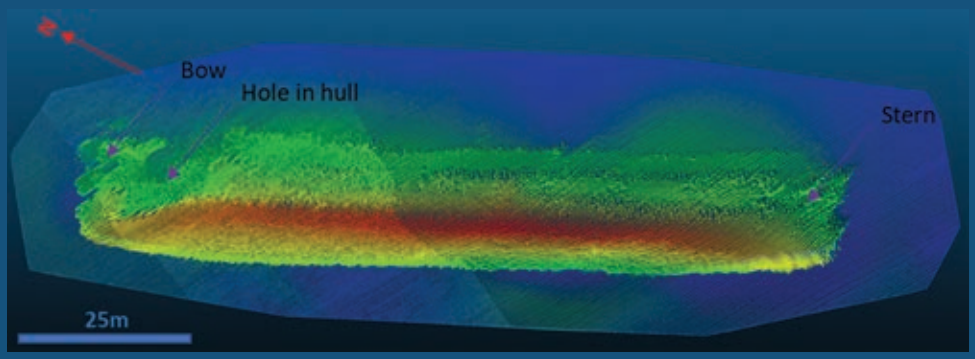
As we move closer towards our construction phase, we will conduct a more detailed survey of the offshore cable route and wind turbine site to further identify and avoid cultural heritage and archaeological assets. Our surveys have already discovered several previously unknown shipwrecks, which we will carefully avoid. When significant wrecks are found, we notify Historic Environment Scotland to ensure appropriate management strategies are put in place for their preservation.

An underwater discovery

Data gathered by sonar scans carried out during geophysical and environmental surveys for MarramWind has identified the likely resting place of the SS Tobol, which was torpedoed by a German U-boat in 1917.

The shipwreck believed to be that of Tobol was among several discovered during the survey works for the 3GW windfarm being developed by ScottishPower and Shell. The ship was built in Sunderland at the turn of the 20th century and was operated as the SS Cheltenham by a steamer company until it was captured by Russian warships in 1904. A year later, it was transferred to the Russian Imperial Navy and renamed SS Tobol after the river in Russia, before being relocated to the Russian Volunteer Fleet in 1916. It was torpedoed by the German U-boat U-52 on 11 September 1917 while sailing from Blyth to Arkhangelsk.

After its discovery, an exclusion zone of 250 metres was put in place around the wreck – which is 100m long, 22.5m wide and 10.5m high and appears to be in good condition – to protect it during the MarramWind survey works.



Traffic and transport

As part of our substation site selection process, we have reviewed the local road network to understand effects from our construction and operation vehicles. The substation site is located near the A950. The A950 provides good access to the substation construction site from the A90. By choosing this substation site, construction traffic will use the A90 and A950 which will minimise effects on the road network and nearby communities as the access routes primarily pass through sparsely populated rural areas.

We will work with Transport Scotland and Aberdeenshire Council to assess and develop measures to mitigate any short-term effects on the road network to be used for construction access. Management and mitigation plans will be developed and will include a commitment to working with other contractors to manage effects of MarramWind and other sites being developed at the same time. The plans will include enforcement of any restrictions on delivery timings to minimise the effect on people, wildlife, and buildings located nearby the proposed construction access route.

Operation, maintenance and decommissioning of MarramWind are not expected to have any noticeable long-term effects on the local road network.

Air quality

The air quality in Peterhead and the wider Aberdeenshire area is very good. Aberdeenshire Council has been monitoring air quality across the region for many years, and the results consistently show that air quality levels are well within safe limits.

Potential effects on air quality from MarramWind could arise from temporary construction activities, including construction traffic and dust along the exposed cable route and excavation points. These activities will be short–term only and appropriate mitigation measures will be put in place through a Construction Environmental Management Plan (CEMP) to address any issues.

Noise and vibration

The construction and decommissioning phases of MarramWind could generate noise and vibration, such as construction traffic and excavation points. These activities will be relatively short–term and appropriate mitigation measures will be put in place through a Construction Environmental Management Plan to reduce the levels of noise and vibration.

The operational phase of MarramWind has the potential to generate noise, particularly those in the vicinity of the onshore substation site. As part of the operational phase noise assessment, baseline sound surveys will be undertaken at sensitive locations around the onshore substation site. The operational noise levels likely to be generated by MarramWind will be predicted and, where necessary, mitigation measures to reduce the noise emissions will be considered.

Greenhouse gases and climate change

During our first round of consultation, the majority of respondents agreed that offshore windfarms are an important part of the solution for addressing climate change.

Although MarramWind will be providing renewable energy, some greenhouse gas emissions will be emitted during the construction and installation of the infrastructure, as well as from the maintenance and decommissioning of the project. A full project life cycle assessment of greenhouse gas emissions will be undertaken to identify appropriate mitigation measures. As part of our project's commitment to sustainable development and environmental enhancements, we will be continuously looking for opportunities to incorporate measures that reduce greenhouse gas emissions during construction and maintenance where feasible. Measures such as these will be reported within a carbon assessment as a part of the EIA.

Aviation

As part of our commitment to responsible development, the project is undertaking a comprehensive aviation and radar impact assessment. We have commissioned a leading consultancy in aviation and renewable energy to conduct this crucial work. They will assess the potential effect of the windfarm on both civil and military aviation, including airspace users and radar systems. This will involve in-depth research, analysis, and engagement with key stakeholders to develop effective mitigation strategies that ensure the safe coexistence of the windfarm with aviation operations. The findings of this assessment will be incorporated into the EIA.

Habitats Regulations Appraisal

A HRA is legally required to be undertaken where there is potential for a project to affect certain types of nature conservation sites of national or international importance.

The conservation sites considered in HRA are:

- **Special Areas of Conservation** (including those proposed but not yet formally designated), which are designated for the presence of "qualifying features". These may include specific habitats, combinations of habitats, species or groups of species, or combinations of these;
- **Special Protection Areas (SPA)** (including those proposed but not yet formally designated), which are designated for the presence of "qualifying features". These may include bird species that are rare, vulnerable, in danger of extinction, or requiring protection due to their habitat needs. Migratory bird species are also included as qualifying features in some SPAs; and
- **Ramsar Sites**, which are designated for wetland habitats that support important communities of birds. The presence of "qualifying features" are defined by criteria set out in the Convention on Wetlands of International Importance (the Ramsar Convention). These are typically wetland habitats that support important communities of birds. In July 2025 the Scottish Government formally included Ramsar Sites within the HRA regime.

What we have already done?

On 16th August 2024 the project team submitted the HRA Screening Report to Aberdeenshire Council and the Marine Directorate for review and consultation as the competent authorities with responsibility for HRA. This report explains the HRA process and identifies the sites that could be affected by the project.

Consultation responses were received from organisations including NatureScot and RSPB Scotland and the Project received the HRA Screening Opinion on 5th November 2024.

Next steps

The Screening Opinion from Aberdeenshire Council and Marine Directorate helps to inform the next stage of the HRA.

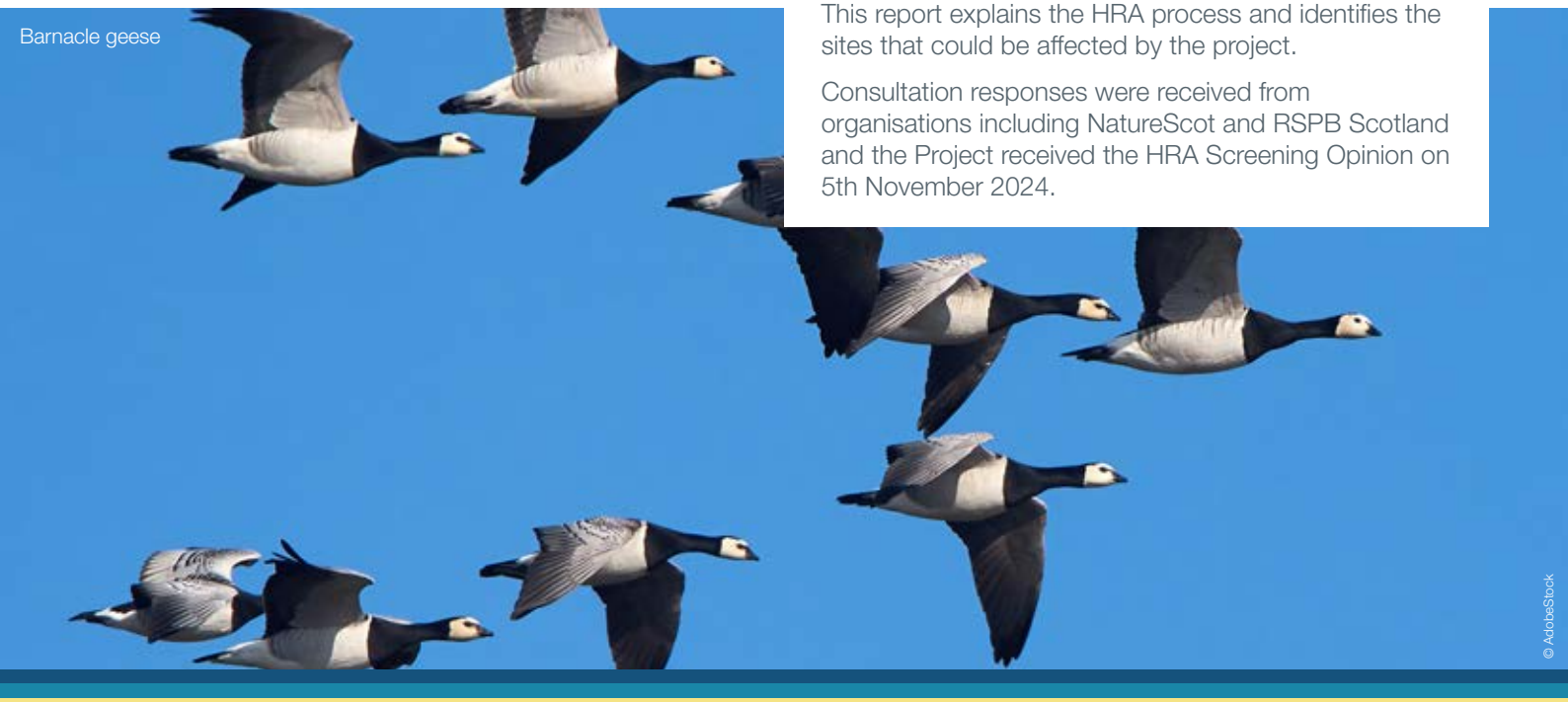
Where HRA Screening identifies the potential for "likely significant effects" on relevant designated sites, it is necessary for an Appropriate Assessment to be undertaken to assess whether the project would have an "adverse effect" on these designated sites. The conclusions of the Appropriate Assessment must be reached beyond scientific doubt.

We have started to prepare a Report to Inform Appropriate Assessment, which will be submitted to Aberdeenshire Council and the Marine Directorate alongside the EIA to support the consenting applications. We also intend to submit a Without Prejudice Derogation Case to address the implications of any predicted adverse effects on relevant designated sites, including the provision of ecological compensation measures if required.

The Report to Inform Appropriate Assessment and Without Prejudice Derogation Case will be made publicly available upon submission.

This report explains the HRA process and identifies the sites that could be affected by the project.

Consultation responses were received from organisations including NatureScot and RSPB Scotland and the Project received the HRA Screening Opinion on 5th November 2024.



Barnacle geese

How Will MarramWind Be Built?

Project Programme

Construction works are anticipated to start in the early 2030s, subject to consent. Given the scale of the project, construction may involve phased installation of both the onshore and offshore infrastructure over the course of the construction phase. It is anticipated that the infrastructure necessary for each phase will be installed sequentially. For example, each of the three onshore substations will be constructed to align with the phased energisation of the wind turbines and the associated installation of the onshore export cables. We will consider all options to minimise the impacts of a phased construction.

The total construction phase for the offshore infrastructure within the windfarm site, including the offshore wind turbines, is anticipated to be between eight and twelve years, but this timeline will be refined as details emerge about the project phasing design and supply chain availability. The offshore cables and landfalls associated with each phase of the wind farm will be installed towards the beginning of that phase's construction.

Offshore

Offshore cables

Before the installation of any offshore cables, the seabed will be prepared and cleared of obstacles, such as debris and boulders. The offshore cables will then be laid 1-2m beneath the seabed wherever possible by cable laying vessels in sections and joined together. Burial protects the cables from damage, with other protection methods such as concrete mattresses or rock berms used where burial is not possible.

Wind turbine installation

It is expected that the wind turbines will be assembled onto their floating unit at a port and then towed to site and connected to the pre-installed anchor and mooring system. Should there be advances in wind turbine installation it may be that turbines could be installed on the floating unit offshore.

Offshore substations

The foundations for the offshore substations will be built near to a port and transported to site for installation, which is likely to require the use of specialist heavy lift vessels. Once the foundations are installed to the seabed, the platform topsides, i.e. the substations and associated infrastructure, can be lifted into place.

Offshore worker accommodation

The accommodation of crew will typically be on onboard vessels, such as construction vessels and service operation vessels (SOV's), but may also be housed on walk-to-work vessels or jack-ups, more likely associated with substation commissioning, operation and maintenance.

The role of ports

Ports are central to the development of offshore wind, serving as a location for component manufacturing, assembly, storage and/or marshalling ahead for transit to the wind turbine site. Operation and maintenance activities are also dependent upon suitable ports.

We continue to engage with a range of key stakeholders, including port operators, local authorities, the Scottish Government and its agencies, to explore options for port utilisation and stay abreast of plans for port expansion. We are considering a range of port facilities that may be required for the installation and operation of MarramWind. Once the project designs are further developed, we will have a clearer understanding of our port requirements.

Port infrastructure improvements or expansion may be necessary to support MarramWind's construction and operation, which will be determined by the technologies selected by the project. These, along with other effects from port operations related to MarramWind, will be subject to assessment and will be authorised under separate consenting exercises.

Landfall

Landfall is the connection point between the offshore cables and onshore infrastructure. How landfall is constructed depends on the chosen landfall(s), coastline features, and other technical or environmental constraints.

How landfall is constructed depends on the chosen landfall(s), coastline features, and other technical or environmental constraints.

The cables at landfall(s) will be buried and installed using a trenchless method, such as Horizontal Directional Drilling (HDD). Open cut construction requires a visible trench along the surface of the ground. This approach was included in previous statutory consultation rounds, but has now been discounted due to environmental considerations.

At the shoreline, the maximum width of land required to install the cables will be 345m. The onshore part of the landfall(s) will include up to six underground transition joint bays where the offshore and onshore cables are joined together. The offshore cable laying vessel will approach the shore then the marine cables will be pulled into the transition joint bays by machinery within a temporary onshore construction compound.


Typical HDD rig

This compound will be located above MHWS at the landfall(s). The land will be reinstated after completion of the construction phase. An inspection chamber or equivalent permanent access arrangement may be left in place at the transition joint bays. The location of the compound at the landfall/s is still to be determined.

Access to landfall construction site(s) may require temporary access routes and/or the strengthening of existing roadways. Construction vehicles accessing the temporary landfall construction areas will require access routes from the A90 for delivery and removal of construction materials.

Onshore

Onshore cables

The temporary cable construction corridor is expected to be 89m wide from landfall to the onshore substation (accommodating up to six underground cables) and 99m wide from the onshore substation to the national grid (up to seven underground cables). This will provide access to construction traffic, and space for cable assembly, trench excavation and storage space for excavated soil. The temporary corridor may require extending beyond this width in certain locations to provide space for access at crossings, avoidance of obstacles, and up to 300m wide at HDD crossings.

Up to three primary and six secondary construction compounds will be required close to the onshore cable corridor. These will be logistic hubs and will include welfare facilities, storage, accommodate building materials, parking, and site offices. We will identify where these will be located through environmental and technical assessments and stakeholder engagement.

A number of temporary construction compounds will be required to enable the construction of joint bays and installation of underground cables.

Underground cables and associated ducts may be laid in either a single operation in trenches, or ducts may be installed in the trenches to allow the cables to be subsequently pulled through at a later stage. The trench is then backfilled. This approach removes the need to undertake repeat excavations. Following cable installation, haul roads and any construction compounds will be removed. Where it is necessary to cross sensitive features, such as watercourses, roads and railways crossings, trenchless construction methods such as HDD will be used to install ducts under the crossed feature. The cables are then pulled through via entry and exit pits.

The underground cables will be installed in sections. Joint bays will therefore be required at intervals along the cable route to enable the cable installation and connection process. These joint bays will be underground structures with a link box located at or above ground level. Link boxes enable electrical checks and testing to be carried out during operation.

We will develop temporary access routes along the cable corridor from existing roads so that construction vehicles can deliver and remove construction materials.

Onshore substation site infrastructure

The onshore substation site infrastructure will require site preparation works, installation of foundations for cables, pipes and equipment, construction of substation buildings, installation and commissioning of electrical equipment, drainage, environmental mitigation and landscaping. The onshore substation infrastructure will be built within the designated site boundary over an anticipated construction period of approximately nine years. Site access will be required, including for the delivery of construction materials and electrical components, so an access road(s) will be constructed. Up to three primary and six secondary construction compounds will also be required but will be dismantled and the land reinstated when the construction work is complete.

Most construction vehicles accessing the substation site will include HGVs, concrete mixer trucks, and vans. However, there will be a small number of abnormal loads to enable the delivery of large electrical equipment such as the electrical transformers.

Onshore worker accommodation

The accommodation requirements for onshore construction workers will be carefully considered but are not yet determined. However, the potential effects on accommodation as well as local community facilities and services will be assessed as part of a socio-economic impact assessment. This approach ensures any potential effects on the community are identified and managed.

MarramWind in Operation

MarramWind is expected to begin generating electricity in the 2030s, with energisation occurring in line with the project's grid connection agreement and up to the maximum connection capacity of 3GW.

Operational maintenance

When MarramWind is in operation, periodic testing of the onshore cables is likely to be carried out. This will require access points to the link boxes along the cable route, which will involve attendance by light vehicles. The vehicles will gain access using existing field access points.

The onshore substation site is unlikely to be permanently staffed, although some maintenance and operational visits will be required. Infrequently, equipment may need to be maintained or replaced and HGVs may be used.

For the offshore elements of MarramWind, maintenance requirements will depend on the infrastructure used, the type of wind turbine, floating platforms, electrical transmission infrastructure, and final layout of the windfarm.

Maintenance will typically be undertaken via an SOV. Helicopters or other specialised vessels may also be used where necessary to prevent damage to equipment, prevent and repair corrosion, and carry out all necessary repairs to maintain safe operation of the windfarm. For major component repair, it may be necessary to tow turbines to port, although technologies are being developed to prevent the need for this.

Approach to decommissioning

Decommissioning MarramWind will begin at the end of its operational life. It is anticipated that each phase of the MarramWind project will operate for up to 35 years.

Decommissioning MarramWind is anticipated to involve the removal of all offshore infrastructure above the seabed. The cables could be removed or left in place to minimise environmental effects and offshore navigational safety risks associated with their removal. The onshore substation site is likely to be removed and the site then reinstated.

We will develop the project in a sustainable manner and will consider both operation and decommissioning during design and development. The decommissioning works are likely to be undertaken in reverse of the construction process of MarramWind. A decommissioning programme will be developed to define the decommissioning methodologies that might be used. It will be updated prior to construction and updated during the operational phase of the project to account for any changes to industry best practice, relevant legislation and policy, or developments in technology.

Benefits and Opportunities

MarramWind presents an opportunity to generate social, economic, and environmental value, particularly for communities in the North-East of Scotland.

As one of the world's largest floating offshore wind farms, MarramWind will play an important role in decarbonsing the Scottish and UK economies, and generating renewable power equivalent to the demand of 3.5 million homes. This nationally significant energy project also offers a sizable opportunity to generate regional and local socioeconomic value, particularly for communities in the North-East of Scotland. This value will be in the form of:

- The contracts made by the project throughout its development, construction, and operations;
- Investments made in any infrastructure enhancements needed by the project (e.g., ports), which deliver wider benefits to other users; and
- Community benefit funding once the project enters into operation.

We are committed to developing MarramWind in a manner that sees as much of the value of the wind farm retained within the North-East, Scotland and wider UK, while also balancing the need to maintain cost-competitiveness, manage risk and ensure we have reliable supply chains. MarramWind's £25m Supply Chain Stimulus fund was created in recognition of the potential that exists within Scottish businesses to support offshore wind development, but also the need to grow Scotland's supply chain capabilities and capacity to realise this potential.

To date, over 90% of MarramWind's total supply chain expenditure been with UK registered companies, including over 40% with Scotland registered companies. The project's intentions to maintain ambitious levels of Scottish and UK supply chain expenditure are set out in the MarramWind Supply Chain Development statement, an updated version of which is due for submission to Crown Estate Scotland in 2026.

Supporting Supply Chain Development

Since being awarded development rights for the MarramWind site in 2022, we have undertaken a range of activities to help raise awareness of future supply chain opportunities and support supply chain development more broadly. These include:

- Running a supply chain opportunities event in Peterhead in November 2023 with the DeepWind cluster;
- Meeting supply chain companies at national and regional industry conferences;
- Launching the enhanced MarramWind Supplier Interest Portal in July 2024, used to help companies target future events, activities and contract opportunities;
- Providing ongoing support to Scotland's Strategic Investment Model, which seeks to build the case for investment in vital new supply chain facilities and port infrastructure;
- Supporting the development of a new Scottish Offshore Wind Energy Council study into the socioeconomic opportunities from Scottish offshore wind;
- Engaging with Scotland's enterprise agencies; and
- Continued engagement with public and private sector partners to explore opportunities to support the growth of Scotland's offshore wind industry

MarramWind remains at a relatively early stage of its development and many of the key decisions that will determine the products and services required by the wind farm will not be made until the project's design is much more advanced. This includes decisions on the floating wind technologies for use by the wind farm, which will in turn determine facilities for manufacture, assembly, installation and operations. However, we continue to engage with supply chain companies and other key stakeholders to maintain an up-to-date view of opportunities to source the goods and services required by MarramWind from local, Scottish and UK suppliers. This will be important for informing the focus of MarramWind's Supply Chain Stimulus Fund, which will be used to support investment in Scottish infrastructure and facilities for offshore wind and help companies innovate and upskill and become a key part of the clean energy future.

Socioeconomic Action Plan

As part of MaramWind's consenting applications, the project will be creating a Socioeconomic Action Plan that will set out in more detail the different ways in which the wind farm can create social and economic value for Scotland and the North-East in particular. The plan will also explain the actions that MarramWind will undertake to ensure that we deliver maximum value for the local economy and support community priorities for wealth-building. We are consulting widely to inform the creation of the Plan – including speaking to businesses, local authorities, enterprise agencies and community groups – but we would invite anyone with views on how MarramWind can leave a positive, lasting legacy for Scotland and the North-East to share them in response to this third round of consultation.

Employment and skills

The growth of Scottish offshore wind will create opportunities for people entering the workforce or pursuing a new career, particularly those from the oil and gas sector. MarramWind will provide more information on increased demand for local labour when the opportunities from MarramWind are better known.

Jobs opportunities and skills development were highlighted as high priorities by respondents to consultation rounds 1 and 2, when asked how MarramWind could leave a positive legacy for the area.

To help local communities take advantage of these opportunities, we will continue working with education facilities to support Science, Technology, Engineering and Maths (STEM) subjects to encourage interest from young people. We are exploring opportunities to support STEM and skills outreach activities, focussed on raising awareness of future offshore wind career opportunities within North-East Scotland. These will build and expand upon our ongoing support for the National Energy Skills Accelerator.

Community Benefit Fund

ScottishPower and Shell take pride in being part of the communities surrounding our energy projects and we want the communities in North-East Scotland to benefit from a future powered by renewable energy.

Feedback received during our first round of statutory consultation ranked the creation of a Community Benefit Fund as the most important opportunity to support community projects and groups in the local area.

Over the coming months and years, we will work with stakeholders to determine how such benefits will be delivered.

Stakeholder Engagement

Stakeholder engagement and consultation is a critical part of the development of MarramWind. We are committed to developing an offshore windfarm in a considered way that is sensitive to the needs and expectations of local stakeholders and communities whilst creating long-lasting benefits and opportunities on a local and national level.

From the early stages of the development of MarramWind, we have been engaging extensively with a wide range of statutory and non-statutory stakeholders across the north-east of Scotland, as well as members of the local community. Some of the engagement activities we have undertaken to date include:

- hosting a drop-in day for the local community to learn about the project and meet the team;
- attending the Floating Offshore Wind conference in Aberdeen to build stronger coordination with other developers;
- hosting a supply chain event with the DeepWind cluster in Peterhead;
- meetings with local Councillors;
- attending a fisheries awareness day with the Scottish Fishermen's Federation;
- organising an OffshoreWind4Kids event with Clerkhill Primary School;
- engaging with Buchan Development Partnership, which is an independent, community-led initiative working with communities across Buchan;
- supporting Aberdeenshire Council's 2040 vision business development event;
- meeting with Community Councils; and
- working in partnership with Aberdeen Science Centre to fund 142 pupils from Peterhead to learn more about the floating offshore wind industry.

Statutory consultation

In 2024, we conducted two rounds of consultations for the MarramWind project. These included online presentations and in-person events in Peterhead and Longside. We also created a virtual exhibition space on our website. These platforms allowed local community members and other interested parties to share their thoughts and help shape the project.

Nearly 300 people from Aberdeenshire, representing various backgrounds, participated and provided valuable feedback. Our project team has reviewed and analysed this feedback to guide the next steps in refining and developing the project.

A summary of the feedback we received and our responses can be found on pages 32 and 33.

Engaging with other developers

We are aware of the scale of energy developments planned for the Peterhead area. As such, we are taking a proactive approach to engagement with other developers to discuss current plans and consider opportunities where we can work together as a collective to coordinate development. Where potential overlaps in proposed infrastructure are emerging, we are initiating discussions with these developers so that plans are taken forward sensitively and to ensure potential effects on the surrounding communities and environment are minimised as much as possible.

We are also actively involved in the Peterhead Developers Forum. The Forum consists of a variety of consists of a variety of energy projects involved in floating offshore wind, carbon capture and storage, and electricity transmission. Being a member allows us to meet regularly to coordinate plans, share best practice and address stakeholder issues. We are committed to open communication and will continue to work with other developers to identify potential synergies and optimise the project infrastructure development process while ensuring the technical viability and integrity of each project.

Summary of feedback from statutory consultation 2

Issues raised	MarramWind response
1. Landfall **The potential for local villages being cut off due to onshore infrastructure, with suggestions to use Lunderton for landfall to minimise impact on fishing and to employ Horizontal Directional Drilling from the shore.**	A construction traffic management plan will be implemented to minimise impacts on local roads, and the landfall and onshore export cable infrastructure will be underground, ensuring no restriction of access to the coast. Landfall selection considers various factors, with Scotstown remaining an option despite near shore constraints. A trenchless method of installation will be employed, such as Horizontal Directional Drilling (HDD). The final trenchless method of drilling will be dependent on ground conditions, particularly in the nearshore area where this is known bedrock.
2. Offshore infrastructure **Suggestions that offshore power remain offshore via switching stations, with trenching and rock dumping over cable corridors to mitigate magnetic fields' effects on wildlife. Additionally, avoiding sonar surveys is recommended to prevent whale breaches.**	Offshore power must come onshore to meet demand, with grid connection locations determined by NESO and TOs. While offshore switching stations are still in development, the project plans to bury cables to protect marine habitats, using other protection methods where burial isn't possible. Environmental surveys will be risk-assessed to mitigate impacts on sensitive marine species.
3. Benefits and opportunities **Suggestions that MarramWind offers reduced energy prices for local residents and invests in new and existing community facilities.**	We are in the early stages of designing our Community Benefit Fund, which is likely to launch when the wind farm becomes operational in the 2030s. We value the suggestions received during the statutory consultation process and will use them to shape the fund. MarramWind believes local people know best what their communities need. Therefore, we will continue to engage and consult with local stakeholders to ensure the fund addresses local priorities and delivers tangible benefits.
4. Construction **Suggestion to occasionally open the landfall site for community viewing. Questions regarding the impact of the project workforce on local services like housing and healthcare.**	We will consider opening the landfall site for community viewing and keep locals informed throughout the project. A detailed Construction Traffic Management Plan will be developed with Aberdeenshire Council to manage construction traffic and minimize disruption. The Socio-Economic Chapter of the EIA will assess the demand for community facilities, and a Socio-Economic Action Plan will outline our commitments, including local needs assessments and opportunities for supply chains and skills development. MarramWind is dedicated to enhancing local employment, offering apprenticeships and trainee roles, and advertising jobs early to ensure local participation.

5. Landscape and visual

The potential for proposed infrastructure to impact on the rural landscape and affect tourism, agriculture, and forestry.

We are conducting a landscape design and visual impact assessment to minimise proximity to properties and fit better with the existing landscape along the A950 corridor. Mitigation techniques, including planting and architectural strategies, will screen the substation site and enhance the area's ecology and visual quality. We aim to design, construct, and operate the onshore infrastructure sensitively, improving biodiversity and creating a clean and coordinated appearance that enhances the area.

6. Fishing

Short and long-term effects of offshore cables on the local inshore fishing industry and seabed habitats, including impacts on lobster, crab, and velvet crab. It is suggested to conduct fishing assessments before and after cable installation to monitor these effects.

The EIA will evaluate the effects of the project on the local inshore fishing industry, including the cumulative impacts of offshore cabling on marine habitats and species. This assessment will cover:

- Habitat disturbance
- Sediment release
- Invasive species
- Electro-magnetic fields (EMF)

We are actively engaging with fishing organisations to gather insights on productive fishing grounds and the effects of EMF on crustaceans.

A Fisheries Mitigation, Monitoring, and Communication Plan (FMMCP) will be developed. This plan will include:

- Monitoring fisheries statistics and data
- Consulting with the fishing industry
- Conducting species-specific surveys based on advice from the Marine Directorate and NatureScot

7. Wildlife and habitats

Cumulative impact of offshore cables on seabed habitats. It is suggested to use trenching and rock dumping over the cable corridor to reduce the effect of magnetic fields on wildlife and habitats.

The EIA Report will assess the cumulative effects of offshore cabling on marine habitats. The project plans to bury offshore cables to protect them and avoid disrupting marine habitats, using other protection methods only when burial isn't possible. The EIA will consider an option for rock placement instead of burial in the nearshore areas and will be subject to further discussions with fishing groups during the design phase.

8. Consultation and engagement

The need for ongoing engagement with key stakeholders, knowledgeable of the local community's needs.

We've been working closely with local experts and stakeholders since we started developing the project. In 2024, we held two rounds of public consultations to shape the project's design at an early stage, and we are conducting two further consultation rounds to discuss environmental measures and enhancing the project's benefits for Peterhead's communities.


MarramWind
Onshore Key Infrastructure
Grid connection cables
marramwind.co.uk
Marram
Onshore Project
The onshore cable corridor
The substation location
marramwind.co.uk

Have Your Say

Providing your feedback

Thank you for taking the time to read through our proposals. Now that you have more information on the proposed MarramWind offshore windfarm, we want you to share your feedback with us and let us know what you think. Your feedback is important to us and all feedback received will be considered. You can provide your feedback through one of the following ways:

- Using the feedback form within the virtual exhibition space on our website **www.marramwind.co.uk**.
- Email us your comments at **stakeholder@marramwind.com.**
- Fill in a paper feedback form. These will be available throughout the consultation period at Aberdeenshire Council's Buchan House building in Peterhead.
- Write to us at **FREEPOST MarramWind.**

This consultation will run from **18 August 2025 to 11:59pm 9 September 2025.** Feedback received after the deadline may not be considered. We cannot respond to every response received individually.

We believe transparency in our decision making is important and we want to ensure that local stakeholders can see how their feedback has been considered in the development of the project's final design. We will present feedback from all our statutory consultation activities in 2024 and 2025, and provide information on how it was considered, in a Pre-Application Consultation Report covering both onshore and offshore elements of the project. This will be published as part of our consent application.

Comments made to us at this stage are not formal representations to the Planning Authority or the Scottish Ministers. Following the submission of our planning applications, which we intend to submit in late 2025, you will have further opportunity to make representations to Aberdeenshire Council and the Scottish Government's Marine Directorate, who will determine whether to grant planning permission and other required consents for the Project.

Consultation event

We will be holding one public consultation event during the consultation period, which we welcome members of the local community and other stakeholders to attend. Members of our project team will be available to provide more information and answer any questions you may have.

The event will take place on:

- **Wednesday 27 August 2025, 2pm – 7pm**, Palace Hotel, Prince St, Peterhead AB42 1PL

Next steps

1. The feedback received as part of this consultation will be used to further refine detailed design considerations, approaches to mitigating effects of the project, and maximising the socio-economic opportunities of the project.
2. A further period of statutory consultation will take place between **14 October – 4 November 2025**, with an in-person event on **28 October 2025** at Longside Football Club.
3. We will submit our consent applications at the end of 2025 to Aberdeenshire Council and the Marine Directorate who will determine whether to grant permission for the project. During the representation period of the determination, you will have further opportunity to comment on our proposals for MarramWind

Staying updated

For the latest information on MarramWind or to stay up to date with future engagement events, please

- Visit our website **www.marramwind.co.uk**
- Follow us on X at **@MarramWind,** or
- Email us at **stakeholder@marramwind.com** if you have any questions not covered in the consultation materials

Glossary

Accommodation platform: an offshore platform that supports living quarters for offshore personnel.

Crown Estate Scotland: manages the Scottish Crown Estate on behalf of Scottish Ministers, including most of the seabed off Scotland's coasts.

Decommissioning plan: a plan describing the removal of offshore infrastructure at the end of its useful life, plus disposal of equipment.

Digital aerial surveys: photography taken from a plane to collect data on a variety of wildlife including birds, marine mammals and fish.

Ecological: relating to the environments of living things or to the relationships between living things and their environments.

Electricity transmission: the transmission of electricity via cables from the turbines to the substations.

Energy security: Having a reliable and diverse supply of energy to meet demands.

Environmental Impact Assessment (EIA): the evaluation of how the planned project might affect the natural surroundings, living organisms, and people throughout its construction, operation, and eventual decommissioning.

Floating unit: a floating structure on which the wind turbine is installed, providing it with buoyancy and stability.

Gigawatt: a gigawatt (GW) is a unit of power equal to one billion watts. It is a measure of the rate at which energy is generated or consumed per unit of time.

Habitat: the natural environment in which an animal or plant usually lives.

High Voltage Alternating Current (HVAC): a type of high voltage electrical current, in which the direction of the flow of charge changes back and forth at regular intervals or cycles, in the UK it works at 50 cycles per second. The majority of the UK electricity grid is HVAC.

High Voltage Direct Current (HVDC): a high voltage electrical current that flows in the same direction.

Holistic Network Design (HND): a coordinated network design exercise completed by the National Grid Electricity System Operator (NGESO) that provides a recommended offshore and onshore design for connection of offshore wind projects to the UK electricity network. This is an NGESO process that has been established to facilitate the UK Government's ambition for 50GW of offshore wind by 2030.

Horizontal Directional Drilling (HDD): a trenchless method of installing underground cables using a drill.

Intertidal zone: the area where the sea meets the land between high and low tides.

Landfall: the point at which the cables transferring power from an offshore windfarm reach the shore.

Life cycle: the sequence of phases through which a project progresses. It includes initiation, planning, execution, and closure.

Marine Directorate: responsible for the integrated management of Scotland's seas on behalf of the Scottish Government.

Mean high water springs (MHWS): the average tidal height throughout the year of two successive high waters during those periods of 24 hours when the range of the tide is at its greatest.

Mean low water springs (MLWS): the average tidal height throughout the year of two successive low waters during those periods of 24 hours when the range of the tide is at its least.

Net zero emissions: a position where total greenhouse gas emissions would be equal to the emissions removed from the atmosphere, with the aim of limiting global warming and resultant climate change.

Offshore cables: these are electrical power cables that are installed offshore, buried in or laid on the seabed between the wind turbines, and then run the electrical power cables from the wind turbines to the offshore substation and from there to the landfall(s).

Offshore platform: a concrete, steel or hybrid substructure that is fixed to the seabed and supports offshore infrastructure above the sea surface.

Offshore substation: an offshore platform containing electrical equipment that collects energy generated from wind turbines and prepares it for transmission to shore via cables.

Onshore substation: the substation on land that connects the power transmitted from the offshore substation to the national grid. The onshore substation may change the electricity voltage to the voltage level required for the national grid connection.

Renewable electricity: also known as green electricity or clean electricity, it is electrical power generated from renewable energy sources such as wind, hydro or solar.

Scoping Report: a document that sets out the project's understanding of consenting requirements and what the project intends the Environmental Impact Assessment report to cover.

ScotWind leasing process: process led by Crown Estate Scotland to enable developers to apply for seabed rights to plan and build windfarms in Scottish waters.

Service Operation Vessel (SOV): a specialised ship designed to support the maintenance and operation of offshore wind farms. These vessels act as a floating base, providing accommodation, workshops, and transportation for technicians and equipment to and from wind turbines.

Socio-economic benefits: the positive outcomes from the project for society and the economy, such as job creation, local investment, reduced carbon emissions and environmental improvement.

Supply chain: the network of companies and activities involved in producing and delivering everything needed for the windfarm, from manufacturing the wind turbines and cables to construction and maintenance.

Supply chain stimulus fund: helps to stimulate economic growth and job creation within the supply chain by encouraging investment and development.

Transformer: an item of electrical equipment, contained in a substation that is used to change the voltage for power transmission and distribution at different levels.

Switchgear: the electrical equipment used in substations to manage and control the flow of electricity.

Water Framework Directive (WFD): is a European Directive which introduces a planning process to manage, protect and improve the water environment. Under the WFD, water bodies are defined as discrete and significant elements of surface water (like rivers, lakes, and estuaries) or groundwater, used as the basic units for assessing and improving water quality.

Wind turbines: the infrastructure that collects the wind energy and converts it into electricity for connection to the power networks. Each wind turbine consists of a number of blades that connect to a rotor hub, which rotates an electrical generator.

For illustrative purposes only.