

|| WHO WE ARE

SSE is the leading generator of renewable electricity in the UK and Ireland, providing energy needed today while building a better world of energy for tomorrow.

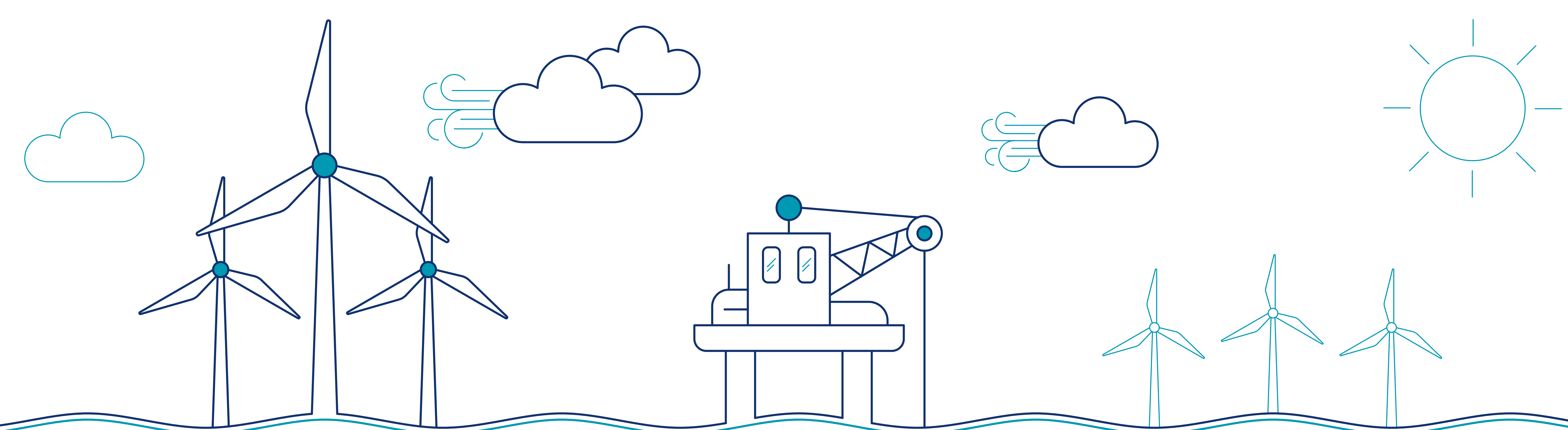


It develops and operates low-carbon infrastructure supporting the net zero transition, including onshore and offshore wind, hydro power, electricity transmission and distribution grids, efficient gas and energy from waste, alongside providing energy products and services for businesses.

UK listed, SSE is a major contributor to the UK and Ireland economies, employs 12,000 people and is real Living Wage and Fair Tax Mark accredited. SSE Renewables is a leading developer, operator, and owner of renewable energy across the UK and Ireland, with a portfolio of around 4GW of onshore wind, offshore wind, and hydro.

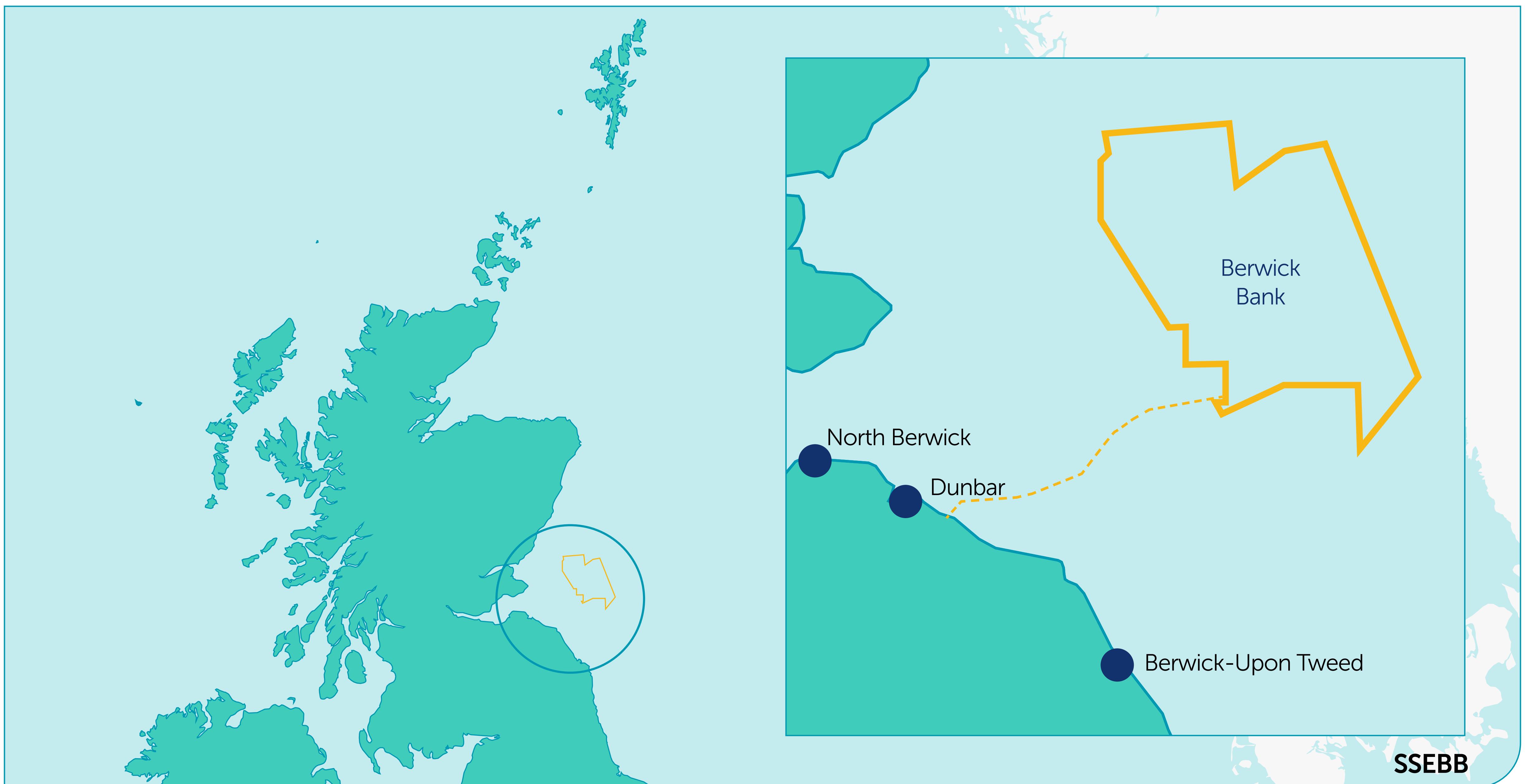
Part of the FTSE-listed SSE plc, its strategy is to drive the transition to a net zero future through the world-class development, construction, and operation of renewable energy assets. SSE Renewables owns nearly 2GW of operational onshore wind capacity with over 1GW under development. SSE Renewables currently has the largest portfolio of offshore wind developments in the UK and Ireland at over 7GW.

We're aiming to deliver enough new renewable projects to generate 30TWh by 2030, trebling our renewable energy output from 2019 levels. We have committed to a £12.5 billion (net) capital investment spending plan by 2026 which will make a significant contribution to decarbonising the UK power sector and achieving net zero emissions by 2050.



PROJECT OVERVIEW

Located in the North Sea, in the outer Firth of Forth, Berwick Bank Wind Farm has the potential to deliver up to 4.1 GW of installed capacity, making it one of the largest offshore opportunities in the world.



Project Background

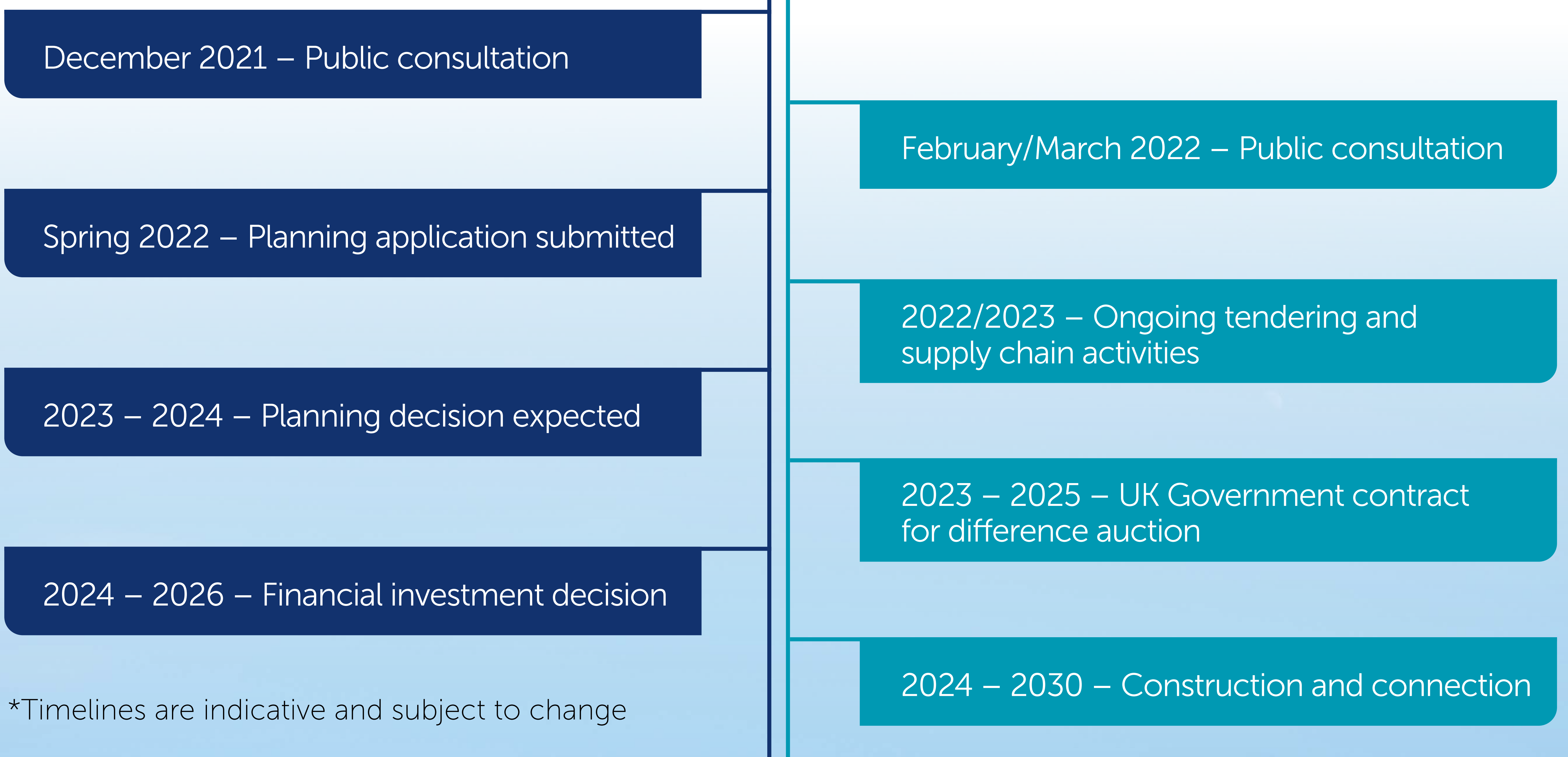
Berwick Bank Wind Farm is in the development stage and previously the project was comprised of two separate proposals, Berwick Bank Wind Farm and Marr Bank Wind Farm. Following initial rounds of consultation, it has been decided to combine our proposals into one single opportunity – Berwick Bank Wind Farm.

Over two years SSE Renewables has conducted one of the world’s largest aerial bird surveys and has an enormous amount of data on the site, enabling the company to put forward the most environmentally sensitive design possible. Berwick Bank Wind Farm will connect to the electricity grid at Branxton, near Torness, in East Lothian and will have a secondary connection point, the location of which is still to be determined.

The project will be capable of generating enough clean, renewable energy to power over five million homes, equivalent to all of Scotland’s households twice over, and avoiding eight million tonnes of carbon dioxide every year – similar to removing all of Scotland’s annual car emissions.

The Scottish Government have recently set themselves a target of achieving 11GW of installed offshore wind capacity by 2030, with a capacity of 4.1GW, Berwick Bank Wind Farm is crucial to the success of achieving this target.

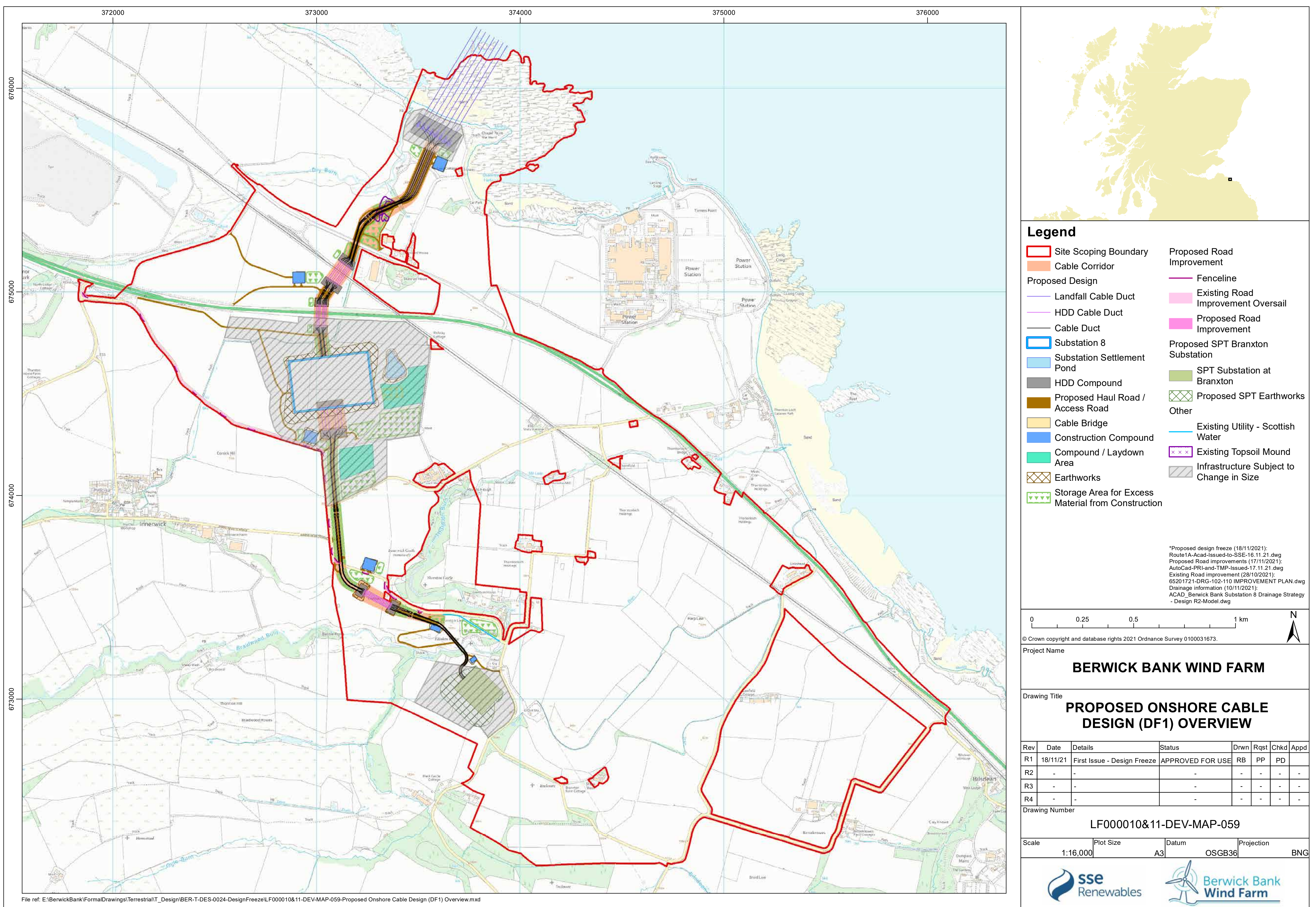
Project Timeline



PROJECT DETAILS ONSHORE

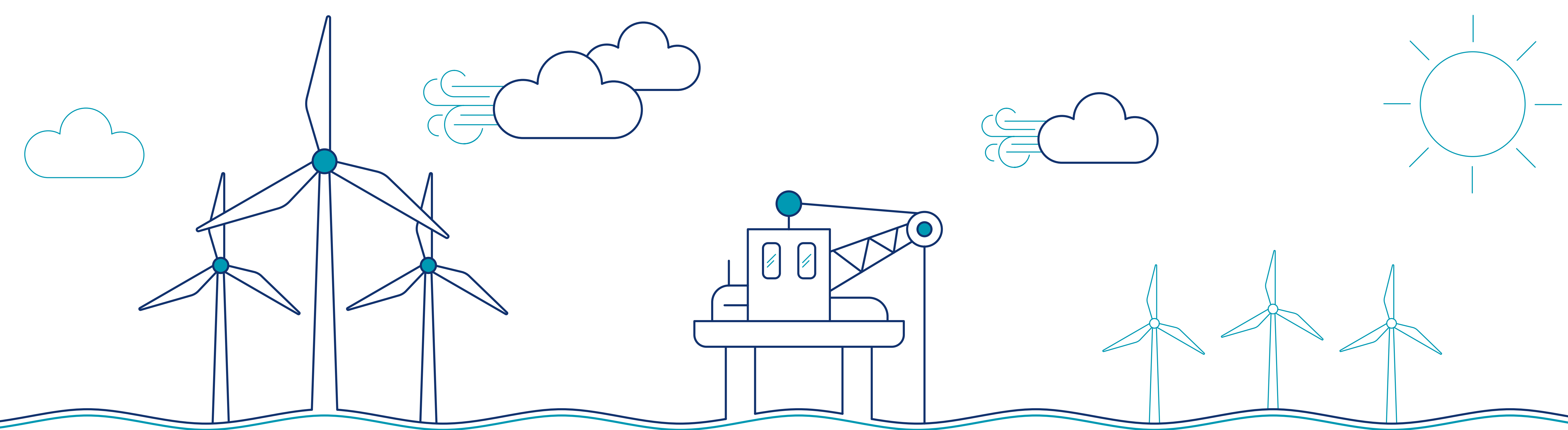
Project overview

Following a detailed site selection process, we have identified our preferred landfall, cable corridor, and substation location for the project. The site selection process considered 7 different landfall sites and 9 different substation locations. This was refined to two potential landfalls and their associated substations. The potential landfall options given detailed consideration were close to Skateraw Harbour or Thorntonloch beach. The process concluded that a landfall near to Skateraw Harbour was the preferred option, from an engineering feasibility and environmental impact perspective. The proposed landfall, cable corridor, and substation can be seen on the map below.



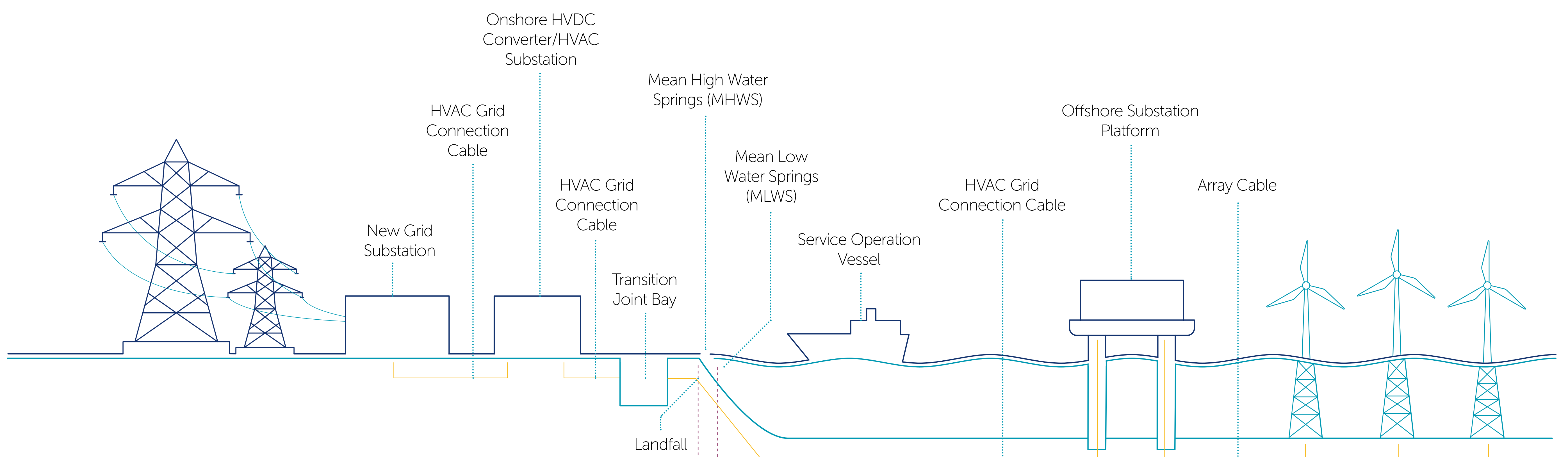
From landfall, our cable corridor runs south crossing under the East Coast Mainline (ECML), the A1 and then connects to our substation, which will be in the large agricultural field south of the A1. From our substation the cable corridor routes due south, crossing the Braidwood Burn, before connecting to the Branxton Grid Substation, which is being developed by Scottish Power Transmission (SPT).

For Berwick Bank Wind Farm, we are undertaking an Environmental Impact Assessment (EIA) for both the onshore and offshore aspects of the project. The onshore EIA considers a broad range of potential impacts on, for example, the natural environment (e.g., woodland), wildlife (e.g., otters), and local residents. The findings of the EIA will be written in an EIA Report that will be published online and in print copy when we submit our planning application.



EIA ONSHORE

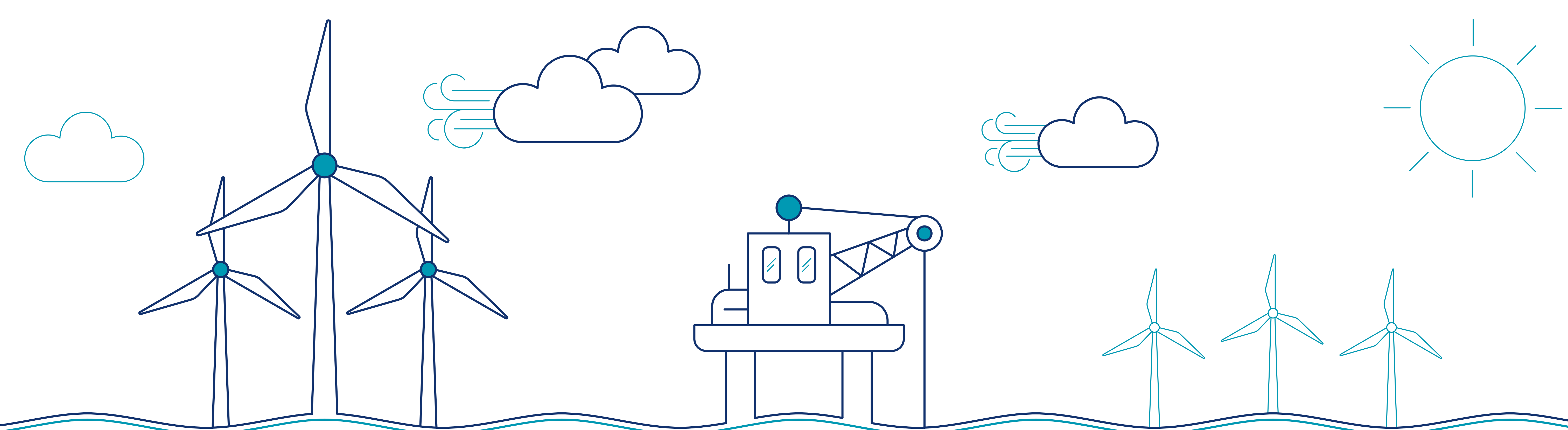
The Environmental Impact Assessment (EIA) is a process to identify the potential effects that could result from a proposed development on sensitive receptors. EIA is used to evaluate the design solution but can also influence the proposed construction, operation and decommissioning methods to remove or minimise the environmental impacts of the project.



Onshore EIA Report	Physical Environment	Geology, Hydrology, Soils and Flood Risk	Physical Processes	Offshore EIA Report	
	Biological Environment	Ecology and Ornithology	Subsea Noise		
	Human Environment	Traffic and Transport	Cultural Heritage		Air Quality
					Benthic Ecology
					Fish and Shellfish Ecology
					Marine Mammals
					Ornithology
					Commercial Fisheries
	Human Environment	Landscape and Visual	Land Use, Tourism and Recreation		Shipping and Navigation
					Aviation, Military and Communications
Marine Archaeology and Ordnance					
Cultural Heritage Settings					
Human Environment	Socio-economics	Noise	Seascape and Visual Resources		
			Infrastructure and Other Users		
			Socio-economics and Tourism		
			Addressed in offshore physical environment topics		

As part of the EIA, we seek the views of a diverse range of organisations, from East Lothian Council and their statutory consultation bodies to local community groups and residents. Our aim is to gain feedback on the project and where possible seek to find ways to avoid or minimise the impacts we may have.

Based on the consultation feedback provided to date, we consider the following aspects to be an important part of our onshore EIA process. This consultation exercise is designed to obtain any further feedback you may wish to provide:

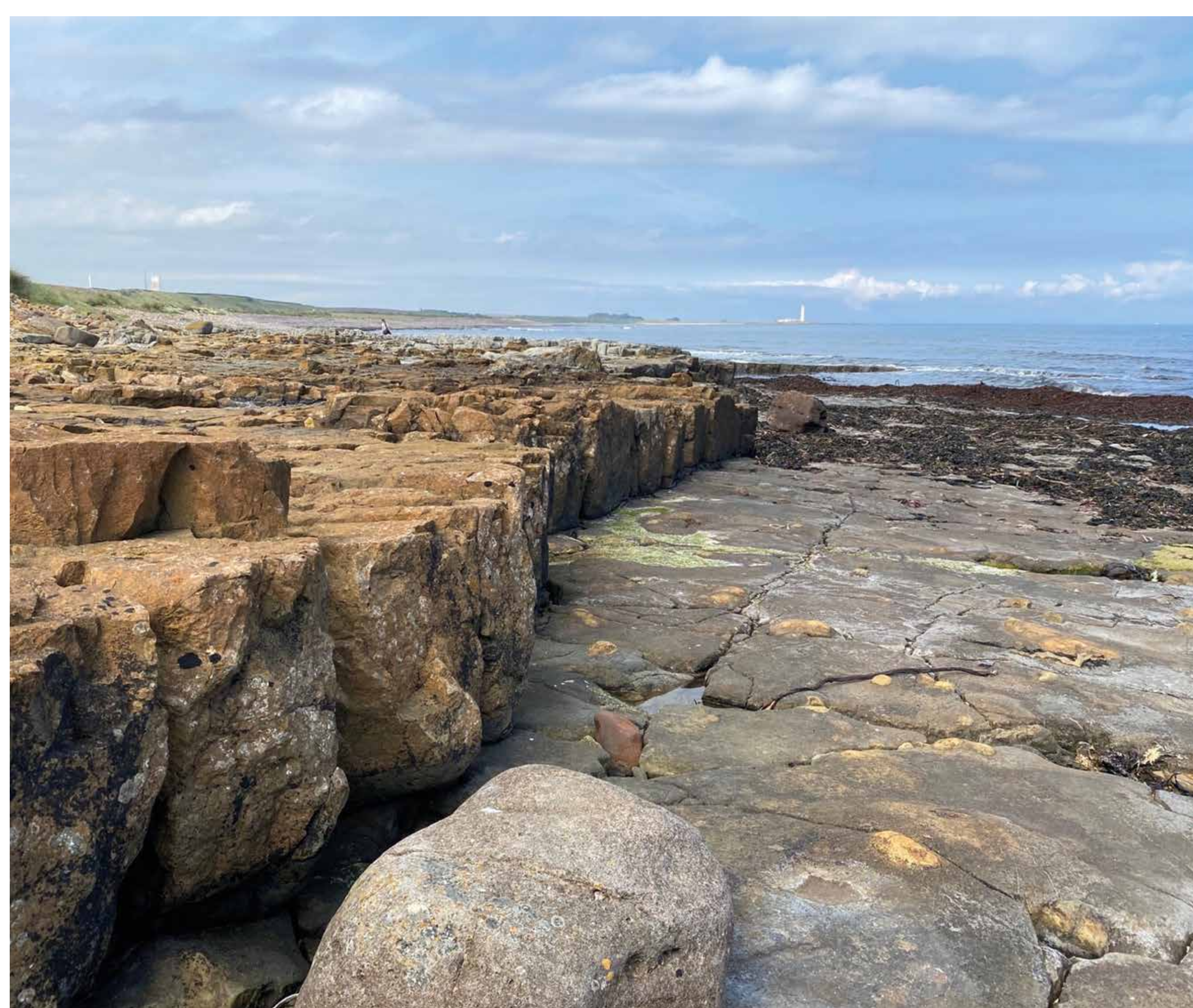


EIA

ONSHORE (CONT.)

Construction Traffic

We understand there are concerns about construction traffic using local roads. Whilst it is necessary for our construction traffic to use some of the local roads, we are developing a Construction Traffic Management Plan (CTMP), which would be implemented throughout the construction phase, with the aim of reducing the impact on local road users and residents living in the area. This would be subject to the approval of East Lothian Council should we secure planning consent. We have taken on board the comments provided by residents of Skateraw during our community roadshow in October 2021 and we are currently assessing a variety of construction traffic options with this feedback in mind.



Noise Impacts

We understand there may be concerns about construction noise and noise generated by the proposed substation. Our noise specialists are completing a noise impact assessment that models noise levels and the potential impacts on residents. This study has helped with our substation design, and further studies will be undertaken to ensure noise impacts will be avoided or reduced as far as possible.

Wildlife & Habitats

We are working with a team of ecologists to determine the impact on habitats and wildlife in the area. Initial investigations have shown that the land use is primarily agricultural. Where significant impacts are identified, we will develop suitable control and mitigation measures to avoid or reduce the impact.

Hydrology

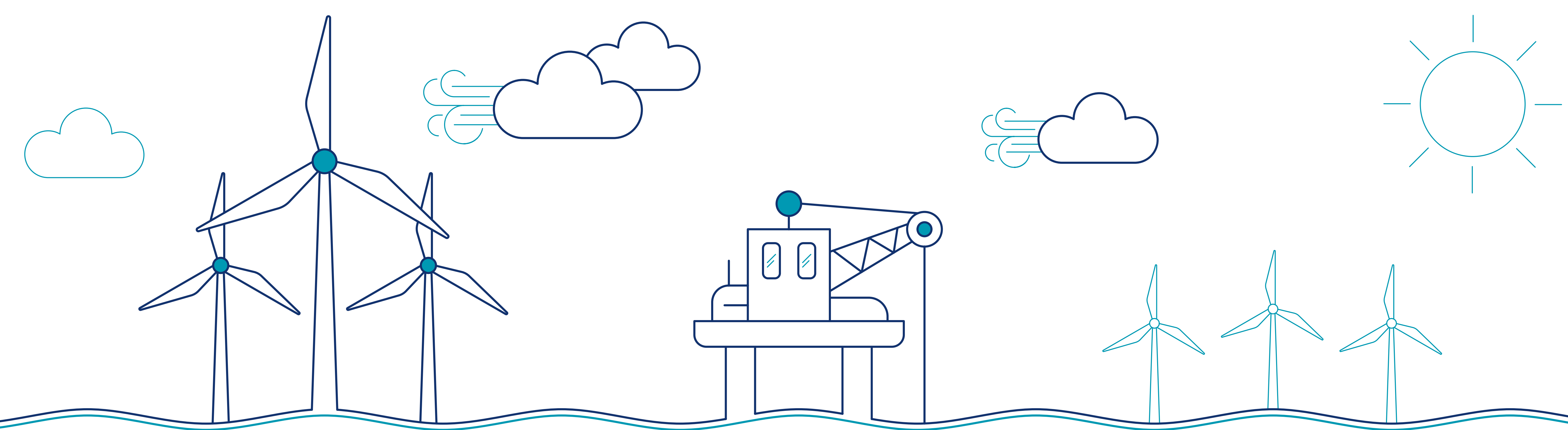
We have mapped out the watercourses across the area and will continue to work with specialist hydrologists to ensure we avoid or reduce the impacts during construction. This will include potential impacts on Private Water Supplies as well as consideration of flood risk and climate change which will be detailed in the EIA Report.

Landscape & Visual Impact

We appreciate that our substation will result in a feature in the landscape. Through careful design we have been able to reduce the visual impact and, through the EIA process we will identify further mitigation to help minimise the impact on the landscape and the views experienced by residents.

Cultural Heritage

The East Lothian coastline contains an array of archaeological and cultural heritage which has been considered as part of our design, and which will be further assessed as part of the EIA. We are working with a team of experienced archaeologists to identify any potential effects during construction and to reduce these where possible.

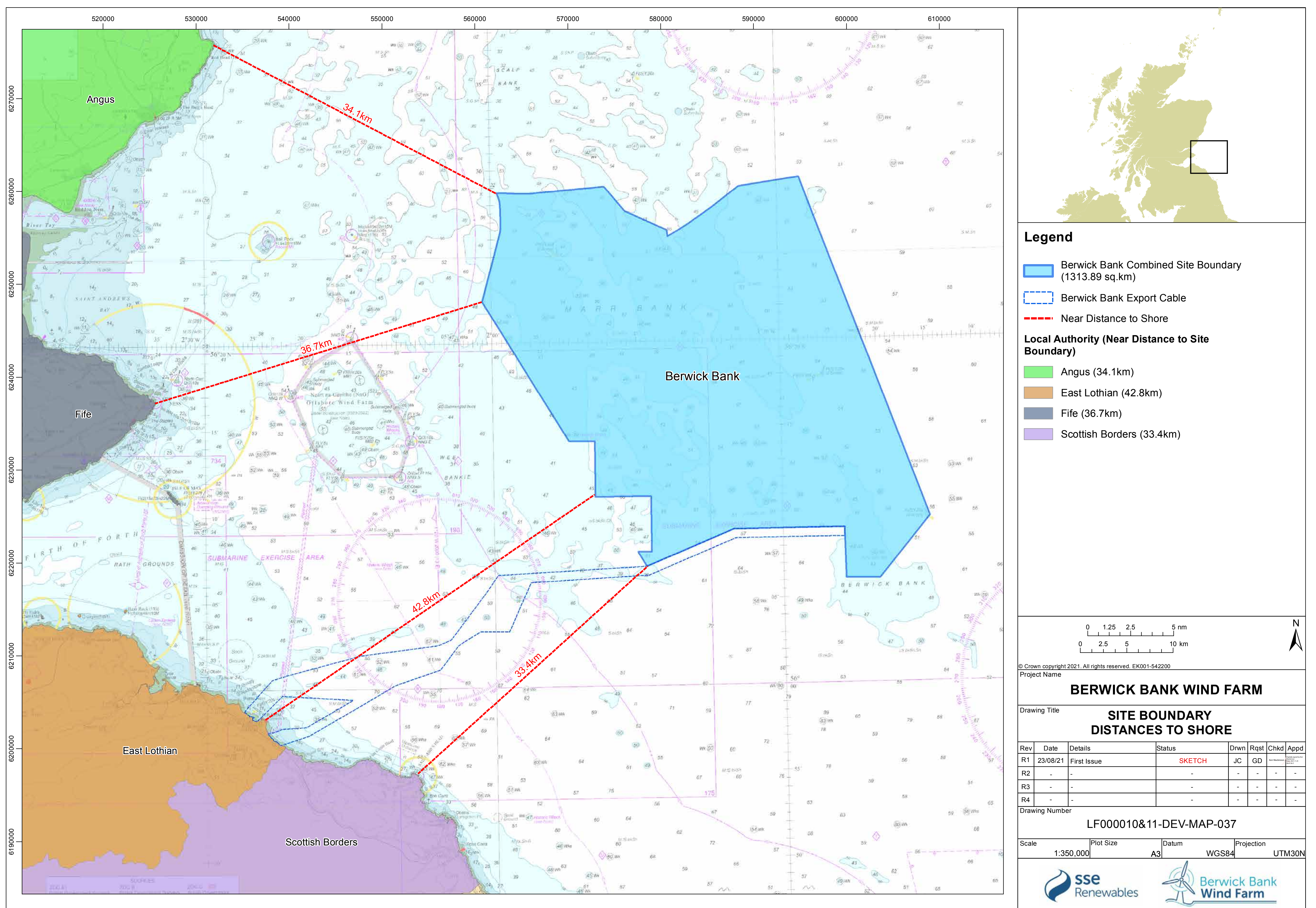


PROJECT DETAILS

OFFSHORE

Project overview

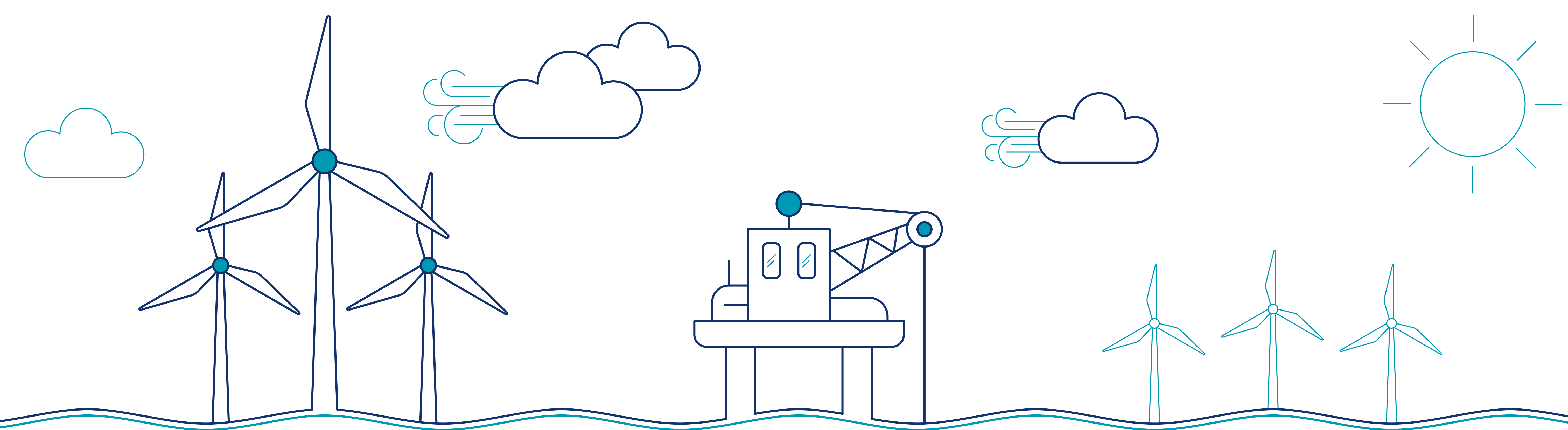
Berwick Bank Wind Farm will be located in the central North Sea, approximately 43 km offshore of the East Lothian coastline. It will have an operational design lifetime of approximately 35 years.



The offshore cable route will be approximately 68.6km in length. This is measured from the offshore wind farm site to the proposed landfall location at Skateraw.

Skateraw is the preferred landfall location. Skateraw has been selected over Thorntonloch as the landfall location due to environmental, engineering and land constraints associated with the Thorntonloch scenario. A key factor was also the limited availability of space at Thorntonloch Beach because of the Neart na Gaoithe (NnG) Offshore Wind Farm's cable route reaching landfall in the same area.

The project team also identified issues with engineering feasibility at Thorntonloch due to the topography and presence of cliffs and other environmental constraints such as the Bathing Water designation, sand dune habitat and a watercourse.



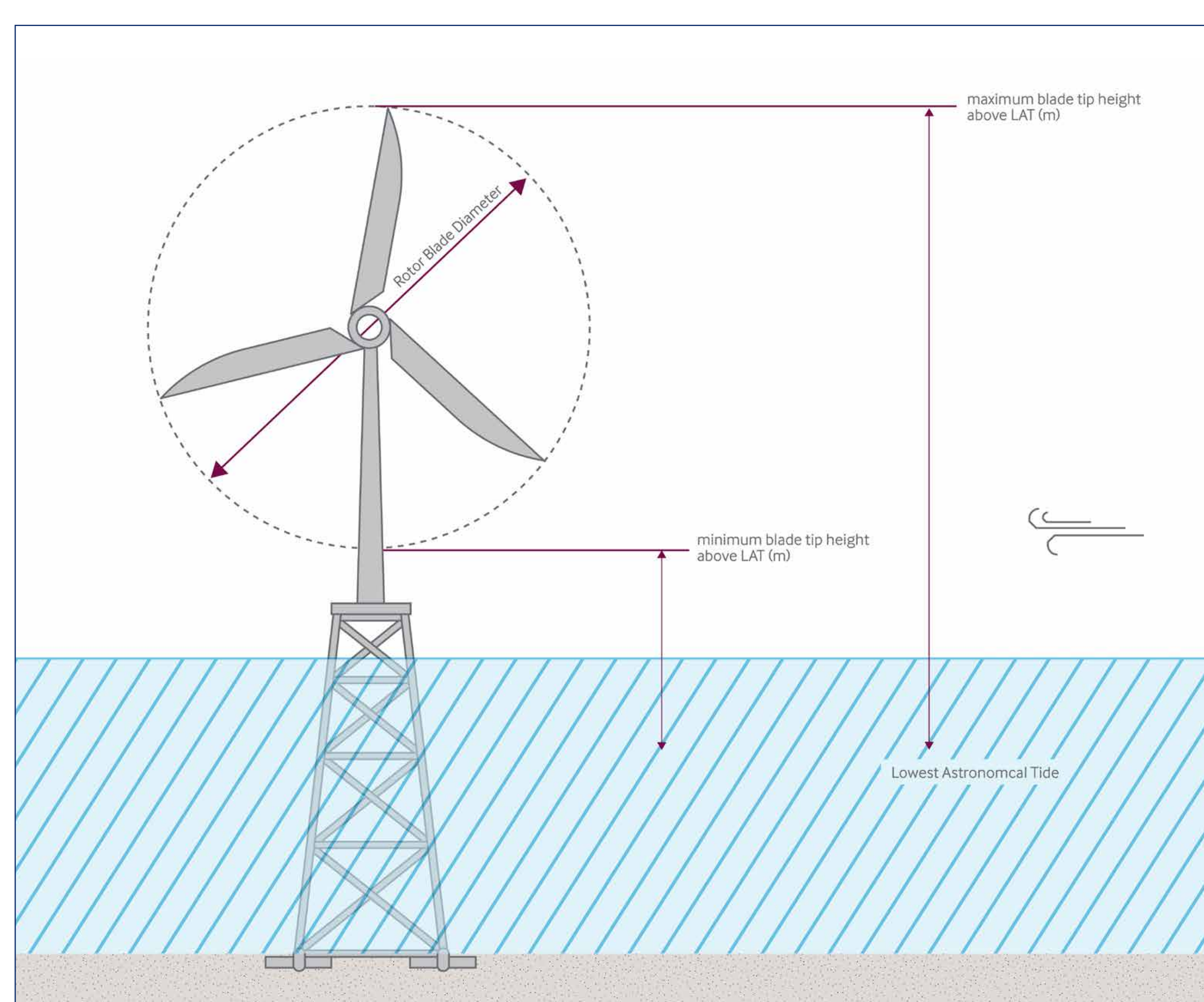
PROJECT DETAILS

OFFSHORE (CONT.)

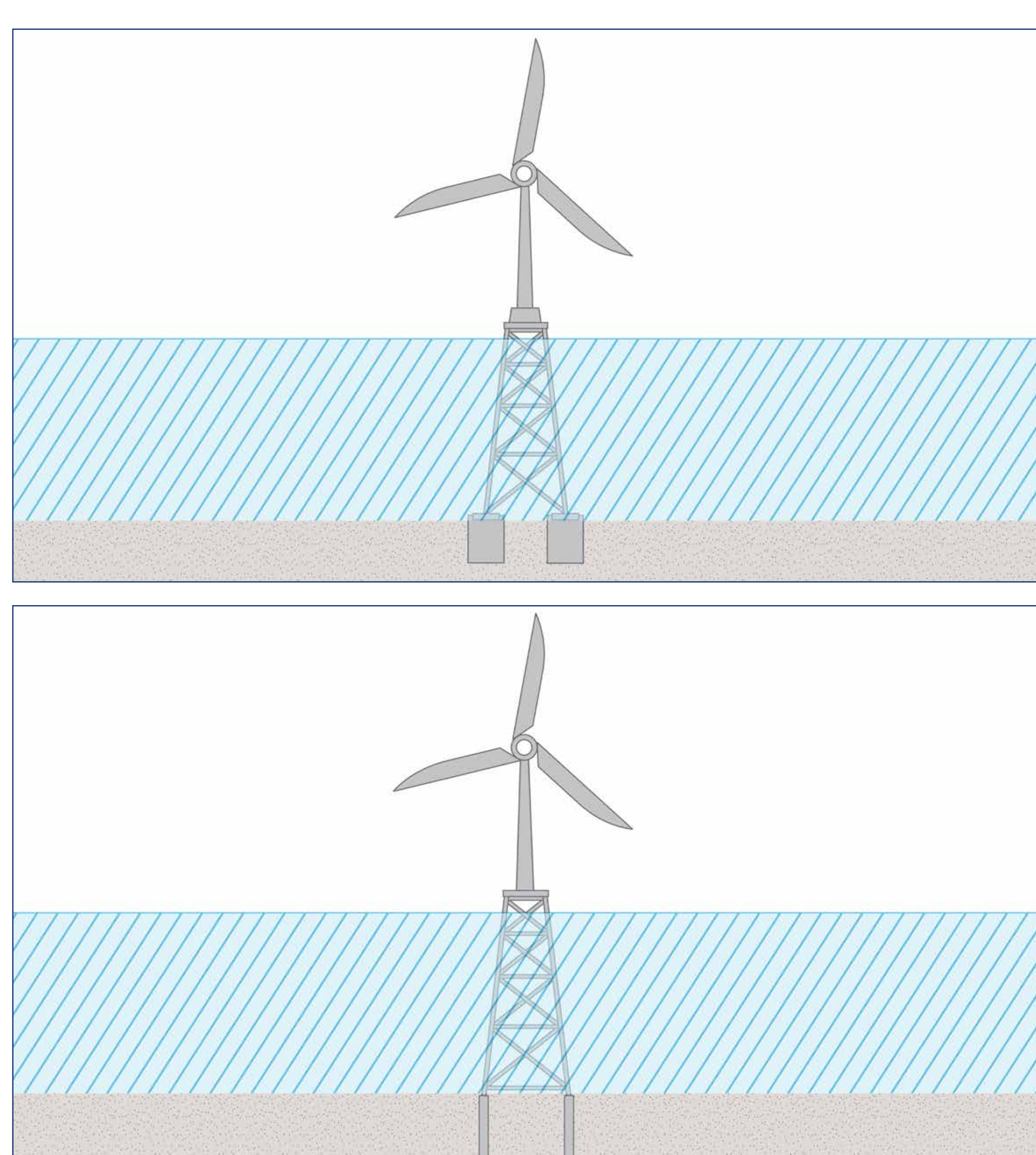
The key offshore components will include:

Wind Turbines

- up to 307 wind turbines (each comprising a tower section, nacelle and three rotor blades) and associated support structures and foundations;
- The final number of wind turbines will be dependent on the capacity of individual wind turbines used, and also environmental and engineering survey results. Wind turbines with a generating capacity between 14 MW and 24 MW are being considered.
- The maximum rotor blade diameter will be no greater than 310 m, with a maximum blade tip height of 355 m above lowest astronomical tide (LAT) and a minimum blade tip height of 37 m above LAT. The top of the wind turbine (the nacelle) will be have a maximum height of 200 m above LAT.



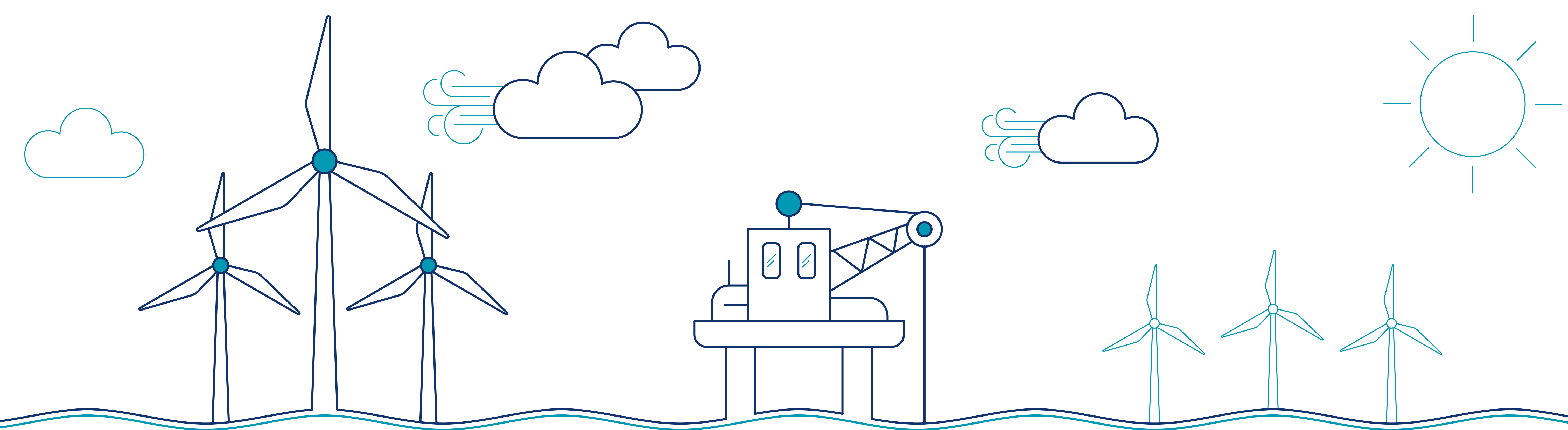
Schematic of an Offshore Wind Turbine. Two types of wind turbine support structures and foundations are being considered – piled jacket and suction caisson jacket.



Top - jacket foundation with suction
Bottom - jacket foundation with pin piles

Offshore Substations & Cables

- up to ten Offshore Substation Platforms and associated support structures and foundations.
- estimated scour protection of up to 2,280 m² per wind turbine and 4,825 m² per Offshore Substation Platforms.
- a network of cabling linking the individual wind turbines to each other and to the Offshore Substation Platforms plus inter-connections between Offshore Substation Platforms (approximately 1,225 km of inter-array cabling and 94 km of interconnector cabling); and
- up to 12 offshore export cables connecting the Offshore Substation Platforms to the Skateraw Landfall.
- It is possible that the project may utilise High Voltage Alternating Current (HVAC) and/or High Voltage Direct Current (HVDC) solutions.



EIA OFFSHORE

Ornithology

The Berwick Bank Wind Farm team have recently completed one of the largest known digital aerial bird surveys for a single project in the world and have collected vast amounts of data about the prevailing birds in the area. Many of these species, such as puffin, razorbills and guillemot fly close to the water's surface and are not at risk of colliding with the turbines. However, other species such as kittiwake and gannet fly higher. One key design feature of the project is to raise the 'air gap' of the turbines (the space between the water level and the lowest point of the turbine blade swept area) to 37 meters above the lowest astronomical tide (LAT). This is as high as 8 double-decker buses, and reduces the risk of birds colliding with the turbines.

We are carrying out detailed modelling of likely effects of the project on bird populations, which will form part of our EIA and will inform the decision-making process.

Marine Considerations

During the gathering of ornithology data as part of the aerial survey we were also able to gather large amounts of data on marine mammals within the area. Assessing the use of the area by marine mammals is particularly important as they are sensitive to noise and may be impacted by works associated with the development.



As we will be placing structures onto the seabed it is important that we know what is living there. Therefore, we have undertaken an extensive benthic survey campaign defining the habitats and species present. This is particularly important as the proposed development sits partially within a marine protected area (MPA). During these surveys we took samples, within which were some ocean quahog which were nearly 200 years old. We are also assessing the fish and shellfish ecology that is present as these can also be affected, positively and negatively, by the proposed development. This includes assessing any effects that the structures may have as fish aggregating devices and also the effects of the cables on the species present.



Kittiwake

The detailed survey work done to date will allow the team to propose the most environmentally sensitive design possible.

Visual Impact

Our site is located approximately 42.8km from the East Lothian Coast, and as such we consider any potential visual impact from the shore to be minimal. As part of the EIA, a Seascape, Landscape and Visual Resources Assessment will be undertaken which will assess the potential changes resulting from the construction and operation of the offshore wind farm. This will include photomontages and 3D models demonstrating the landscape changes anticipated and will present any visual impacts placed that would be upon identified landscape and visual receptors.

The project team have created a 3D model of East Lothian which depicts the visual impact of the proposal. This model can be viewed at the public consultation event, please speak with a member of the team for more information.

Fishing

Commercial fisheries are an especially important sector to the coastal communities around Scotland. Therefore, we will liaise closely with those stakeholders to understand the types of fishing within the proposed development, how important the area is to the sector and the concerns that they may have about the wind farm. By doing this we can understand the effects that we may have on this sector during the different project phases (e.g. construction and operation) and to also allow us to factor in mitigation that may lessen any effects and allow their activities to carry on with the least amount of interruption.

Shipping & Navigation

The Firth of Forth and Firth of Tay are two important areas for commercial shipping. As the proposed development sits at the mouth of these Firth's it is important that we engage with affected stakeholders to understand what, if any, effects there may be on their activities. We have engaged a specialist navigational consultant and are currently developing a navigational risk assessment, which will be used to determine the potential effects of the proposed development on commercial shipping interests in the area. This will look at the potential for navigable corridors between Berwick Bank Wind Farm and other wind farms in the area.

PROJECT OPPORTUNITIES



Supply Chain

Berwick Bank Wind Farm represents a multi-billion-pound investment and presents an enormous opportunity for the local, Scottish and UK supply chain. Despite still being in the pre-planning stage, to date the Project team have engaged with and utilised several Scottish suppliers, ranging from the hospitality sector, communications sector, local ports, and harbours, Scottish environmental, survey, geotechnical and engineer consultancies and local contractors.

In April 2020 we held an initial Supply Chain online seminar which was attended by approximately 700 businesses, and we are committed to continuing our engagement with the local supply chain. The project team is a member of the Midlothian & East Lothian Chamber of Commerce and looks forward to continuing to engage with the chamber on project opportunities.

As part of these plans, we are finalising a Socio-Economic Report which will help the project team determine our approach to working alongside the supply chain.

For further information on how your business can become involved with the Berwick Bank Wind Farm project please contact our procurement team at berwickbank@sse.com



Local Opportunities

To date the Project team have been delighted to work alongside various local organisations such as Fringe By The Sea and The Scottish Seabird Centre. We are keen to ensure that Berwick Bank Wind Farm also provides benefits to the local community, and we look forward to working alongside local organisations and projects as our plans develop.

We are committed to inspiring the next generation of young talent and as part of this, we are members of the Midlothian & East Lothian Industry and Education Partnership Group. Our aim is to roll out a variety of STEM activities within the local education sector once COVID-19 guidance allows.

Keep In Touch

We would be delighted to hear feedback from all interested stakeholders, and you can submit any feedback directly to the project team at berwickbank@sse.com. You can also register for updates on the latest news relating to Berwick Bank on our project website; www.berwickbank.com