



Outer Dowsing Offshore Wind Exhibition Panels



**OUTER
DOWSING**
OFFSHORE WIND



Welcome

Welcome to our public exhibition for the Outer Dowsing Offshore Wind Project. In this round of consultation, we want to share with you our Preliminary Environmental Information Report (PEIR) and updated plans. Members of the Project team are here to help answer your questions and hear your feedback.

The proposal is for an offshore windfarm, approximately 54 kilometres off the coast of Lincolnshire, England. The project comprises a 1.5GW offshore generating station, along with the transmission infrastructure (both onshore and offshore) required to get the electricity to consumers.

Who we are

The project partners are committed to delivering a brighter future for the Greater Lincolnshire area. Further afield, the wind farm will help form the backbone of the UK's net-zero energy system, delivering opportunities and empowering transformational environmental change. The project is being developed by Corio Generation, TotalEnergies and Gulf Energy Development who have put together a team of experts with decades of experience in offshore wind to ensure that we deliver the project to the highest standard.



CORIO

GULF

A reminder about our Grid Connection

In July 2022, National Grid Energy Systems Operator (NGESO) published the preliminary results of the Offshore Transmission Network Review (OTNR) Holistic Network Design (HND), which confirmed that there are two connections options under consideration for the Project;

- 🌀 **Lincolnshire Node**, or;
- 🌀 **Weston Marsh**

The objective of the OTNR is 'to ensure that the transmission connections for offshore wind generation are delivered in the most appropriate way, considering the increased ambition for offshore wind to achieve net zero'.

The final conclusions arising from the HND Report have not yet been finalised and therefore the PEIR and our consultation to date includes proposals for both of these options. Once a grid connection is confirmed by National Grid, only one of these connection options and associated onshore infrastructure will be taken forward.

What has changed since the last consultation?

1. The Preliminary Environmental Assessment Report (PEIR)
 - The Project have undertaken studies to assess potential impacts to the environment and propose mitigations.
 - The full PEIR can be viewed at the public exhibition events in hardcopy and online at <https://www.outerdowsing.com/phase-2-consultation/>
2. Following feedback from our previous consultations, we have adjusted and further refined down the Project's search zone including;
 - Offshore Export Cable Corridor
 - Onshore Cable Corridors
 - Onshore Substation Search zones

Details on these can be found in the specific "Offshore", "Onshore Cable Corridor" and "Onshore Substation" Panels.



Outer Dowsing Offshore Wind and the Community

Our team believe that communities close to our project and the local knowledge they bring can help us build the wind farm in the most socially and environmentally sensitive way.

Our Consultation

We are dedicated to consulting in the best way possible. We really appreciate the feedback we've had to date on our consultations, and we are fully committed to continue this open style of communication and we want to encourage you and your local community to give your views on how the project may affect you or your local area.

We are seeking feedback to help develop the Project's proposals regarding, but not limited to:

- Our onshore proposals, including our proposed cable corridors landfall search zone and onshore substation search zones
- Our offshore proposals, including the offshore array area and offshore cable corridor search zone
- Any lessons learned from previous projects locally to help improve our processes
- How we can deliver a **substantive and enduring benefit to local communities through partnerships and community led projects**

Our consultation with the Community

- Over our previous rounds of consultation, we communicated with **28,000 households** as well as locally elected councillors and community representatives. We have had over **800 visitors** attend our previous public exhibitions.
- We have hosted over **12** Community Liaison Groups with over **60** attendees.

Our Consultations with Landowners

- We have met with over **490 landowners and tenants** to date (that's almost 88% of the cable corridor)



There are several ways you can provide feedback to us including on your sign in card, speaking to the team, sending us an email (contact@outerdowsing.com), leaving a message on our Freephone number (**0808 175 2970**) or writing to us free of charge (**FREEPOST ODOW**).

Our Offshore Proposals

The offshore elements of the Project consist of an offshore wind turbine array, area located approximately 54 km east of the Lincolnshire coast, along with offshore platforms, and export cables and array cables to connect the electricity generated to the National Grid.



The key offshore components are:

- Up to 93 wind turbines;
- Wind turbines will have a maximum tip height of 403m;
- Up to four offshore substations;
- Up to two offshore reactive compensation platforms;
- Accommodation platform;
- Array and interlink cables; and
- Offshore export cables

Offshore Cable Corridor

The offshore export cable corridor is the area where the offshore export cables will be installed. The offshore export cables will bring the power generated by the windfarm ashore. The offshore export cables will predominately be buried below the seabed.

The Wind Turbines

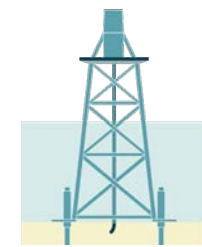
The exact size and number of turbines that will be installed will be subject to further engineering design development.



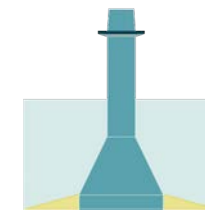
The Wind Turbine Foundations

A number of different foundation types are being considered, including monopiles, pin piles, jackets, suction buckets and gravity base foundations, examples shown here.

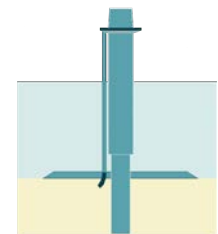
Typical Foundation Types



Jacket



Gravity base



Monopile

Wind Turbine Array Area

The array area is where the wind turbines will be located, as well as any additional infrastructure including offshore substations and electrical cables to connect wind turbines and offshore substations.

The array area currently covers approximately 500 km² but as part of the ongoing EIA process, and in consultation with relevant stakeholders the size of the array area will be refined to 300 km² prior to construction.

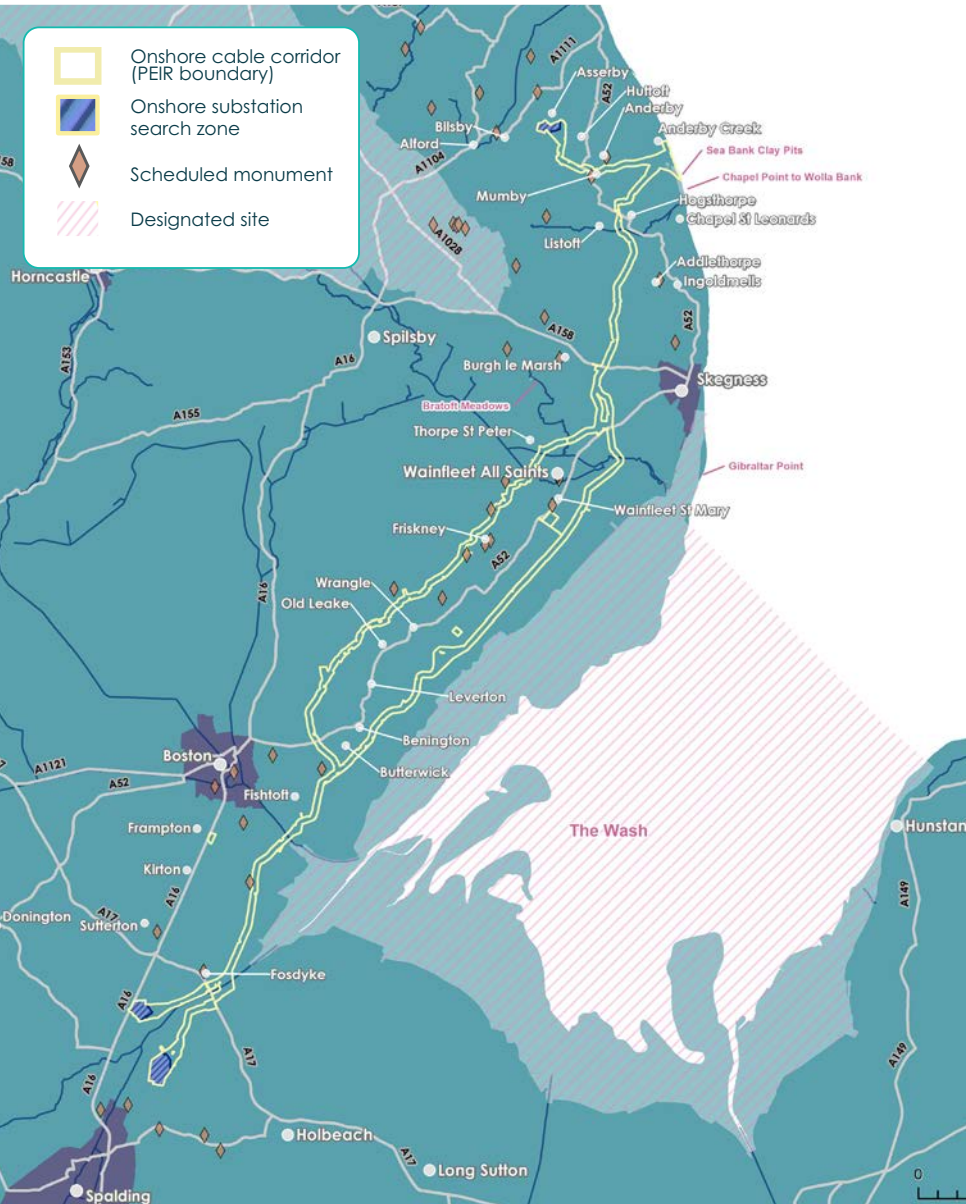
The final wind turbine layout will be determined once the design optimisation process has been completed. This process will balance a range of key considerations including wind turbine design, foundation structure, turbine spacing, seabed characteristics, metocean conditions, wind direction, benthic habitats, navigational safety and fisheries considerations amongst other factors all of which have been considered as part of the project's PEIR.

Our Onshore Cable Corridors

Since our previous consultation we have refined our onshore cable route search zone down from 2000m to an approximate 300m width. This 300m width is our refined search zone (Onshore PEIR Boundary) for where the onshore underground cables will be placed to allow power to be transferred to the Project's connection point and ultimately into the National Grid Transmission System.

Whilst the width of the cable corridor may fluctuate along the route to account for specific environmental or engineering constraints, the Project will ultimately require a typical working width of 80m during cable construction, reducing to a typical 60m wide corridor post construction. The current 300m PEIR boundary will therefore be refined (reduced) for the Project's DCO Application.

As can be seen on the image the Project landfall is located at **Wolla Bank**, south of Anderby Creek. Underground cables would continue to one of two different connection points still under consideration by National Grid;



☼ A connection to the **existing overhead lines at Weston Marsh** (north of Spalding)

- There are two alternative onshore cable route options being considered to this connection point as shown on the "PEIR Boundary" in yellow on the image; these are Weston Marsh (north of the A52) and Weston Marsh (south of the A52). The Project are currently undertaking environmental and engineering studies on both of these routes, as well as feedback received from this consultation, this will help inform which route should be taken forward if Weston Marsh is the adopted grid connection

Or;

☼ to a proposed **new National Grid connection point, Lincolnshire Node** (east of Alford)

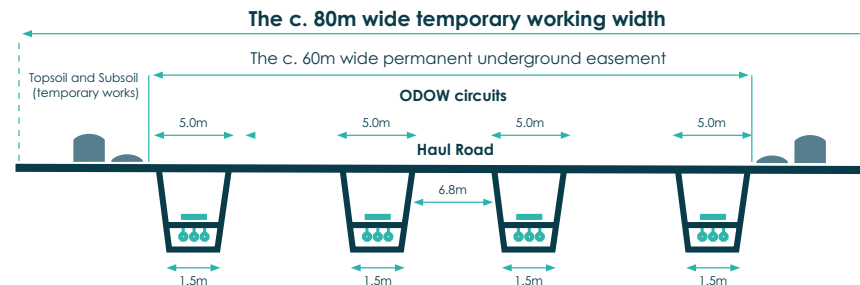
- There is only one proposed cable route option being considered for this connection point.

The Onshore Underground Cables

The onshore cables will be placed in up to four trenches to transfer the power generated across Lincolnshire to the grid connection at the Project's onshore substation. The onshore cable route will also include temporary compounds, temporary access routes and a temporary haul road.

Site Selection

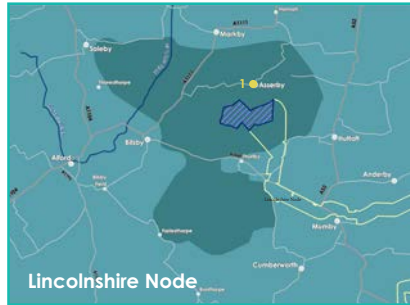
The guiding principles for locating the Project's onshore cable route was to identify an economic and efficient cable route corridor (i.e., as close as possible to the grid connection point and in as direct a line from the landfall to the grid connection point as possible) that does not, as far as practicable, give rise to significant adverse environmental impacts including seeking to avoid residential properties and minimise disturbance from construction activities.



We have committed to burying our cables from the landfall to our onshore substation.

Once the cable route has been constructed, land will be reinstated, and agricultural activities will resume.

Our Onshore Substation



- Onshore cable corridor
- Refined onshore substation search zones
- Phase 1 onshore substation search areas
- Existing overhead lines
- Viewpoint location

Our Visualisations

The visualisations shown here illustrate a computer-generated indicative model based upon the maximum design envelope for a GIS substation (shown right). The full set of visualisations for each location are available on the tables in the hall and on our website. Go and take a look, we would be pleased to discuss them with you and take down your feedback.

Take a closer look at our Preliminary Visualisations – they are available on the tables, ask a member of the team if you're unsure!

Transmission Infrastructure & the onshore substation

The project has confirmed that only a single transmission technology type - High Voltage Alternating Current (HVAC) technology will be used i.e. specifically excluding High Voltage Direct Current (HVDC) technology. By adopting this technology it means a smaller onshore substation will be required, reducing the visual impacts associated with the permanent above ground infrastructure.

Our Onshore Substation Search Zones

Until we have a final grid connection secured, we currently have **three onshore substation search zones** to allow a connection to one of the **two different connection points**. Only one of these zones, along with the adopted onshore cable route will be progressed once a final connection point is confirmed.

The identification of the **search zones** has been influenced by a number of key factors such as; proximity to the proposed connection points, flood risk, agricultural land classification (Best and Most Versatile Agricultural Land), proximity to residential areas, visual aspects and other environmental considerations.



Lincolnshire Node: Viewpoint 1



Weston Marsh North: Viewpoint 2



Weston Marsh South: Viewpoint 3

The Onshore substation

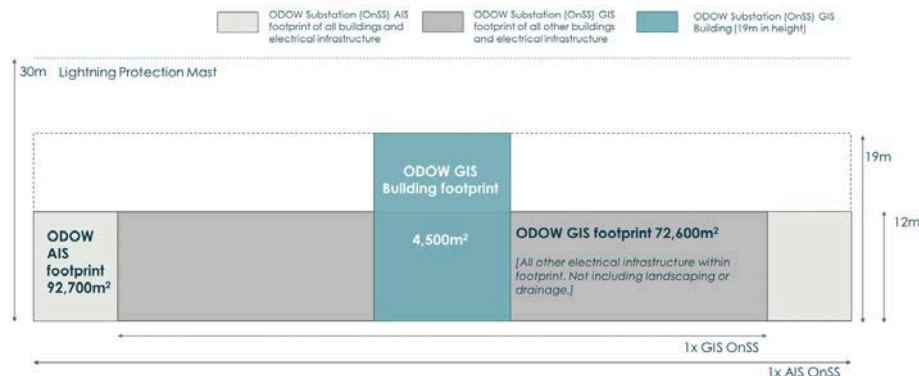
The onshore substation will contain the electrical components that are needed to transform and convert the power from the wind turbines to match the power in the National Grid Transmission System. The power will be transferred to the substation via the offshore and onshore underground cables. There will also be a need for a National Grid substation and associated enabling works within the vicinity of the project's onshore substation including 400kV cables between our project substation and that which will be developed by National Grid.

The 'Maximum Design Scenario'

The Maximum Design Scenario is what we use to be able to assess a "worst case scenario". For the project's onshore substation, the maximum parameters have been defined based on two potential technologies still under consideration, Air Insulated Switchgear (AIS) and Gas Insulated Switchgear (GIS), the type of technology adopted has an impact on the maximum footprints and heights of the onshore substation as can be seen on the drawing below.

The Onshore Substation Design & Community Consultation

We are dedicated to working with the local community to develop the design of the onshore substation. While there are certain areas of the design that the Project will not be able to consult on or, provide flexibility for as they are driven by technical or other key considerations, there will be a number of key elements that will significantly influence the design, look and presence of the onshore substation that the project propose to design in consultation with the local community. The project therefore propose to develop a design panel in line with their established Community Liaison Groups following confirmation of the project's grid connection location.



Managing Impacts

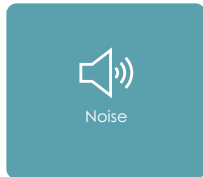
By undertaking detailed survey work we can better understand the current environment, this helps us to design and develop the project with the environment in mind; avoiding or minimising impacts from the outset.



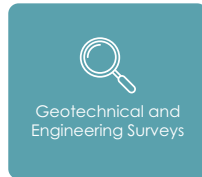
We have been gathering baseline traffic data to help us understand how we can minimise impacts to the local road network, such as our commitment to building a temporary haul road along the entire cable route.



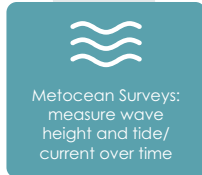
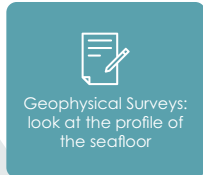
Our ecology surveys are ongoing and once our surveys are complete, any additional mitigation required will be developed in consultation with key environmental stakeholders.



We have been gathering baseline noise data to help us understand how we can minimise impacts to local receptors and we are looking to utilise alternative techniques to lessen our impacts.



We are currently undertaking surveys to help us understand the ground conditions at locations along the cable route. This data will enable better design and refinement of the cable route.



Delivering Transformational Environmental Change

As well as minimising any adverse environmental impacts of the Project through innovative and environmentally sensitive design, we are committed to pursuing opportunities for **Biodiversity Net Gain** as part of our project. This means that we will aim to leave the natural environment in a better state than before the project.

Working with stakeholders and local communities we will seek to identify opportunities to improve the environment at a local level. For example, by implementing measures to create an improved environment for species and habitats, for the benefit of people and nature. We welcome any feedback or ideas you may have on possible environmental gain in the local area.

Minimising and Mitigating Environmental Impacts

Environmental Impact Assessment (EIA) is a process which identifies and assesses the potential environmental effects of a development. It informs the design of the Project from both an environmental and social perspective and identifies mitigation measures to minimise and manage the impacts of the project on the surrounding people and environment.

Mitigation is a critical component of the EIA process. It aims to reduce or prevent adverse impacts from happening and to keep those that do occur within an acceptable level. The Project has made a number of key commitments that have been embedded into the Project design, such as:

- **Burying our onshore cables;** We have committed to burying our onshore cables underground all the way from landfall to the onshore substation to mitigate visual impact and to ensure agricultural activities can resume post construction.
- **HDD at the landfall;** The landfall is the area where the offshore export cables will come ashore. The cables at the landfall will be facilitated through the use of **Horizontal Directional Drilling (HDD)** to ensure that the cables will be installed underneath the beach, the dunes, Anderby Marsh Local Nature Reserve and the coastal (Roman Bank) road. The HDD temporary compound will be located on the western side of the coastal road (Roman Bank), ensuring minimal interaction with the beach and the Coastal Country Park.
- **Trenchless techniques;** To avoid impacts where the cable route crosses key watercourses, roads and protected areas, trenchless techniques (such as HDD) will be utilised meaning we will "go under them".
- **Land Drainage;** We appreciate that agricultural land is of key importance to the local area and economy, following consultation with landowners and agents we have committed to using a local land drainage expert to ensure land drainage systems remain operational during and after our works.
- **Haul Road;** To provide access to the onshore cable route, limit damage to agricultural land and reduce construction traffic on the main road network, a temporary haul road, will be installed in its entirety (except where the project has committed to trenchless works only).



The Application Process

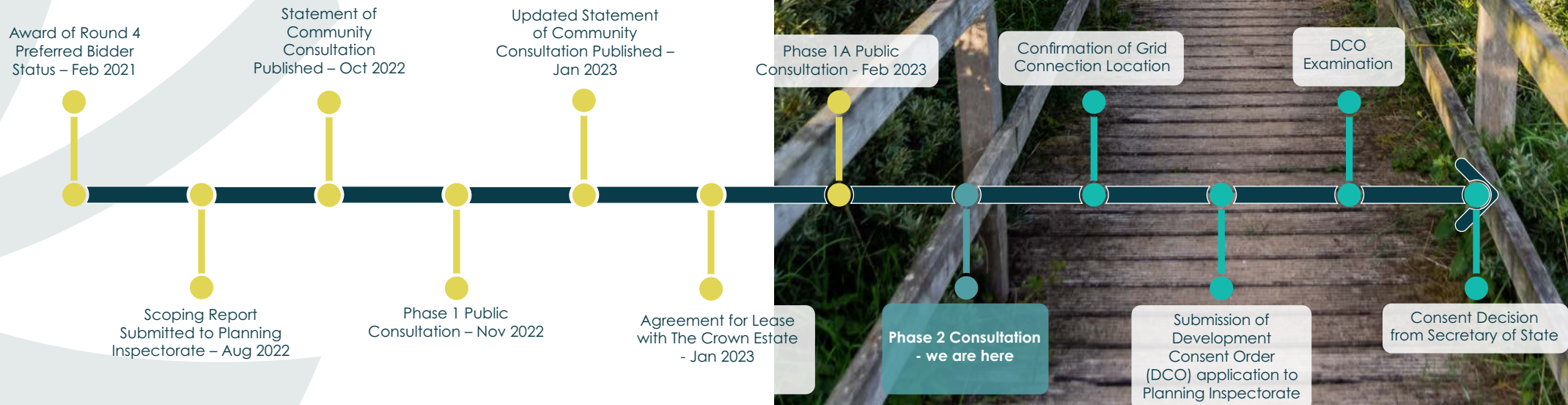
Offshore wind developments of more than 100MW are considered Nationally Significant Infrastructure Projects and require a Development Consent Order (DCO) to build and operate.

The DCO process was created to streamline the consenting of large infrastructure projects and to ensure transparency and facilitate public participation.

The DCO application process will be managed by the Planning Inspectorate and examined by an Examining Authority, which will produce a recommendations report, before a decision is made by the Secretary of State.

The Local Planning Authorities and Marine Management Organisation play an important consultative role in the process.

If granted, the DCO will consent the offshore wind farm, the cables and associated electrical infrastructure as well as the onshore grid connection works (and any other associated development included in the application).



Helping the UK reach Net Zero

Outer Dowsing Offshore Wind - delivering a brighter future for people and planet.

The UK Government has ambitious plans to have 50GW of operating offshore wind capacity installed by 2030 – enough to potentially power every home in the UK, delivering home-grown renewable energy and providing increased energy security for the nation.

At 1.5GW, Outer Dowsing Offshore Wind will be one of the UK's largest offshore wind farms upon completion. It is anticipated to generate renewable electricity equivalent to the annual electricity consumption of over **1.6 million households** and will play a critical role in achieving the UK Government's ambition to deliver 50GW of offshore wind by 2030 and **achieve net zero by 2050**.

The Project will displace the equivalent of nearly **2 million tonnes CO₂ emissions per year** of operations through the generation of renewable electricity. **This is the equivalent of removing over 650,000 petrol cars from the road** for the duration of the Project.

Innovation and economies of scale within the offshore wind industry have helped to significantly drive down costs whilst supporting the regeneration of a number of local coastal communities and economies through both the construction and ongoing maintenance of projects.

The offshore wind sector is already making a major contribution to the UK economy, **supporting over 31,000 UK jobs**, both directly in the offshore wind industry, or indirectly through the supply chain companies which manufacture products for the offshore wind industry. By 2030, the offshore wind sector could employ over **97,000 people in the UK**¹.

Once operational, Outer Dowsing Offshore Wind will be a major part of the Government's plans for providing secure and affordable home-grown energy to British households and industry, accelerating the growth of the UK economy, and eliminating carbon emissions.

The offshore wind industry has a strong track record of innovation, delivery and cost reduction. In the seven years from 2015 to 2022 the cost of electricity from offshore wind farms securing Government-backed production contracts fell by almost 70 per cent. Offshore wind is now among the cheapest forms of new electricity generation in the GB market, along with onshore wind and large-scale solar.²

¹: OWIC Press Release, 13 June 2022 (<https://www.renewableuk.com/news/608235/New-report-shows-jobs-in-UK-offshore-wind-industry-to-grow-to-100000.htm>)

²: Electricity Generation Costs, BEIS, August 2020 (p.27)



Up to 1.5GW of clean electricity



Powering over 1.6 million UK households



Displacing nearly 2 million tonnes of CO₂ per year



Equivalent to removing over 650,000 petrol cars from the road



Contributing to Net Zero by 2050



Offshore wind is one of the cheapest forms of new electricity generation

We would like to understand if climate change is an issue that concerns you. Let us know your views.





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GET IN TOUCH

If you would like any more information about Outer Dowsing Offshore Wind then please get in touch at contact@outerdowsing.com

You can call us free of charge on: **0808 175 2970**

You can write to the Project free of charge at:

FREEPOST ODOW

(no stamp or further address details needed on the envelope)

Visit our website: www.outerdowsing.com