



Welcome to our Consultation Event

Please have a look at our banners where you'll find lots of information about the Dogger Bank South (DBS) projects. Please speak to a member of the team who will be happy to answer any questions that you have or help guide you to the most helpful sections of the event.

Your comments are important:

The purpose of this event is to provide you with an opportunity to learn more about our proposals so you can give us your feedback and help shape our application for the DBS projects. Please complete a questionnaire giving your feedback before you leave. Alternatively, you can take it home and return it to us using the freepost address.

Comments must be received by 23:59 on 17 July 2023.

Please pick up a Consultation Brochure which will guide you around our proposals and assist you in responding to the consultation.

At this event you will find:

- A detailed explanation of our proposals and an introduction to RWE;
- Key consultation documents including a Consultation Brochure and Non-Technical Summary of the Preliminary Environmental Information Report;
- A range of photomontages (graphical visualisations) showing how the proposed electrical infrastructure could look from the surrounding areas;
- RWE and a team of specialists who will answer your questions and discuss your comments;
- Consultation questionnaires to enable you to share your ideas with us about the proposal and help shape the final project.



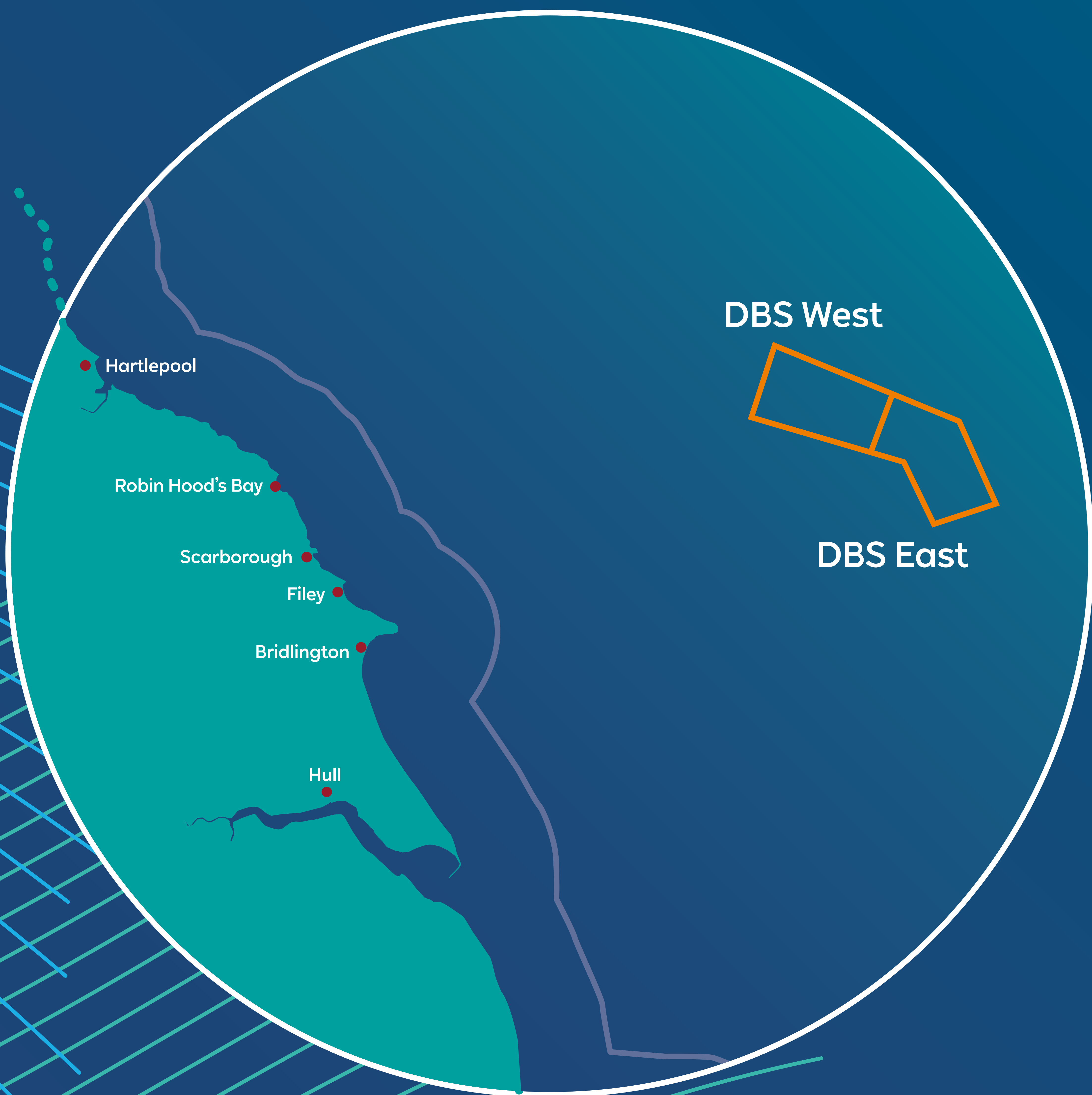
About RWE

- RWE is one of the world's leading renewable energy companies and is a key player in the offshore wind market. RWE has been involved in offshore wind energy in the UK since the very start, having installed the first full scale offshore turbines at Blyth in 2000 and commissioned the UK's first commercial wind farm in 2003, the 60 MW North Hoyle.
- RWE is the UK's largest power producer and one of the country's largest renewables generators with the largest offshore wind fleet in the UK. Around 15% of all electricity generated in the UK is supplied by RWE sites.
- In the UK, we currently operate:
 - 10 offshore wind farms
 - 33 onshore wind farms
 - 21 hydro plants
 - 1 biomass plant
- We are dedicated to generating electricity using sustainable and environmentally friendly resources. We do this by harnessing the natural power of wind, water and biomass into significant sources of renewable energy for the UK's present, and future, electricity needs.



About Dogger Bank South

- The Dogger Bank South (DBS) offshore wind farm projects are planned to be located over 100 km off the northeast coast of England on the shallow offshore area of the North Sea known as Dogger Bank.
- DBS will be made up of two separate sites, DBS East and DBS West. Each site is approximately 500km² in size and, when combined, could generate enough clean renewable energy to power up to 3.4 million typical UK households per year.
- The number of turbines for each DBS site has not yet been determined, but the design allows for up to 200 wind turbines (a maximum of 100 for each project). The final number will be dependent on the size of turbines eventually installed. It is possible that more than one wind turbine model could be used across the two sites.
- In January 2023 RWE entered into Agreements for Lease for the two projects with The Crown Estate, giving RWE exclusive seabed development rights for the sites. Offshore and onshore surveys have been underway since March 2021, including metocean data collection (which looks at both meteorological and oceanographic conditions), and a series of geophysical and environmental surveys. The surveys undertaken were designed following ongoing consultation with Expert Topic Groups made up of key stakeholders.
- In July 2022, RWE submitted the Scoping Report for the DBS projects to the Planning Inspectorate who then issued a Scoping Opinion in September 2022. The scoping opinion is viewable on the Planning Inspectorate website.
- The DBS projects are classed as Nationally Significant Infrastructure Projects (NSIPs) so we are required to undertake an Environmental Impact Assessment (EIA) to assess the environmental impacts of the projects. The EIA will be included in our formal application for development consent to the Planning Inspectorate. The Preliminary Environmental Impact Report (PEIR) is available to view electronically at this event and presents the findings of the surveys and assessments that we have completed and reports on the significance of the results. The purpose of PEIR is to provide early information to allow stakeholders to develop an informed view of the impacts of the projects.



Our Consultation

The application for development consent for the DBS projects will be made to the Planning Inspectorate (PINS) under the provisions of the Planning Act 2008 (the Planning Act).

The Planning Act requires applicants to undertake pre-application consultation on the development proposal before submitting a Development Consent application.

As part of this consultation, we must consult with a set list of public and regulatory bodies, including local authorities and the local community, about the proposed plans.

We have already published a Statement of Community Consultation (SoCC), providing details on how this consultation will be carried out and how you can participate in it. We consulted on the SoCC with East Riding of Yorkshire Council and Hull City Council and copies of are available at this event and on our website.

Objectives of the community consultation

- To inform community stakeholders about the various elements of the project in a clear and concise way;
- To provide information on an inclusive basis to all sections of the relevant community;
- To provide an opportunity for local people to influence and comment on the proposals.

How to participate

Your views are important and will be used to help shape our proposals before we apply for a Development Consent Order:

- Comments made during the consultation process will be recorded and considered carefully by the project team;
- Any written comments received will be made public in our Consultation Report. This report will become part of our DCO application.

How to respond

Any responses made to the consultation must include contact information including a name and an address to which any correspondence relating to the consultation can be sent:

- Please give your completed questionnaire to a member of staff or use the Freepost address on the questionnaire;
- You are also able to respond to our consultation through the consultation section on our website, www.doggerbanksouth.co.uk
- You can email us or write to us with your comments and suggestions.

All comments must reach us by 23:59 on 17 July 2023.

What we are Consulting on

We are looking to gain valuable local feedback on our proposals for DBS including, but not limited to, the following:

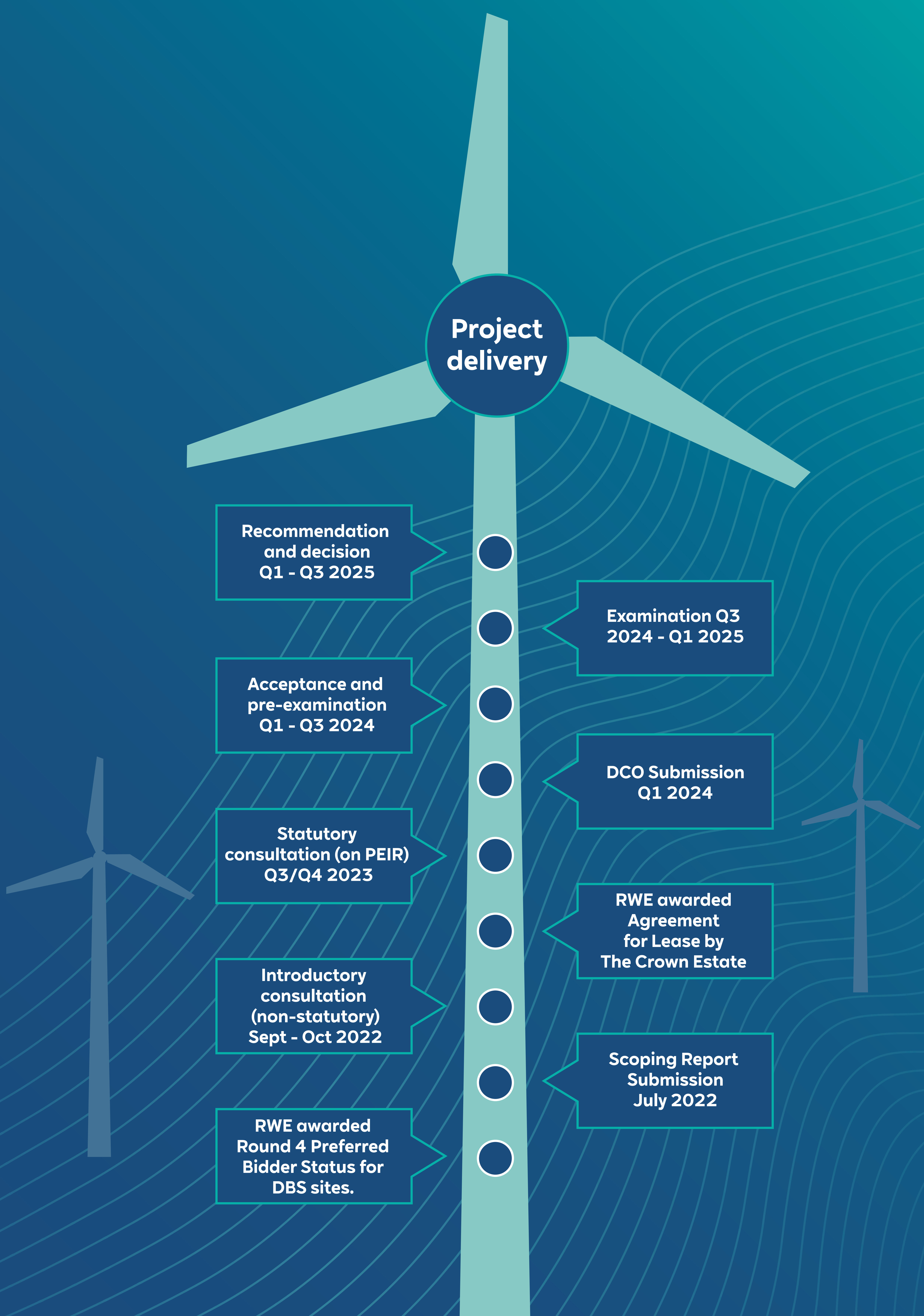
- Proposals for the offshore array;
- Proposals for the onshore infrastructure (landfall locations, onshore underground cable route, substation locations);
- Potential environmental effects (e.g. landscape and visual amenity, terrestrial/marine ecology, wildlife);
- Economic effects (e.g. commercial activities such as shipping and fisheries, employment opportunities);

- Community effects (e.g. Public Rights of Way);
- Traffic and transport impacts;
- Construction methodology and temporary construction areas;
- Potential environment mitigations.

A Consultation Brochure has been developed to guide you through the information available as part of the consultation and will help you respond to the consultation. The Consultation Brochure is available at the event today or can be viewed or downloaded from our website:

www.doggerbanksouth.co.uk

Dogger Bank South Development Timeline



Previous Consultation

Between 9 September and 14 October 2022, we held an Introductory Consultation on our initial proposals. The purpose of the consultation was to:

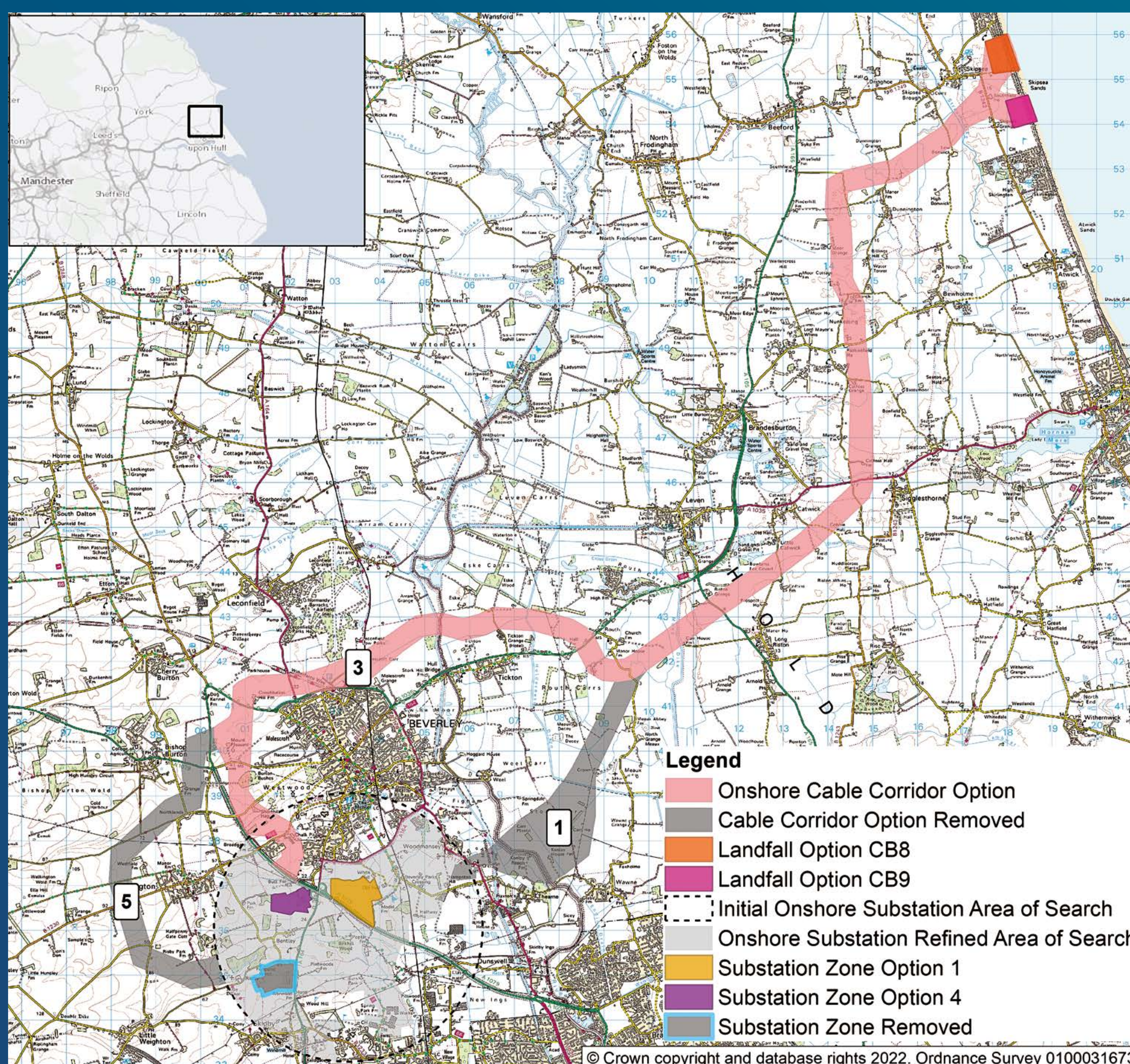
- Introduce the projects;
- Explain the site selection process and options for the substation zones and onshore cable corridor;
- Collect feedback on the onshore elements of the proposals.

What we heard from your feedback

Many people provided feedback on our proposals, including useful local information on features along the proposed cable route options and near

to the proposed substation zones. A summary of the feedback received along with our responses can be viewed in our Introductory Consultation Report which is available at the event today or on our website www.doggerbanksouth.co.uk.

Following the conclusion of the Introductory Consultation, a number of updates to the project proposals were announced in our Winter 2022 newsletter. Following feedback received from the local community, along with the data collected from surveys, engineering studies and discussions with statutory bodies, the team were able to discount one of the shortlisted substation zones and two of the potential cable routes (shown on the map below).



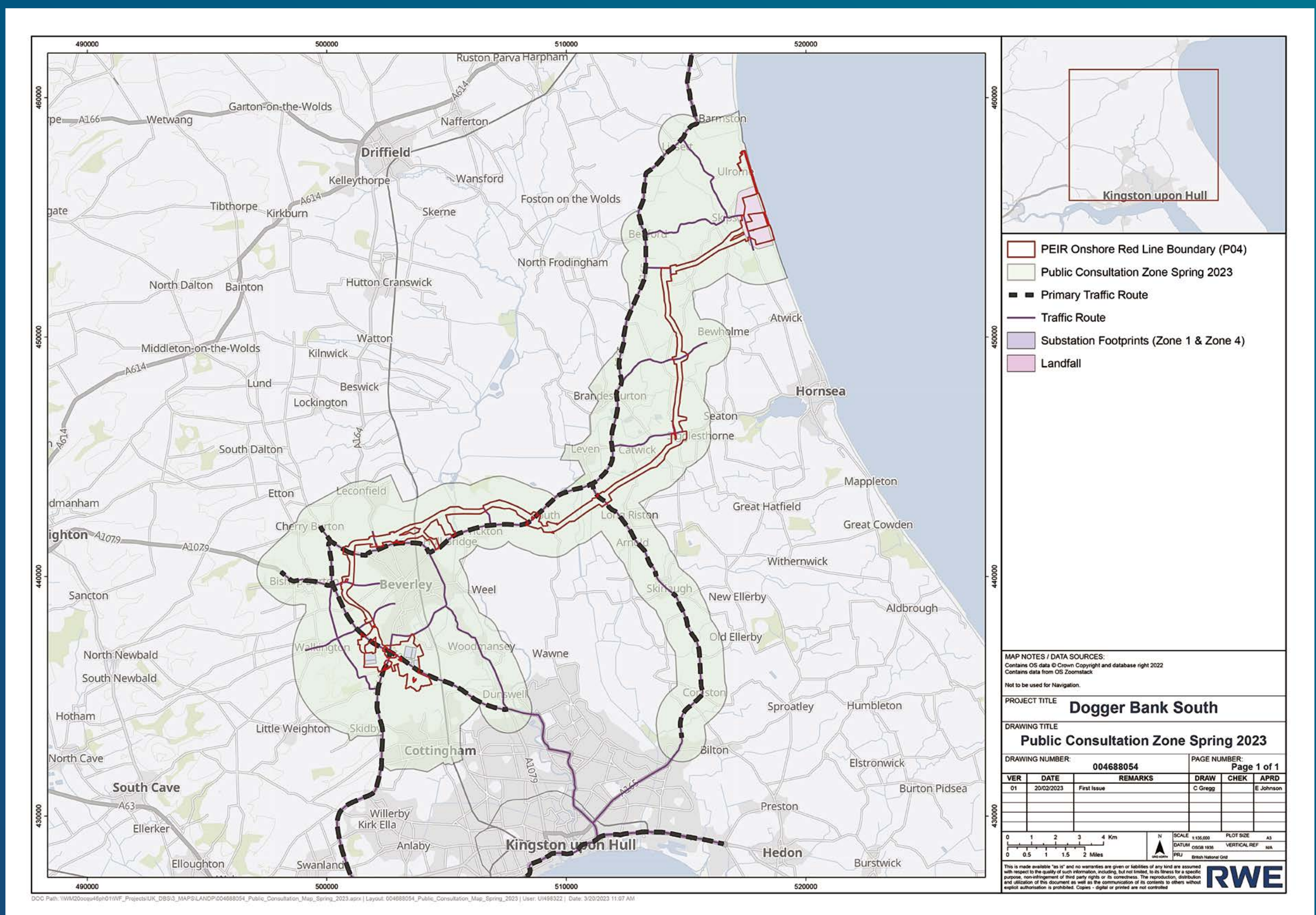
Consultation Zone

Our consultation zone includes:

- All addresses located within 1.5km of each of the two landfall zones;
- All addresses located within 3km of each of the two onshore substation zones;
- All addresses located within 1km of our onshore cable corridor;

- All addresses located within 50m of an identified access route;
- Anyone who has previously registered their details with us to receive project updates.

All addresses identified within our consultation zone have been invited to take part in our consultation.



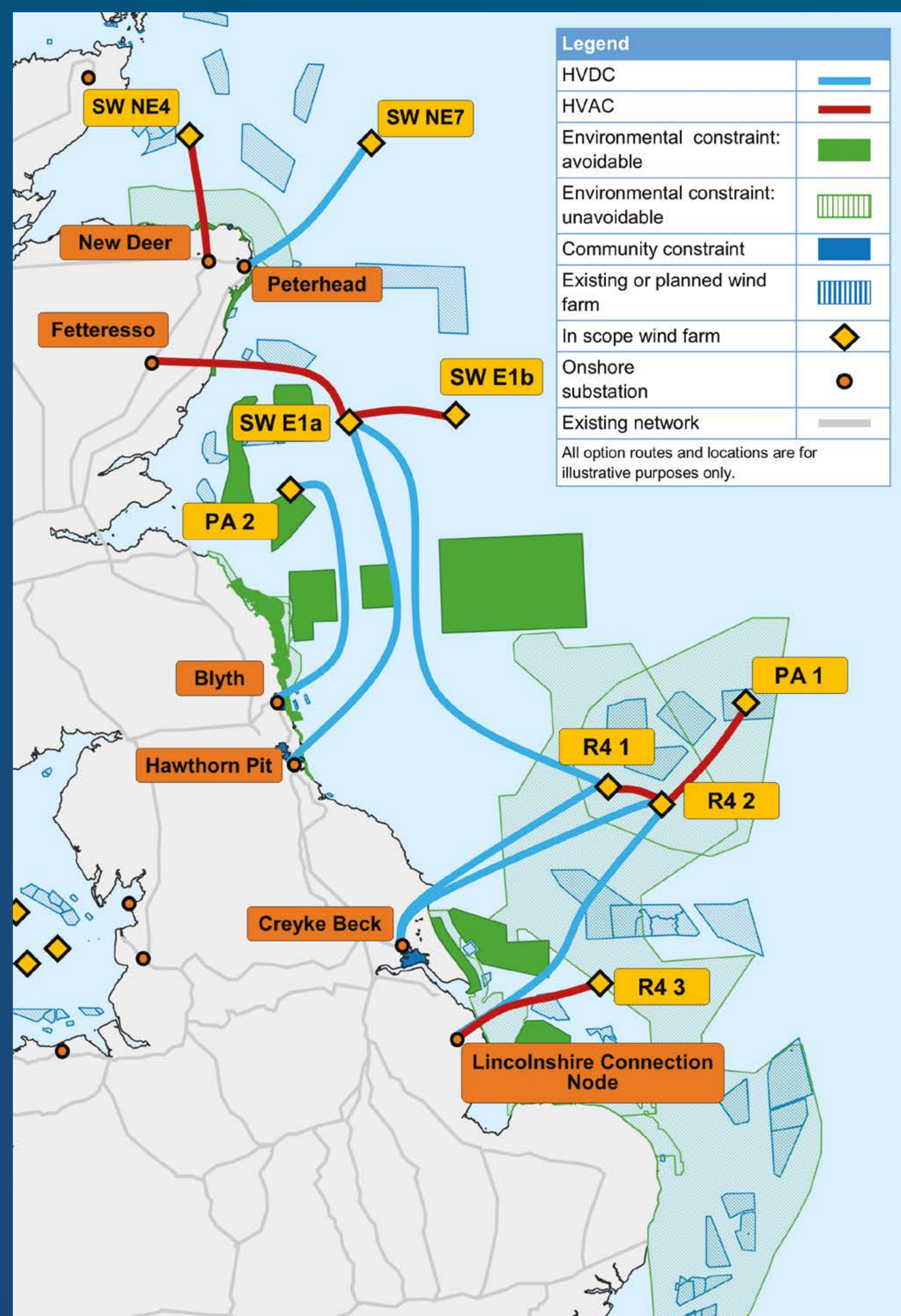
How the Connection Point to the National Electricity Transmission System was Chosen

To achieve net zero greenhouse gas emissions by 2050, a step-change in the speed and scale of deployment of offshore wind is required.

National Grid ESO, the UK electrical system operator, embarked upon the recently completed Holistic Network Design (HND) process. The aims of the HND process was to design a coordinated solution for the national grid which takes account of planned offshore wind expansion in a way which is economic and efficient, deliverable and operable, and which considers environmental impacts and the effects of infrastructure developments on local communities.

Through the HND process, National Grid ESO considered several potential grid connections for the Dogger Bank South projects. The locations considered included Hawthorn Pit, Creyke Beck and the Lincolnshire Connection Node.

In early Summer 2022, National Grid ESO published the results from the HND process and determined that connections to the national grid for both DBS West and DBS East would be made in the vicinity of a new National Grid substation located near Creyke Beck. This area has been the focus of all landfall, offshore and onshore cable corridor and substation site selection work undertaken by RWE.



Offshore Array

The DBS offshore arrays encompass the wind farms themselves. The key components comprise:

- Wind Turbine Generators (WTG);
- Foundations;
- Offshore Substations Platforms (OSP)/ Offshore Converter Platforms (OCP);
- Array and inter-array cables linking the WTGs to the OSPs/ OCPs.

We are planning for each project to consist of between 48 and 100 wind turbines, equating to a maximum of 200 turbines across the two sites.

There are currently two possible electrical solutions being considered for DBS West: High Voltage Alternating Current (HVAC) or High Voltage Direct Current (HVDC). Due to the distance of the array area offshore, DBS East will be a HVDC project.

Therefore, there are two possible electrical solutions for the projects:

- One HVDC project and one HVAC project; or
- Two HVDC projects.

The wind turbine layout will not be finalised until much closer to the time of construction, following completion of detailed pre-construction wind resource studies, site investigations and the selection of the preferred turbines and their foundations. A layout will be selected from within the consented array areas to optimise energy output and the foundation installation process accounting for ground conditions.

There are several foundation types under consideration for the wind turbines at the DBS sites: monopiles, pin pile jackets and suction bucket jackets. The different types of foundations can be viewed in PEIR Chapter 5 - Project Description.

There will be up to eleven offshore platforms, including eight offshore substations evenly split across the DBS East and DBS West sites. Offshore substations are needed to transform and transfer the energy collected by the wind turbines.

At DBS, the power generated by the wind turbines will be transformed to a higher AC voltage of up to 275kV (high voltage alternating current) or 525kV (high voltage direct current).

The projects may potentially include up to two offshore platforms outside the array areas, within the offshore export cable corridor. The platform(s) would be located at least 52km from the landfall, and therefore at least 37km from the closest land at Flamborough Head. This distance offshore has been increased since Scoping. The offshore platform would be a maximum of 100m high (excluding narrow elements such as masts or cranes).



Offshore Export Cables

The electricity generated by the offshore turbines will be carried from the offshore substations located within the array areas via offshore export cables to the coast.

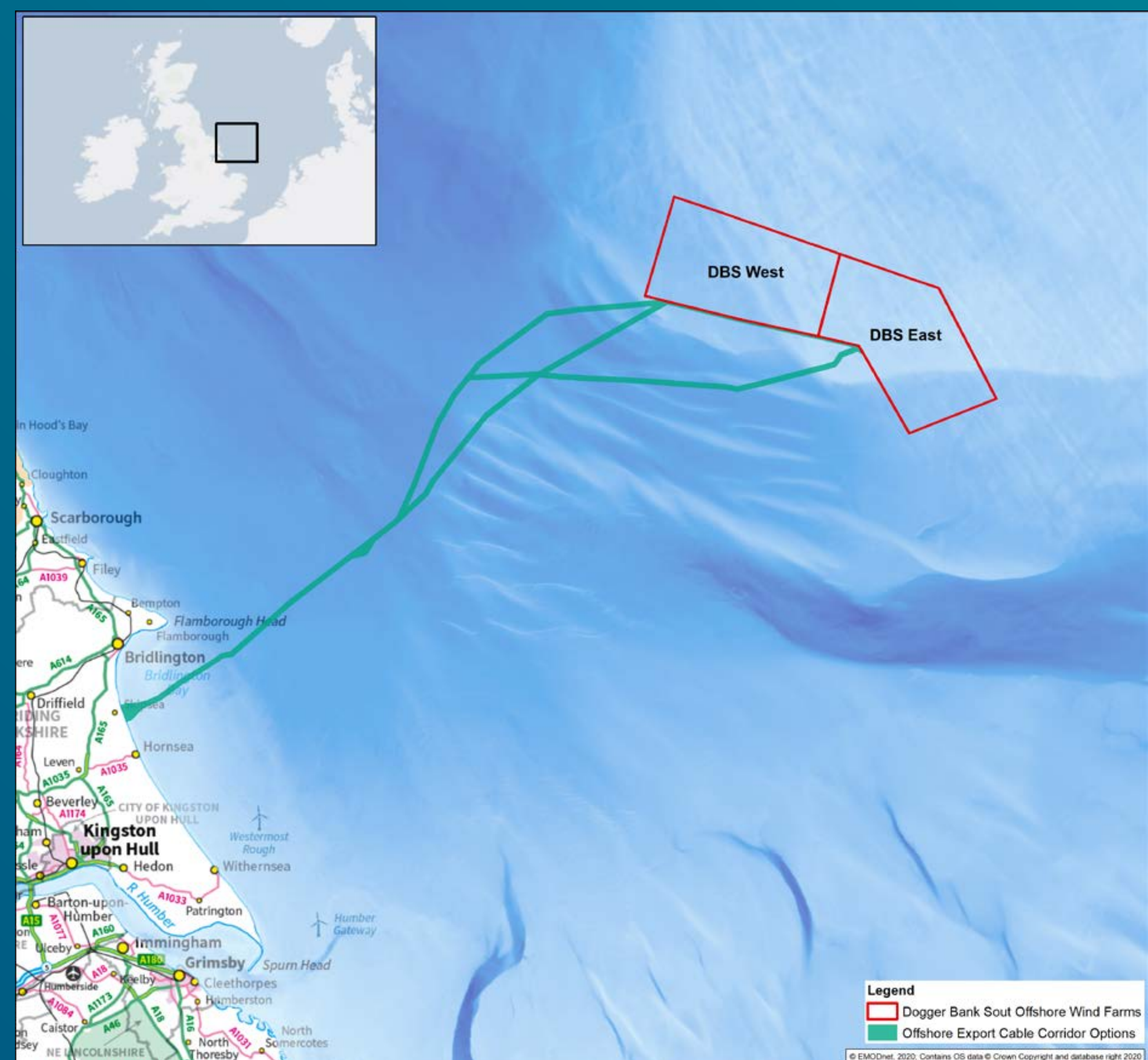
The offshore export cables will be buried in the seabed in corridors up to one kilometre wide, with up to six cables linking the array areas to a shared landfall location.

The offshore export cables would make landfall near Skipsea, where they would be connected to the onshore cables in transition joint bays (TJB), having been installed under the intertidal zone by HDD. More information on the TJBs can be found on the landfall information banner.

These cables will share a single corridor in the nearshore area. However, this will likely diverge to two, one kilometre wide corridors in the offshore area to reach the individual offshore substations required by each project.

We are considering a number of cable route options with a maximum offshore cable corridor length of 198km for DBS East and 158km for DBS West.

For the purpose of the DCO application and environmental assessment, an offshore export cable corridor has been defined that encompasses all required cables. The precise location of the cables will be decided at a later stage and will be within this corridor.



Landfall

The landfall is where the offshore export cables join the onshore export cables. The DBS offshore export cables would make landfall near Skipsea, at an exact location to be confirmed. The offshore export cables will be connected to the onshore export cables in transition joint bays (TJBs), having been pre-installed under the intertidal zone by HDD.

There are two potential zones for where the offshore cables could make landfall, both located near to Skipsea on the North Sea coast of the East Riding of Yorkshire, approximately halfway between Bridlington and Hornsea.

The zones are situated within an area of sandy beach, backed by cliffs topped with agricultural land and are bordered to the immediate north and south by holiday parks, with Skipsea lying to the west.

Outputs from environmental surveys will be combined with utilities mapping and engineering studies to allow a final decision to be made relating to the exact landfall locations.

Feedback on the landfall zones received during this consultation will also inform the final decision on which zone is chosen.

At the landfall, the offshore cables will connect to the onshore cables in transition joint bays (TJBs).

The TJBs provide a dry protected environment where the onshore and offshore cables are joined. They are generally buried at depth, allowing the majority of land to be returned to uses such as agriculture after construction.

Landfall works are likely to include:

- Construction of access to the landfall compound;
- Construction of the landfall compound;
- Horizontal Directional Drilling (HDD) which is likely to require 24-hour working;
- Construction of TJBs;
- Pull-in of duct from barge (alternatively, they may be pushed from landfall side);
- Pull-in of offshore high voltage cables from vessel;
- Transition jointing offshore / onshore cables;
- Backfilling of joint bays;
- Reinstatement works.

A temporary onshore compound will be required to accommodate the drilling rigs, ducting and welfare facilities at the landfall location. The HDD works should not require any prolonged periods of restrictions or closures to the beach for public access. However, it is possible that some construction activities will need to be performed on the beach that may require short periods of restricted access. Any areas subject to short-term restricted access would be agreed in advance with East Riding of Yorkshire Council and the Environment Agency prior to construction.



Landfall Site Selection

There are two potential zones for where the offshore cables could make landfall, both located near to Skipsea on the North Sea coast of the East Riding of Yorkshire, approximately halfway between Bridlington and Hornsea.

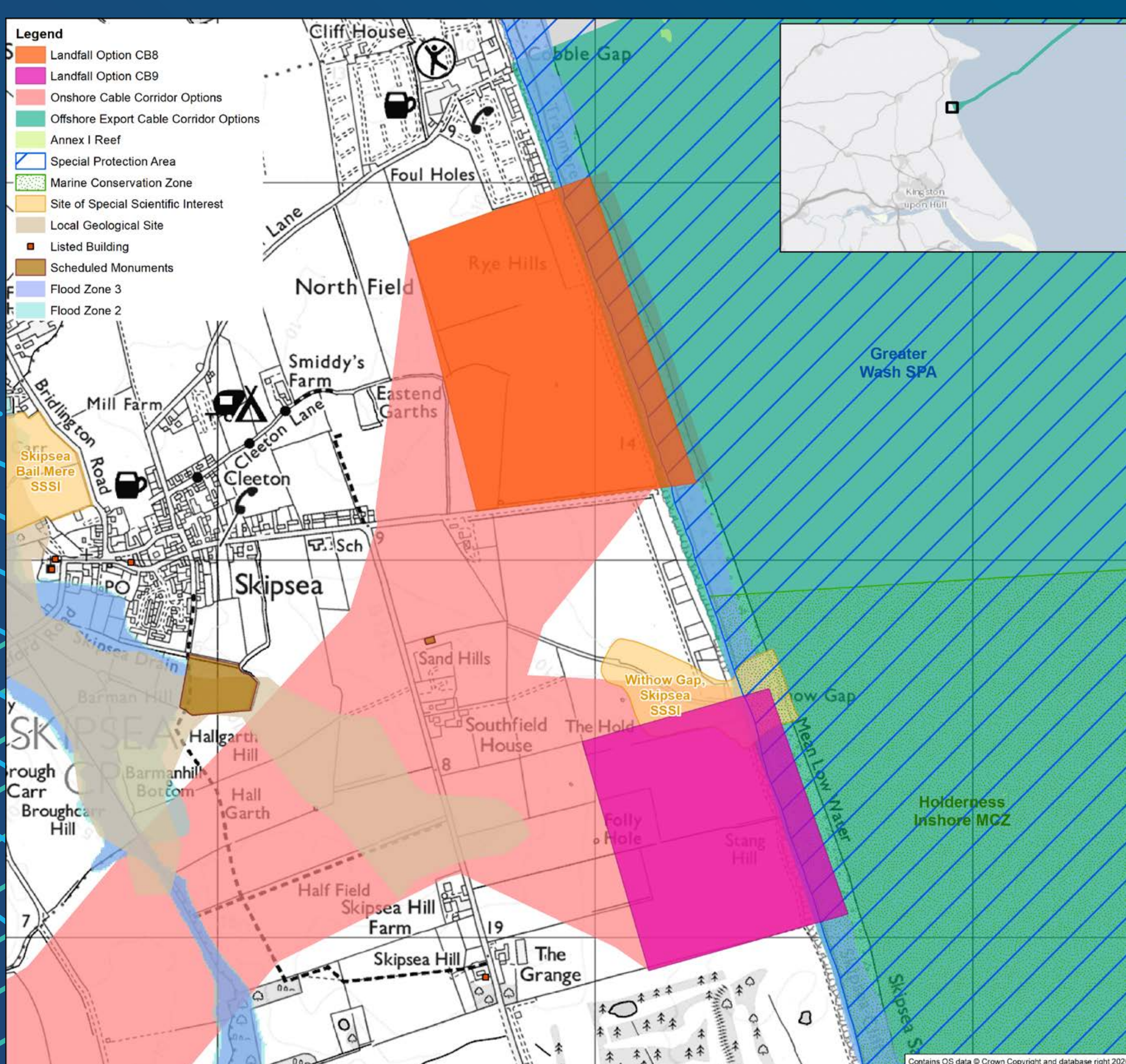
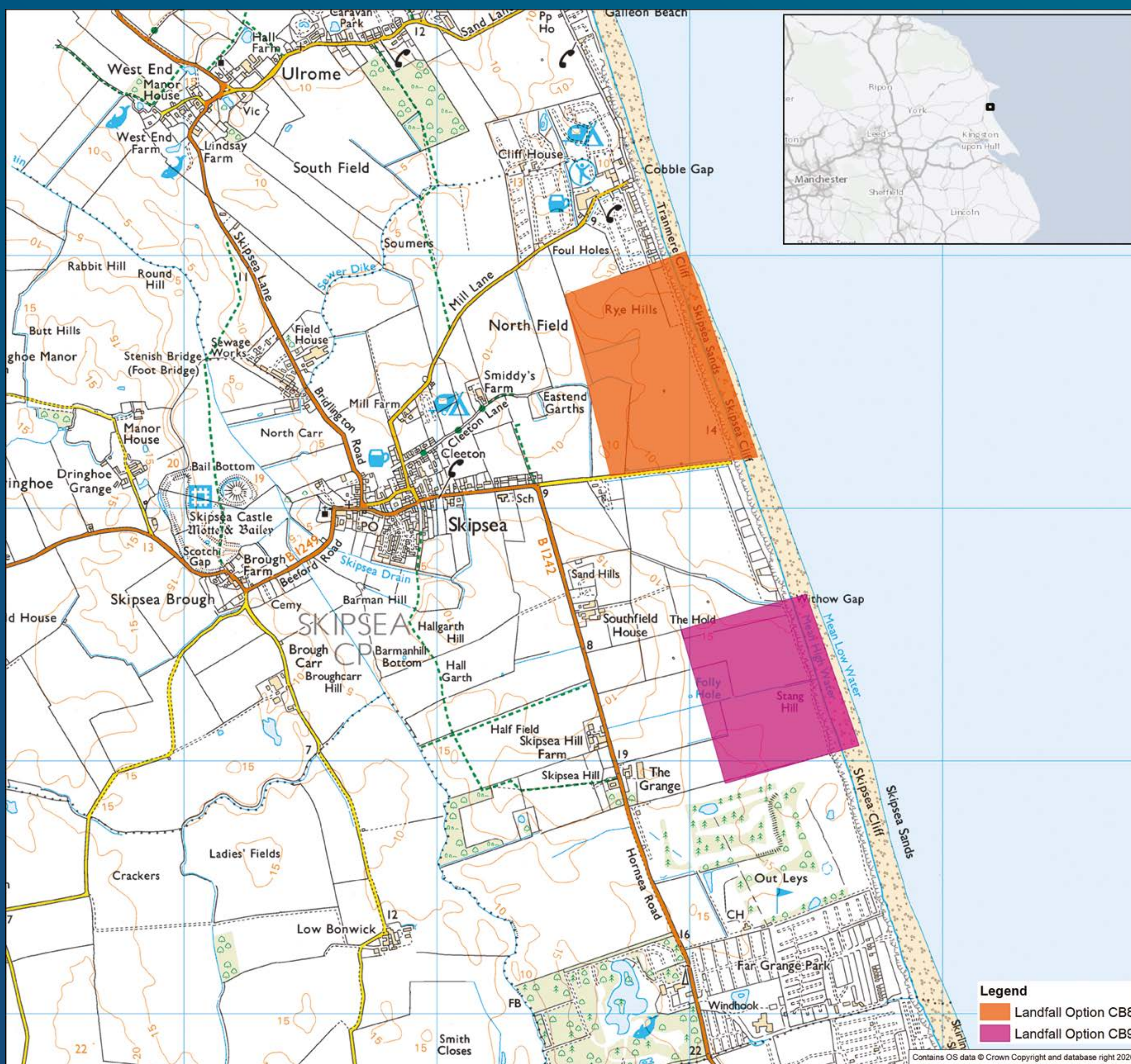
Zone 8 (Skipsea North), shown in orange
Zone 9 (Skipsea South), shown in pink

The zones are situated within an area of sandy beach, backed by cliffs topped with agricultural land with Skipsea lying to the west. There is a holiday park immediately to the north of Zone 8 and a golf course to the south of Zone 9.

Landfall Selection

Outputs from environmental surveys will be combined with utilities mapping and engineering studies to allow a final decision to be made relating to the exact landfall locations.

Feedback on the landfall zones received during this consultation will also inform the final decision on which zone is chosen.



Onshore Cable Corridor

The onshore cable corridor connects the landfall point near Skipsea to two substations, located to the south of Beverley, for transmission into the National Electricity Transmission System.

The type and arrangement of cables will be dependent upon if an HVAC or HVDC system is adopted, with either a substation for an HVAC system and/or onshore converter stations for HVDC systems. It is anticipated cables will be buried along the full route where possible.

A 200m wide onshore cable corridor has been considered for the PEIR assessment with an indicative 100m onshore cable corridor presented.

The final onshore cable corridor will be informed by stakeholder feedback on the information provided in the PEIR, as well as further technical studies and ongoing environmental survey and assessment work.

Once construction has completed and the relevant testing activities have been completed, the cable trenches will be backfilled and the land will be reinstated to its pre-construction condition. In most areas, you won't be able to see any evidence that construction works took place and the land can return to its previous use.



Onshore Substations



There are different parameters required for the onshore substations required for the DBS projects depending on which electrical solution is selected for DBS West (HVAC or HVDC).

Therefore, there are four possible development scenarios within the onshore substation zones that could be taken forward:

- Two HVDC converter stations in Substation Zone 4;
- One HVDC converter station in Substation Zone 1 and one HVAC substation in Substation Zone 4;
- One HVDC converter station in Substation Zone 4 and one HVAC substation in Substation Zone 1;
- One HVDC converter station in Substation Zone 1 and one HVDC converter station in Substation Zone 4.

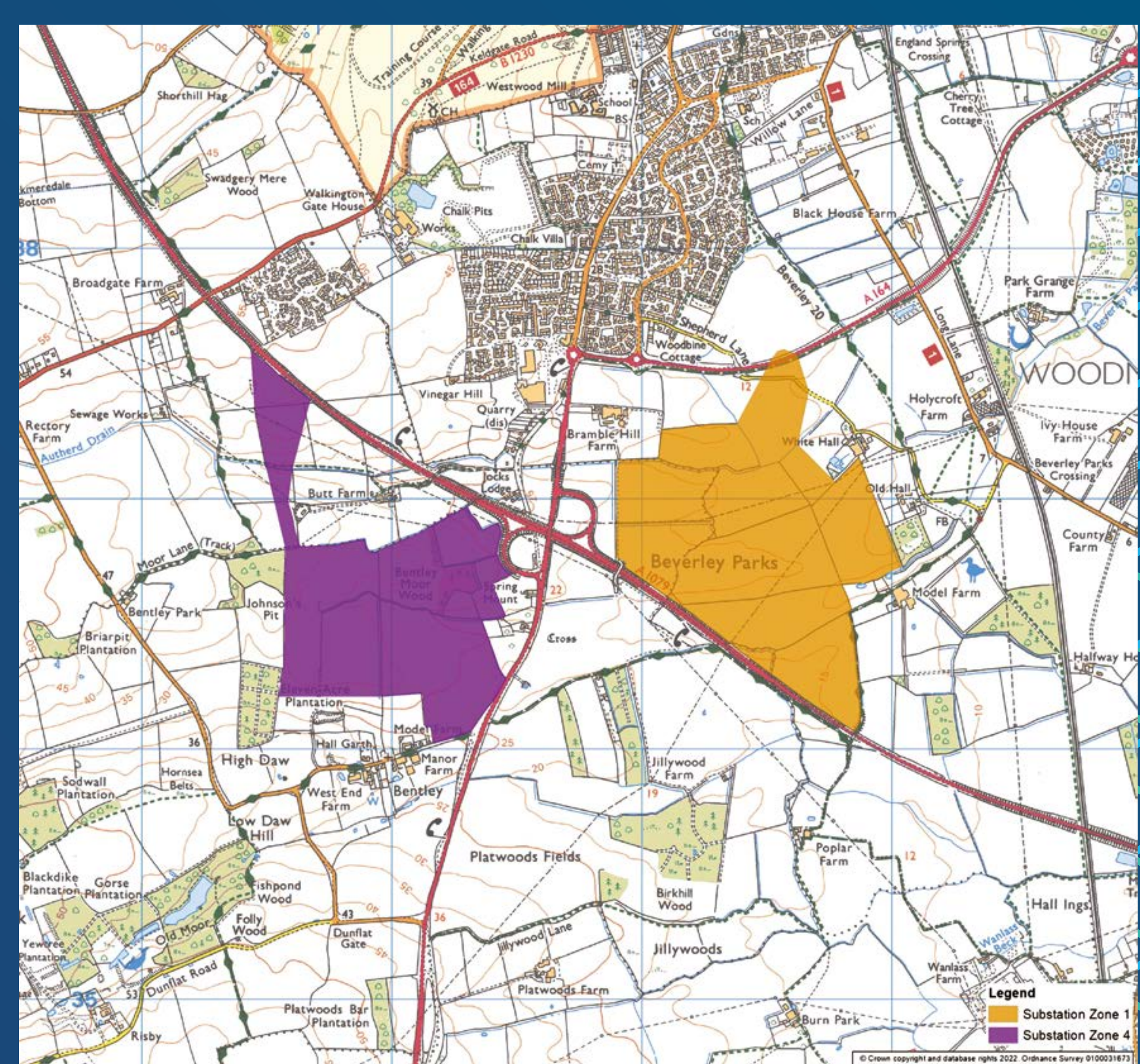
The onshore substations will contain the necessary electrical equipment and components for transforming the power from the wind farms to meet the UK Grid Code for connecting to the transmission grid.

The substation zones are located in proximity to grid connection points (see the banner called **How Connection Point to the National Electricity Transmission System was Chosen**), so the electricity can be easily transferred for use across the UK's network.

It may be possible for both of the substations required for DBS to be located in just one of the zones and we are currently assessing scenarios for their layout. You can view the different scenarios in our Consultation Brochure.

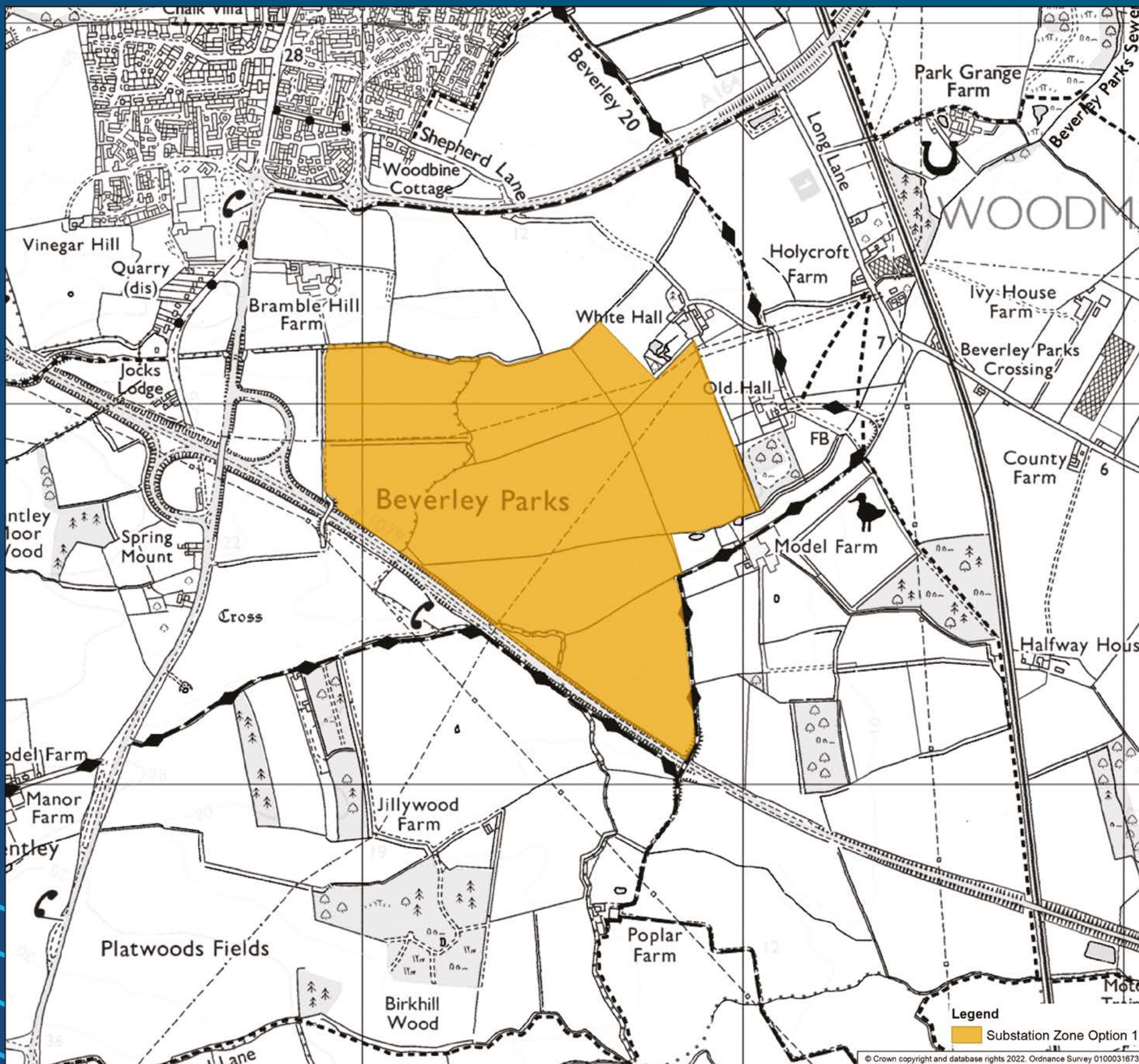
Each substation will consist of several buildings housing electrical equipment and unboxed electrical equipment contained within secure fencing. The substation equipment is expected to need around 20 hectares (50 acres) of land in total, across both projects.

The final dimensions of the substations are dependent on the electrical capacity of the wind farms and the design of the electrical transmission used to transmit electricity to the substation.



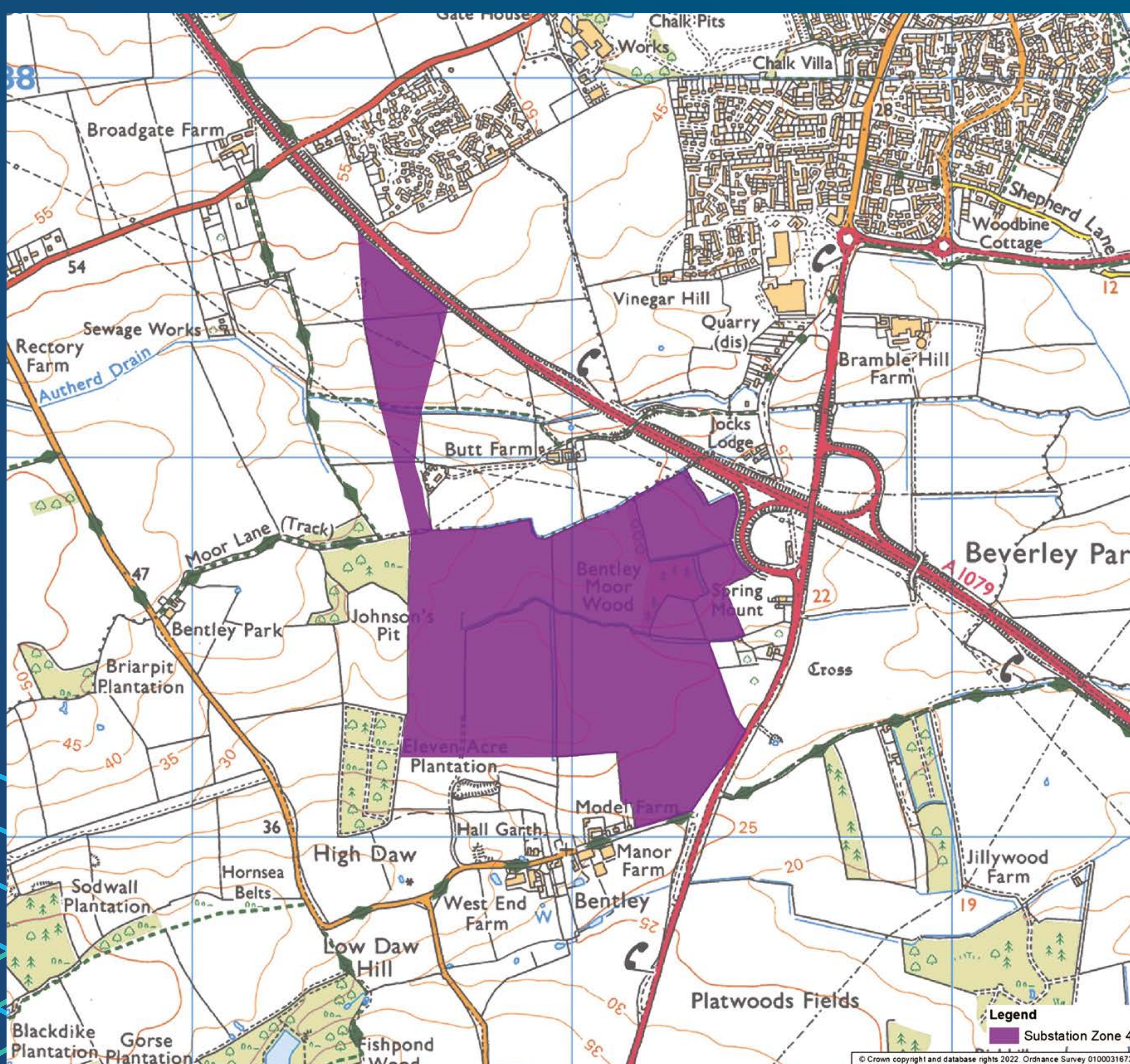
Onshore Substation Zone 1

- Substation Zone 1 is located adjacent to the A1079 in an area of low lying agricultural land.
- The zone comprises 75 hectares. A high pressure ethylene pipeline crosses the western part of the zone and there is an electricity transmission line 100 metres to the south of the zone.
- The zone is less than one kilometre from the indicative grid connection point and could offer a viable connection route that avoids the relocation of existing infrastructure.
- There are no residential properties within the zone. The closest residential property is approximately 75 metres from the zone.
- There are no international or national ecological or landscape designations that directly affect this zone.
- The zone is adjacent to the substations associated with Dogger Bank Wind Farm that are currently under construction and is close to the existing substation at Creyke Beck. The zone would avoid visual effects in the Yorkshire Wolds Important Landscape Area identified in the Local Plan.
- Access options are still under consideration for this zone. Options include constructing a new access route from the A164 (north of Jock's Lodge) or from the A164/Ward Way Roundabout. Discussions are ongoing with East Riding of Yorkshire Council which will inform the proposals if this zone is taken forward.
- We are aware of a potential solar farm planning application made on this land.
- A flood zone is located within the substation zone. This will be taken into consideration when positioning the locations of the substations within the zone.



Onshore Substation Zone 4

- Substation Zone 4 is located adjacent to the A164 and the A1079 at the Jock's Lodge junction. It lies 115 metres to the west of the A164 at its closest point. It is located in an area of low lying agricultural land that includes areas of ancient woodland and plantation forestry.
- The zone comprises 38 hectares and is bound by a high pressure gas and ethylene pipeline to the south and an electricity transmission line to the north.
- The zone is less than one kilometre from the indicative grid connection point and could offer a viable connection route that avoids the relocation of existing infrastructure.
- There are no residential properties within the zone. The closest residential property is approximately 100 metres from the zone.
- There are small areas of Ancient Woodland within the substation zone, which could help provide natural screening. There is sufficient space within this zone to ensure that the substation, construction compound and access routes avoid these areas. The zone also lies within the Yorkshire Wolds Important Landscape Area defined in the East Riding Local Plan.
- The zone is not located in a flood zone, so is not considered to be at risk of flooding. There is a watercourse running through the zone. The final positioning of the substations will take this into account to reduce impacts on the watercourse.
- The zone is located to the south of Butt Farm, west of which lie several heritage features associated with a World War II Heavy Anti Aircraft Battery, part of which is a Scheduled Monument. The final siting of the onshore substation and associated cable routing will seek to minimise impacts on this nearby heritage feature.
- The zone is close to the existing substation at Creyke Beck and is located in a relatively well screened and low lying part of the Yorkshire Wolds ILA.
- The zone lies immediately adjacent to the Jock's Lodge junction improvement scheme which may offer the opportunity to take access via the realigned A164. Alternatively it may be possible to take access from an existing layby to the north on the A1079. Discussions are ongoing with East Riding of Yorkshire Council which will inform the proposals if this zone is taken forward.





Working with the Community

The construction and operation of an offshore wind farm can bring significant benefits to the neighbouring areas including jobs, skills and general economic benefits.

Working with local stakeholders, we will develop a community benefit package for DBS in line with any relevant best practice guidance. At this early stage we would like to hear how you think the project could help to deliver lasting benefits to your local community.

RWE is already supporting communities in the region from our onshore wind farms in Goole.

As well as a local community fund we are supporting the 'East Riding of Yorkshire Future Communities Initiative' which is supporting community projects across the county. Our offshore wind farm sites across the North East region are also offering community funds linked to their onshore infrastructure. Humber Gateway, Triton Knoll and Sofia Offshore Wind Farms are all helping local community and voluntary groups to make a difference in their area.

DBS will be a major investment for the local area and wider region, and we will ensure that this investment establishes a valuable and lasting legacy for local communities. For example, the maintenance port and facilities will be located on the east coast of the UK in the locality of the DBS site and we are aiming to source all direct labour from people living within the area.

To find out more about how RWE works with local communities, please visit:

www.rwe.com/in-your-community



Economic Benefits

DBS will also bring about economic benefits to the region including investment, skills, careers and supply chain opportunities.

The construction of DBS could result in a total investment of up to £7billion* with around 50% of that expected to be spent in the UK. The operations and maintenance of the wind farms could amount to around £177million per annum.

Jobs, Careers and Skills

Through past offshore wind farm developments, we estimate that, at their peak, the construction of the DBS projects could create a total of:

- 1,240 full-time equivalent jobs across Humberside; and
- 2,150 full-time equivalent jobs across the UK.

During the operations and maintenance phase, the projects could provide employment for 1,120 full-time equivalent jobs.

RWE are already investing in job creation, in skills and training opportunities, and investigating STEM related education programmes to encourage local young people to make quality learning decisions, to learn quality skills, boost their employability and be better able to compete for and win new jobs with us and across the wider industry and region.

Supply Chain

Over time, our approach to supplier engagement has become more holistic as we strive to maximise the opportunities from our projects progressing through development. To that end, we have created the Supplier Transparency and Engagement Programme (STEP) a more proactive approach to supplier engagement.

STEP is our commitment to continuously improve supplier engagement. Following a review of our existing processes, we have introduced new practices, which include increased opportunities for dialogue with our supplier network. We promise to strive to continuously 'step up' our efforts regarding our supplier engagement activities.

It will be some years before the DBS projects enter the construction phase, which is where many of the supply chain opportunities will be found, but there are still plenty of opportunities for the UK supply chain during the development phase. There are already a number of UK suppliers working on the project carrying out our environmental impact assessment, surveys and professional services. As we move through the development phase, we will develop a Supply Chain Plan which will explain how we will work with the supply chain and boost opportunities for UK suppliers.

We will work hard to ensure businesses that work with and employ local people are aware of opportunities and able to bid for contracts related to the project.

DBS represents a significant investment within both the East Coast and UK economies. This, in turn, has positive spin-offs for businesses not necessarily directly involved in the project. Companies involved in everything from hotels to transport and office facilities to catering are involved in supporting the delivery of the project throughout its various phases of development, construction and operation.

* It is expected that a fixed offshore wind farm project in the UK would spend around £2.3 billion per GW installed (BVG Associates, 2021).

What Happens Next?

Please complete a Consultation Questionnaire at the event today and either return to a member of the team, post in the designated postbox or return to us using our Freepost address. You can also complete a questionnaire online through the consultation section of our website: www.doggerbanksouth.co.uk.

We will consider all feedback received during this statutory consultation and will use it to finalise proposals for DBS, before submitting a Development Consent Order application to the Planning Inspectorate.

The feedback and information on how we have taken your comments into account will be available in the Consultation Report which will form part of this application.



How to Get In Touch With Us

Thank you for attending our consultation event. We really value your feedback and want to work with you during the development, construction and operational phases of the DBS projects.

You can keep up to date on the progress of DBS by visiting:

www.doggerbanksouth.co.uk

If you have any further questions following this event, you can contact the DBS team by:

Post: [FREEPOST DBSOWF](#)

Telephone: [0800 254 5459](tel:08002545459)

Email: dbs@rwe.com