Welcome to Our Exhibition

Please have a look through our information boards where you will find lots of information about the project or speak to a member of the Dogger Bank South (DBS) Offshore Wind Farms team.

Your comments are important:

We understand that people living and working locally have a wealth of knowledge about the area. Our consultation is designed to gather your comments and suggestions on our project proposals – please complete or take home a questionnaire before you leave.

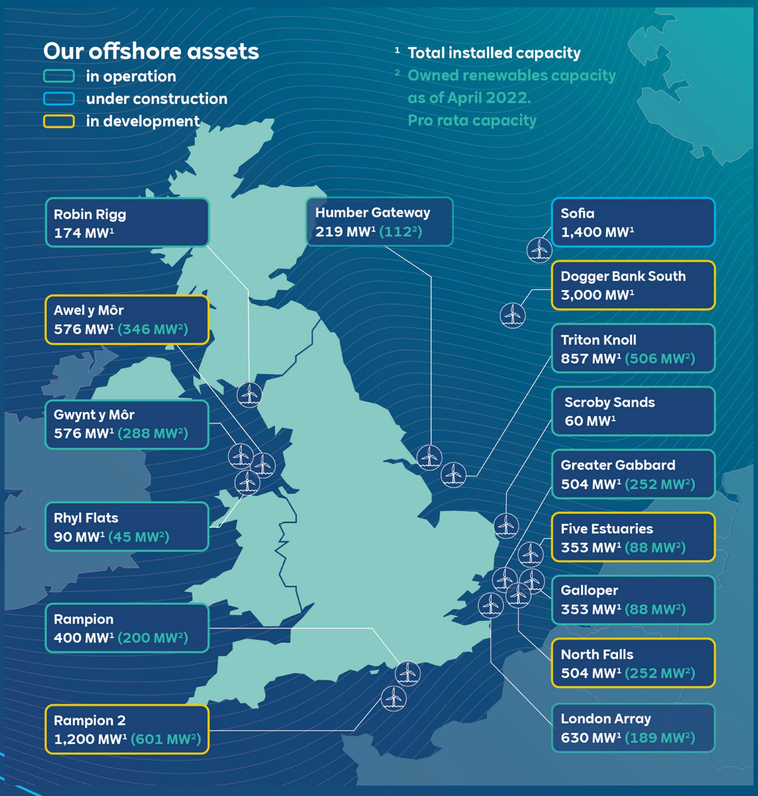
At this exhibition you will find:

- Information about the proposed infrastructure (onshore and offshore) relating relating to the DBS projects.
- Information around the shortlisted locations for our proposed onshore electrical infrastructure.
- Visualisations of how the onshore substations could look in the surrounding areas.
- Information about RWE.
- RWE staff and a team of specialists who will answer any of your questions.

RWE

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 second largest power producer and third largest renewable generator supplying around 12% of UK electricity.
- 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.



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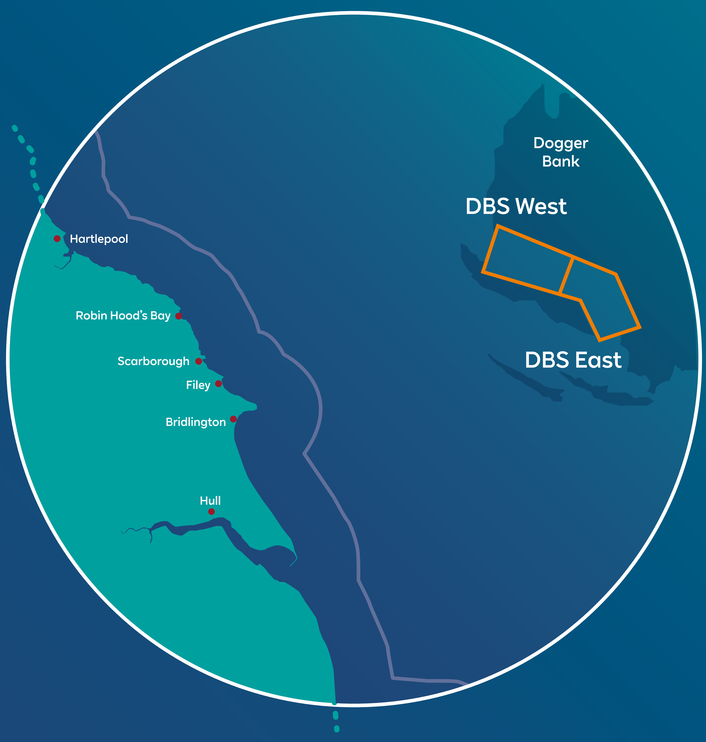
Dogger Bank South Offshore Wind Farms

- The Dogger Bank South (DBS) Offshore Wind Farm projects are located over 100 kilometres off the North East coast of England.
- DBS is made up of two separate sites, DBS East and DBS West, which are located on the shallow offshore area of the North Sea known as Dogger Bank.
- Each project could have an installed capacity of up to 1.5 gigawatts meaning that the projects could generate enough clean, green renewable energy to power up to 3.4 million typical UK households per year.



The Consultation

Your response can make a difference

- We understand that people living and working locally have a wealth of knowledge and may be able to identify issues affecting the potential locations for our onshore electrical infrastructure that we may not be aware of.
- The consultation will enable you to have your say on the possible zones where the electrical infrastructure associated with Dogger Bank Offshore Wind Farms could be located and on our wider project proposals.

How to participate

- Please speak to a member of staff about filling in a questionnaire. You may respond for any of the shortlisted zones or make more general comments on the wider project proposals.
- You may fill in more than one questionnaire if providing comments for different zones. You can also complete a questionnaire online by downloading the editable version of the questionnaire from: www.rwe.com/doggerbanksouth

How to respond

The consultation runs from 9th September 2022 to 14th October 2022. Please note, consultation responses must be received by 5pm on 14th October 2022.

- Your comments may be made public in a consultation report but will be kept anonymous. The report will record comments received and explain how the views of the public, consultees and other stakeholders have been considered in developing the final project design. This report will become part of our formal planning application.
- Please give your completed questionnaire to a member of staff or post in the dedicated box. Alternatively, you can take the questionnaire home and then send to the freepost address listed on the questionnaire.

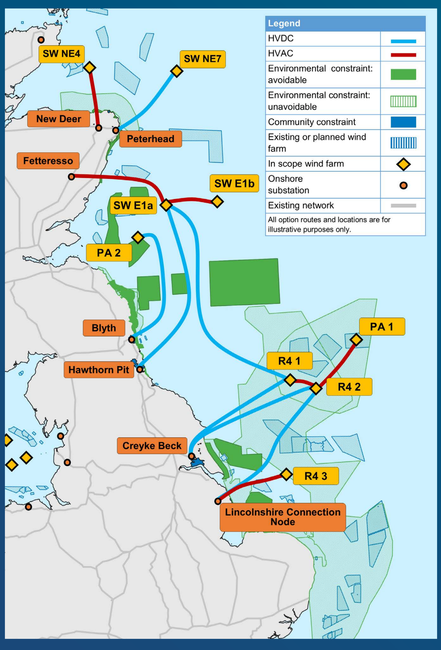
How the Connection Point to the National Grid was chosen

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.



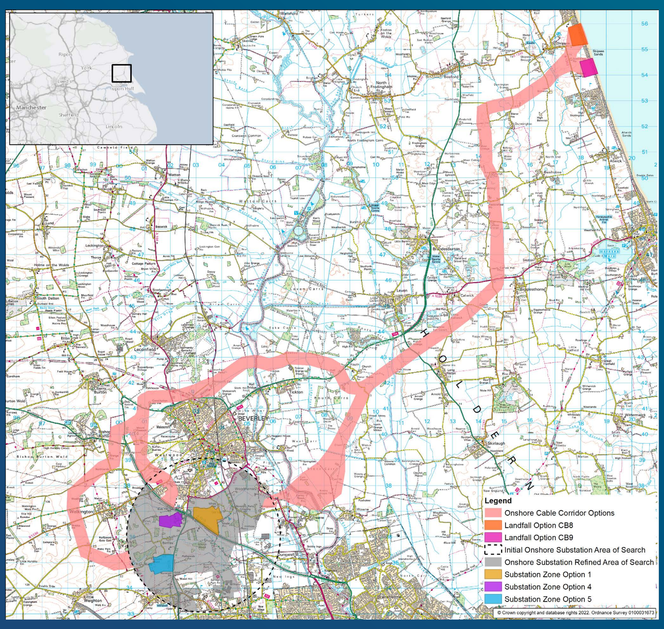
Site Selection

Since being awarded preferred bidder status for the Dogger Bank South offshore wind farms by The Crown Estate through the Offshore Wind Round 4 process, RWE has been engaged in a process of site selection, aiming at connecting the array areas to the national grid.

With the locations of the offshore sites fixed through the Round 4 process, and the grid connection location determined through the HND process, the site selection work has been identifying suitable offshore and onshore export cable corridors, a cable landfall location and a substation location for each of the two projects.

In undertaking this work, RWE has sought to strike a balance between commercial, engineering, environmental and social considerations. In so doing, RWE has sought to minimise impacts on local communities and the environment where possible. The details of the site selection work, the options remaining under consideration and the processes followed to develop these options are presented as part of this consultation exercise.

It is anticipated that each of the Dogger Bank South projects will be served by its own project specific infrastructure, but cable corridors, landfall locations and substation sites will be shared as far as possible to minimise impacts on communities and the environment.



The Offshore Array

The array areas are located more than 100 kilometres offshore on the Dogger Bank in the southern North Sea. Each of the two array areas cover approximately 495 kilometres. The final layouts for each project will not utilise this entire area.

The Projects' array areas will include wind turbines, array cables and offshore platforms (for both substations and accommodation).

Wind turbines

The Projects' design envelope allows for up to 300 wind turbines, subject to the wind turbine capacity used. Wind turbine capacity is likely to increase in the time period between now and construction, therefore the EIA will be undertaken on a range of rated capacities.

A number of different foundation types are being considered, including monopiles, jackets on pin piles and jackets on suction buckets.

The overall layout of the wind turbines within the wind farm site will be informed by site investigation works and wind resource modelling and will comply with relevant best practice for offshore wind farms in relation to shipping and navigation, fishing interests, offshore health and safety and any relevant aviation interests.

Array cables

Array cables will be used to connect the wind turbines to the offshore substations. The maximum length of the array cabling for the DBS projects is estimated to be 600 kilometres. The location and length of the array cabling will be determined post consent, subject to the final layout of the wind turbines.

Offshore platforms

Up to eleven offshore platforms may be required although two of them may be located outside of the offshore wind turbine array area: eight offshore substation platforms and three additional platforms (e.g. reactive compensation platform, offshore switching station platform and accommodation platform).

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Offshore Cable Route Options

Offshore Cable Corridors

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

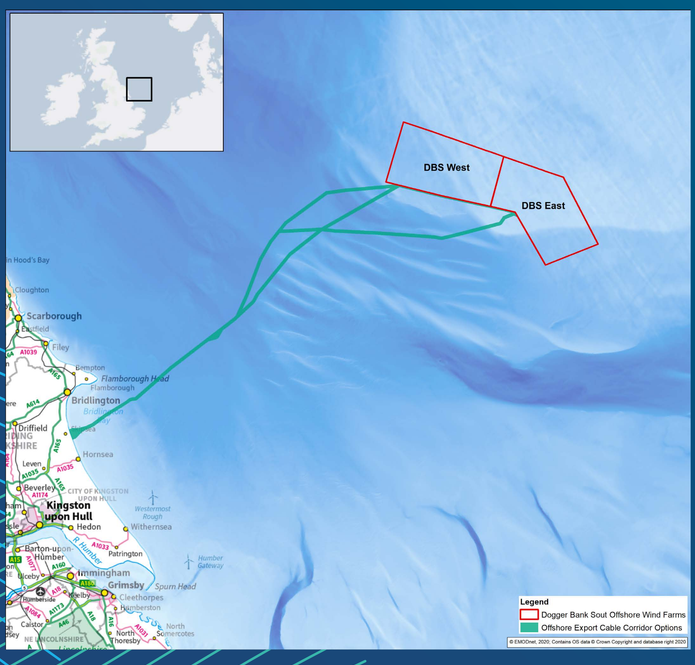
- The offshore export cables will be buried in the seabed in corridors up to 1 kilometre wide.
- Up to six cables will link the array areas to a shared landfall location.
- These cables will share a single corridor in the nearshore area, however, this will diverge to two 1 kilometre wide corridors in the offshore area to reach the individual offshore substations required by each project.

Offshore Cable Corridor Option Selection

The selection of offshore export cable corridor options has been closely linked to landfall site selection work. All options were developed to:

- Maintain required minimum separation distance with other offshore cables and pipelines unless crossing is required, at which point, crossings will be designed to be at approximately 90°.
- Maintain sufficient space for offshore cable installation (including anchor spread of installation vessels whilst maintaining an appropriate safety buffer with existing sub-sea cables and pipelines).
- Avoid known historic wrecks as far as possible.
- Minimise sterilisation of aggerate dredging areas and other lease areas.
- Avoid direct significant impacts to sites designated for nature conservation as far as possible (SACs, SPAs, MCZs).
- Avoid direct significant impacts to ecologically important sandbanks and potential reefs as far as possible.
- Otherwise, in taking account of the above, be as short as practicable.

A number of options for the offshore export cable corridors remain under consideration in the offshore area. All options displayed are the subject of ongoing survey work. Corridor options will be selected based on the findings of this survey work.



Landfall Shortlist

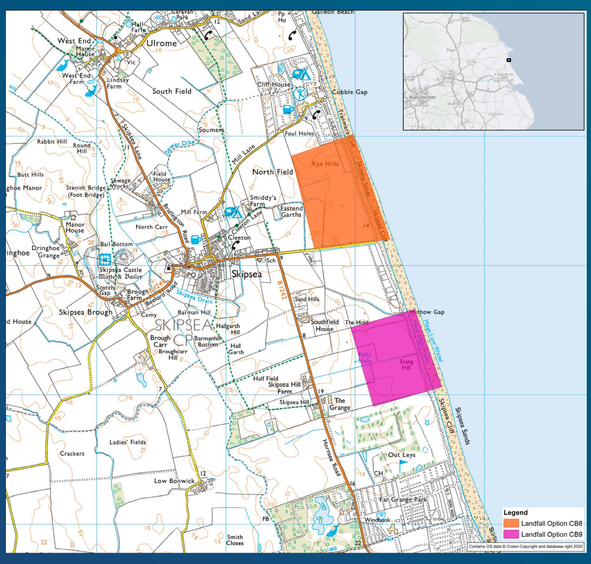
Two possible landfall locations are under consideration for development. These lie adjacent to one another and are known as Landfall zone 8 and Landfall zone 9. It may be that cable landfall is made within one or other of these sites, or potentially within both sites.

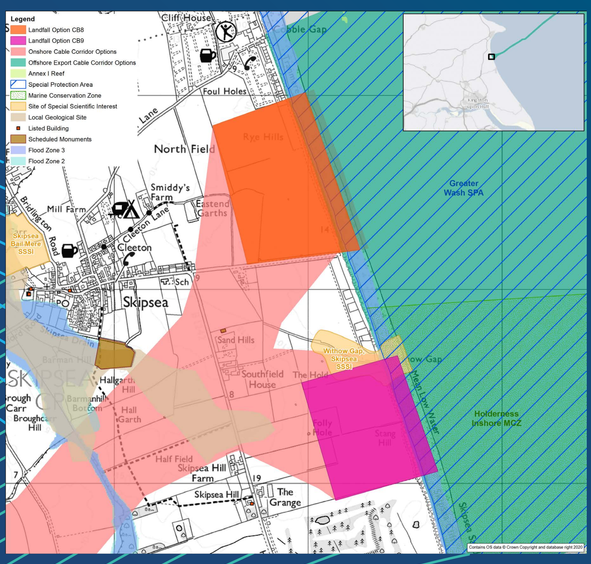
Landfall zones 8 and 9

Landfall zones 8 and 9 lie close to Skipsea, 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, and Skipsea Primary School located nearby. A number of areas of environmental designations lie within approximately 1 kilometre of the zones. Other constraints include listed buildings, heritage features, scheduled monuments, sites of scientific interest and flood risk zones. A marine conservation zone also encompasses the southern reaches of the zone 9.

Landfall Selection

Environmental Survey work has been ongoing throughout 2022. The outputs of these surveys will be combined with utilities mapping work and engineering studies to allow a final decision to be made relating to the exact landfall locations.





The Landfall

The cables that travel from the offshore wind farm will come ashore at an area known as the landfall location.

Site selection work completed to date considered a total of 28 potential landfall locations along the Holderness Coast. The outputs of a variety of environmental and engineering assessments and feasibility studies have been combined with site visits to inform the reduction of this longlist down to a short-list of two potential landfall areas.

During the operational phase of the project very little infrastructure will be visible at landfall as the cables will be buried where they come ashore, joining to the onshore corridors at an underground installation known as a Transition Joint Bay. The onward onshore cables will also be buried.

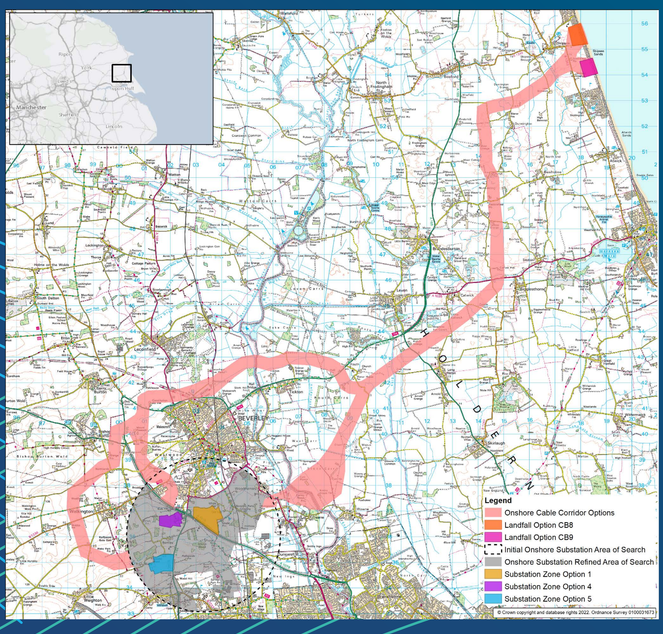
The only elements at or above ground would be manhole type covers for future inspection and potentially some electrical cabinets and some fencing. These elements would all be set back from the immediate coastline at landfall.

Some disruption and disturbance including temporary increases in noise, traffic and visual disturbance may occur whilst construction activities are ongoing.

Use of the beach following construction will be able to continue as before.

Onshore Cable Corridor

- The onshore export cable corridor is the path along which electrical cables will be placed underground to transmit electricity generated by the wind farms to the UK's electricity transmission network.
- Both of the wind farms will require onshore export cables running from landfall to the grid connection point. The onshore export cables will be buried underground from the landfall location to the onshore substations and wherever possible, all cables will be installed along the same cable corridor.
- Site selection work has been undertaken to narrow the number of suitable cable corridors to a shortlist of possible routes running from landfall to the onshore grid connection point. The current corridor width, for site selection purposes is 500 metres. The purpose of maintaining the corridor width of 500 metres is to enable the route to be refined based on this consultation and a range of ongoing surveys and studies.
- We are currently undertaking environmental surveys which will inform the final route selected for the cable corridor alongside engineering studies to determine suitable crossing points of obstacles and underground utilities such as electricity, gas, water and telecoms infrastructure.
- Key stakeholder groups including East Riding of Yorkshire Council, York Consortium Drainage Board, the Environment Agency, Yorkshire Wildlife Trust, Natural England, Historic England, local landowners and National Highways are being invited to contribute knowledge to the process.
- There are cable route options around the landfall area to accommodate the landfall zones still under consideration and there are several options for routeing into the area of the onshore substations.
- The final width of the corridor to be used for constructing and laying the cables is expected to be approximately 100 metres and will include internal haul roads to reduce vehicle movements on public roads in and around the cable route. Once constructed, the cables are expected to typically fit within a width of 35 metres, although in locations where crossings are required underneath obstructions, the width can increase substantially for a short distance.
- Along the length of the cable route there will be construction access points, and small storage and works compounds that will be required for undertaking trenchless cable installation where the cable route requires to be drilled under obstacles, for example, rivers, railways and roads.



Underground Cabling

Key Points:

- Up to six cables for both projects. Where located adjacent to each other the typical construction cable corridor for both projects will be up to 100 metres wide. Construction widths will be wider in some areas, e.g. where directional drilling is required.
- When going through agricultural land, cables will typically be buried to a depth of 0.9 – 1.6 metres with a protective board placed on top of the cable ducts.
- Working areas will be fenced off during construction with a dedicated temporary haul road to permit access to all areas of the corridor during construction.
- To allow cable installation, the majority of the route is likely to be open-trenched with major obstacles such as roads, railway lines, and water courses drilled under.
- Jointing pits are located along the onshore route to connect each length of cable. With the ducts pre-installed, the cables can be pulled through without further disruption to the land. Constructed of concrete, the pits are buried in the ground and once restored will be completely covered. Separate manholes set in a concrete slab are located within the vicinity of the joints to allow cable testing. Under normal operational conditions the jointing pits are the only locations which the maintenance teams would require access to during the life of the wind farm. Land will be restored after completion and returned to former use. On very rare occasions we may have to excavate the cables and ducts to carry out a repair.

- We will ensure that the contractor undertaking the cable installation work will seek to install the cables in such a way as to minimise any long term affects on the land or to drainage systems. Landowners will be invited to provide site specific information to assist us in correctly identifying existing land drain systems. We will also draw upon experience gained through installing underground cables in other locations where there is extensive land drainage.

RWE

Onshore Substation

We are consulting on a shortlist of three zones in which we believe the onshore substations could be built.

- Two onshore substations (one for each project) are required to transform the generated electricity to a higher voltage for onward transmission on the national grid. It is expected, if space allows, the two substations will be located adjacent to each other on one site.
- Each substation will consist of several buildings housing electrical equipment and unhoused electrical equipment contained within secure fencing.
- The final dimensions of the substations are dependent on the electrical capacity of the wind farms and the design of electrical transmission used to transmit electricity to the substation. However the tallest building could be up to 24 metres in height. Lightning rods and other electrical equipment may need to be higher than the tallest building.
- The substation equipment may need approximately 20 hectares (50 acres) of land.
- There will be temporary works associated with the construction of the substations. Temporary working areas are usually located adjacent to the substations and include temporary office and welfare facilities in the form of portacabins, car parking and storage. Temporary working areas will be removed following commissioning of the offshore wind farms and the land reinstated.

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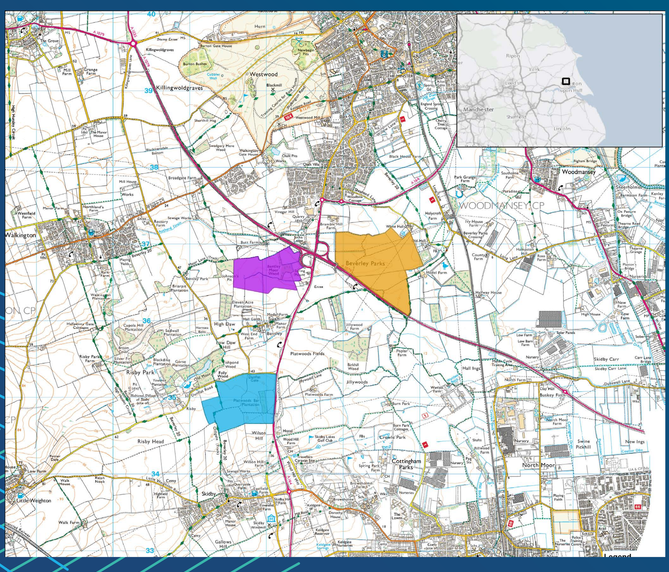
Onshore Substation Shortlist

Three substation zones have been shortlisted following consideration of a range of environmental and engineering constraints.

We have considered the following:

- **Landscape and visual** – the zones are located in an area that is rural in nature, some of which is characterised by energy infrastructure and roads. Preliminary photomontages show how the substations could look. When the design is more developed, proposals on landscaping and planting will be developed to further mitigate landscape and visual impact.
- **Access roads** – we have considered the feasibility of access for construction vehicles taking into account other developments in the area.
- **Ecology** – we have identified designated sites for conservation in East Riding. Ecology surveys are ongoing to identify any protected species on and around the proposed zones. Further surveys will be carried out once the final zone has been selected
- **Flooding risk** – The electrical equipment and the access roads will be designed to withstand flooding and that will form part of our design at application stage.
- **Operational noise** – background noise levels will be measured via location-specific modelling to determine the noise that would be produced by the electrical equipment. It will be possible to ensure that final designs conform to planning guidance in relation to noise levels.
- **Technical considerations** – the zones are being evaluated for their proximity to the grid connection point and ability to route cables from the substation to that point. This takes into account existing over and underground infrastructure that the cables will have to cross.
- **Archaeology and heritage** - the existing historic environment with respect to onshore archaeology and cultural heritage is being evaluated including (but not limited to): known non-designated heritage assets, potential for buried archaeological remains and previously unrecorded above ground heritage assets and designated heritage assets. We are speaking to stakeholders regarding our approach and we will use this information to help guide the final onshore substation locations to avoid potential impacts where possible.



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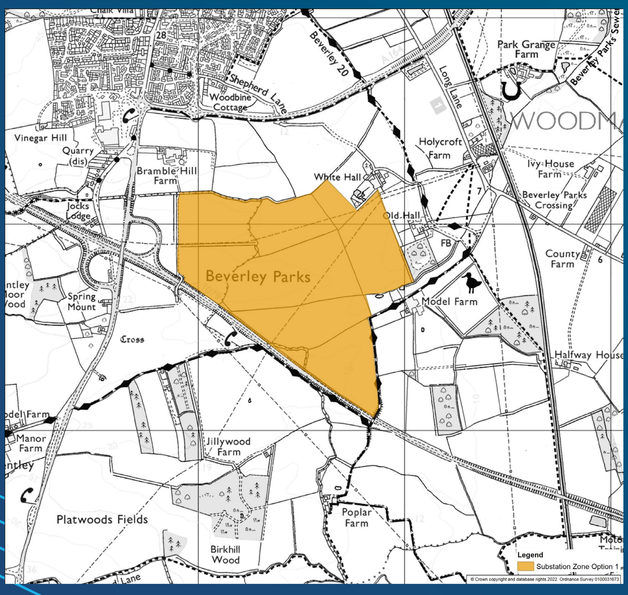
Onshore Substation Zone 1

- Substation zone 1 is located adjacent to the A1079. It is located 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 1 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.



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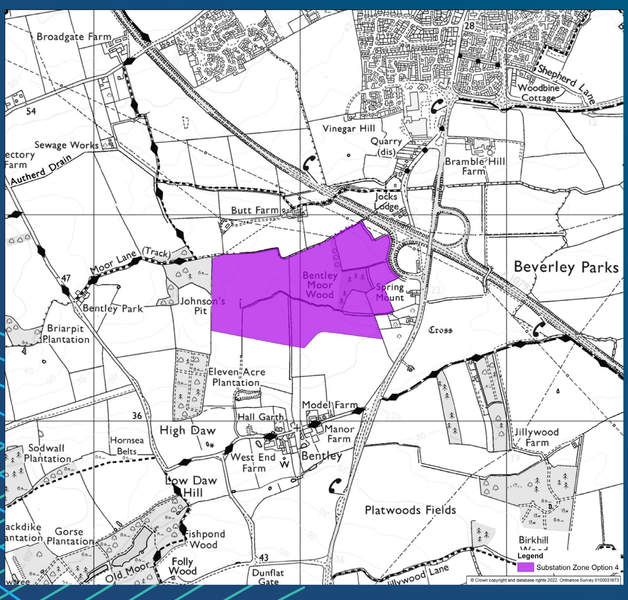
Onshore Substation Zone 4

- 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 pipelines to the south and an electricity transmission line to the north.
- The zone is less than 1 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.
- This zone is not located in flood zone so it 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.



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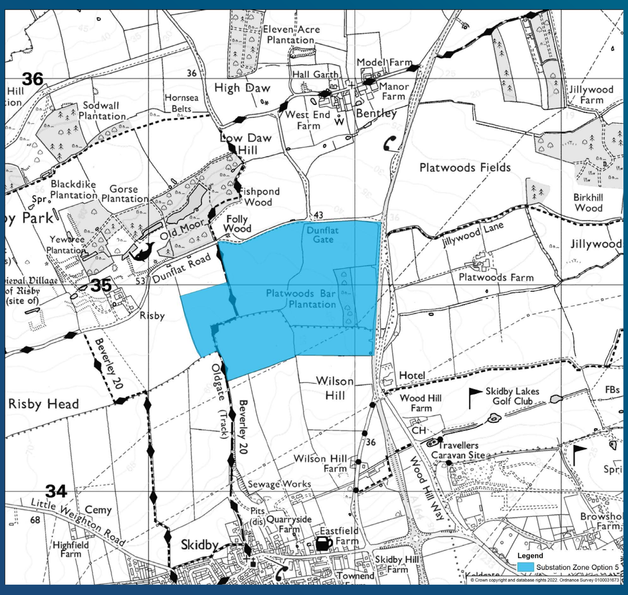
Onshore Substation Zone 5

- Substation zone 5 is located adjacent to the A164 on the corner with Dunflat Road. A small area of plantation woodland lies within the eastern portion of the site.
- The zone comprises 54 hectares and the south of the zone is dissected by an existing overhead electricity line, a gas pipeline and a Public Right of Way.
- The zone is approximately 1.4 kilometres 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 250 metres from the zone.
- There are no international or national ecological or landscape designations that directly affect this zone. The zone lies on the eastern edge of the Yorkshire Wolds Important Landscape Area (ILA) defined in the East Riding Local Plan. There is sufficient space within this zone to ensure that the substation, construction compound and access routes are sited to minimise impacts from other parts of the ILA and visibility from the A164.
- This zone is not located in a flood zone and is not considered to be at risk of flooding.
- The zone could be accessed via Dunflat Road via the wider road network and will not conflict with the Jock's Lodge junction improvement scheme.



What Happens Next?

Once we have gathered all the information and comments from statutory consultees, non-statutory organisations and members of the public, we will be able to re-assess our proposals. Weighing up all the factors to take into consideration, we will select the most appropriate sites and zones for further assessment.

What happens next?

Once all feedback has been reviewed, we will select all of the zones and locations which will be taken forward to the next phase of development. We will undertake detailed environmental assessments on the selected zones to determine the locations and orientation of the infrastructure.

These assessments will include:

- Ground investigations to help us with the infrastructure design.
- Access studies for abnormal loads and HGVs and associated construction traffic.
- Flood risk studies.
- Further detailed visual assessment and work around the mitigation of potential impacts.
- Ecology surveys.
- Noise monitoring.
- Archeology and heritage studies.

We will also consult further with relevant statutory bodies such as Natural England, local authorities, the Environment Agency and other consultees and will take into account their views into our design. The detailed assessments and the consultations will help identify the best location of the development within the chosen site.

Any mitigation required will also be identified to minimise impacts on the environment and people.

What happens once the detailed environmental assessments are completed?

Following our detailed assessments, once we have more information on the proposed electrical infrastructure, we will hold another consultation to ask you what you think about the entire scheme (onshore and offshore). This will be your other opportunity to influence the project before we finalise our proposals.

The finalised proposal will be submitted to the relevant examining authority for development consent.

The application will contain all the information to describe the infrastructure, its location and proposed mitigation and monitoring which we will implement before, during or after construction.