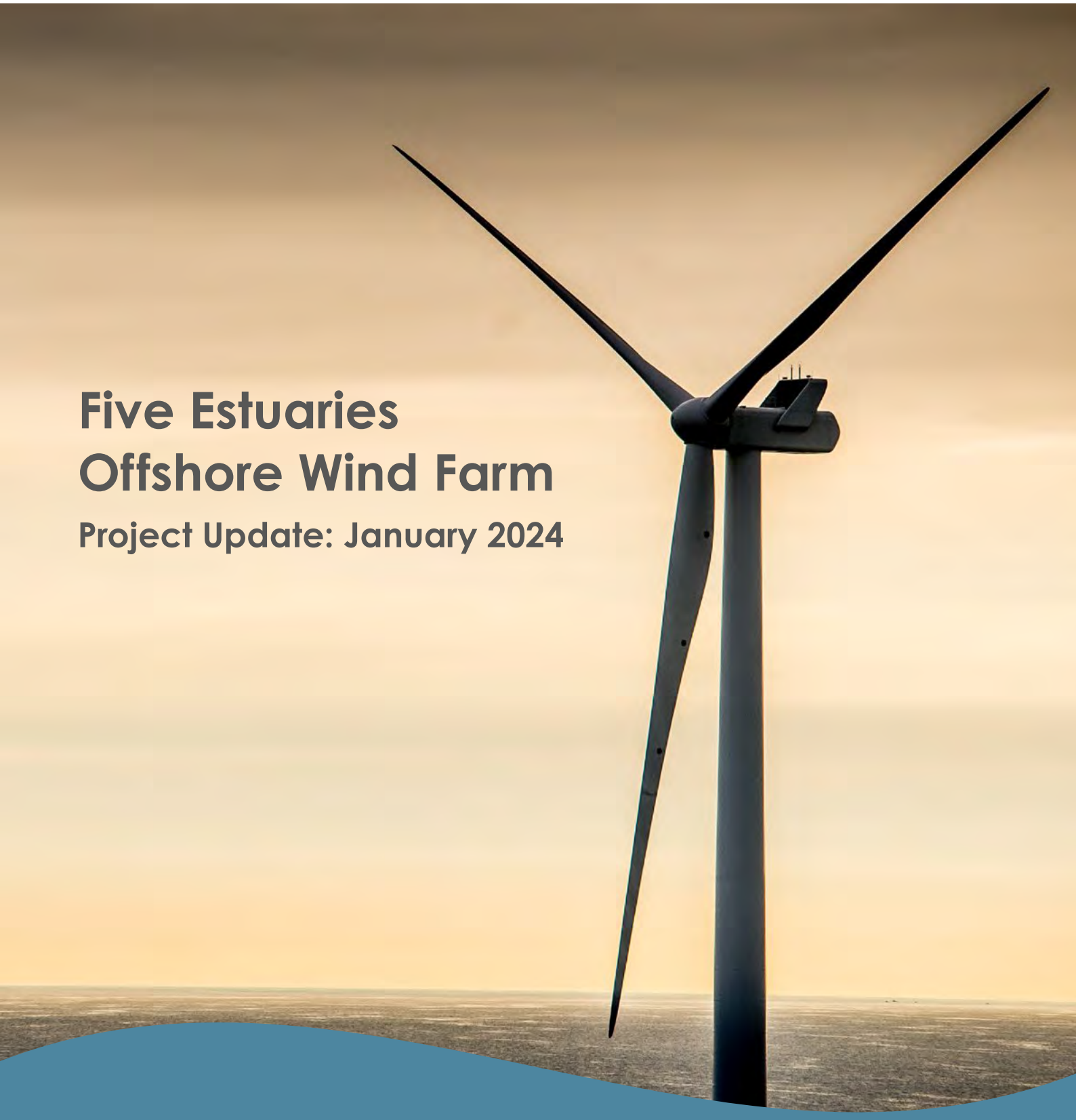
FIVE ESTUARIES
OFFSHORE WIND FARM



Five Estuaries Offshore Wind Farm

Project Update: January 2024

www.fiveestuaries.co.uk

2024

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Introduction

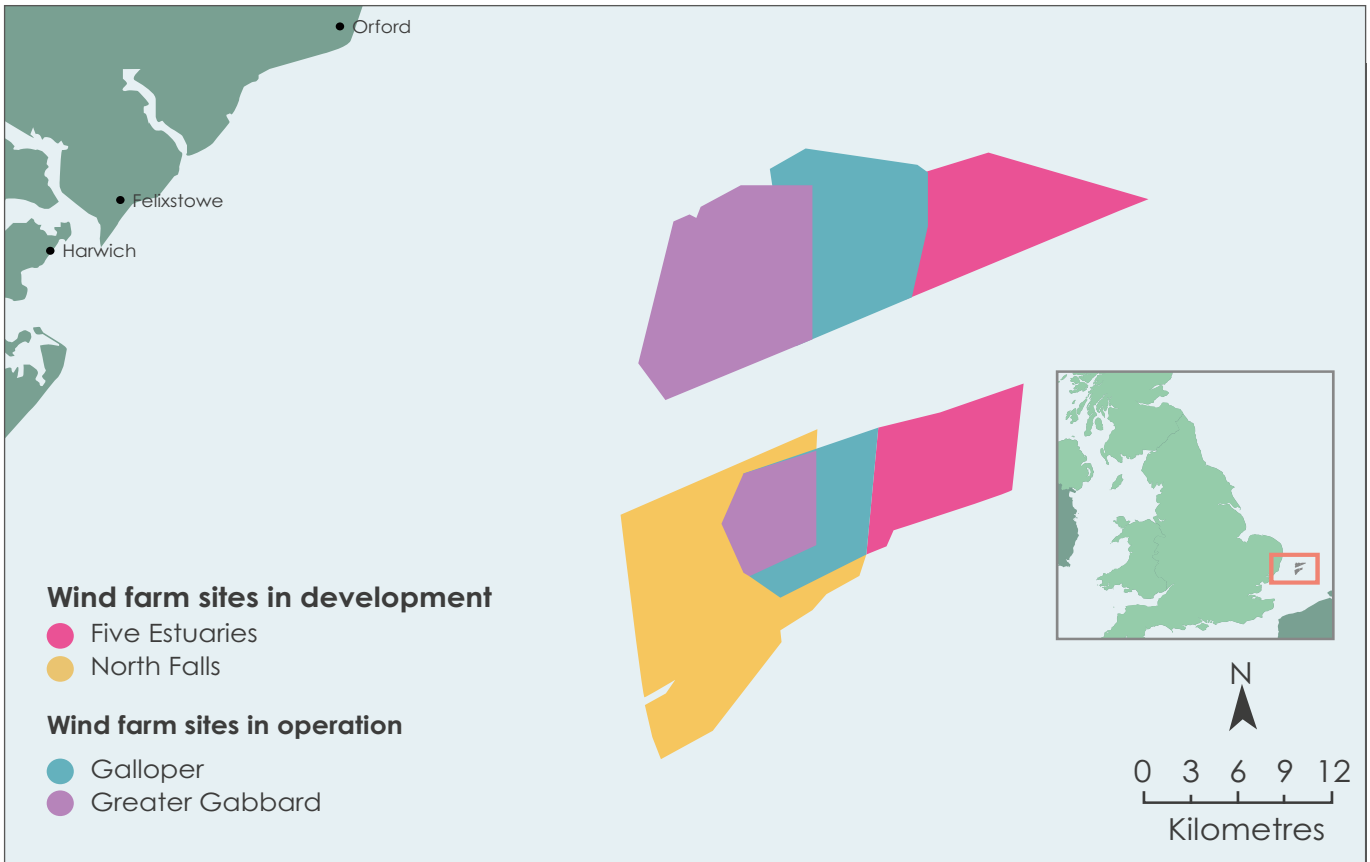
Five Estuaries Offshore Wind Farm ('the Project') is a proposed extension to the existing Galloper Offshore Wind Farm. The new wind farm would be split across two separate seabed areas in the southern North Sea and create enough energy each year to power hundreds of thousands of homes.

We have been developing the Project over the last three years and plan to submit an application for a Development Consent Order (DCO) in March 2024. In this time we have worked extensively with stakeholders, the local community and other developers in the region.

This engagement has meant that we have been able to design a Project with the least impact to the local environment and communities as possible. Coordination with North Falls Offshore Wind Farm has increased throughout each project's development and as a result the cable route and substation works areas almost completely align, meaning a significant cumulative reduction in potential impacts. We are also exploring construction options and will continue to work closely together.

This booklet provides an update on the Project, the development story so far, how consultation feedback has informed our plans and what our final proposals for application look like.

The Project will create job opportunities, support the UK Government's target for up to 50 gigawatts (GW) of electricity generated from offshore wind by 2030 and help meet the objectives of the UK Energy Security Strategy.



Operational and proposed offshore wind farms

Project key facts

128km² array area across two separate seabed areas

Up to 79 wind turbine generators

Each turbine would be up to 420m at the tallest point of blade tip above sea level

37km closest distance to shore off the coast of Suffolk

Two offshore export cables to from the wind farm to landfall (up to 98km)

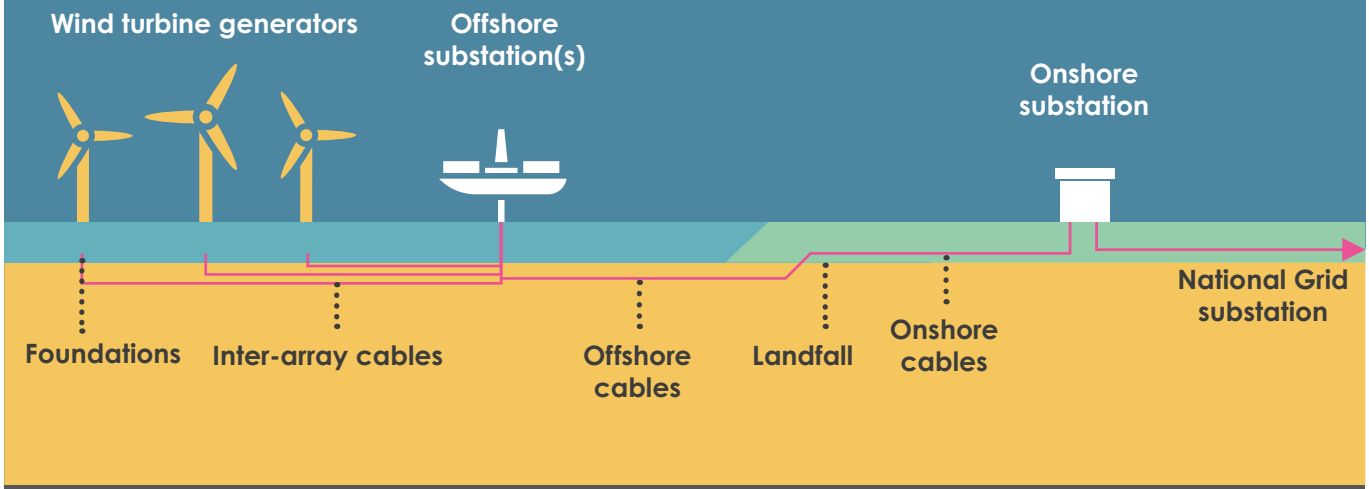
Up to two offshore substations

Landfall located at Sandy Point between Frinton-on-Sea and Holland-on-Sea

Two underground cables from landfall to the onshore substation (approx 22km)

One onshore substation to transform the power from the wind farm up to the required voltage to connect to the national electricity transmission network

Underground connection to the proposed adjacent National Grid substation



Key components of a typical offshore wind farm

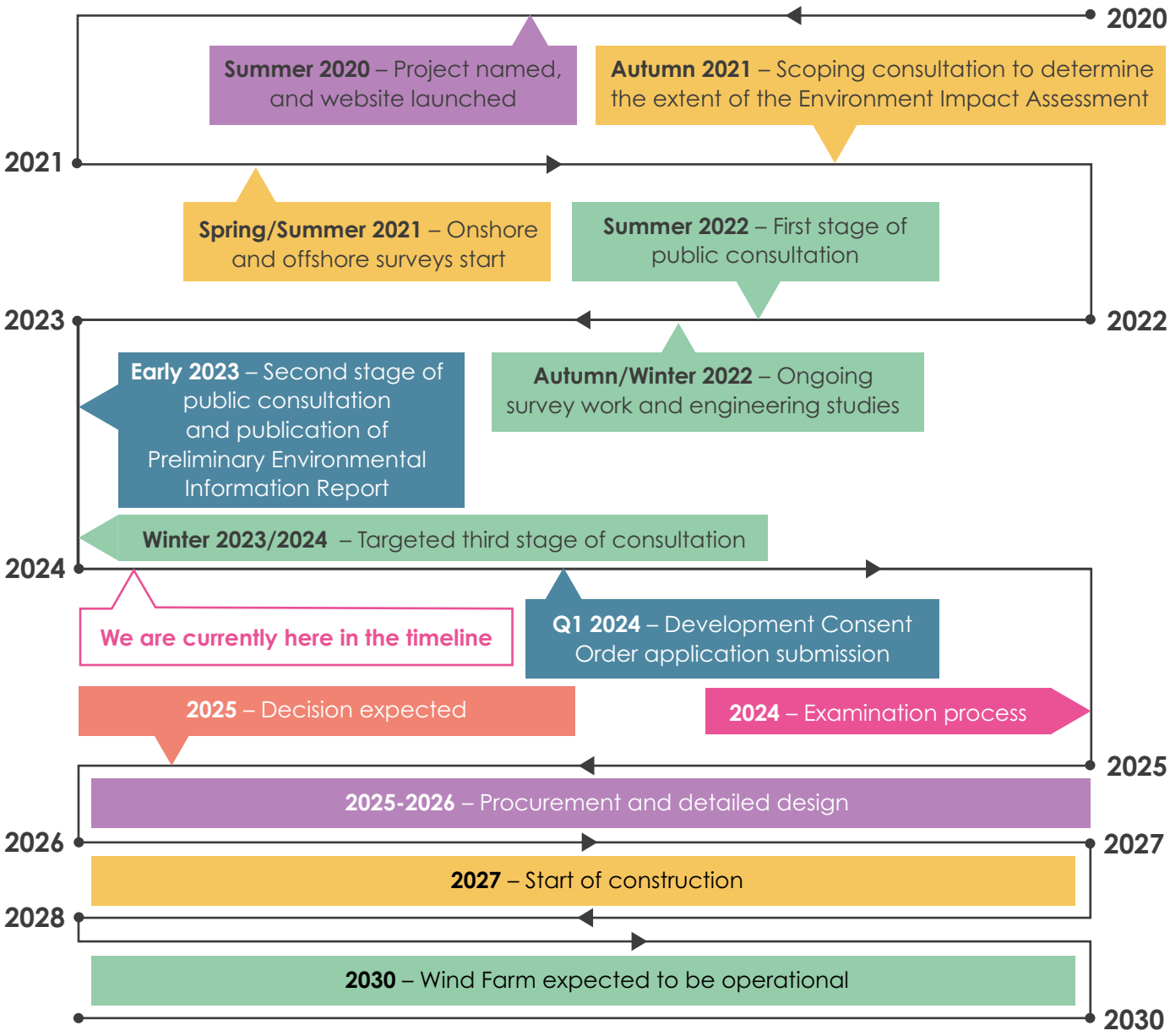
The story so far

The wind farm has been in development since August 2020 following an agreement for lease with The Crown Estate. At that point we launched the project with the Five Estuaries name and project website.

In 2021 we started our survey work and received a Scoping Opinion from the Planning Inspectorate, which sets out the scope of the Environmental Impact Assessment we would need to carry out.

We have held three stages of public consultation and throughout the entire development process we have continuously engaged with statutory bodies, key stakeholders and landowners, alongside dedicated surveys and coordination efforts with North Falls, to gain technical insight and greater understanding of the local environment to inform the development of our plans.

Project timeline

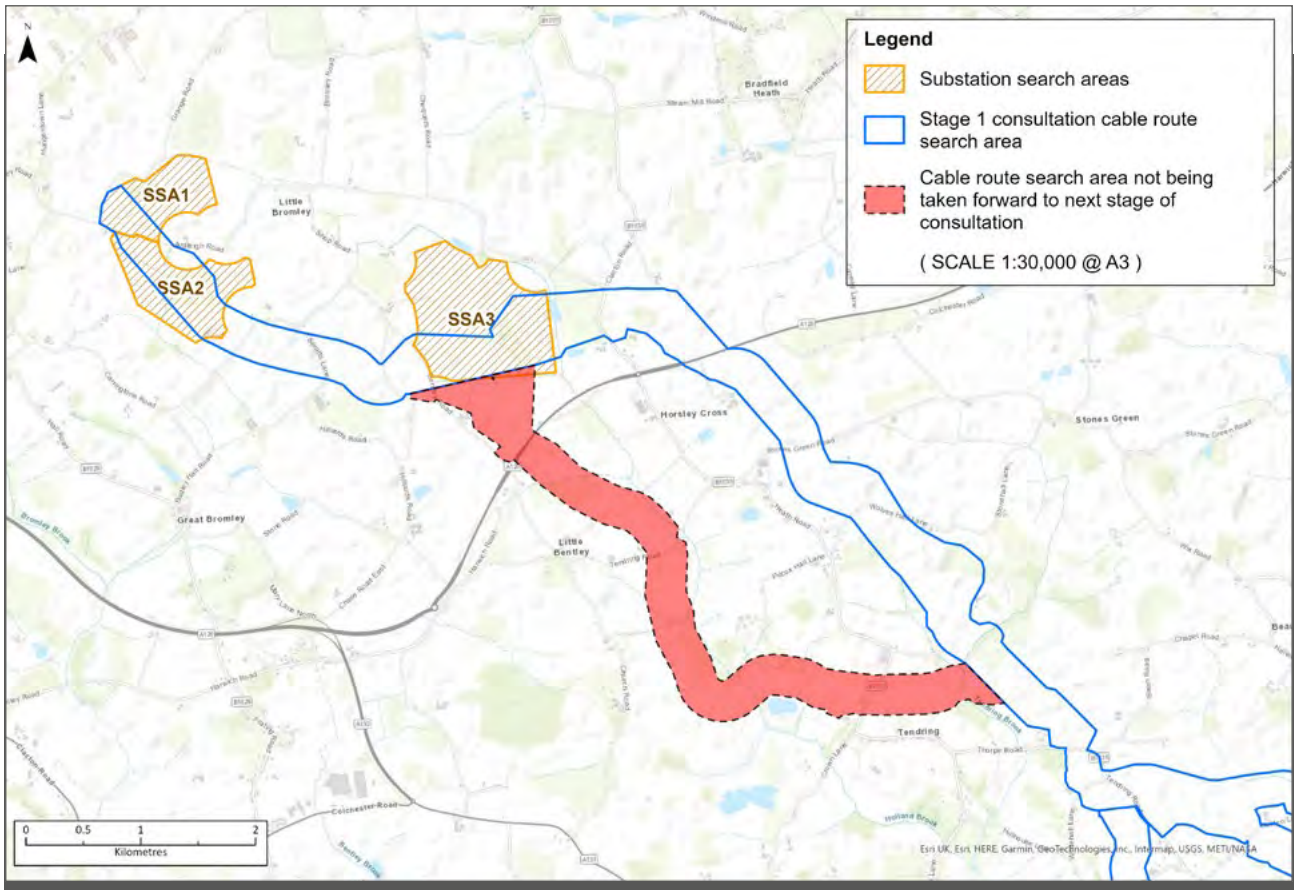


Stage 1 Consultation

Between 30 July and 12 August in 2021, we held our first stage of consultation to introduce and obtain feedback on our early proposals for the Project. The purpose of this consultation was to collect information about the area from the local community and learn about any other issues we should be aware of in the development of our preferred route corridor for the onshore cables.

During the consultation we held two public information days in Essex, where the onshore infrastructure would be located, at which we welcomed 204 attendees. We also hosted a virtual exhibition on our website. We received 139 responses to the consultation, which contained a large amount of useful information particularly about land uses, wildlife and traffic.

Following the consultation, the cable search area nearest to Tendring was dropped and our northern offshore array was reduced. You can read more about the findings of the first stage of consultation in our Stage 1 Feedback Report on the Five Estuaries website.



Cable route search area not taken forward after Stage 1 consultation

Note: For Stage 2 Consultation the substation areas were renamed as follows: SSA1 and SSA2 became SSA West and SSA3 became SSA East.

Stage 2 Consultation

Between 14 March and 12 May 2023, we held our second stage of consultation. This was our final project-wide consultation phase before submitting our DCO application. We ran two online webinars and ten in-person public information events across Essex, Suffolk and Kent, for communities that fall within our 'zone of theoretical visibility'.
More than 450 people attended these events.

We received almost 700 responses to this stage of consultation, obtaining useful feedback to the proposals including:

- Request for greater coordination with North Falls Offshore Wind Farm;
- Marine focus stakeholders questioned the need for four circuits per project for the offshore export cables;
- Concern regarding the impacts of the onshore substation and cumulative impacts with other new infrastructure;
- Preference for co-location with other developers' substations;
- Concern around impact on water utilities and drainage;
- Concern about the loss of farmland (temporary and permanent);
- Comments around the suitability of the road network for construction;
- Concerns around the level of disturbance during construction;
- Preference to utilise the northern landfall route;
- Queries about support and community benefits for the local area; and
- Request for an offshore transmission connection to reduce onshore impacts.





In the months following Stage 2 Consultation, some key refinements were made to the Project in response to the feedback received. This included:

- Reduction from up to four export cables to two, reducing the required development width and therefore associated impacts;
- Selection of the western search area for the location of the onshore substation meaning the previously proposed eastern search area is now crossed by the cable route only;
- The preferred landfall location selected as the proposed northern route, distancing the Project from breeding and non-breeding bird habitats and closest noise sensitive receptors;
- Significant reduction in the width of the export cable corridor; and
- Increased use of horizontal directional drilling to reduce the impact on established hedgerows, other ecological areas of note, and highways.

Working with other developers in the region

How we have coordinated with North Falls Offshore Wind Farm

Working together to streamline design and minimise local impacts as far as possible is important to both Five Estuaries and North Falls.

An important consideration for Five Estuaries during the site selection and design work has been the proximity of the proposed North Falls Offshore Wind Farm. Although North Falls and Five Estuaries are two separate projects each requiring their own Development Consent Order (DCO) application and being developed by different shareholder groupings, co-ordination between the two projects has been increasing as designs have progressed. In support of this, both parties signed a 'good neighbour agreement' in summer 2023, which has enabled closer liaison, information sharing and joint planning.

The primary goal of this coordination is to reduce any potential impacts of building the onshore connection to the national electricity transmission network for the two projects. This meant that Five Estuaries sought to identify suitable options for the Project's onshore infrastructure that could accommodate either the Five Estuaries project alone or co-location with North Falls.

Through coordination, we have been able to:

- Almost fully align the onshore export cable corridors;
- Identify possible shared works accesses and construction compounds;
- Exchange data and share surveys e.g. ecology and archaeology;
- Agree on a shared location for each project's substation and identify possible shared access and screening concepts;
- Increase the coordination of engagement with landowners;
- Share our navigational risk assessments and measures to ensure vessel co-ordination during construction; and
- Exchange information on project design at an early stage to carry out cumulative seascape, landscape and visual impact assessments.

Closely aligning the onshore cable routes, substation locations, and landfall areas for the projects has reduced the amount of land required to build and operate both projects, as well as creating the possibility of reducing potential construction impacts through coordinated works.

We will continue to explore coordination opportunities to reduce impacts, support local skills and create employment opportunities.

North Falls Offshore Wind Farm is the proposed extension to the operational Greater Gabbard Offshore Wind Farm.

You can find out more about North Falls at **northfallsoffshore.com**

NORTH FALLS
Offshore Wind Farm

Working with National Grid

Following consideration of a number of potential options, the Project identified a location for its onshore substation adjacent to the proposed National Grid substation zone. This was based on consultation feedback alongside engineering and environmental considerations.

Five Estuaries was offered a connection into a new East Anglia Connection Node (EACN) substation by National Grid Electricity System Operator (ESO). The siting of the EACN, where the project connects into the national electricity transmission system, was undertaken by National Grid Electricity Transmission (NGET).

NGET identified a location on the Tendring Peninsula in Essex, which could be integrated as part of the Norwich to Tilbury reinforcement project, as an economic and efficient site for the EACN as set out in the Corridor and Preliminary Routeing and Siting Study published by NGET in 2022.

Five Estuaries and Norwich to Tilbury are being developed in parallel with the same ambition to be operational by 2030. Throughout the development the project teams meet regularly to share updates on the designs and explore opportunities for coordination to reduce impacts on local communities.

Should both projects receive development consent, these efforts will continue throughout the construction and operational phases.

Norwich to Tilbury is a proposal by National Grid Electricity Transmission (National Grid) to reinforce the high voltage power network in East Anglia between the existing substations at Norwich Main in Norfolk, Bramford in Suffolk, and Tilbury in Essex, as well as connect new offshore wind generation.

You can find out more about Norwich to Tilbury at **nationalgrid.com/norwich-to-tilbury**

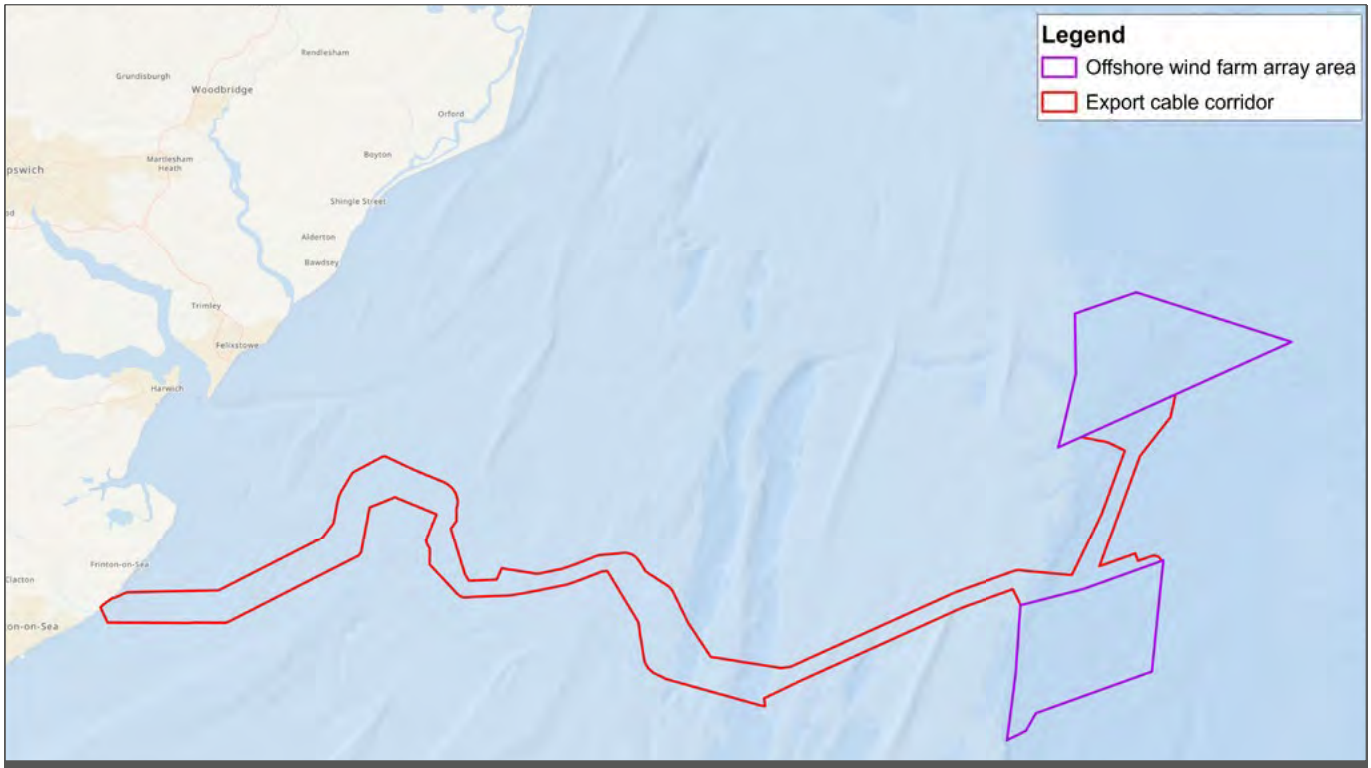
nationalgrid



Offshore turbines at the Galloper Wind Farm

Offshore – the wind farm and offshore infrastructure

The offshore wind farm itself is called the array. This area makes up around 128km^2 across two areas in the southern North Sea, which are separated by a shipping traffic separation scheme.



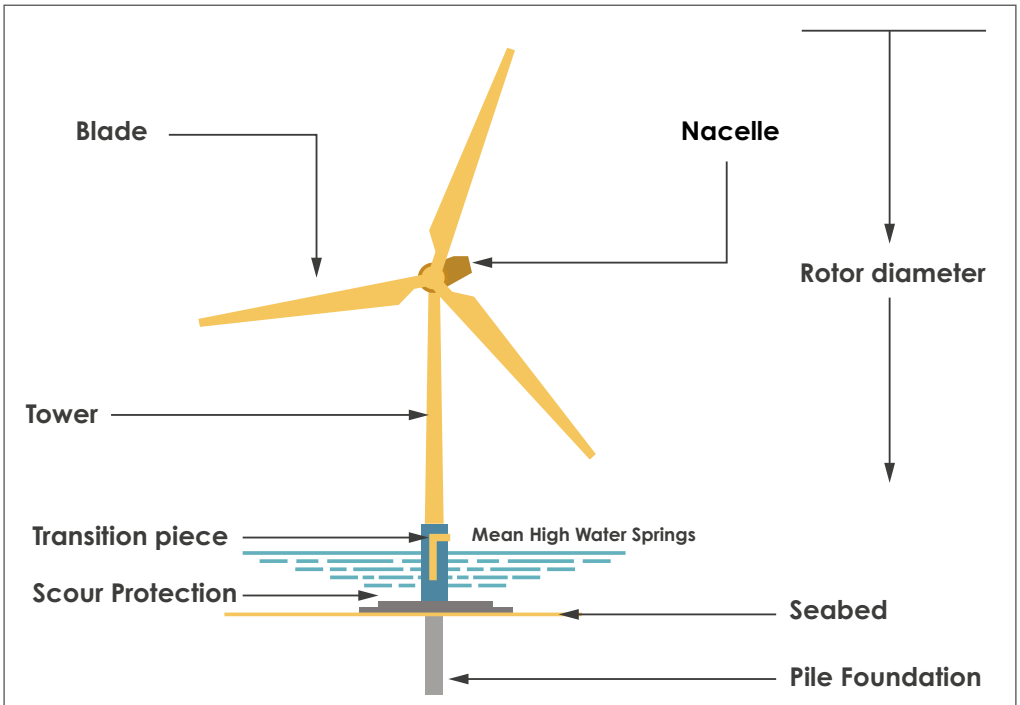
Wind farm array area and export cable route corridor

The wind farm

The array is made up of the following components:

- Up to 79 wind turbine generators of a maximum height of 420m to convert wind energy to electricity. Offshore turbine models are continuously evolving and improving, so the final model will not be chosen until after consent is granted, but will comply with the maximum dimensions as proposed in the application.
- The turbines will be attached to the seabed with foundation structures.
- Up to two offshore substation platforms collect and export the power generated by the turbines. They will also be attached to the seabed.
- Inter-array cables connect the wind turbines to the offshore substation(s). Cables will either be buried in the seabed or, where burial is not possible, protected by a hard layer of rock or concrete mattresses. Up to 200km of inter-array cables will be required, dependant on the number of turbines.

The specific placement of wind turbines and other offshore infrastructure will not be decided as part of our application in order to allow for flexibility in our final engineering design. We use a design envelope to carry out our assessments based on a maximum design scenario or reasonable worst-case scenario, which is then included in our Development Consent Order application.



Wind turbine components

Views

The closest point of the array to the coast is approximately 37km from the coast of Suffolk. From the majority of viewpoints, turbines for the Five Estuaries project would be behind existing wind farms (Galloper and Greater Gabbard). However, our turbines are proposed to be taller (up to 420m maximum tip height) than the existing turbines that have a maximum tip height of 180.5m.

For our seascape, landscape and visual impact assessment we have used a study area 60km from the arrays, but due to the distance, weather conditions and curvature of the earth the turbines are unlikely to be visible frequently.

Transporting the energy to shore

Two offshore export cables will connect the offshore substation(s) over approximately 75-85km back to shore. The cable corridor is up to 2km wide, although the actual diameter of each cable will be approximately 310mm (around 12 inches). The corridor is routed to avoid major seabed constraints and the development width provides the opportunity for micro-siting around obstructions and for coordination on routeing with North Falls. The area of sea between the array and the proposed landfall site is complex, with a large number of environmental considerations such as:

- Existing and proposed offshore wind farms (Galloper, Greater Gabbard and North Falls);
- Other offshore infrastructure such as telecoms and transmission cables;
- Shipping routes, high density traffic areas (such as ferry routes) and other navigational routeing measures for maritime traffic;
- Special Areas of Conservation, Special Protection Areas and protected marine habitats; known wrecks and archaeological features.

The preferred method of protecting the subsea cables will be to bury them within the seabed. Where burial of cable is not possible, cable protection such as rock placement or concrete mattresses may be required. Cable protection will also be used where cables cross existing cables or pipelines on the seabed.

Compensatory measures for lesser black-backed gulls

As part of our ongoing assessment of the potential environmental impacts, we have identified the Project is predicted to have a minor impact on lesser black-backed gulls, a number of which are associated with the Alde Ore Estuary Special Protected Area. The Habitats Regulations require that where a protected site may be adversely affected, and that effect cannot be avoided, the impacts are compensated for, or offset by, measures such as improving habitat and breeding success for those bird species affected.

In order to compensate for our potential impacts, we are proposing habitat improvements within, or close to, the Special Protection Area. This would include various measures such as fencing around the perimeter of the chosen site, managing vegetation to support nesting (strimming of ground vegetation), and assessing and controlling predator (for example rats or foxes) effects, making the area more attractive to breeding pairs.

We are exploring four potential sites around Orford in Suffolk for the improvements. Further work will be undertaken to determine a final location which will be included within our DCO application. A targeted consultation was held with statutory consultees and the community near the proposed site.

How our plans have evolved through consultation

Export cable reduction

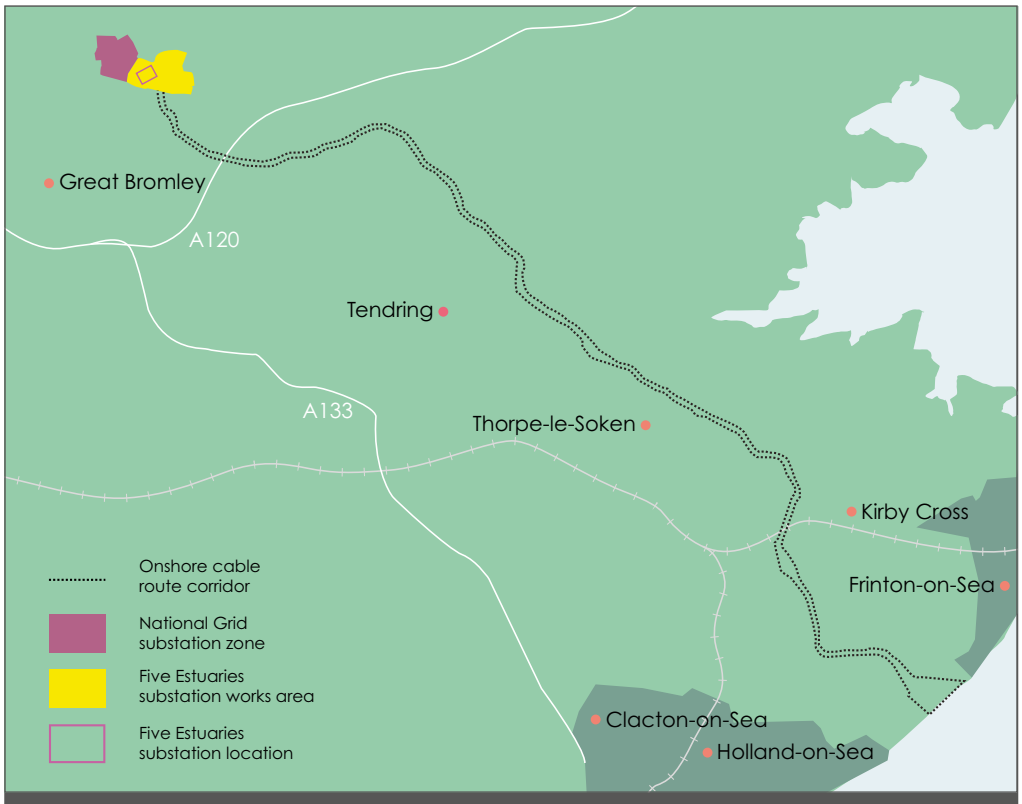
Our second stage of consultation resulted in a reduction in the maximum number of circuits from four to two meaning a reduction in the width of the proposed combined onshore cable corridor during construction and operation. North Falls have also reduced their maximum number of circuits from four to two. Therefore, for both projects, the corridor will be predominantly 90m wide, rather than 200-250m which would have been required for eight circuits. This allows for soil storage, internal haul roads and possible micro-siting plus flexibility for use of trenchless crossing techniques, such as horizontal directional drilling under constraints such as roads.

The narrower route corridor has allowed the Project to avoid more ecological constraints and move further away from residential properties at a number of locations. It also means both projects can use the same landfall location, which focuses the onshore construction activities.

Onshore – underground cable route and substation

The onshore elements of Five Estuaries are located entirely within the Tendring boundary in Essex and include:

- **Landfall**: the area where the offshore export cables are connected to the onshore cable circuits;
- **Onshore export cable corridor**: permanent underground infrastructure connecting the cables at Landfall to the proposed onshore substation;
- **Onshore substation**: where the power supplied from the wind farm is adjusted (including voltage, power quality and power factor as required) to meet the UK System-Operator Transmission-Owner Code (STC) for supply to the National Grid; and
- **Connection to the national grid**: 400kV underground cable circuit(s) running from the proposed Five Estuaries substation to the proposed National Grid substation.



Indicative cable route corridor and onshore substation location

Onshore cable corridor

In order to continue to transport energy from the landfall location to the onshore substation, the Project will need to lay new underground electricity cables along a route approximately 22km long.

The cable corridor has been selected and refined on the basis of greater understanding of the local environment from dedicated surveys and

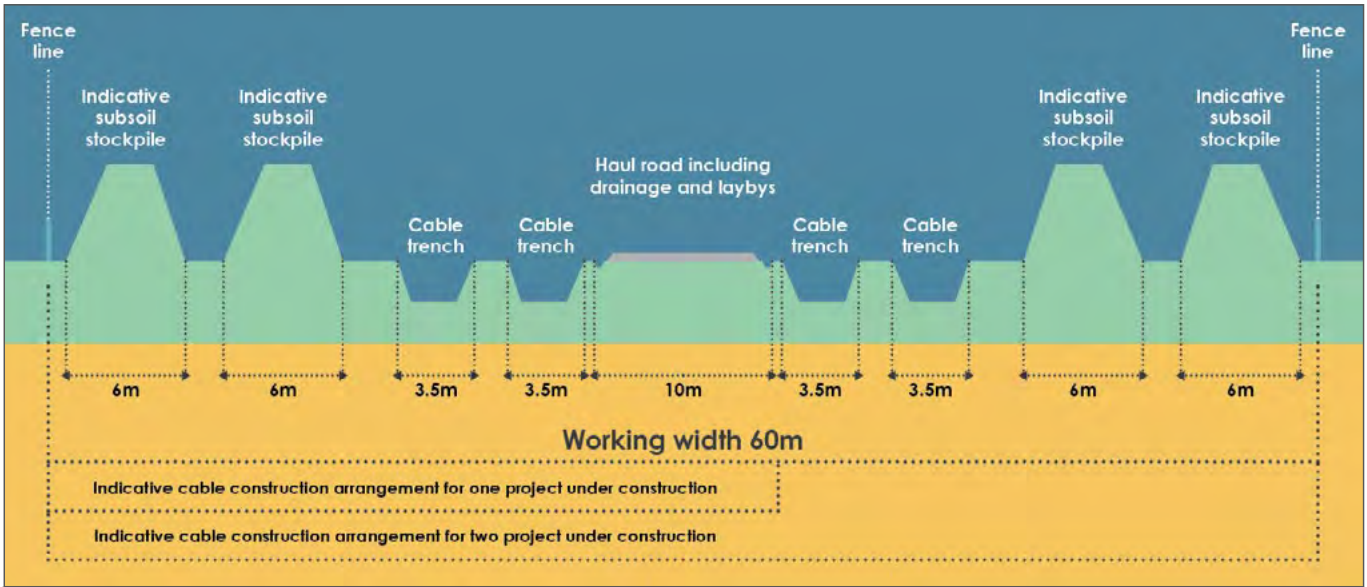
engineering assessments, avoiding residential properties, feedback to our consultations and coordination efforts with the adjacent North Falls project.

The combined construction corridor for both Five Estuaries and North Falls is now proposed to be predominantly 90m wide rather than 200-250m. Each of the onshore circuits required to connect the wind farm are made up of three power cables, each laid within a plastic duct. Two approaches will be used to lay the ducts; open cut trenching and trenchless techniques such as horizontal directional drilling. For open trenching, a smaller width would be required, of around 60m (previously 120m) for both projects, or around 40m for Five Estuaries alone (previously 60m). The corridor width increases in key areas where significant trenchless crossings are proposed, allowing for different installation options and routeing around potential obstacles or sensitive features.

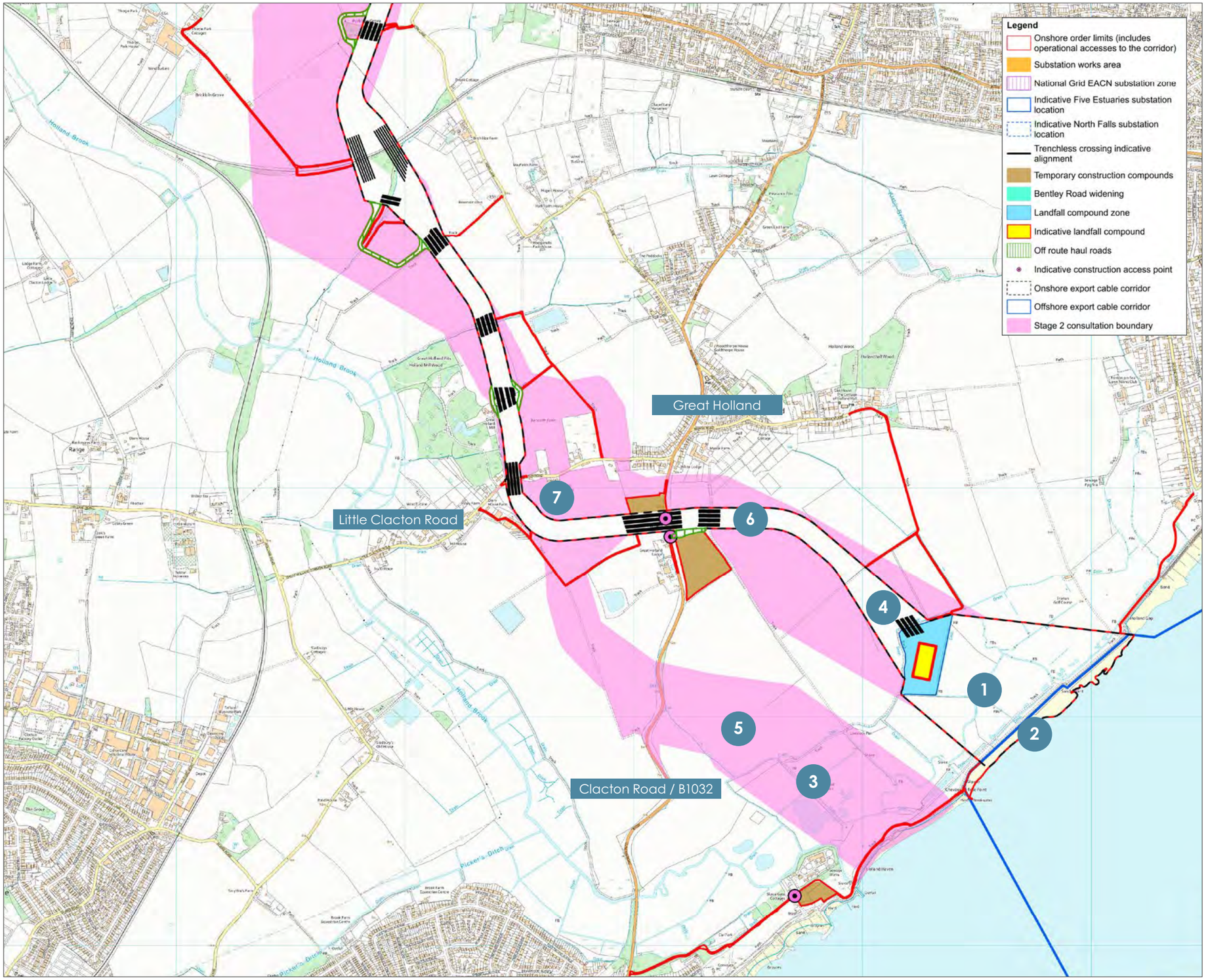
Joint pits are installed at regular intervals along the cable route to pull the cables through after the ducts have been laid. This allows for quicker reinstatement of the land and access for maintenance with minimal disruption.

Our proposals have been refined since the publication of the Project's Preliminary Environmental Information Report. These changes include:

- A number of additional off route haul roads are identified where works access will be required. These generally allow routing of vehicles through existing gaps in the hedgerows or over existing watercourse crossings, which are nearby but not exactly on the cable route.
- Access points and associated visibility splays (where we will reduce the height/depth of vegetation to ensure that construction vehicles leaving a site have safe visibility before joining the road) have been revised following discussion with the relevant highway authority and more detailed designs, including safety audits. These seek to minimise the impact to trees and hedgerows along the road verges.
- Operational access routes following existing farm tracks have been added to will enable periodic access to cables for testing during the operation of the wind farm.

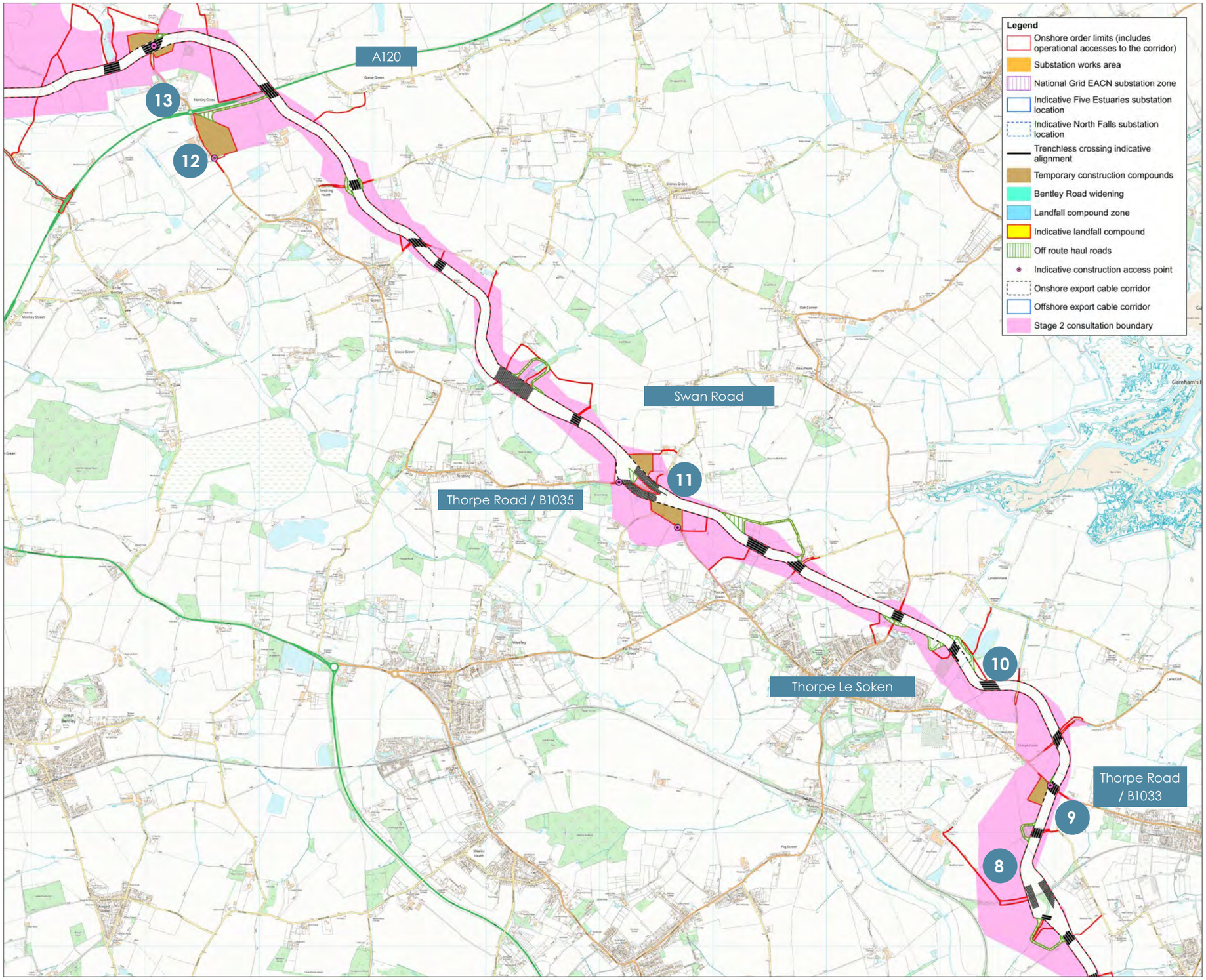


Indicative cross section through a combined onshore cable corridor



Landfall and cable corridor

1. Landfall is the area where the offshore export cables come ashore. The landfall location chosen at Sandy Point between Holland-on-Sea and Frinton-on-Sea on the Essex coast has allowed for an opportunity to more closely coordinate with North Falls as well as increasing distance to bird habitats. It has also increased the distance to the closest sensitive noise receptor.
2. At the landfall, a trenchless technique such as horizontal directional drilling will be used to install ducts so that the offshore cabling can be pulled under the sea wall to transition joint bays where they are connected to the onshore cables. These bays would be inland and below the ground to the northwest of Frinton Golf Course, avoiding the beach and Frinton Golf Course.
3. Removal of the south/western landfall option under Holland Haven.
4. The north/eastern landfall leg has been refined to identify a specific land parcel for the landfall construction compound and location of the transition joint bay (to connect the onshore and offshore cables).
5. Temporary construction compounds associated with the south/western landfall option have been removed.
6. The corridor has moved further away from residential properties on Clacton Road, where an additional smaller temporary construction compound within the old corridor to the west of Clacton Road has been added.
7. At the crossing of Little Clacton Road, a single corridor is now proposed rather than three. This is adjacent to Mill Lane and the Great Holland Pits Local Nature Reserve. This significantly reduces land take in this area.



Cable corridor

8. The route follows the eastern side of the original PEIR corridor crossing under the East Coast Mainline spur railway and a wooded area using a trenchless technique. The area included in the boundary here is greatly reduced compared to the original PEIR boundary, from approximately 700m to 250m.
9. At the crossing of Thorpe Road the corridor and temporary construction compound has moved further east away from residential properties on the junction with Thorpe Park Lane / Frinton Road, where an additional smaller temporary construction compound next to Sneating Hall Lane has been removed.
10. To ensure the route remains within tolerance at bends and to avoid constraints on the route, the new alignment extends slightly outside of the original PEIR boundary to the north as it crosses Damants Farm Lane.
11. At the crossing of Tendring Road / Thorpe Road / Swan Road junction, the route has been refined removing land parcels to the west of Tendring Road. The route now splits either side of properties on Thorpe Road. The Project has committed to using trenchless techniques in this area to cross the roads and at sensitive ecological features identified here. The locations of temporary construction compounds have been refined to move them away from sensitive ecological features, such as Simon's Wood.
12. The location of the proposed temporary construction compound to the south of the A120 has been reduced in size and kept to the eastern portion of the land parcel, to move it further away from a nearby residential property.
13. Where the route crosses Clacton Road north of the A120, the project has focussed on the centre of the PEIR boundary, maximising the distance from the residential properties. The number and size of the temporary construction compounds here have been reduced.

Cable corridor and substation

14. Substation Search Area East has been removed from the revised project boundary and the area is now crossed by the export cable corridor route only.

15. Widening Bentley Road from the A120 to the export cable corridor route crossing, along with improvements to the A120 junction have been identified and included in the revised project boundary.

16. At the crossing of Bentley Road, the temporary construction compounds have been reduced in size and moved within the original PEIR export cable corridor boundary, taking them further away from residential properties.

17. A portion of the export cable corridor route from Bentley Road to Ardleigh Road will be used to construct a temporary substation construction access road, with the southern temporary construction compound at Bentley Road used for marshalling construction traffic. This could be shared with other projects.

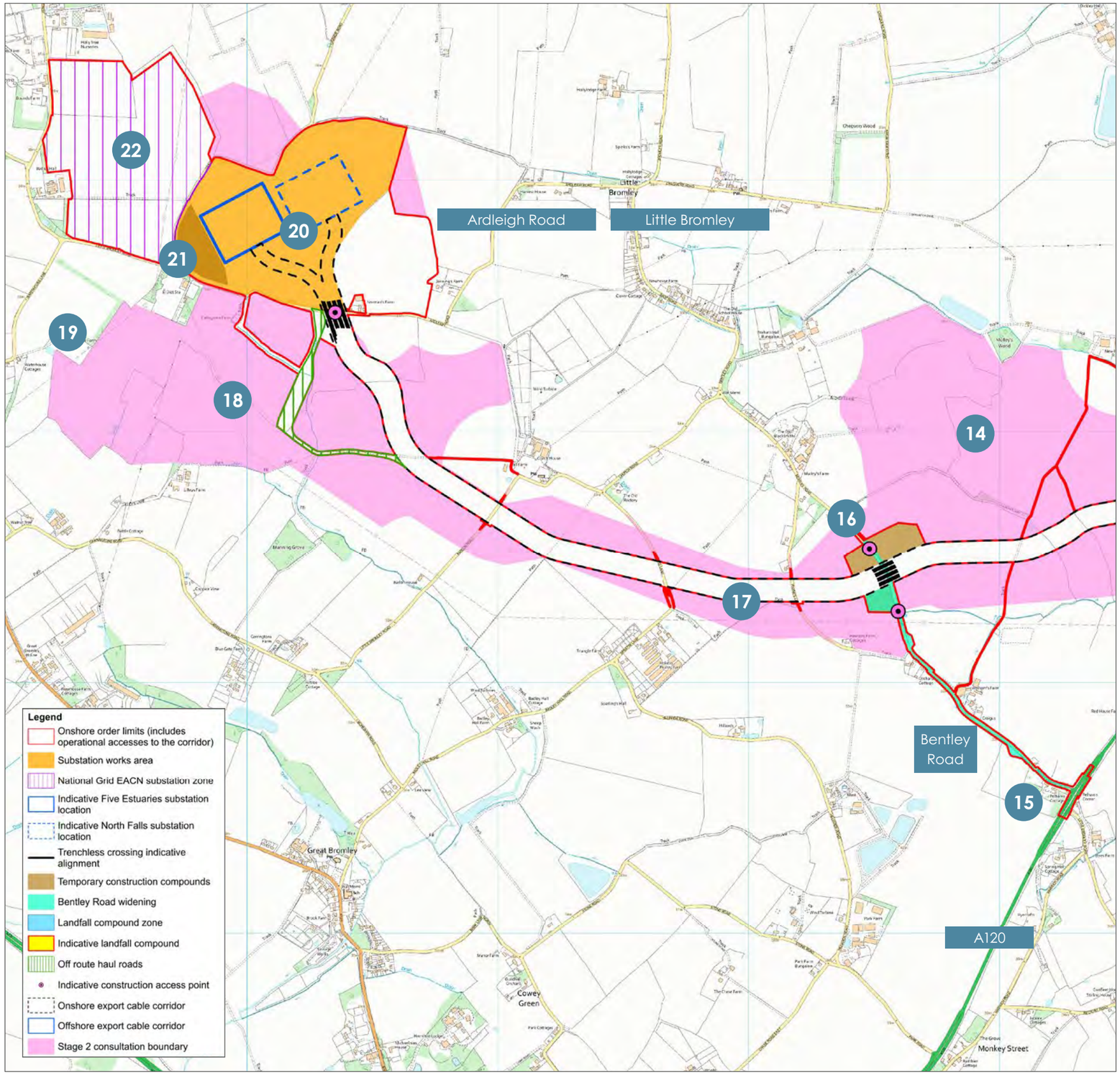
18. The land parcels to the south of Ardleigh Road have been reduced to the width of the export cable corridor route only. This means there will be a lower overall land take than if all three individual projects' substations were located in different areas. It allows for coordinating designs, potentially sharing temporary and permanent access roads, and coordinating landscape mitigation principles to reduce impacts.

19. Access route to the substation zone via Harwich Road / B1027 and Waterhouse Lane as main construction accesses have been removed. Main construction access will be via Bentley Road and then via a haul road within the cable corridor.

20. Identification of the specific substation location within the northern half of the original Substation Search Area West. This means that the Project's substation would be co-located on the same site as the North Falls substation, adjacent to the location of the proposed National Grid East Anglia Connection Node substation zone.

21. The area to the north of Ardleigh Road has largely been retained to allow for construction compounds and mitigation measures, including new drainage and planting.

22. National Grid has provided a revised East Anglia Connection Node substation zone, which sits between Grange Road and Hungerdown Lane. This allows for the removal of the rest of their search area included within the original PEIR boundary, which extended around the existing substation.



Connecting to the National Grid

In 2020, National Grid Electrical Transmission provided us a grid connection point at the proposed East Anglia Connection Node substation, near Lawford, Essex. as part of the National Grid wider high voltage network reinforcement between Norwich, Bramford and Tilbury.

Our substation location neighbours the proposed National Grid substation and underground cables would be used to connect the two.

Onshore substation

In order to connect to the national electricity transmission network, the electricity exported from the wind farm needs to be 'stepped up' to increase the voltage. We confirmed our preferred substation location following our Stage 2 Consultation as being to the west of Little Bromley, north of Ardleigh Road, next to the proposed National Grid substation. Further work since then has allowed us to determine the location of the substation within the search area, considering mitigation and a co-located arrangement with North Falls. The substation area includes:

- **Onshore substation construction zone**: the area in which the final substation Temporary Construction Compound will be located.
- **Substation access zone**: the area which will contain the access route(s) (both construction and operational) north of Ardleigh Road.
- **Substation access route**: the route includes permanent road improvements to the A120/Bentley Road junction and widening to the Bentley Road highway, along with a new temporary haul road running within the cable corridor for substation construction traffic from Bentley Road to Ardleigh Road.

The substation will contain a number of elements including switchgear, busbars, transformers, capacitors, reactors, reactive power compensation equipment, grid stability equipment, filters, cooling equipment, control and welfare buildings, lightning protection rods and internal road access. A security fence will surround the substation compound.

How our plans have evolved through consultation

Selecting the substation location

From the two search areas presented during consultation, our western search area (SSA West) was selected as the preferred location for our substation. With the search area being adjacent to the location selected for the proposed substation for the National Grid Norwich to Tilbury reinforcement and overlapping with the North Falls Offshore Wind Farm search area this has allowed us to keep impacts to a single area when considering cumulative development effects and have a lower overall land take when compared to locating the substations in different search areas.

It also allows for co-ordination of design, which includes the potential for shared temporary and permanent access roads, co-ordinated design and landscape mitigation principles to support reducing impact on the surrounding area.

The substation will use either Air-Insulated Switchgear (AIS) or Gas-Insulated Switchgear (GIS) technology. The choice of switchgear affects both the total land area required and the size and type of buildings which will be needed. The largest structure will be the substation building, with a maximum height of 15m above existing ground level (assuming a GIS design). All other equipment (e.g., transformers, switchgear) is designed not to exceed a height of 15m above existing ground level with the exception of slender lightning masts which would be up to 18m in height.

The total land requirement for the substation (assuming AIS layout) to the perimeter fence is 58,800m^2, as well as additional land required for the construction compounds, roads, drainage and cut/fill. The choice of AIS or GIS will be part of the detailed design process and a decision will be made post-consent prior to construction commencing.



Indicative view of an AIS Substation



Indicative view of an GIS Substation

The drainage design will consist of swales and / or attenuation ponds. Filter drains will collect runoff from the internal access roads within the substation site and convey runoff to swales and / or attenuation ponds. Outfall locations are proposed to the existing drainage ditches located in the vicinity of Ardleigh Road.

An indicative mitigation planting plan has been prepared which shows landscape and ecological mitigation, compensations and/or enhancement planting in the mitigation zone around the substation. This incorporates woodland, hedgerow and grassland planting, and drainage, all of which contributes to the Project's commitment to deliver biodiversity net gain.

Construction

Should the Project receive development consent, construction is expected to commence in 2027 and take three years to build, being operational by 2030. A key part of our development process is designing a construction plan that limits impact to the environment and communities. Our application includes several measures to address this while delivering the project in budget and on time.

Building the offshore infrastructure

Working offshore is a challenging environment but RWE is experienced at delivering similar projects in the UK and across the world. Health and safety is at the heart of our approach. Before construction starts, we will carry out detailed geotechnical and unexploded ordnance surveys. The installation of wind turbines, offshore substations and export cables are highly complex construction activities. Large components for the wind farm are typically shipped from where they're manufactured to a staging port, before then being taken to site, rather than using the road network. We have not yet chosen a location to base our offshore construction activities from.

Building the wind farm and laying the export cables will have a temporary impact on commercial fisheries and shipping. We will develop a Fisheries Liaison and Coexistence Working Plan, and work closely with operators potentially affected, as we have done throughout the development process.

Building the onshore infrastructure

Construction of the onshore cable corridor and substation is expected to take between 18 and 27 months. The onshore cable construction corridor is predominantly 90m wide for both Five Estuaries and North Falls, allowing for flexibility so different installation options can be considered at obstacles and to determine a final alignment. Several components are involved in installing the underground cables and to build the substation as follows:

Trenchless installation techniques

Horizontal directional drilling (HDD) is a trenchless technique that is used where there are constraints that would make it impractical to carry out trenching such as crossing under railways, roads or certain areas of environmental sensitivity.

A HDD rig is used to bore a hole through which the duct is then placed. Construction compounds at either end of the HDD sections are required to manage equipment and spoil. These compounds would be approximately 100m by 50m for both projects (50m by 50m for Five Estuaries alone). The corridor for HDD is normally wider than for trenching, because of electrical and engineering requirements.

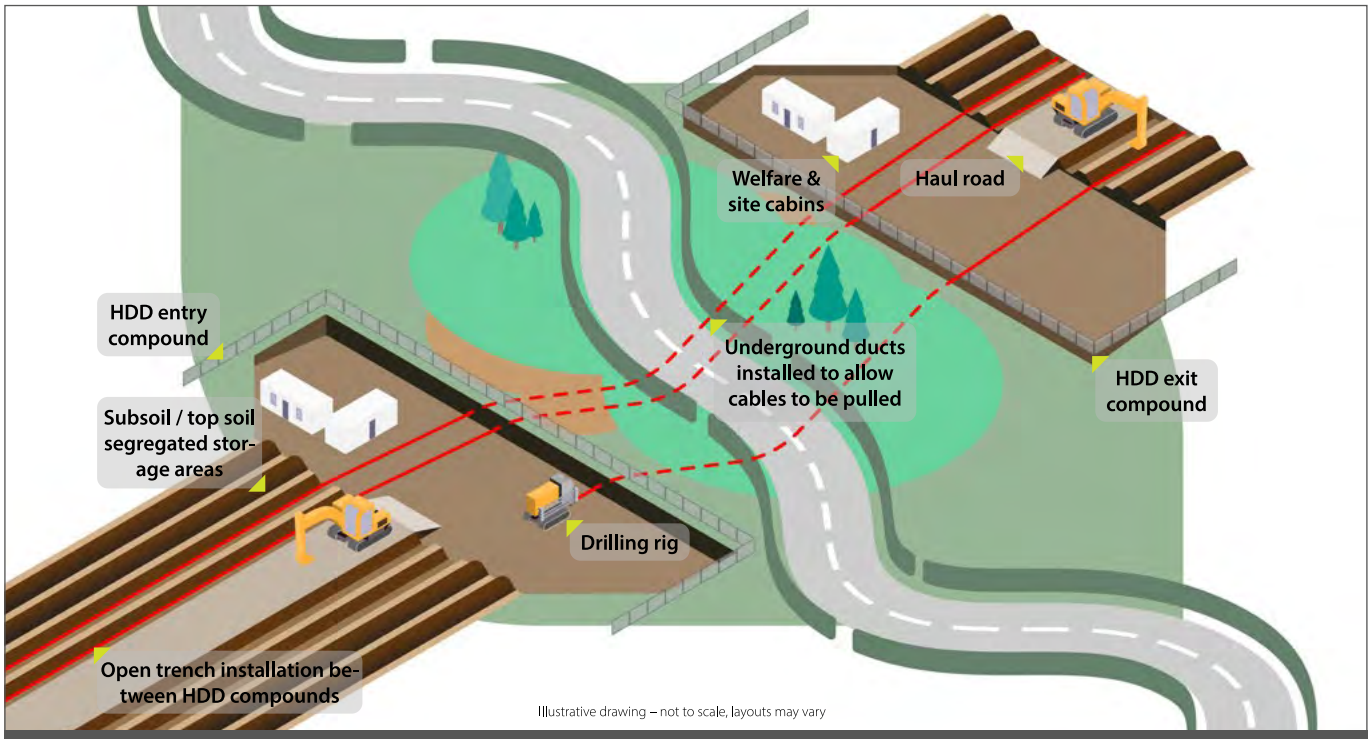


Illustration of typical horizontal directional drilling for onshore cable corridor

Trenching

Where the land is suitable, open cut trenching will be used to lay ducts for the cables. This is our construction method for the majority of the route and involves removing topsoil, excavating a trench for each circuit, laying the ducts, backfilling, and then drainage and land restoration. Each excavation (one for each circuit) is likely to be around 3.5m wide and up to 2m deep.



Open cut cable trench excavation

25

Construction compounds

Temporary construction compounds are needed along the corridor route and the majority of these compounds will be relatively small and only used for parking and welfare facilities for staff, set down areas for materials, and access points to haul roads. Larger HDD compounds will be needed to accommodate equipment and adequate room for drilling. They would not include overnight accommodation for workers.

Constructing the substation

The main construction works are anticipated to take place over an approximately 24-month period. Preliminary / enabling works, such as initial site clearance or the improvement works to Bentley Road, may extend this period. The soil will be stripped and graded as required with material being reused on site where possible. Excavations and laying of foundations, trenches and drainage will commence after grading is complete.

Upon completion of the enabling works and installation of drainage and foundations, the substation platform will be finalised with a layer of stone combined with concrete foundations for specific areas. Specialist electrical equipment will be delivered to site, installed and commissioned. Due to the size and weight of the transformers' tanks, these deliveries will be classed as Abnormal Indivisible Loads (AILs). Such loads may require specialist delivery methods to be employed and, when on site, offloaded and skidded into position with the use of a mobile gantry crane.

Temporary perimeter fencing will enclose the substation for the duration of the construction period, and then during operation a permanent, typically 2.4m high fence will be installed once construction works are complete.

Public Rights of Way

Throughout the construction we do not intend to close any public rights of way, however they may need to be crossed by construction traffic at times. An Outline Public Access Management Plan has been prepared to describe how we will maintain access to public rights of way.

Land restoration

The majority of the onshore cable route will pass through arable farmland. Engagement with individual landowners is ongoing, and we understand the importance of land restoration to ensure that farming activities can restart, land drainage is reinstated appropriately, and soil quality is maintained. RWE has a lot of experience restoring land on similar projects. While Five Estuaries would retain a permanent right to access the cable route if needed, this is unlikely to interfere with farming activities.

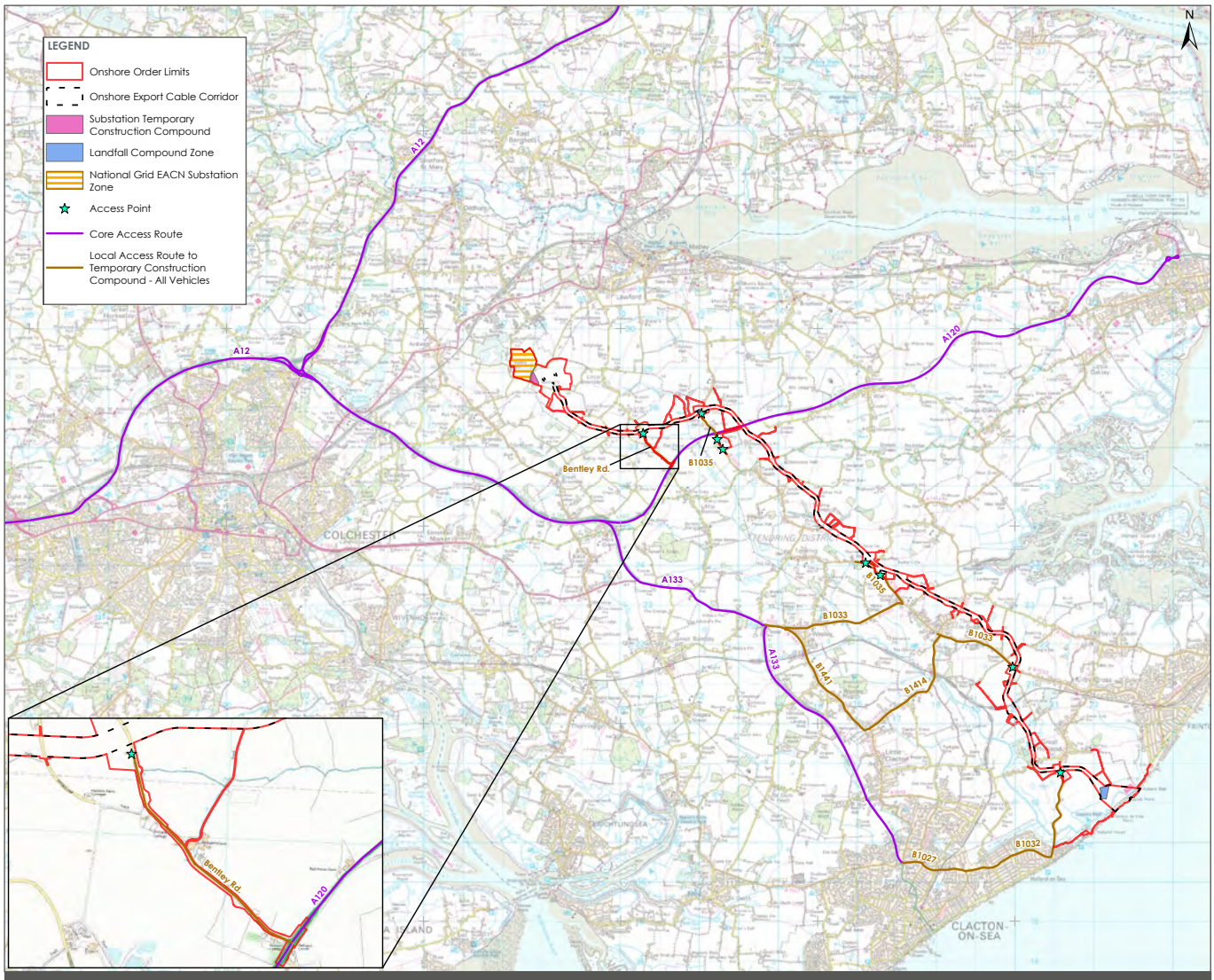
Traffic and transport

Construction will generate additional traffic in the area. To minimise the number of heavy goods vehicles using local roads, the Project is proposing to build temporary haul roads along the cable route corridor to access points along the route not otherwise reachable from main roads and keep construction traffic off public highways.

Designated access routes have been defined within our plans which construction traffic will have to utilise when traveling to and from the construction corridor. These routes have been selected due to their suitability to handle the additional volumes of traffic being proposed.

Embedded mitigations were identified and adopted as part of the evolution of the Project, these include project design measures, compliance with elements of good practice and use of standard protocols as follows:

- Development of Project specific Outline Construction Traffic Management Plan, Outline Workforce Travel Plan and Outline Public Access Management Plan, all of which set out the key principles and types of measures to be implemented during construction of the Project;
- No road would be fully closed for cable installation under the public highway (other than roads where the width of the carriageway is unlikely to permit one lane to be kept open). Horizontal Directional Drilling (or another trenchless technique or other trenchless crossing technique) will be utilised for the installation of the export cable under most roads; and
- Temporary haul roads length would be maximised at construction sites, to remove as much HGV traffic from the local highway network as possible.



HGV construction access routes

Construction management

A number of management plans such as a Code of Construction Practice and Ecology and Landscape Management Plan will be put in place to limit the disturbance and manage the onshore construction works. Contractors undertaking work on behalf of Five Estuaries will need to follow strict measures and controls to manage the potential environmental impacts of construction such as dust, noise and lighting.

The Code of Construction Practice will include specific measures and details of monitoring regimes to ensure that we comply with a wide range of industry best practices. These requirements and standards will be applied throughout the construction period. The Project will also have archaeologists and ecologists supporting during construction where necessary. This is to help to ensure the works are managed in a sensitive way and protect the local environment.

Coordinating construction with North Falls

The onshore elements of the Project have been designed in co-ordination with North Falls. The onshore cable routes of the two projects will run adjacent and the substations have been co-located in the same location to the west of Little Bromley. This approach allows for opportunities to minimise environmental and community disruption through co-ordinated delivery.

Three construction scenarios are being considered further:

- **Scenario 1**: Five Estuaries proceeds to construction and undertakes the additional onshore cable trenching and ducting works for North Falls as part of a single civils works (ducting for four electrical circuits). Five Estuaries would undertake the cable installation and substation build for its project only (two electrical circuits). The two projects would share accesses from the public highway for cable installation and substation construction. The projects would utilise and share the same temporary compound areas for the cable installation works. In scenario 1 either project could advance to construction first and undertake construction work on behalf of the second project.
- **Scenario 2**: Both Five Estuaries and North Falls projects proceed to construction on different but overlapping timescales (between 1 and 3 years apart), with civil works undertaken independently but opportunities for reuse of enabling infrastructure e.g. haul roads / site accesses etc. with the other project reinstating.
- **Scenario 3**: North Falls does not proceed to construction; or both Five Estuaries and North Falls projects proceed to construction on significantly different programmes (over 3 years apart). In the latter case the significantly different programmes would mean that haul roads and TCC's are reinstated prior to the second project proceeding. In such case cumulative impacts are for a potential construction period of 6 years+. No reduction in overall impacts for the schemes from sharing of infrastructure.

Five Estuaries will continue to work with North Falls to look at opportunities for coordination during construction to minimise the overall impact of the two projects.

Exploring options for an offshore connection

Offshore Transmission Network Review

Five Estuaries is currently engaged in the government-led Offshore Transmission Network Review, which is looking into ways that the offshore network is designed and delivered, consistent with the ambition to deliver net zero emissions by 2050. Both the Government's recent Energy Security Strategy and Net Zero goals show the importance of bringing 50GW of new offshore renewable generation online by 2030.

Five Estuaries is also considering alternative consenting options appropriate to any potential proposals that may come forward and making use of existing materials prepared for the DCO application as far as possible, provided there is greater certainty on the commercial, regulatory and technical environment. The viability of any coordinated connection is dependent on the progress made by the Offshore Transmission Network Review process and associated regulatory and commercial policy changes and the individual offshore connector projects involved.

It is important to recognise the risk of delaying projects that the UK Government is counting on to deliver their 2030 ambitions for offshore wind deployment. Alongside considering opportunities for offshore connection, we will continue to develop coordinated plans on the basis of existing regulations to provide an onshore connection, ensuring no delay to our planned grid connection date and therefore continuing to support the UK Government's 2030 targets.

You can read more about the Review here:
www.gov.uk/government/groups/offshore-transmission-network-review



Offshore substation at Rampion Wind Farm



Export cable spool for Galloper Offshore Wind Farm during installation

Offshore Coordination Support Scheme

National Grid Electricity Transmission (Sea Link), North Falls (Offshore Wind Farm) and Five Estuaries (Offshore Wind Farm) have been working together to explore the potential for offshore coordination as part of the Offshore Transmission Network Review (OTNR) "Early Opportunities" workstream.

In early December 2023, the projects acting together in a consortium led by North Falls, welcomed the decision from the Department of Energy Security and Net Zero (DESNZ) to provide grant funding through the Offshore Coordination Support Scheme ("OCSS"). The aim of the scheme is to develop and explore the feasibility of coordinated options for offshore transmission infrastructure.

The consortium applied for OCSS grant funding in February 2023. Following the grant announcement, the consortium will now undertake a series of studies and assessments to determine the feasibility, challenges and solutions to enable a co-ordinated offshore connection. This work will consider the economics, engineering & regulatory challenges, logistics and programme delivery aspects. The first step will be a high-level feasibility study which is expected to be completed before the end of March 2024.

All three participating projects are delighted to have been awarded the grant funding. This support enables the projects to consider an alternative coordinated connection whilst, in parallel, continuing to progress existing radial proposals to ensure no delay in building the much-needed infrastructure to support the UK's net zero targets (should the offshore coordination be determined as not deliverable). As beneficiaries of the grant, we will be required to share key learnings on how a coordinated offshore transmission approach could work.

The consortium strongly supports the Government's ambition to make the UK the world leader in offshore wind. The delivery of the UK Government's ambition of 50GW of offshore wind by 2030 will create green skilled jobs, strengthen UK security of supply, provide clean renewable power to fight climate change and help to reduce energy bills for British consumers.

Project benefits

Jobs and skills

In addition to generating renewable energy, Five Estuaries will create jobs directly and indirectly throughout the supply chain. Jobs are created during the entire life cycle of an offshore wind farm, from its development and design, through to construction and longer-term operation and maintenance.

RWE recognises the importance of a future skilled workforce to support the growth of offshore wind. As part of our activities in the region, we intend to work with local education institutions to help students at all levels learn about the opportunities that Five Estuaries would create and the wider offshore energy industry. We are still developing our programme, but potential opportunities include:

- Supporting growth and employment in local supply chain companies;
- Helping local SMEs to be visible to the employment market;
- Promoting training and employment opportunities to the local community;
- Engaging with local education institutions to educate on career opportunities; and
- Supporting career transition from other sectors.

RWE also champions skills development at its UK-wide training hub through a valuable partnership with Llandrillo College in North Wales. To date, over 40 wind turbine apprentices have been trained at the College. Some of these apprentices are working at the Galloper Operations and Maintenance base located in Harwich. Five Estuaries is committed to developing an Employment, Skills and Education Strategy, which would seek to identify and secure a greater contingent of local workforce, increasing skills locally.



Galloper Operations and Maintenance base

Galloper Offshore Wind Farm

Five Estuaries' sister project, Galloper Offshore Wind Farm (operational since 2017), supported over 700 jobs during construction. Since becoming operational, 60 long-term skilled jobs are linked directly to the wind farm.

The Galloper team works closely with local authorities, not-for-profit organisations, education and industry groups to deliver education and skills activities along the East coast. This includes shadowing days at Galloper Operations and Maintenance base, holding mock interviews for students at Clacton High School, and engagement with the East Coast Energy Internship Scheme and many Science, Technology, Engineering and Mathematics (STEM) events.

The wind farm also has four STEM ambassadors who work closely with local schools and supports five apprentices all who all live locally.

The long-term operations and maintenance of the wind farm is bringing significant employment and investment benefits to Tendring, the wider Essex area and along the East coast as well as elsewhere in the UK and we expect Five Estuaries to do the same.

Local supply chain benefits

The UK supply chain has an integral role to play in shaping the future of the offshore wind industry here and abroad. We know our UK offshore wind farms can act as a catalyst for the UK supply chain.

Five Estuaries is keen to use local suppliers and understand the products and services local businesses can provide to the Project. The £1.5 billion Galloper Offshore Wind Farm worked with over 20 local companies during construction. As the Five Estuaries project progresses we'll engage with local suppliers through a range of activities such as Meet the Buyer events, and setting up a supplier directory to identify local partnership opportunities.



Galloper Wind Farm apprentices

Community benefits

RWE has a long history of supporting the communities in which it operates. As the Five Estuaries project progresses, we will work with communities to develop our approach to supporting the local area. At this stage, the details of any community benefit package associated with Five Estuaries have not been finalised. We plan to engage local people and groups to help shape how the Project can best support the community.

As an example, Galloper Offshore Wind Farm provides three community fund packages to the local community including £187,000 over 17 years through the Galloper Wind Farm Fund to contribute to the appearance, setting, conservation, amenity, accessibility and enjoyment of the Suffolk Coast & Heaths Area of Outstanding Natural Beauty. The Galloper Sponsorship Fund has given away approximately £60,000 to date to local community projects and organisations, and a fund managed by Essex Community Foundation which has awarded 29 grants since 2018, totalling over £54,000, which promote charitable, community, educational or environmental initiatives.



Little Oakley Football Club sponsored by Galloper Offshore Wind Farm

Next steps

We thank everyone that has engaged with the Project over the last three years throughout the pre-application development process, through attending our events or providing feedback. Continuing the positive relationships we have built with the local community is important to us.

We intend to submit our Development Consent Order application in March 2024. Throughout the application submission and examination period we will continue to provide updates via our website and email updates.

If you would like to register to receive these updates, you can do so at **fiveestuaries.co.uk/contact**.

Applications for development consent are examined by a government organisation called the Planning Inspectorate. Following Examination of our proposal, the Planning Inspectorate will make a recommendation to the Secretary of State for Energy Security and Net Zero, who will make the final decision. The six steps of the DCO process are:

- **Application submission**: We anticipate submitting our Development Consent Order application in March 2024.
- **Acceptance**: After the application is submitted, the Planning Inspectorate has 28 days to decide whether it meets the standards required to be accepted for Examination.
- **Pre-examination**: During this stage you can register as an Interested Party by making a Relevant Representation, which is a written summary of your views. Inspectors are selected, who then hold preliminary meetings and set out the timetable for Examination.
- **Examination**: The Planning Inspectorate has a six month period to carry out the Examination. This is mostly a written process, and those who have registered as Interested Parties will be invited to provide further information in writing. There will also be open floor hearings, which the public can register to speak at.
- **Decision**: The Planning Inspectorate has three months to prepare a report, which includes a recommendation. The relevant Secretary of State for the Project then has a further three months to issue a decision.
- **Post-decision**: After a decision has been issued by the Secretary of State, there is a six week period in which the decision can be challenged through a process called Judicial Review.

Five Estuaries project partners

The Project is being proposed by Five Estuaries Offshore Wind Farm Limited. The Five Estuaries Project partners are RWE (25%), a Macquarie-led consortium (25%), Siemens' financing arm, Siemens Financial Services (25%), ESB (12.5%) and Sumitomo Corporation (12.5%). RWE is leading the development of the Project on behalf of the project partners.

You can contact the Project team at any time using the details below:
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