NORTH FALLS

Offshore Wind Farm

OUR CONSULTATION

Monday 17 October to Friday 9 December 2022

WELCOME TO OUR CONSULTATION

North Falls Offshore Wind Farm, an extension project to the existing 504 MW Greater Gabbard Offshore Wind Farm, is being developed in the southern North Sea more than 20km off the UK coast. Its site is in two parts which together cover a total area of 150km². North Falls is being developed by North Falls Offshore Wind Farm Limited, a 50/50 joint venture company owned by SSE Renewables and RWE. This is the second public consultation about the project. It is open from Monday 17 October until Friday 9 December, 2022.

The initial October 2021 consultation to introduce North Falls and invite comments on how we intended to progress the project was online only. However, this is a hybrid consultation featuring both online and face-to-face opportunities to find out how the project proposals have progressed over the past 12 months and provide feedback.

There will be another consultation and further opportunities to engage with us in 2023 prior to submission of our application. Through this consultation we hope to give stakeholders the opportunity to provide their opinions and thoughts on the plans as they stand.

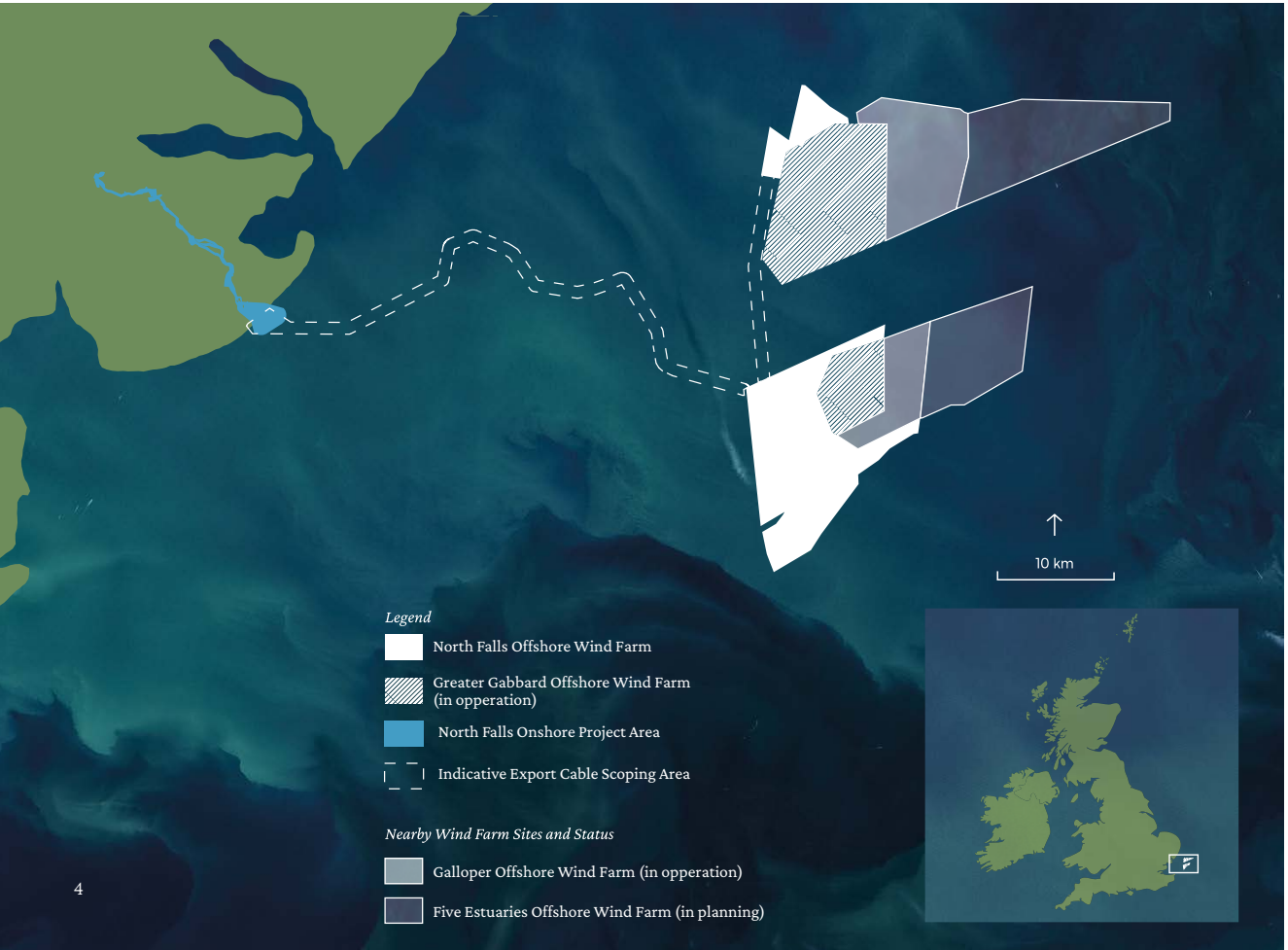
Our team is on hand to answer any questions you might have about our proposals and we encourage you to use the feedback form provided to have your say. You can also visit our website, attend one of our webinars or contact us directly via the website, freephone, email or post.

Dates and times of consultation events:

Date	Time	Venue
Thursday 3 November 2022	4pm to 8pm	McGrigor Hall, 85 Fourth Ave, Frinton-on-Sea, CO13 9EB
Friday 4 November 2022	4pm to 8pm	Great Bromley Village Hall, Parsons Hill, Great Bromley, Colchester, CO7 7JA
Saturday 5 November 2022	11am to 3pm	Tendring Village Hall , Tendring, Clacton-on-Sea, CO16 0BG
Friday 11 November 2022	4pm to 8pm	Thorpe Le Soken Women's Institute Hall, High Street, Thorpe Le Soken, CO16 0EF
Saturday 12 November 2022	11am to 3pm	Ardleigh Village Hall, Station Road, Ardleigh, Essex, CO7 7RS

THE STORY SO FAR

Together SSE Renewables and RWE have been active in the East Anglia region since the organisations developed the Greater Gabbard Offshore Wind Farm, located 25km off the coast of Suffolk in the North Sea. The 504 megawatt (MW) project started construction in 2008 and at the time was the world's largest offshore wind farm. It has 140 wind turbines and was commissioned in September 2012. North Falls is an extension project to Greater Gabbard.



Extensions timeline

In February 2017, The Crown Estate, manager of the seabed, launched a process for wind farm operators to apply for extensions to their existing projects. This opportunity closed in May 2018, with eight project applications received.

A plan-level habitats regulations assessment (HRA), was undertaken to assess the possible impact of the proposed wind farm extensions on relevant nature conservation sites of European importance.

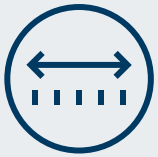
Expert independent advisors were utilised and there were consultations with the statutory marine planning authorities, the statutory nature conservation bodies and a number of non-governmental stakeholders.

In August 2019, The Crown Estate announced the conclusion of the HRA, confirming that seven out of eight of the extension application projects put forward in 2017, representing a total generating capacity of 2.85GW, would progress to the award of development rights, including what is now called North Falls Offshore Wind Farm.

The Agreement for Lease between North Falls Offshore Wind Farm and The Crown Estate was signed in Autumn 2020 and the project is now in development with the aim of submitting its application in 2023 and achieving a development consent order (DCO) in 2025.

Construction would then take place in the latter part of the decade with a view to the project being operational by 2030, aligned to the UK Government's net zero targets.

PROJECT FACTS AND FIGURES



20 KM
DISTANCE TO SHORE (CLOSEST)

Located 20km off the UK coast in the southern North Sea, covering area of 150km^2 across two sites

UP TO 72
TURBINES

Potentially it will comprise up to 72 turbines, depending on the size of turbine selected

50GW
OF OFFSHORE WIND BY 2030

Contributing to the UK government's ambitions of 50GW of offshore wind by 2030 (current figure is around 10.5GW)

ONSHORE GRID LOCATION

Assuming a radial connection, the onshore grid location is likely to be on the Tendring Peninsula in North Essex

22 KM
UNDERGROUND CABLE

Approximately 22km underground onshore cable to transport the power from landfall to the new substation

IN 2023

The development consent order application and supporting environmental assessment and other documents is currently scheduled for submission in mid-2023

£1.5
BILLION

Likely investment in UK electricity infrastructure of more than £1.5 billion

POWER MORE THAN 400K
UK HOMES

Potential to supply more than 400,000 UK homes with their annual electricity needs using clean renewable power

50/50

North Falls is being developed by a joint venture company owned equally by SSE Renewables and RWE

sse Renewables | RWE

High Level Timeline

Date	Action
Summer 2019	The Crown Estate concludes its Habitats Regulations Assessment. Seven projects totalling 2.85GW of new capacity to be awarded agreements for lease.
Autumn 2020	Shareholder agreement signed between the two owners, SSE Renewables and RWE. Agreement for Lease signed with The Crown Estate. Early contracts awarded and start of detailed surveys to inform the Environmental Impact Assessment and Habitats Regulations Assessment.
2020 to 2023	Onshore and offshore surveys and studies, project planning and design, stakeholder consultation and community engagement undertaken, along with an Environmental Assessment and Project Level Habitats Regulations Assessment.
Spring 2023	Environmental Impact Assessment completed. Project Level Habitats Regulations Assessment completed.
2023	Development Consent Order and supporting Environmental Information submitted to the Planning Inspectorate.
2024/25	Planning Inspectorate makes recommendation to the Secretary of State. Secretary of State announces consent decision.
2025	Project design finalised, major component and construction contracts awarded and wind farm constructed.
2030	Wind farm expected to be operational by the end of the decade.

RATIONALE FOR THE PROJECT

Offshore wind in the UK

In the past 10 years the capacity of the UK's offshore wind farms has increased from only one gigawatt (GW) in 2010 to almost 10.5GW in early-2022. The costs per megawatt hour of offshore wind have been driven down by almost two-thirds, the sector directly employs more than 26,000 people, and it supplies on average around 15% of the nation's electricity. In short, the offshore wind sector has become one of Britain's most laudable industrial success stories.

However, it is still a sector in its relative youth, with plenty of potential for further growth in the UK and for export internationally. In its Energy Security Strategy, the Government announced its the ambition for the UK to install 50GW by 2030. This ambition goes even further than the Sector Deal, agreed in 2019 between the offshore wind sector and the UK Government, which aimed for 30GW of installed capacity by 2030.

The UK Government's new vision is for offshore wind to power every home in the UK by 2030 and the plan has emerged as a central plank of Britain's green recovery after the coronavirus pandemic and given the current energy crisis and situation in Ukraine. The aim is to ensure the nation "builds back better" as it works towards its 2050 climate goals including legislated decarbonisation targets.

While the green agenda needs to clear multiple hurdles to deliver on the promise of billions in investment and much-needed green jobs, projects like North Falls will play an essential role in reaching the targets. We intend to work closely with all our stakeholders, Government, local communities and the supply chain to ensure we make a positive contribution to the nation's net zero ambitions, energy security and economic prosperity.

Climate Change

Scientists continue to see changes in the Earth's climate in every region and across the whole climate system, including continued rise in sea levels and dramatic climate events. The August 2021 Intergovernmental Panel on Climate Change (IPCC) Report, said that many of the changes are unprecedented in thousands, if not hundreds of thousands of years and that the role of human influence on the climate system is undisputed.

However, strong and sustained reductions in emissions of carbon dioxide (CO_2) and other greenhouse gases would limit climate change. Some benefits - such as for air quality - would come quickly, while it could take 20 to 30 years to see global temperatures stabilise.

Offshore wind farms generate clean, green electricity that powers millions of homes and businesses without burning fossil fuels. They have a vital role to play in the fight against climate change. While reducing greenhouse gases is at the core, the onus is also on developers to ensure new offshore wind farms are built responsibly, sustainably and employing the most efficient technology.

Cost of offshore wind

The price of offshore wind has fallen to an all-time low with the most recent contracts for difference auction bids coming in at £37.35 per megawatt hour (MWh). These "contracts for difference" guarantee offshore wind developers a fixed price to sell electricity for 15 years. If the market price falls below the contract price, the government subsidises the difference. If the market is higher, the companies pay money back to the government.

Since wholesale energy prices began to skyrocket last year - in May 2022, electricity prices reached a high of £263.79 - wind farms have been paying back money to the government. This means that if more offshore wind farms were operational now, electricity prices could potentially be much lower.

Energy security

As well as reduced costs, North Falls will also play a role in helping to stabilise the nation's energy prices and improve its energy security. By generating more electricity from offshore wind, the UK will be less reliant on international energy imports, for example, oil and gas, and therefore more self-sufficient. It will also become less susceptible to global price fluctuations in such commodities, which should lead to reduced costs for consumers.

The invasion of Ukraine has given a stark reminder of the need for the UK to shore up its energy supplies and as one of the windiest nations in Europe, the UK is well placed to take advantage of offshore wind technology.

OTHER BENEFITS OF THE PROJECT

As well as helping to protect the environment and contributing to the UK's net zero ambitions, North Falls will bring numerous local benefits by way of jobs, local economy and community involvement. As an extension project, North Falls would aim to emulate the initiatives of its sister project Greater Gabbard and therefore create similar, if not greater, socio-economic benefit.

Greater Gabbard benefits

Greater Gabbard represented a total investment of around £1.5 billion and a new facility was constructed in Lowestoft, Suffolk for the project's operations & maintenance base.

Around 120 long-term, skilled jobs were created to operate and maintain the wind farm, with 95% of those recruited from the local area. These roles were in addition to the hundreds of jobs created during construction.

Greater Gabbard has engaged 10 apprentices since the start of operation, offered junior engineer roles and employed ex-fishermen on crew transfer vessels as part of the drive to find locally skilled people to fill roles. The project recently announced a five-year trainee plan to further grow apprentice numbers.

Since starting operation, the project has invested more than £250,000 in community funds and local training initiatives.

Questions

Do you have any general comments you would like to make about the UK's offshore wind energy ambitions?

Do you believe that more offshore wind will:
- **reduce energy costs for the UK?**
- **improve the nation's energy security?**

Do you believe that offshore wind has a key role to play in the UK's energy future? Why/why not?

GRID

Offshore Transmission Network Review

A grid connection is a key requirement for each offshore wind farm as it needs to be able to deliver the power it generates to the national transmission network.

In 2020, the Committee on Climate Change asked the government to: Develop a strategy to coordinate interconnectors and offshore networks for wind farms and their connections to the onshore network and bring forward any legislation necessary to enable coordination.

The review, called the Offshore Transmission Network Review (OTNR), aims to bring together the key stakeholders involved in the timing, siting, design and delivery of offshore wind to consider the existing regime and how this influences the design and delivery of transmission infrastructure. Its overall aim is to ensure that the transmission connections for offshore wind generation are delivered in the most appropriate way, considering the increased ambition for offshore wind to achieve net zero. This will be done with a view to finding the appropriate balance between environmental, social and economic costs.

Project coordination

An early to short-term part of the OTNR has been the encouragement of well-advanced projects to opt-in to become what is called Pathfinders. The Pathfinder concept was created for these advanced projects to provide important learnings for future projects, inform the design of the new regulatory framework and maximise benefits for consumers, local communities, and the environment.

These projects will progress under the existing regime but with greater collaboration, and while addressing the existing policy and regulatory barriers to increased network coordination.

While not nominated as Pathfinders at this stage, North Falls along with four other projects in East Anglia: Five Estuaries, National Grid Electricity Transmission's Sea Link, and National Grid Ventures' EuroLink and Nautilus have committed to exploring coordinated network designs with a view to identifying a Pathfinder project. In the meantime, North Falls is continuing to progress the development of its offshore wind farm and grid connection aligned to the current regulatory regime. This approach aims to ensure that North Falls will be operational by 2030, contributing to the 50GW government target.

Strategic review

In the medium to longer-term, the Government together with National Grid ESO is looking to develop a single, integrated network design that supports the large-scale delivery of offshore wind energy across Great Britain. Published in July 2022, the Pathway to 2030 Holistic Network Design (HND) aims to facilitate the connection of 23GW wind, helping to deliver the Government's ambition for 50GW offshore wind by 2030.

This is a first step towards more centralised, strategic network planning that is critical for delivering affordable, clean and secure power, as we journey towards our net zero future. It should be noted that East Anglia was not included in this HND due to the fact the various offshore wind farm projects are already advanced.

North Falls grid connection

As with all offshore wind farms, North Falls will require a grid connection point to export the power it generates to the national grid - the UK's high voltage electricity system. In 2019, North Falls specified what it needed in terms of a grid connection to the National Grid. The National Grid owns the national grid, and it is their responsibility to connect new sources of electricity to the grid, installing additional infrastructure at existing substation sites or constructing new substations as required.

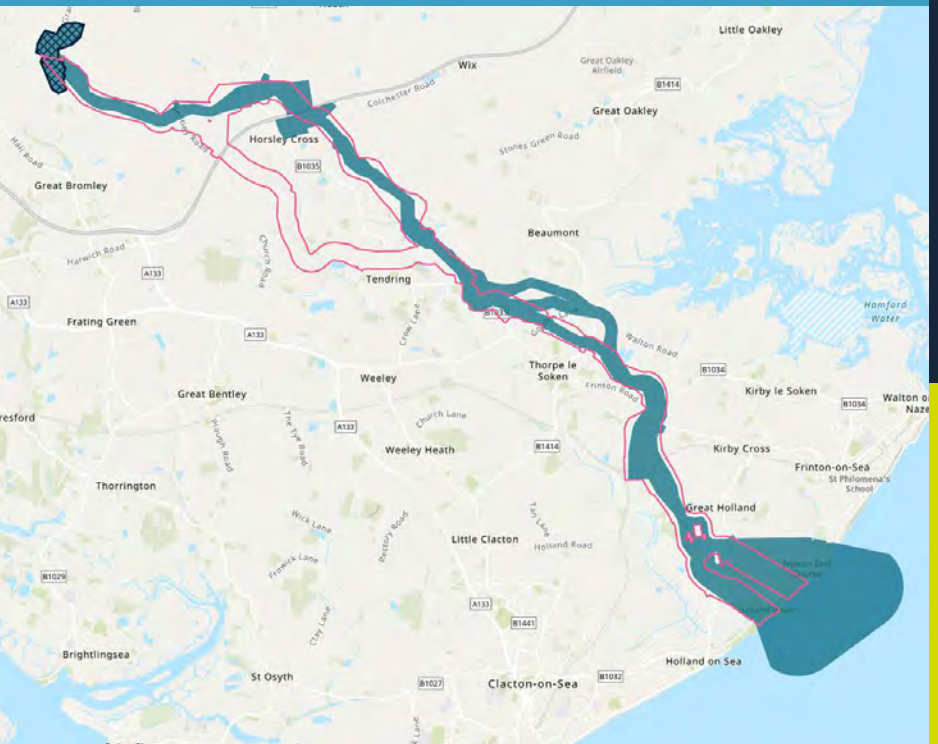
A grid connection in Tendring, Essex has been offered to North Falls by the National Grid. Our engineering design, survey and planning work to date has been undertaken in relation to this grid connection and this consultation will seek your views on the outputs of that work.

In parallel, North Falls has committed to working with other projects in East Anglia to determine if there are opportunities to coordinate network designs (on the next page). For the purposes of this consultation we are eager to hear views on our current proposals based on the existing connection option in Tendring, Essex. It is possible that this will be the route the project takes forward in our application, so we encourage you to provide specific comments on the proposals in this consultation, rather than referring only to a preference for an alternative solution, which may not be feasible.

Coordination with Five Estuaries

The agreement to explore grid-related opportunities was formalised in a statement published in July 2022 as part of the Offshore Transmission Network Review. North Falls and the proposed neighbouring offshore wind farm, Five Estuaries, are already working together on key onshore elements such as the route of the corridors for the underground cable, surveys and by sharing consultation feedback.

Map showing alignment between North Falls and Five Estuaries onshore cable corridor.



Joint statement on commitment to exploring coordinated network designs in East Anglia (July 2022):

Onshore and offshore energy infrastructure are critical to delivering on the ambition for the UK to be Net Zero by 2050. As responsible developers, owners and operators of renewable generation and transmission infrastructure, we strongly support the government's ambition to make the UK the world leader in offshore wind. Delivering government ambitions 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.

National Grid Electricity Transmission (Sea Link), National Grid Ventures (Nautilus and EuroLink), North Falls (offshore wind farm) and Five Estuaries (offshore wind farm) are working together and exploring the potential for offshore coordination as part of the Offshore Transmission Network Review (OTNR) "Early Opportunities" workstream, with a view to identifying a future Pathfinder Project.

Offshore coordination of these projects could reduce, but not avoid, the need for coastal onshore infrastructure in east Suffolk and southern East Anglia and significant reinforcement of onshore infrastructure, such as the East Anglia Green project, is key to enabling a clean low carbon future irrespective of where energy comes ashore.

Whilst we welcome the progress the OTNR has made and recent publications from BEIS and the energy regulator, Ofgem, on enabling regulatory and policy changes, currently, the detailed commercial, regulatory and legislative frameworks needed to realise offshore coordination are not yet fully in place. We are working with the Government and Ofgem as they continue to progress the changes needed to enable greater coordination between these projects. So as not to impact the Government's 2030 offshore wind ambition, we continue to progress, in parallel, consent for grid infrastructure projects based on the existing regime.

North Falls

Five Estuaries

National Grid

Questions

Do you have any preference as to how North Falls could engage with and benefit the local community?

Do you have any comments or questions about North Falls involvement with the Offshore Transmission Network Review?

Do you have any comments about the location of the proposed North Falls grid connection?

DEVELOPING NORTH FALLS

Nationally significant infrastructure project

As a nationally significant infrastructure project (NSIP), North Falls must be consented under the Planning Act 2008 development consent process, which was introduced to streamline the decision-making for such projects.

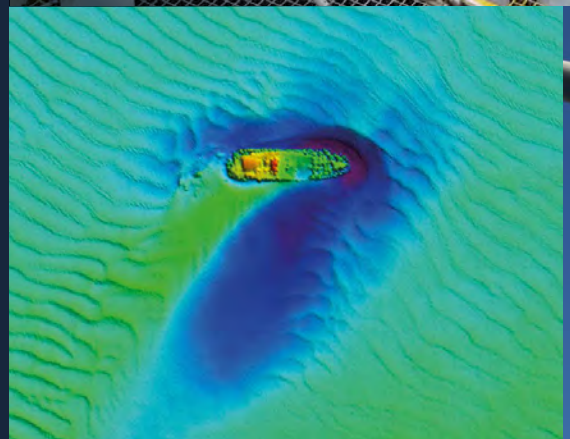
Applicants, such as North Falls, must go through this process to gain permission to build and operate their NSIP. The permission is called a development consent order (DCO). The government agency responsible for examining and making recommendations on applications for NSIPs is the Planning Inspectorate.

The final decision on the application will be made by the Secretary of State for Business, Energy and Industrial Strategy (BEIS).

Application process

The Planning Act 2008 process was introduced to streamline the decision-making for major infrastructure projects like North Falls, to make it fairer and faster for communities and applicants alike. See diagram opposite which outlines the six stages of the process. You can also visit the Planning Inspectorate website which provides more information on the planning process.

Photo courtesy of Craig Dunn



APPLICATION PROCESS
THE SIX STEPS

1 Pre-application

Look out for information in local media and in public places near the location of the project, such as the library. Or you can register to recieve updates. North Falls will be developing the power proposals and will consult widely as part of the development.

2 Acceptance

The planning Inspectorate, on behalf of the Secretary of State, has **28 days** to decide whether North Falls application meets the required standards to proced to examination, including whether the consultation has complied with relevant legal requirements.

3 Pre-examination

You can now register as an interested party; you will be kept informed of progress and opportunities to put your case. Inspectors will hold a Preliminary Meeting and set the timetable for examination.

4 Examination

You can send in your comments in writing. You can request to speak at a public hearing. The Inspectorate has **6 months** to carry out the examination.

5 Decision

A recommendation to the relevant Secretary of Stae will be issued by the Inspectorate within **3 months**. The Secretary of Stae then has a further **3 months** to issue a decision on the proposal.

6 Post-decision

There is the opportunity for legal challenge.

PRE-APPLICATION PHASE

North Falls is now in the pre-application phase, which runs until its development consent order (DCO) application is finalised and submitted to the Planning Inspectorate. This is the key period for local communities to input into the shaping of the project proposals. For North Falls this phase will run until application submission in 2023.

Environmental impact assessment (EIA)

The core of our current work during this pre-application phase is carrying out an environmental impact assessment (EIA). The EIA is a systematic and iterative approach to assessing the environmental, social and economic effects arising from our proposals. It will set out mitigation measures to reduce adverse impacts plus the results of further assessments with these mitigation measures applied.

The EIA provides a consistent approach to both the onshore and offshore development proposals.

Throughout this phase there is ongoing technical design and engineering work to ensure the project is deliverable.

North Falls Scoping Report

North Falls prepared a scoping report and requested a scoping opinion from the Secretary of State during 2021, as the first stage of the EIA process. The North Falls Scoping Report outlined the receptors that will be considered during the EIA and the proposed data gathering and methodology employed to characterise the existing environment; assess potential impacts; and develop mitigation measures. This document provides high level information which will be expanded on during consultation with technical stakeholders throughout the EIA process.

A scoping opinion was adopted by the Secretary of State in August 2021 and can be found on the North Falls website as well as on the project page of the Planning Inspectorate's website, along with other documentation related to the project. The feedback received on this report from the relevant local planning authorities and statutory consultees resulted in a scoping opinion is available to read on theNorth Falls website.

Preliminary Environmental Information Report (PEIR)

The Scoping Report is now being followed by a Preliminary Environmental Information Report (PEIR), which is a technical document covering the full range of every element that has been considered to date, its potential impacts and proposed mitigations.

Since our previous consultation we have focussed on the content of this report and we are now seeking feedback on this work from local communities and relevant stakeholders, including local planning authorities and statutory nature conservation bodies, prior to completing the first draft of this report.

The PEIR will form the basis of next year's statutory consultation on our proposals and will provide a status on the project's EIA process and on the progress of the preparation of the development consent application.

Feedback given on the PEIR will be used to produce the final document required for the application, the Environmental Statement.

Environmental Statement (ES)

The Environmental Statement (ES) will be the final output of the EIA undertaken by the North Falls project team, and it will be an evolution of the PEIR. It will incorporate the results of the surveys and assessments, technical details and also the outcome of responses from our consultations.

The ES will also describe any changes made to the project proposals since PEIR and the mitigation measures that will be implemented and will form a key part of the submitted DCO application. This document will accompany the final application when it is submitted to the Planning Inspectorate.

Consultation

Consultation is a key element of the pre-application development process and is crucial to the progress of the EIA. The project team will ensure that stakeholders are engaged in the development and have the opportunity to comment on the proposals at key decision-making points.

The preparation and refinement of the North Falls proposals continues to be an iterative process. Feedback is received, considered and relevant changes made in a step-by-step approach. Anyone with comments or suggestions about the project can provide input throughout the development phase. However, pre-application consultation periods, such as this current consultation, will provide the best opportunity for stakeholders to review the plans, provide comments, submit feedback and, importantly, have an influence on parts of the process or shape of the project.

At these defined consultation periods, North Falls will ask for input related to specific elements of its proposals where stakeholders - particularly those with key local knowledge - will be able to offer valuable insights. These insights will be carefully considered by the project team and incorporated as feasible.

WHO WILL WE CONSULT WITH?

Throughout development, North Falls continues to consult with stakeholders to gather feedback on the way the project is being assessed and on the project itself as it takes shape

The groups of stakeholders, or consultees, are defined as follows:

1. **Those directly affected**.
   This includes statutory bodies, the relevant Local Authorities, landowners and others with an interest in the land or who may be affected by the construction and operation of a consented scheme. These groups are sometimes referred to as *Section 42 consultees.*
2. **The local community**.
   Defined as those people living or working within a specified distance of the onshore infrastructure or those who may have an interest in the area, for example, local archaeology groups and mariners and the fishing community or other non-statutory groups. These are sometimes referred to as *Section 47 consultees.*
3. **The general public**.
   These are people beyond the local community who will primarily be reached through national newspaper advertisements and on the project website. These are sometimes referred to as *Section 48 consultees.*

We will carry out targeted activities for each group of consultees and a statement of community consultation (SoCC) will be published in 2023, which will detail our consultation approach with the local community.

Questions

Do you have any questions about the development consent application process?

Do you have any comments about the purpose of the Preliminary Environmental Information Report?

OTHER NEARBY INFRASTRUCTURE

North Falls Offshore Wind Farm is a nationally significant infrastructure project (NSIP) and as such, is required to consider its cumulative impact and in-combination effects in relation to other relevant infrastructure projects that are planned in the same geographic region, including the proposed neighbouring Five Estuaries Offshore Wind Farm.

There are a number of other NSIP and infrastructure developments proposed locally and the North Falls project team is already engaging and coordinating with project promoters (see OTNR statement on the previous panel). This engagement will continue as North Falls progresses. Part of this engagement will include monitoring and exploring opportunities for cooperation with the developers of the projects as far as is practicable, as part of the development process.

Questions

Do you have any comments or suggestions about North Falls coordination with other major infrastructure projects in the region?

PROJECT DESCRIPTION

Design envelope

Due to the complex nature of offshore wind farm development and the fact that the proposals are still evolving, specific details of the project are still under consideration. Some final specifications are not due to be decided until after the submission of our application.

For this reason, we have incorporated a 'range' of parameters, which is known as the design envelope. By applying a design envelope, it means that we are in effect presenting a realistic 'worst case scenario' rather than what we anticipate as the final project design.

This consultation will present the information that is known plus the ranges where specific details are yet to be finalised related to: the offshore array, proposed offshore cable route and landfall, onshore cable corridor and onshore substation search area.

Project description

North Falls has an offshore array area of 150km^2 split into two sections within the Outer Thames Estuary, in the southern North Sea. Its closest point to land is 22.5km from the East Anglia coast near Orford.

The current proposals for North Falls include wind turbines on fixed foundations, the design of which is still to be determined. Array cables will connect the turbines in strings to either one or two offshore substations, also on foundations. An interconnector will join the project's northern and southern sections.

At this stage it is planned for subsea export cables to bring the power to shore at a location known as 'landfall', with underground onshore cables carrying the power to a new onshore substation. From here the power will be transmitted to the national grid.

Turbines

As turbine technology is likely to evolve between now and the possible start of construction for North Falls, we are looking at a range of machines in terms of size and the final number installed. The project has the potential for up to 72 turbines in total.

Foundations

Each turbine and the offshore substation(s) will sit on top of a foundation. The type and design of foundations will be informed by site investigations and a procurement process, after the project has been consented. They may be: monopiles; jackets on pin piles or on suction caissons, or gravity base structures.

Offshore electrical infrastructure

This will comprise the array cables between the turbines, the offshore substation(s), an interconnector between the two array sections and export cables bringing the power to shore.

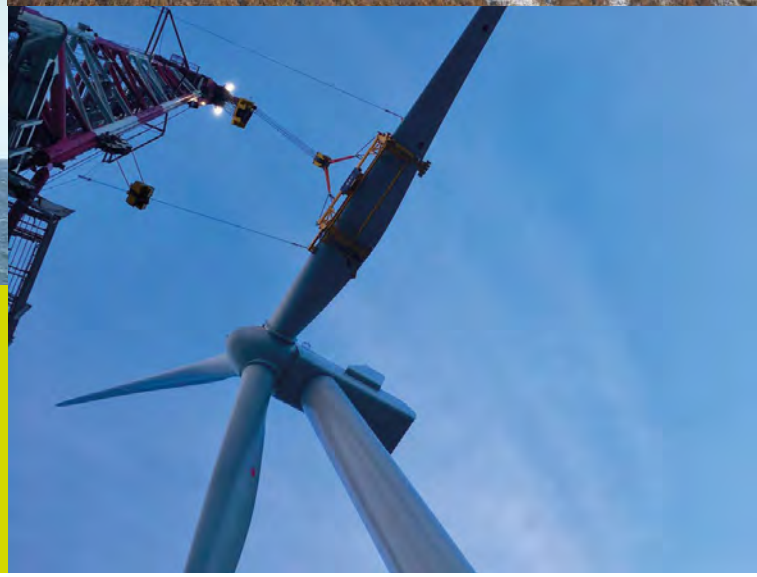
The array cables transmit the power between the turbines and the offshore substation(s). The length of the array cables will depend on the spacing of the turbines and their placement in relation to the offshore substation. The final turbine, interconnector and array layout will be decided post-consent. Likewise, the location and design of the offshore substations will also be finalised during the design phase of the project.

Landfall is where the offshore export cables which bring power from the wind farm come to shore underground. For North Falls this will be on the coast near Frinton-on-Sea, with the final location still subject to review.

Onshore electrical infrastructure

From landfall, power will be transmitted by underground cables to a new onshore substation. From there, it will be further transported to a National Grid substation and then on to the national grid.

A grid connection in Tendring, Essex was offered to the project by the National Grid, so the project has been working to design the best way to bring power into that connection.



Question

Do you have any comments or questions about the concept of a design envelope?

HOW SITES ARE SELECTED

Site selection principles

Together with our consultants we have worked to identify suitable locations for the project's infrastructure as part of our ongoing environmental assessment and to support our further design. We have used an iterative process incorporating input from a range of disciplines including environmental, engineering design, technical, planning as well as from stakeholders. Consultation feedback continues to be a critical element of the site selection process and by this we mean stakeholder and public consultation as well as consultation with other projects.

We have also followed a set of site selection principles for each element which you can read more about in the brochure accompanying this exhibition, or on our consultation portal.

Offshore site selection

The offshore export cable corridor site selection process commenced in 2020, with

formal stakeholder consultation the following year. Selection has been based on the

following principles:

- Selection of the most direct route from array to preferred landfall search area, in balance with the other key principles
- Avoid, or minimise direct impact to, designated/protected environmental sites where possible
- Minimise impact on other sea users and navigational safety
- Avoid significant sandbank features where possible
- Avoid aggregate dredging areas, anchorages and dumping grounds where possible
- Avoid locations of known archaeological importance where practicable
- Avoid existing operational or planned offshore wind farm sites
- Avoid routing through offshore oil and gas sites
- Minimise the number of subsea cable/pipeline crossings, and
- Explore options to reduce cable footprint with other known developers.

Landfall site selection

The landfall site selection began consultation in early 2021 with the overarching principles to:

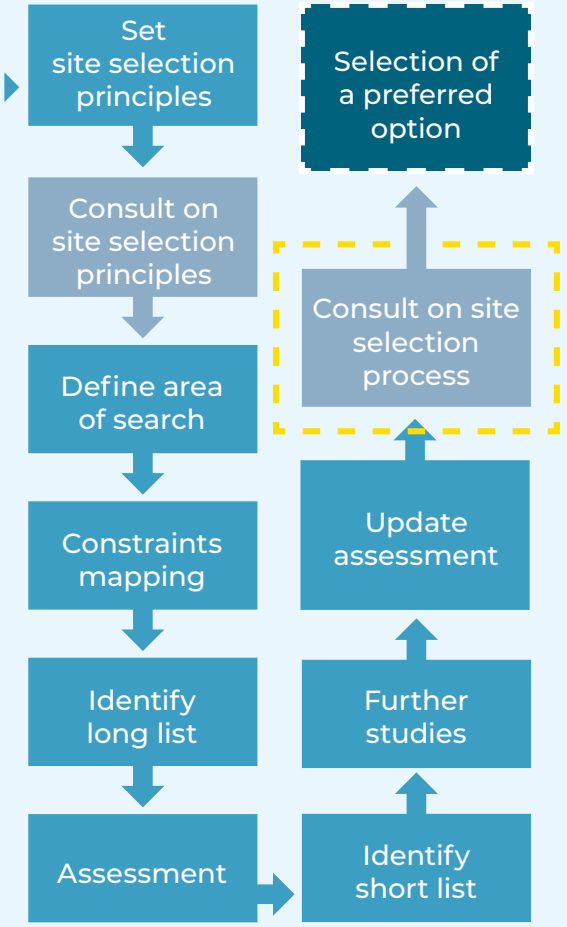
- Avoid direct significant impacts with European, national and local ecologically designated sites
- Avoid direct significant impacts with landscape and cultural heritage designations
- Avoid areas with substantial infrastructure or urban/recreational land use such as housing or caravan parks
- Maintain a required separation distances with other offshore cables and pipelines
- Ensure the potential horizontal directional drill length is achievable (up to four drills), and
- Consider options that could facilitate co-location of underground cable landfall infrastructure with other known developers who may be connecting to the national grid at a similar location and therefore using a similar landfall.

Onshore cable corridor selection

North Falls began its onshore cable route selection process in 2021 adhering to the following principles wherever possible:

- Routing should be kept as straight and as short as practicable – avoiding tight bends
- Avoid residential titles (including whole gardens) where possible
- Avoid direct significant impacts with European, national and local ecologically designated sites
- Avoid direct significant impacts with landscape and cultural heritage designations
- Avoid direct significant impacts to mature woodland, historic woodland and important hedgerows
- Minimise the number of:
  - crossings of assets such as utilities, and of road and rail crossings
  - hedgerow and watercourse crossings.
- Consider options that could facilitate co-location of cable infrastructure with other known developers who may be connecting to the national grid at a similar location.

This diagram shows the step-by-step process used in refining the location of the North Falls infrastructure to date.



THE PROJECT: OFFSHORE

Offshore array

Like our sister project Greater Gabbard, the North Falls offshore array area is split into two separate sections, with boundaries to take the existing shipping route into account. The site boundaries have not changed since our previous consultation.

It will be within the two boundaries that turbines, array cables and offshore substation(s) will be installed. The northern section covers approximately 20km^2 and is 22.5km from shore at its closest point. The larger southern section covers approximately 130km^2 and is 38km from shore at its closest point.

Offshore infrastructure

North Falls will use conventional three bladed, horizontal axis turbines made up of a: rotor, comprised of blades, a hub and a nacelle housing the generator and electronics, and a tubular steel tower. The layout of the wind turbines will be defined post consent and will take into account wind resource, ground conditions and the turbines chosen. However at this stage we can state that the minimum spacing between turbines would be 820m.

Like the turbines, the number and type of foundations will be finalised post-consent and following detailed design.

North Falls will require up to a maximum of two offshore substations depending on the electrical system voltage and final layout. These comprise a platform topside supported by a foundation.

A total of up to 228 km of voltage alternating current (HVAC) cables will link the turbines to the offshore converter station(s). The project design also includes an interconnector cable between the northern and southern array areas.

Export cable corridor

The electricity generated by North Falls will be transmitted to shore by from the offshore substation(s) via export cables which will be located within an offshore export cable corridor. Through our planning work we have identified a proposed corridor to run from the southern array area to a proposed landfall on the Essex coast near Frinton-on-Sea.

The offshore export cable corridor passes to the north, and outside of the Margate and Long Sands Special Area of Conservation (SAC) and Kentish Knock East Marine Conservation Zone (MCZ), with a small overlap with the Outer Thames Estuary Special Protection Area (SPA) as it approaches landfall.

A number of constraints have been considered in the routing of the provisional offshore export cable corridor including: engineering feasibility; nature conservation designations; other offshore wind farms; shipping and navigation; dredging areas; existing infrastructure and wrecks. In additional to general shipping and navigation we have also taken into consideration other specific sea users in particular: fishing activity, aggregate and military use.

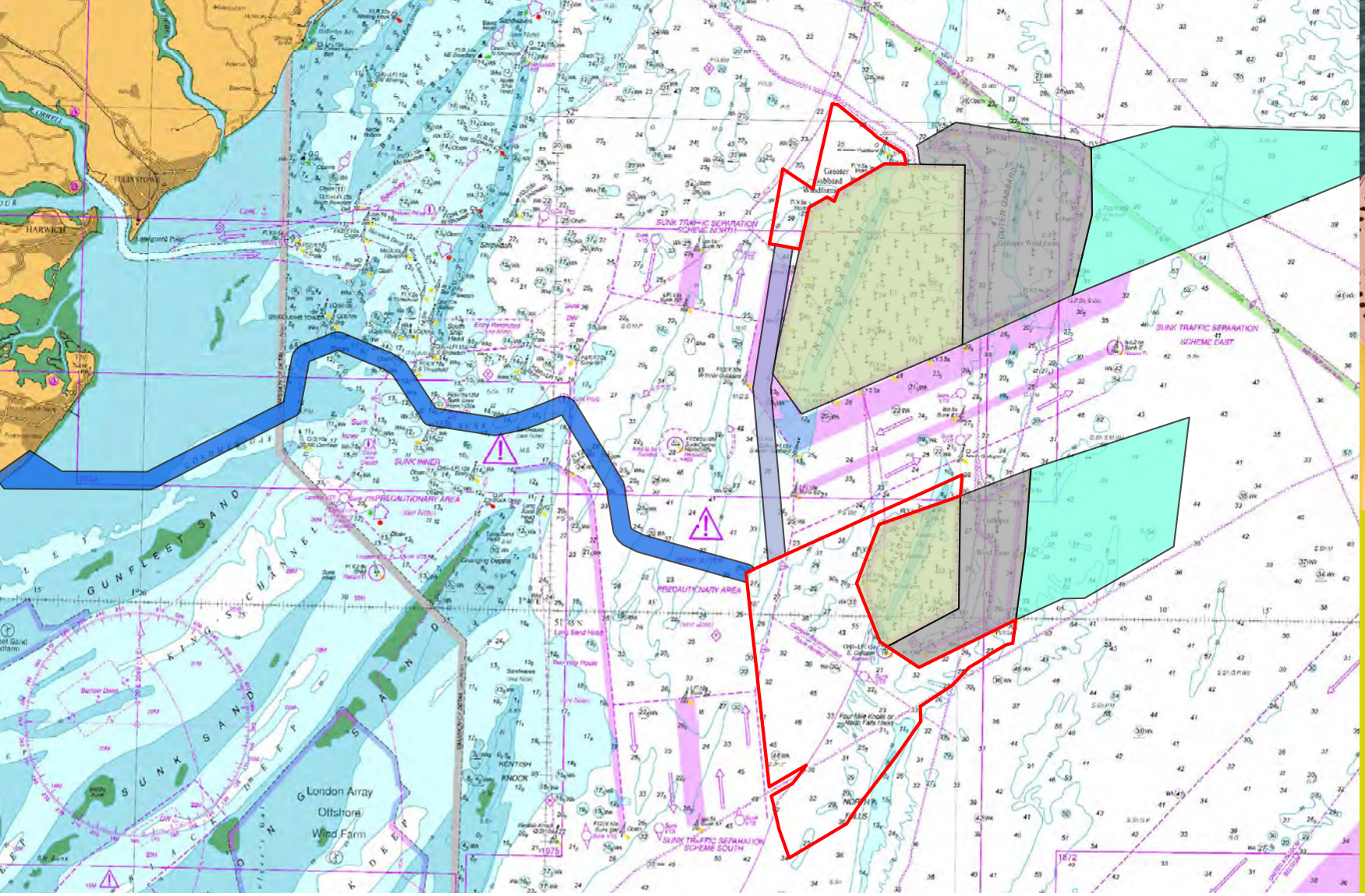
Offshore construction

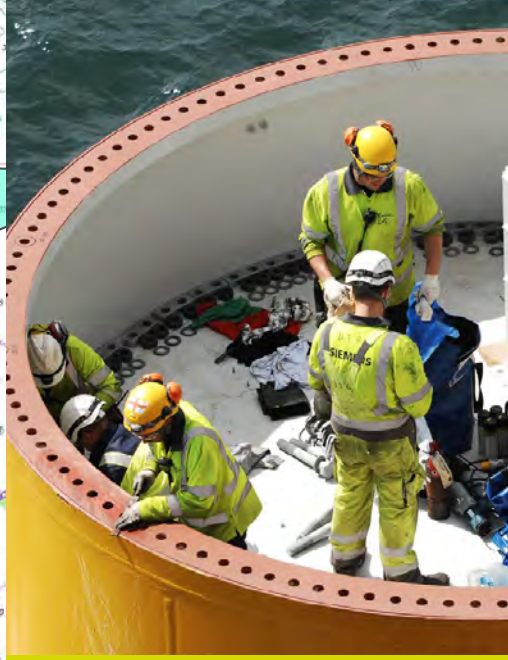
Pre-construction seabed surveys will be undertaken along with work such as boulder removal to prepare the array site and cable route for construction of the wind farm. The construction methodologies used will depend on the final design, seabed condition and type of technology or component selected. These will be decided post-consent, with the full range of options to be included in the development consent order application.

UP TO
72
TURBINES

OFFSHORE SUBSTATIONS
1 OR 2

LENGTH OF EXPORT CABLES
55M





Question

Do you have any comments or suggestions in relation to the wind farm's offshore location or offshore infrastructure? This could be comments on fisheries, components, marine ecology, offshore construction or anything else you feel relevant.

MINIMUM DISTANCE BETWEEN TURBINES
800M

TOTAL LENGTH OF ARRAY CABLES
228M

WATER DEPTHS WITHIN THE ARRAY SECTIONS
5 TO 59M


Frinton-on-Sea
Clacton-on-Sea
4.5km

THE PROJECT: LANDFALL

Progress on the landfall search area

The offshore export cables are brought to shore at a location known as 'landfall'.

The previous consultation highlighted a landfall search area - the section of coastline between Clacton-on-Sea and Frinton-on-Sea - which was defined through a process of engineering and environmental review and assessment. The process took into account a range of constraints including designated sites, nature reserves, land use, historic features and technical feasibility.

The landfall selection process has continued following the confirmation of the grid connection location and further data collection and consultation. This work has resulted in a landfall compound zone (see map), within which the temporary construction compound would be located. The precise landfall location will be identified, from within this zone, and finalised in advance of the development consent application submission.

Construction works at landfall

Construction works at the point of landfall will comprise the installation of underground cable ducts using horizontal directional drilling (HDD) or another trenchless technique. This will be done from the landward side, with the drill exiting beyond the beach in the sub-tidal zone. This method will bury the cable ducts deep under Holland Haven Marshes Site of Special Scientific Interest (SSSI) and so avoid crossing the site at the surface. Once the ducts are installed underground, the offshore cables will be pulled through them, before being connected to the onshore cables at transition joint bays which will also be buried once construction is complete.

Although there would be temporary disruption during the project construction, there will be no permanent above-ground building at landfall. The objective is to keep any disruption to a minimum through considerate construction activities including the use of the HDD installation methodology mentioned above.

Landfall compound zone (in blue)

Question

Our previous consultation asked people about how they use the coastal area between Clacton-on-Sea and Frinton-on-Sea. We will factor that use into our planning and construction programme.

We have now identified a landfall compound zone, from within which we plan to select the location for our temporary construction compound. Looking at that zone, is there anything you feel would be relevant for our project to know about this particular area?

THE PROJECT: ONSHORE

Onshore description

Onshore, North Falls will comprise underground cables carrying the power from the landfall to a new onshore substation, which will transform the electricity so it can enter the national grid via another substation to be constructed by National Grid. From here it will be delivered to the end users: homes, businesses and industry.

Onshore project area

Since our previous consultation when we did not have a confirmed grid connection location, National Grid has provided North Falls with a location which has enabled us to narrow down our original scoping area to an onshore project area. This area includes the temporary works footprint for the cable landfall, onshore export cables and associated works as well as for the project's onshore substation. The onshore project area lies entirely within Tendring, Essex.

The area was identified through a site selection process which included filtering out broad constraints such as designated habitats and sites of importance for nature conservation, ancient woodlands and historic landscapes while employing design assumptions and undertaking consultation with technical stakeholders.

The subsequent onshore scoping area is approximately 150km^2 and located within the Tendring District of Essex. It extends from the coast, between Clacton-on-Sea and Frinton-on-Sea, approximately 20 kilometres inland.

Our ongoing site selection activity will look within this broad onshore scoping area to identify specific locations for each element of the onshore electrical infrastructure required for North Falls. Future consultations will present the outcome of this work and offer opportunities to input into the proposed locations.

Onshore cable corridor

The onshore cable corridor is where buried export cables would be installed to transmit the electricity generated by the wind farm from landfall to the project's onshore substation. Further buried cables would connect that substation to the National Grid connection point.

The corridor runs approximately 22 kilometres inland from Great Holland on a roughly north-west alignment towards Little Bromley via Landermere, Tendring Green and Horsley Cross. The Tendring Brook is crossed to the north-east of Tendring and the Holland Brook to the north-west of Horsley Cross.

Onshore cable construction

All onshore cables will be buried and once their construction is completed, the land along the route will be returned to landowners to use as they would have previously.

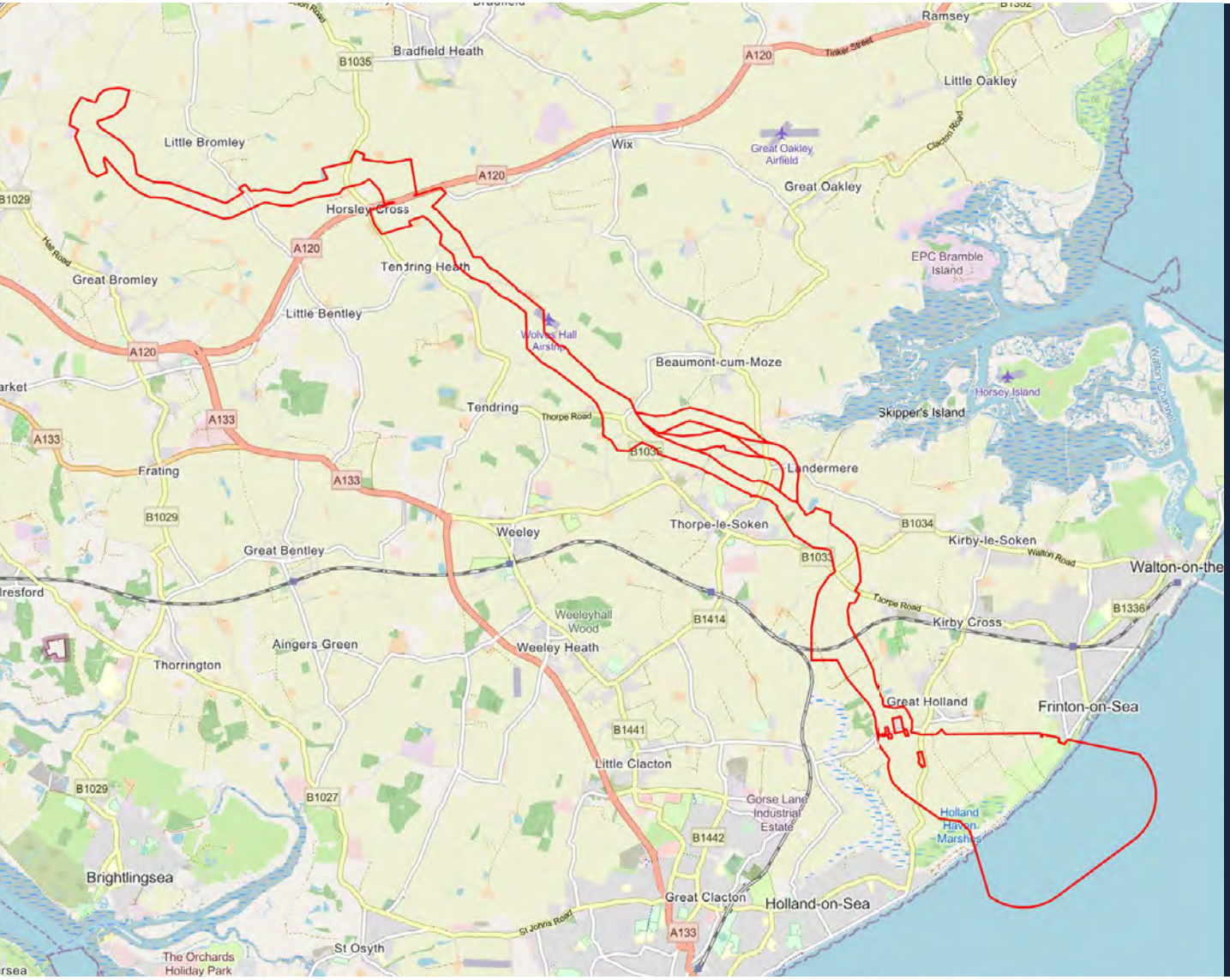
The construction works will comprise duct installation using a combination of 'open cut' trench excavation and trenchless techniques such as horizontal directional drilling (HDD) at crossings such as roads, rivers and designated sites. Once the ducts are installed, the cables would be pulled through them and joined within joint bays located along the onshore cable corridor. To facilitate construction, temporary facilities would be required including construction accesses, up to seven temporary construction compounds and HDD compounds.

The cables would be laid in up to 16 trenches, within a temporary working width of up to 60m wide, or up to 122m where HDD is used. Cables would be installed approximately 1.8m below ground level, and cables would typically be 200mm in diameter.

Question

Do you have any comments or questions about the methodologies proposed to be used to construct the onshore underground cable?

ONSHORE FACTS



UNDERGROUND CABLES A TOTAL OF

24KM

CABLES INSTALLED AROUND

1.8M

BELOW GROUND LEVEL

NUMBER OF HORIZONTAL DIRECTIONAL DRILLS (MAXIMUM)

8

NUMBER OF TEMPORARY CABLE CONSTRUCTION COMPOUNDS - UP TO 7 WITH EACH APPROX 100M X 100M

ONSHORE SUBSTATION ZONE

Onshore substation

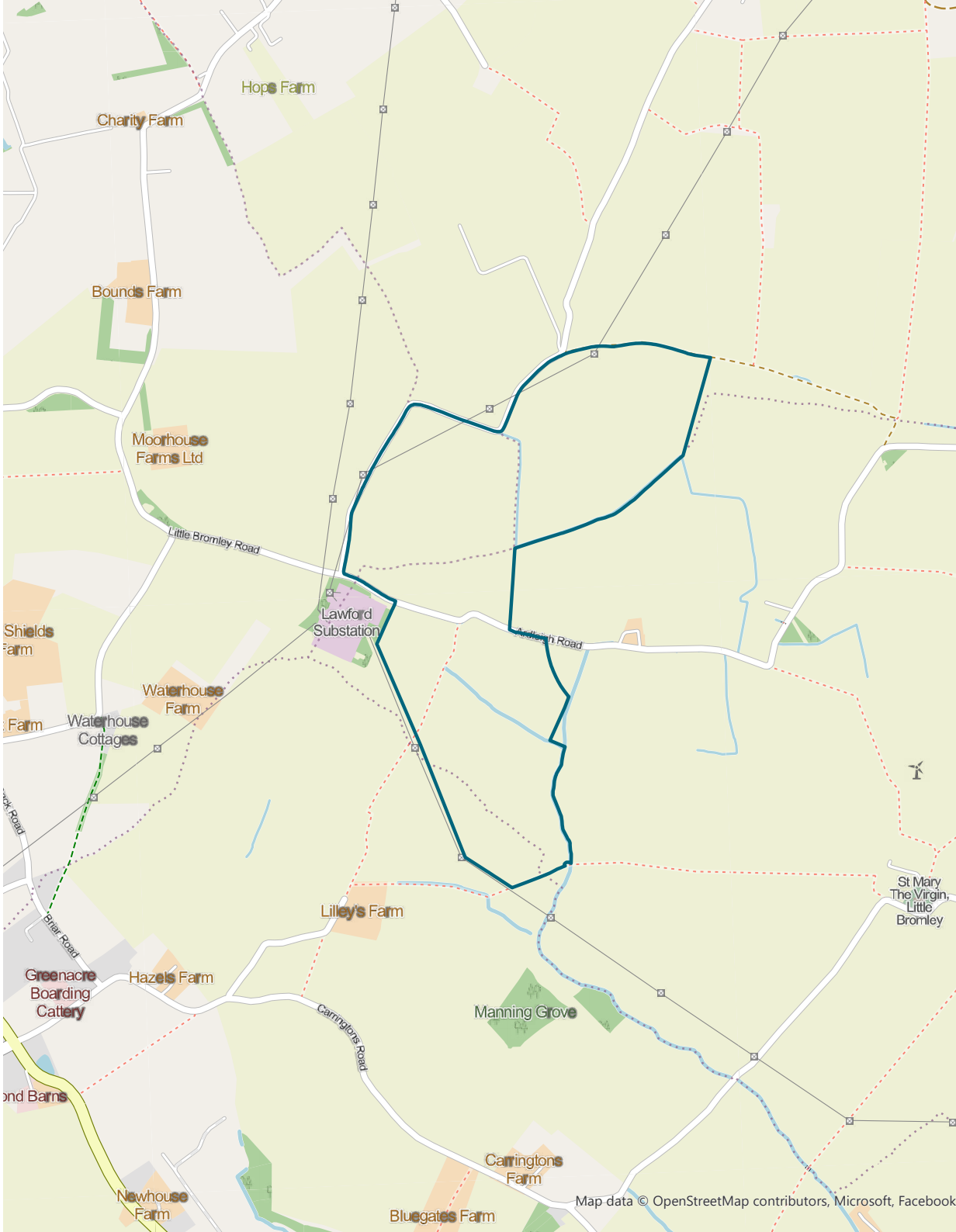
North Falls will require an onshore substation for all the electrical equipment required to connect the project to the national grid. This will include electrical transformers, air / gas insulated switchgear, control and storage buildings, and other ancillary equipment. The onshore substation will also include drainage and access infrastructure, and extensive landscaping such as bunds, and woodland and hedgerow planting.

Onshore substation zone

The North Falls onshore substation would be located in an area we have called the 'onshore substation zone', located east of the village of Ardleigh and west of Little Bromley. Land heights in this zone vary from 35m Ordnance Datum (OD) around the onshore substation zone to 5m around the Holland Brook, adjacent to the coast. The footprint of the substation and its construction compounds will be located within this zone.

Onshore substation construction

Construction at the substation will start with stripping the topsoil then creating access points, temporary haul roads and the works compound. Earthworks will be required to create a substation platform and there may be piling (if required) before concrete is poured for the substation platform. Once the platform is completed, the electrical equipment will be installed along with drainage infrastructure. Finally, there will be reinstatement and landscaping including screening vegetation.



TEMPORARY SUBSTATION CONSTRUCTION COMPOUND SIZE

250M X 150M

1

ONSHORE SUBSTATION

AREA OF SUBSTATION BETWEEN

3 AND 8

HECTARES

HEIGHT OF SUBSTATION EQUIPMENT (MAXIMUM)

18M

Offshore grid connection

North Falls continues to work towards the fact that the project's grid connection will be the one provided by National Grid in Tendring, Essex, part of the East Anglia GREEN project. However, it should be noted that had an alternative grid connection solution been offered, for example offshore, infrastructure on land would still be required to transmit the electricity produced to the national grid for use by customers.

Questions

Do you have any information about the onshore substation zone that could help in finalising the location for the onshore substation?

Do you have any comments or suggestions in relation to the onshore cable route for North Falls? This could be comments on the route, onshore ecology or anything else you feel relevant.

Although not feasible under existing regulations, do you have any comments or questions on the concept of an offshore grid connection or its associated onshore infrastructure?

Biodiversity net gain

The Environment Act 2021 includes a condition mandating a minimum of 10% biodiversity net gain for all developments including nationally significant infrastructure projects such as North Falls. Developers will be required to leave the natural environment in a better state than it was before. The biodiversity net gain process includes specific and measurable actions and outcomes to be undertaken throughout the project lifecycle. This ranges from collecting baseline data for assessment through to calculating biodiversity gains and losses from the project's development. The intention is to deliver demonstrable and quantifiable benefits to biodiversity that will apply to all habitats within the onshore project area.

North Falls will work with statutory bodies and other groups to develop biodiversity net gain proposals, with relevant progress to be included in the Preliminary Environmental Information Report which will be subject to consultation next year.

HOW TO RESPOND

We welcome your feedback and have provided a number of ways for you to respond to this consultation.

Face-to-face events
There will be a total of five face-to-face events at locations near the project search area with feedback forms to fill in and return to the team.

Webinars
We will be hosting two webinars at 6pm on Tuesday 15 November and 6pm on Wednesday 23 November. To register to attend an online webinar, please visit our website.

Online consultation
You can also respond to this consultant online by visiting www.non-stat.northfallsoffshore.com

Feedback questionnaire
We have asked some direct questions about specific elements of the proposals throughout the online materials. As you go through the information, you can respond to the relevant questions in each section.

Freepost
You can also download the feedback questionnaire and return it to: Freepost address: North Falls FREEPOST. This address can be used for all postal responses.

Consultation map
There is also a consultation map if you would like to focus on a specific location, you can pinpoint it on the map and leave your question or comment there.

Website
Please send your comments or feedback to us via the online contact form on our website: www.northfallsoffshore.com.

Email and telephone:
We also welcome emails to: contact@northfallsoffshore.com,
or you can ring us on 0800 254 5340.

To view the full programme of events, please refer to page 3

We thank you for taking the time to participate in this consultation.

NORTH FALLS

Offshore Wind Farm

sse Renewables | RWE

CONTACT US

Website: **www.northfallsoffshore.com**
Telephone: **0800 254 5340**
Email: **contact@northfallsoffshore.com**
Post: **FREEPOST North Falls**