

NORTH FALLS STATUTORY CONSULTATION

North Falls Offshore Wind Farm, an extension project to the existing 504 megawatt (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. The project has accepted an offer from National Grid to connect to the national electricity network at a new substation in Tendring, Essex. Onshore electricity cables would be installed underground from landfall near Frinton-on-Sea to this new substation.

North Falls is being developed by North Falls Offshore Wind Farm Limited, a 50/50 joint venture company owned by SSE Renewables and RWE.

The project is holding its statutory consultation phase from Tuesday 16 May until Friday 14 July 2023.

Purpose of this consultation

This third phase of consultation aims to give people a further chance to review, influence and provide comments on our project proposals, specifically on our preliminary environmental information report (PEIR). The PEIR sets out initial findings from the environmental impact assessment (EIA) work completed over the past three years.

The EIA investigates the potentially significant effects that our proposals may have on the environment and on local communities and details how they are avoided or mitigated, where possible.

The proposals presented in this consultation are not the final application, rather this is an opportunity for the local community and others with an interest in the project to influence the details of the application before it is submitted to the Planning Inspectorate.

North Falls Preliminary Environmental Information Report (PEIR)

The North Falls Offshore Wind Farm Preliminary Environmental Information Report (PEIR) is a complex and detailed document comprising three volumes and a non-technical summary. It is recommended you start your review with the North Falls Non-technical Summary (NtS) as it gives a high level overview and can help to signpost you to the PEIR chapters, details and documents that are likely to be of most interest.

The full PEIR can be viewed online or at our face-to-face consultation events, while hard copies of the NtS can be requested. Brief extracts of the NtS, along with references to the corresponding PEIR chapters can be found in this consultation booklet.

As well as the NtS, the PEIR comprises 33 technical chapters covering every aspect of the project from ecology and ornithology to traffic and shipping; chapter figures, and appendices. The PEIR also includes three additional reports:

- Schedule of Mitigation
- Design Vision
- Habitats Regulations Assessment



How to provide feedback

You can give your feedback by using the feedback form available online or at the face-to-face events, by using the online consultation map or by email and post.

Online consultation portal:

stat.northfallsoffshore.com

Link to the PEIR documents only:

www.northfallsoffshore.com/peir

Email: contact@northfallsoffshore.com

Freepost: FREEPOST North Falls

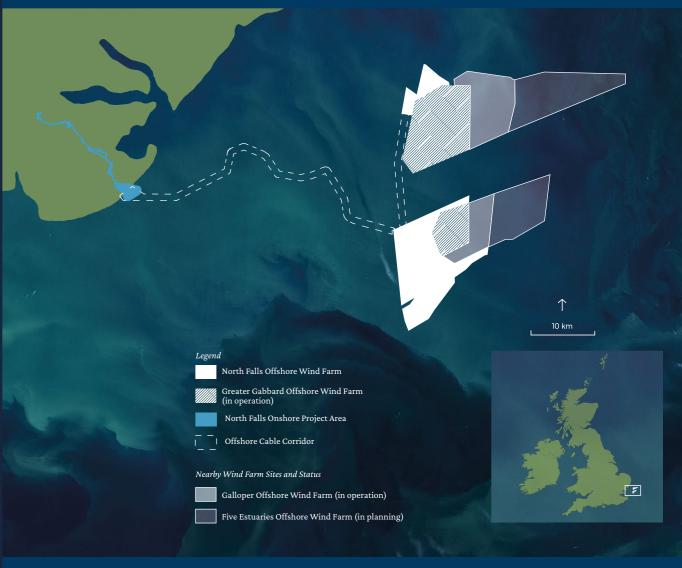
Telephone: 0800 254 5340

Website: www.northfallsoffshore.com

Programme of consultation events

Date (2023)	Time	Venue
Friday 2 June 2023	3:30pm to 7:30pm	Great Bromley Village Hall, Parsons Hill, Great Bromley, Colchester, CO7 7JA
Saturday 3 June 2023	9am to 1pm	Tendring Village Hall, Tendring, Clacton-on-Sea, CO16 OBG
Thursday 8 June 2023	3:30pm to 7:30pm	McGrigor Hall, 85 Fourth Ave, Frinton-on-Sea, CO13 9EB
Friday 9 June 2023	3:30pm to 7:30pm	Thorpe-le-Soken Women's Institute Hall, High Street, Thorpe-le-Soken, CO16 0EF
Saturday 10 June 2023	9am to 1pm	Ardleigh Village Hall, Station Road, Ardleigh, Essex, CO7 7RS
Tuesday 13 June 2023	6pm to 7:30pm	Webinar (Zoom)*
Wednesday 21 June 2023	6pm to 7:30pm	Webinar (Zoom)*

^{*}There is a link to register on the online consultation portal: stat.northfallsoffshore.com



Map 1 – Location of North Falls and adjoining offshore wind projects

NORTH FALLS NON-TECHNICAL SUMMARY

The North Falls Non-technical Summary (NtS) is a 70 page standalone document providing an overview of the potential environmental effects of North Falls in relatively non-technical terms. The full details for each area presented in the NtS can be found in the North Falls PEIR, however it is useful to start with this summary document to identify key areas of interest.

As well as describing the project, the NtS explains the need case for North Falls, details how its different aspects have been selected and explains the environmental impact assessment work to date. It outlines the role of national policy statements in the decision-making process plus the role of other relevant policies, and covers the project's consultation approach (also covered in the North Falls Statement of Community Consultation).



OFFSHORE

- Marine geology, oceanography and physical processes
- Marine water and sediment quality
- Benthic and intertidal ecology
- Fish and shellfish ecology
- Marine mammals
- Offshore ornithology
- Commercial fisheries
- Shipping and navigation
- Offshore and intertidal archaeology and cultural heritage
- Aviation and radar

4 North Falls Offshore Wind Farm

Infrastructure and other users

The North Falls Non-technical Summary includes a number of tables, plates and figures to support the chapters and ends with a conclusion section as well as references.

ONSHORE

- Ground conditions and contamination
- Onshore air quality
- Water resources and flood risk
- Land use and agriculture
- Onshore ecology
- Onshore ornithology
- Onshore archaeology and cultural heritage
- Noise and vibration
- Traffic and transport

PROJECT-WIDE

- Human health
- Seascape, landscape and visual impact
- Landscape and visual impact assessment
- Socio-economics
- Tourism and recreation
- Climate change

Conclusion

For all the offshore topics and for most of the onshore topics, the preliminary project assessments have concluded that, with mitigation, there would be no significant adverse effects in environmental impact assessment terms other than the following where significant residual effects have been identified:

- Land use and agriculture, with permanent loss of agricultural land during operation of the onshore substation;
- **Onshore ecology,** with temporary loss of some hedgerows and associated temporary impacts on bats and dormice. Replanting of hedgerows post-construction should lead to moderately beneficial impacts in the longer term.

For project-wide topics, significant effects have been identified in relation to:

- Seascape, landscape and visual, due to the visibility of the wind farm from certain areas of the coast during its operation this will influence the seascape and landscape character: and
- Landscape and visual, with respect to effect on the landscape fabric and visual amenity of the onshore substation zone during the project's construction and operation.

Beneficial effects were identified for a number of topics, including around onshore ecology due primarily to the project's commitment to biodiversity net gain; socio-economics, with skills and supply chain opportunities, and contribution to combatting climate change.

North Falls has committed to implementing mitigation measures to ensure that any potential impacts are minimised as far as reasonable and practicable, and to reduce the potential for significant effects.

PROJECT FACTS AND FIGURES



DISTANCE TO SHORE (CLOSEST)

Off the UK coast in the southern North Sea



Depending on the size of turbine



Total area across two sites



Offshore substations/platforms to facilitate the export of electricity to an onshore or offshore connection point



MORE THAN

Of underground onshore cable to transport the power from landfall to the new onshore substation (assuming an onshore grid connection)



TIMES THE **EXISTING LAWFORD**

Size of the onshore substation footprint, with similar surrounding landscaping



Likely investment in UK electricity infrastructure



The potential number of UK homes supplied with their electricity (depending on final installed capacity)



North Falls would support this government target





Offshore Wind Farm

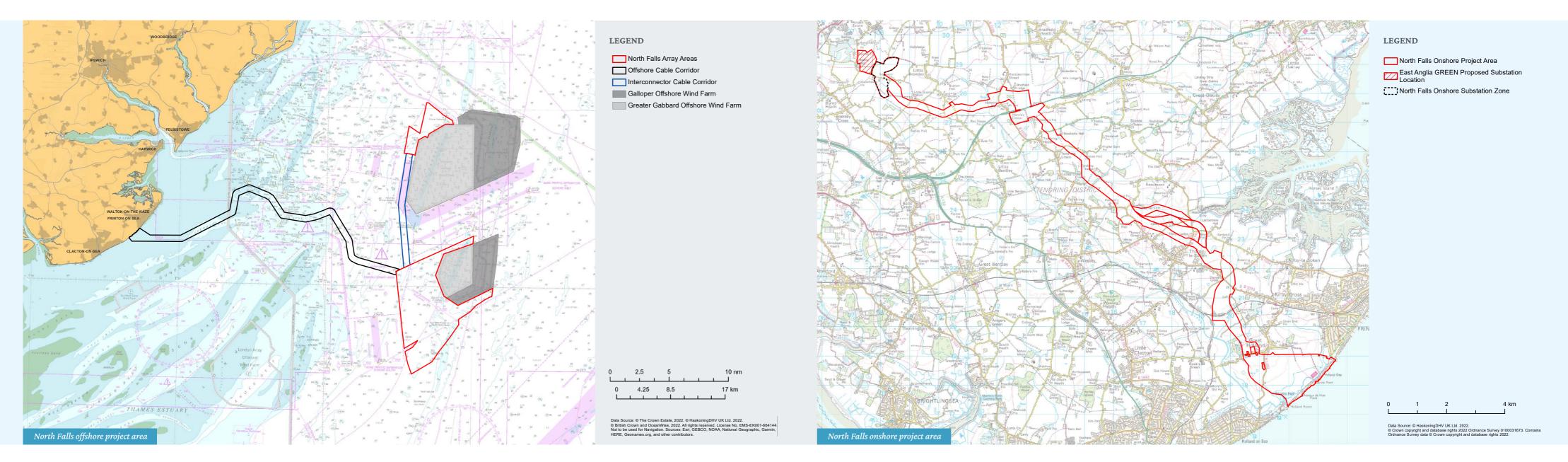
North Falls is being developed by a joint venture company owned equally by SSE Renewables and RWE.



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OFFSHORE PROJECT AREA MAP

ONSHORE PROJECT AREA MAP



STORY SO FAR

Together SSE Renewables and RWE have been active in the East Anglia region since the organisations jointly developed and constructed the Greater Gabbard Offshore Wind Farm, located 25km off the coast of Suffolk in the North Sea and operated out of Lowestoft. 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 nongovernmental stakeholders.

In August 2019, The Crown Estate announced the conclusion of the HRA confirming that seven of the 2017 extension application projects, 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 to the Planning Inspectorate in 2023 and receiving 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 Government targets.

Pre-application phase - progress since 2020

Since North Falls signed its Agreement for Lease with The Crown Estate, the project team has been in what is called the pre-application stage. 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. The process includes six stages which are shown in the diagram on the opposite page, the first being pre-application.

Applicants, such as North Falls, must go through this six stage process to gain permission to build and operate their NSIP. The permission is called a development consent order (DCO). The Planning Inspectorate is the government agency responsible for examining and making recommendations on applications for NSIPs with the final decision being made by the Secretary of State for the Department for Energy Security and Net Zero.

Environmental impact assessment

The pre-application phase for North Falls will run until the DCO application is finalised and submitted to the Planning Inspectorate. The primary focus of this phase has been carrying out an environmental impact assessment (EIA), a systematic and iterative approach to assessing the environmental, social and economic effects the project may have. A baseline has been established via years of onshore and offshore surveys to collect data which has subsequently been analysed to build up a picture of every element from onshore ecology and ornithology to offshore archaeology and fishing activity. Throughout this period there has been ongoing technical design and engineering work to ensure the project is deliverable, as well as consultation and ongoing stakeholder engagement.

North Falls Scoping Report

At the first stage of the EIA, North Falls prepared a scoping report and requested a scoping opinion from the Secretary of State in July 2021. The North Falls Scoping Report outlined what would 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. The feedback received from the relevant local planning authorities and statutory consultees resulted in a scoping opinion adopted by the Secretary of State in August 2021.

Preliminary Environmental Information Report (PEIR)

Since the last phase of consultation, the North Falls PEIR has been progressed and is now the subject of this consultation. This is a technical document covering the full range of every element that has been considered to date, its potential impacts and proposed mitigations. This is in effect 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.

North Falls Environmental Statement (ES)

Looking ahead, the North Falls Environmental Statement (ES) will be the final output of the EIA undertaken by the North Falls project team. It will be an evolution of the PEIR presented in this consultation and will incorporate the results of the surveys, assessments and project technical details as well as the outcomes of responses from our consultations.

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

APPLICATION PROCESS - THE SIX STEPS





PUBLIC CONSULTATION

North Falls has so far held two rounds of community consultation with the information provided and feedback received still available to view online. These were held in parallel with targeted topic-specific activity with statutory stakeholders. Feedback from the consultations has been considered as part of the evolving project proposals. This feedback has influenced a number of key project actions and decisions:

- All the project's onshore cables are to be buried
- Cables will be installed by drilling beneath Holland Haven Marshes Site of Special Scientific Interest, including Holland Haven Local Nature Reserve and Frinton Golf Club to avoid disturbing the surface
- No work will take place in the intertidal zone to limit disruption at the coast
- Offshore cable placement and construction will avoid sensitive areas of the seabed
- A 3D model has been produced to enable people to visualise the wind farm from key coastal viewpoints
- Construction traffic will be routed and timed to avoid school drop off and pick up, and minimise impacts on local community events

- A temporary haul road within the construction corridor will minimise the amount of traffic on the local road network
- Landscaping will be provided around the onshore substation in consultation with the community
- The project will aim to achieve a biodiversity net gain following construction
- Inclusion of an option to connect to an offshore grid connection, if made available to North Falls by a third
- A land drainage consultant will be engaged to develop pre and postconstruction farm drainage plans
- Ongoing close cooperation with Five Estuaries to minimise cumulative impacts where possible

In March 2022, the North Falls Statement of Community Consultation was published, setting out the project's approach to consultation including who will be consulted and how. This third consultation phase provides the opportunity for the public to give the North Falls team useful information and influence the proposals that will be included in the final application.



3D computer-generated visualisation

- 3. Dunwich Coastguard cottages

- 9. Pulhamite Cliffs

- 14. Frinton-on-Sea
- 15. Clacton-on-Sea
- 16. Margate Oval Clifton

THE NEED FOR NORTH FALLS

Nationally significant infrastructure project

In the past 12 years the capacity of the UK's offshore wind farms has increased from only one gigawatt (GW) in 2010 to almost 14GW in early-2023. 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.

Environmental targets

There are a number of overarching UK environmental targets and goals which set the national framework for tackling climate change and for renewable energy production. These include the legally binding target to reduce the net UK carbon account and therefore reduce greenhouse gas emissions to zero by 2050. These are implemented through the Climate Change Act 2008 and the 2019 Amendment Order.

In support, the British Energy Security Strategy published in April 2022 sets out the need to increase the pace of offshore wind deployment to deliver 50GW of offshore wind by 2030. And in March this year, Powering up Britain was published bringing together both the Energy Security Plan and Net Zero Growth Plan, as a blueprint for the UK to develop its own sources of clean energy to boost energy independence and green industries.

Powering up Britain is the manifesto that will guide the new Department for Energy Security and Net Zero on its ambitions on four areas of security: climate, consumer, energy and economic. Offshore wind, and projects like North Falls, will have a central role to play in meeting each of them.

While the green agenda needs to navigate multiple obstacles in order to deliver on to deliver on the promise of billions in investment and much-needed jobs, projects like North

Falls will play an essential role in reaching the targets. We intend to continue to work closely with all our stakeholders, the Government, local communities and the supply chain to ensure we make a positive contribution to the nation's climate 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. Climate change as a result of greenhouse gas emissions is a global issue associated with impacts on weather, ecosystems, human health and welfare. The role of human influence on the climate is undisputed.

Offshore wind farms generate clean, green electricity powering 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

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 sure 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. North Falls has completed an initial socio-economic benefits study as part of its impact assessment to better clarify the type and extent of opportunities for the local area.

In terms of employment, over the lifetime of the project there will be a wide range of direct, indirect and induced local jobs available, from highly skilled to more manual roles. These jobs will be with the project team itself, as well as with businesses and contractors across the supply chain with the total number of annual full-time equivalent (FTE)* local jobs calculated at

In terms of local supply chain opportunities, the study calculated that the gross value added (GVA)** for the local area as a result of North Falls could be up to £400 million for the lifetime of the project across the supply chain. Local companies will be well placed to take advantage of the opportunities which will be promoted via both the project and its Tier 1 and 2 suppliers as the project progresses.

- * Annual full-time equivalent (FTE) is a unit to measure employed people in a way that makes them comparable although they may work different number of hours
- ** Gross value added (GVA) measures the contribution to the economy of each individual producer, industry or sector.

Planning policies

National Policy Statements (NPS) were prepared by the UK government in 2011 in accordance with the obligations of the Climate Change Act 2008, and set out a case for the need and urgency for new energy infrastructure. In total there are three National Policy Statements relevant to the decision-making process on North Falls:

- EN-1 Overarching Energy, which highlights that there should be a presumption in favour of granting consent for projects which fall within relevant NPSs and recognises that offshore wind is a key factor in meeting UK policy objectives
- EN-3 Renewable Energy Infrastructure, which covers national significant renewable energy infrastructure, including offshore generating stations in excess of 100MW
- EN-5 Electricity Networks Infrastructure, which covers the electrical infrastructure in conjunction with EN-1.

The PEIR demonstrates how the development of North Falls would comply with and support the policies stipulated by these statements. On 30 March 2023 a consultation was launched on draft revisions to the NPS with the final revised versions expected to be designated by the Government in mid-2023. These will be taken into account by North Falls as the project progresses.



Regarding other planning policies, local authorities are required to prepare and maintain up-to-date Local Development Plans which set out their objectives for the use and development of land within their jurisdiction, and general policies for implementation. The onshore project area falls under the jurisdiction of Tendring District Council and Essex County Council. Relevant Local Development Plans have been considered during the onshore site selection for the project to mitigate conflict with site-specific planning allocations.

PEIR reference

Chapter 2. Need for the Project **Chapter 3.** Policy and Legislative

Chapter 31. Climate change Chapter 33. Socio Economics

GREATER GABBARD

As an extension project, North Falls would aim to emulate the initiatives of its sister project Greater Gabbard and therefore these provide an example of the type of socio-economic benefits that could be achieved:

- 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. In 2022, the project 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, and in late 2022 a further £50,000 fund was announced in celebration of the project's 10 year anniversary.



Do you have any suggestions as to how North Falls could work with Essex-based businesses to help them take advantage of potential contracting opportunities with the project?



SITE SELECTION

The siting and refinement of the North Falls offshore and onshore project areas considered environmental, physical, technical, commercial and social aspects and opportunities, engineering needs and the feedback from early engagement with communities and stakeholders.

The process has been iterative with proposals informed by ongoing environmental studies, and influenced by multiple factors from different disciplines, including by public consultation at different stages of development.

This consultation provides the opportunity to influence what is proposed inside the project's red line boundary. There will also be future consultation with the communities near the substation site, specific to the substation design. Should the project receive consent it will be subject to planning conditions, called requirements. These requirements will ensure the local authority and other key stakeholders are integral to the detailed design process.

Consideration of other projects

Opportunities for co-ordination with other projects have been sought during the project design, particularly with Five Estuaries, a proposed extension to the existing Galloper Offshore Wind Farm, Like North Falls, Five Estuaries has been offered a connection to the national grid at a point opposite Lawford substation, near the village of Ardleigh. Due to the projects' proximity to each other and given stakeholder feedback noting a preference for collaboration, the projects have sought to co-ordinate on proposed onshore infrastructure where practicable, primarily for the onshore substation zone and onshore cable corridor. Both projects have committed to burying all their onshore electricity cables.





Offshore Transmission Network Review

There are currently numerous challenges related to whether North Falls could be offered a feasible and practicable offshore grid connection to replace the onshore grid connection in Tendring, North Essex in time to meet the 2030 ambitions. These challenges are beyond North Falls control with examples including: need for new regulations around grid charging; revised rules related to the government's contract for difference auction to allow for ioint bids, and the current offshore transmission owner (OFTO) obligations. Other challenges relate to how different projects are allowed to work together, for example, if one is required to make anticipatory investments to oversize their infrastructure so a later second project can benefit.

Through the OTNR, North Falls is engaged in technical, regulatory and programme discussions with the Office of Gas and Electricity Markets (Ofgem), the Department of Energy Security and Net Zero, third party transmission providers and others, to address these challenges.

However, to maintain momentum and avoid the risk of project delays, North Falls will continue to progress with our onshore grid connection whilst assessing offshore grid connection options. By progressing both onshore and offshore grid connection options, and potentially including both in its application, North Falls aims to be in a position to be operational by 2030, therefore contributing to the UK targets for both offshore wind and net zero.

Offshore site selection

The initial site selection was run by The Crown Estate as part of its process to award extensions to existing operational projects. Criteria included, for example, that extensions must share a boundary with the existing wind farm. As Greater Gabbard has two array areas separated by a shipping route, North Falls is similarly separated into two array areas. Additional constraints considered included: anchorage areas, military areas, existing cables and pipelines.

Offshore site selection has also included the proposed interconnector cable corridor between the northern and southern array areas and the offshore export cable corridor. North Falls followed key principles including selecting the most direct route to shore, and minimising impacts to designated sites, other users of the sea and navigation. Five cable corridor options were originally identified, and following consultation with marine and maritime stakeholders, a final offshore cable corridor is now proposed in the PEIR.

Landfall

North Falls commissioned a study to identify suitable locations for landfall when it became clear that National Grid would offer a grid connection on Tendring Peninsula. With the results of this study and influence from the community as a result of the first two phases of consultation, the area between Frinton-on-Sea and Clacton-on-Sea was identified as the least constrained landfall location and taken forward for further assessment.

Onshore cable corridor

For the onshore cable corridor a series of initial 400m wide options were identified based on assumptions around the the project. Key high-level constraints were identified, with engineering, environmental, land and planning input sought to inform this initial site selection stage. To align with national policy and stakeholder feedback and with influence from the project's public consultation activity, North Falls and Five Estuaries began working more collaboratively on the underground onshore export cable infrastructure locations. A combined cable corridor study looked at the potential for a single onshore cable corridor option for both projects.

Within the North Falls PEIR, the area identified for assessment comprises a single combined cable corridor connecting the landfall search area to the onshore substation zone of up to 243m wide. This is still subject to ongoing refinement through data collection, engineering assessments and consultation.

Grid connection

The onshore grid connection location was decided via National Grid's Connection and Infrastructure Options Note (CION) process, which took place between March 2019 and April 2021. Having understood that the grid connection would be located in Tendring, Essex, this location has been used as the basis of the North Falls site selection process. In parallel, through the Offshore Transmission Network Review (OTNR), North Falls is also evaluating options for an offshore gid connection. Such an option would be provided by a third party and regulated by UK and EU law (see further details on next page).



Onshore substation

Over the past two years, North Falls has sought to identify suitable options for the project's onshore substation to accommodate either North Falls alone or combined with Five Estuaries.

A broad 'area of search' was identified followed by a constraints mapping exercise to identify an initial 'long list' of potential options for the location of the onshore substation. Consultation with an expert topic group, supported by statutory bodies, was undertaken on the long list options and the site selection process. Parcels of less constrained land were identified within the area of search, and further assessment were undertaken to identify the preferred option: the onshore substation zone. This covers two potential sites capable of accommodating both North Falls and Five Estuaries.

Feedback question:

What outcome

would you like

Transmission

from the Offshore

Network Review?

PEIR reference

Chapter 4. Site Selection and Assessment of Alternatives

- Marine Conservation Zone

THE PROJECT

Components, optionality and construction

Project description

North Falls has an offshore array area of 150km² 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 up to 72 wind turbines on fixed foundations, the design of which is still to be determined but could include: monopile, suction bucket, gravity base or jacket. Array cables will connect the turbines in strings to either one or two offshore substation platforms, also on foundation(s). These contain electrical equipment and ancillary components to transform the voltage of the electricity generated by the turbines, so it can be transported either to the onshore transmission network or to an offshore connection point. Scour protection would be placed around the base of each of the foundations and seabed cables as required.

A subsea interconnector will join the project's northern and southern sections. In the event of an onshore grid connection, subsea export cables will bring the power to shore at a location known as 'landfall'. From there, underground onshore cables would carry the power to a new onshore substation and then on to the national grid.

At this stage of the project, some optionality is required to future-proof the development consent order and therefore a 'design envelope' approach has been adopted. The design envelope includes maximum and minimum parameters to be fully transparent and ensure that the worst case scenario is quantified and assessed.

Offshore works

The North Falls array area, where the turbines and offshore substation platform(s) will be located, is split into two boundaries separated by a shipping route. The northern and southern array boundaries cover areas of approximately 21km² and 129km², respectively.

Prior to offshore construction, pre-construction surveys would be undertaken to plan potential minor siting adjustments and identify whether unexploded ordnance and boulder clearance is required. Any other seabed obstructions such as discarded fishing gear or abandoned cables would also be removed.

Offshore construction should take around three years however the programme can be affected by the final design and layout of the components, supply chain and weather conditions during the work.



Connection options

One key area of optionality is around connection to the national grid. North Falls is committed to working with the Department of Energy Security and Net Zero to explore grid connection options as part of the Offshore Transmission Network Review (OTNR) process and as such has committed to exploring coordinated network designs, along with four other projects in East Anglia.

This means we are currently reviewing three options for the grid connection point:

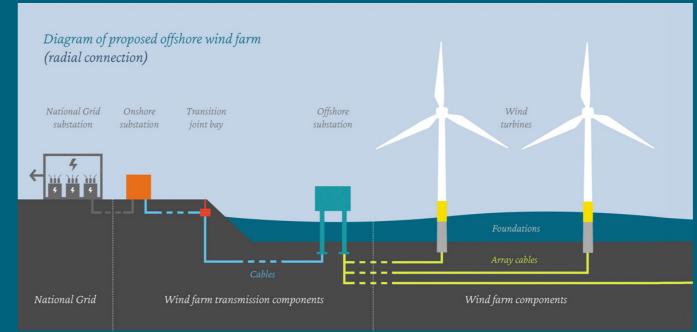
Option 1: Onshore electrical connection at a connection point within Tendring, Essex, with a project alone onshore cable route and onshore substation infrastructure;

Option 2: Onshore electrical connection at a National Grid connection point within Tendring, Essex, sharing an onshore cable route with separate onshore export cables with another project (such as Five Estuaries) where practicable; or

Option 3: Offshore electrical connection supplied by a third-party electricity network provider. Such a connection will potentially be identified through the OTNR process.

North Falls grid connection options







Diagrams are a simplified representation only and not to scale. Actual distances will be dependant on geography of the project.

PROJECT DESCRIPTION

Onshore works

North Falls' onshore infrastructure is proposed to be located entirely within Tendring, Essex. Its footprint is referred to as the 'onshore project area' with the exact siting of the infrastructure being refined through site selection, and with consideration given to consultation feedback and data from our surveys.

There are three key areas that make up the onshore project area as follows:

The landfall is where the offshore

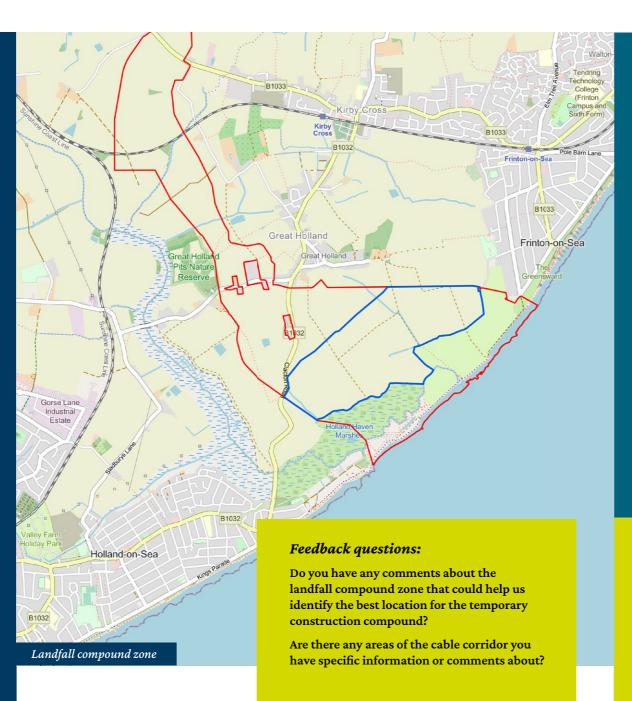
1. Landfall

export cables are brought onshore and connect to the onshore export cables within transition joint bays. It is likely to be located near Frintonon-Sea with construction work being undertaken from a temporary compound within what we refer to as the landfall compound zone. A construction technique called horizontal directional drilling will be used to install the cables at landfall. At our previous consultation we asked for any details that may help us to select the location for our temporary construction compound. This question remains important to us, as we are still to finalise the exact location of the construction compound. Please do share any local knowledge or ideas with us by submitting feedback.

2. Onshore cable corridor

From the landfall, onshore export cables, laid in ducts along the cable route, will carry electricity approximately 24km to the onshore substation. So far North Falls has identified broad onshore cable corridor(s) up to 243m in width, which will be refined down to a predominantly 60m-wide working width where the construction works for the onshore export cables will take place. Some sections may be wider to allow for more complex crossings such as railway lines, main roads or hedgerows. Some additional land adjacent to, or near, the cable corridor will also be required for temporary construction compounds.

At this stage the current corridor(s) still have a degree of flexibility and optionality. There will be further engineering design studies and ground investigation works, ongoing engagement with landowners and consultation feedback to take into account prior to the submission of the project's application. When it comes to construction, the export cables will be installed by open cut trenching, or trenchless techniques where needed, with land reinstated and returned to its former use after the work is completed with the exception of any land affected by permanent above ground infrastructure, specifically the onshore substation.



3. Onshore substation

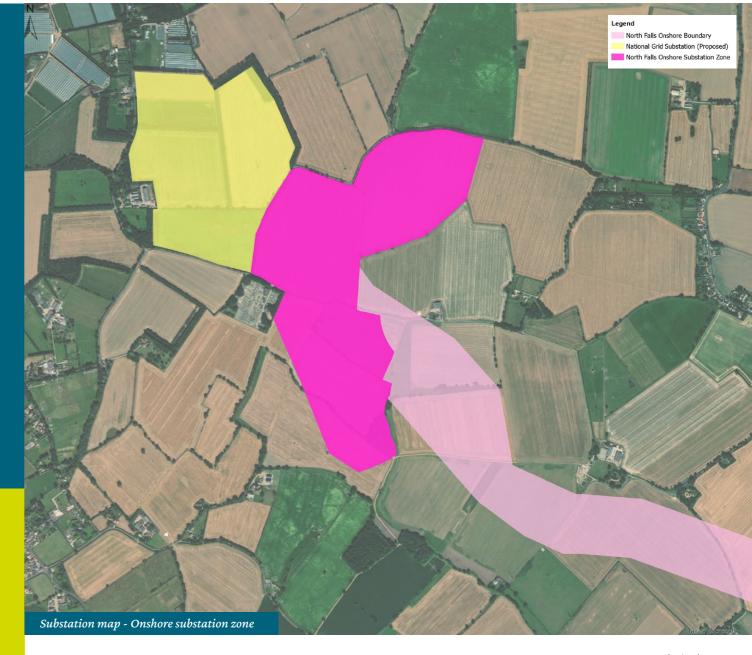
Again, the precise location of the onshore substation and grid connection is subject to ongoing consultation, however assuming a radial connection, the substation will be located in the onshore substation zone (see map). The onshore substation will feature either air insulated switchgear where the high voltage equipment is installed outdoors, or gas insulated switchgear where high voltage equipment is located within a building. A maximum area of 0.080km2 (8ha) would be required for the onshore substation. In addition there would be drainage and accesss infrastructure, and extensive landscaping such as bunds, woodland and hedgerow planting.

North Falls considered issues of good design from an early stage in the development of the project. Initially as part of the golden rules used for the site selection process but more recently through the preparation of a Design Vision Statement which sets out the project's design strategy for the onshore substation, identifying the constraints and opportunities relevant for electrical infrastructure situated in the local landscape.



Feedback question:

Looking at the proposed onshore substation zone, is there anything North Falls should know that could help with the final siting of the electrical infrastructure?



The North Falls PEIR assesses a wide range of potential impacts for physical, biological and human environmental topics for the whole project lifecycle.

This section takes a high-level look at the key topics that are relevant to the offshore and onshore elements of the project, as well as those relevant project-wide. For full details on each specific topic you can review the relevant chapter.

OFFSHORE

Marine geology, oceanography and physical processes

Boat-based geophysical and benthic surveys and desk-reviews of available data were undertaken to assess impacts on marine geology, oceanography and physical processes such as changes to suspended sediment concentrations, changes in seabed level, interruptions to bedload sediment transport and indentations on the seabed. Mitigation will be incorporated into the project design where practicable including: effective and strategic turbine spacing.

Marine water and sediment quality

The surveys mentioned above also enabled assessment of potential increases in suspended sediment and the potential deterioration of water quality due to the release of existing contaminants. Through the commitment to use best practice techniques to reduce the likelihood of any accidental release of pollutants the project is predicted to have no significant impact on marine water and sediment quality.

Fish and shellfish ecology

Species of commercial importance identified in our studies include sole, whelk, bass, thornback ray, horse mackerel, herring, cod, and plaice. The studies also covered locations for species of conservation importance at certain times of the year, and spawning and nursery grounds. Impacts reviewed include physical disturbance and habitat loss, underwater noise from construction activities, changes

in fishing activity, increased suspended sediments and the potential impact of electromagnetic fields around the cables during operation. Mitigation such as cable burial, cable protection, noise-limiting construction protocols and pollution protection measures will be implemented where practicable to ensure no significant impacts on fish and shellfish ecology.

Fisheries survey

Benthic and intertidal ecology

Offshore ornithology

North Falls undertook 24 monthly digital aerial surveys flown along transects across the array site plus buffer zones to record existing bird populations. The impacts assessed for the project include direct disturbance, displacement, collision risk and indirect effects on prey species and habitat. Mitigation measures include sensitive site selection of the offshore cable corridor to minimise overlap with the Outer Thames Estuary SPA, and a minimum air gap of 27m (five metres above the gap proposed in the North Falls Scoping Report) to reduce the risk of collisions, and a best-practice shipping protocol which may include actions such as designing transit routes to minimise disturbance within the SPA, restricting and minimising vessel

Through the use of mitigation measures, the project should not have significant effects on ornithology, even in cumulation with other projects except for some specific species such as the kittiwake and black-backed gull, where there may be a significant impact in terms of collision risk.

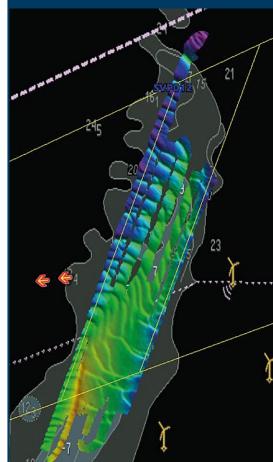
Common Seagull

Marine mammals

North Falls undertook two years of monthly aerial surveys for both marine mammals and seabirds. High resolution digital data was collected providing imagery for marine megafauna over the project's two array areas with a four kilometre buffer. As well as use of wider desk-based sources, these surveys provided information on the numbers and density of harbour porpoise, minke whale, grey seal and harbour seal.

Impacts identified could include: potential hearing damage and disturbance / behavioural impacts or barrier effects from underwater noise; an increase in vessel collision risk and indirect effects through changes to water quality and prey resources. Mitigation measures proposed include: soft-start and ramp-up for piling activities; use of best practice guidance to reduce vessel collision risk and implementation of a project environmental monitoring plan to manage potential pollution events. Additional mitigation will be implemented through a marine mammal mitigation plan, with an outline to be submitted alongside the DCO application.

Seabed survey (Marine geology)



Feedback question:

Do you have any comments about any of the offshore-related assessments or on the mitigation measures proposed?



Commercial fisheries

Shipping and navigation

Vessel traffic surveys were conducted over two periods in 2022 using Automatic Identification System (AIS), radar, and visual observations to ensure a full account of traffic within the area. The surveys, along with desk-based research, informed the assessment of impacts including: risk of vessel-to-structure or vessel-to-vessel collision; vessel displacement on vessels using nearby ports, and a reduction of emergency capabilities due to increased incident rates and/or reduced access for Search and Rescue (SAR) responders. An additional impact (interaction with subsea cables including cable protection) was assessed for the operational phase.

However, these risks can be largely mitigated by implementation of safety measures, adherence to international regulations and conventions, working with consultees on the turbine layout and with thorough emergency response planning and communication of information to other sea users.

Aviation and radar

Aviation and radar assessments focussed on potential impacts to civil and military radars for example due to: the height of construction vessels, the creation of an aviation obstacle environment causing permanent interference, or increased air traffic in areas related to wind farm activity. The project will use obstacle location charts in aeronautical documents, marking and lighting turbines and application of minimum separation distances, as well as targeted communication, to ensure there are no significant impacts.

Infrastructure and other users

This chapter of the PEIR focusses on potential impacts or interference with infrastructure or other users of the marine infrastructure, aggregate sites, and Ministry of Defence (MoD)

will also be in consultation with Trinity House to determine provide obstruction free search and rescue access.





Offshore and intertidal archaeology and cultural heritage

This refers to such issues as ship or plane wreck sites, or marine geophysical anomalies of archaeological interest, which were assessed during a marine geophysical survey in 2021, alongside desk-based research. Potential impacts related to direct (physical) impacts to known and also to potential heritage sites, as well as indirect impacts to the heritage assets and seascape character for example and changes to physical processes. There are no known sites within the study area that are subject to statutory protection. North Falls will use archaeological exclusion zones or minor siting adjustments as mitigation with full details on the proposed approach, and investigation into the final design of North Falls, to be covered in an Outlined Written Scheme of Investigation.



PEIR reference

Chapter 14. Commercial Fisheries

Chapter 15. Shipping and Navigation

Chapter 16. Offshore Archaeology and

Chapter 17. Aviation and Radar

Chapter 18. Infrastructure and Other

ONSHORE

Ground conditions and contamination

A Code of Construction Practice (CoCP) will be adhered to throughout construction, which will include an assessment of any risks to human health, soils and water, and will outline how industry best practice measures will be implemented to avoid, minimise and mitigate potential impacts. An outline version of the CoCP will be submitted as part of the project's DCO application.

Onshore air quality

Best practice dust mitigation measures will be followed, as well as other measures to be outlined in the CoCP (mentioned above), to minimise impacts such as construction dust, emissions from non-road mobile machinery and construction road vehicle exhaust emissions. Air quality considerations have been included in the site selection process for the onshore substation and associated infrastructure.

Onshore ecology

North Falls has undertaken extensive habitat surveys as well as surveys specific to species such as bats, reptiles, water vole and otters, hazel dormice and great crested newts.

The impacts assessed include those on: Holland Haven Marshes Site of Special Scientific Interest (SSSI) and Holland Haven Local Nature Reserve (LNR); other designated sites; hedgerows and arable field margins; impacts on specific species, and the spread of invasive non-native species.

To address impacts, the proposed location of the cable rout and onshore substation avoid designated sites, ancient woodlands, and specific habitats. Construction methods will be chosen carefully and an Ecological Management Plan (EMP) in line with best practice measures, will be implemented during construction.

All habitats subject to temporary construction impacts will be reinstated. In addition, North Falls has committed to delivering a minimum of 10% biodiversity net gain for the project.

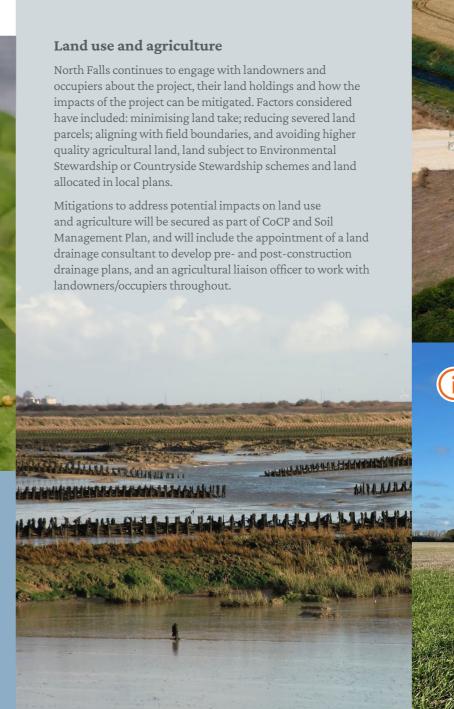




Water resources and flood risk

The physical characteristics of the watercourses within the onshore project area were assessed with specific potential impacts such as direct disturbance of surface water bodies, increased sediment supply, contaminants, changes to surface and groundwater flows, and flood risk. Mitigation and soil management measures will be included in the CCoP and also in a Soil Management Plan

During construction, trenchless methods will be used install cables at rivers and most ordinary watercourses temporary Bailey bridges will be used across rivers, and best practice measures will be employed at trenched crossings. A land drainage consultant will develop preand post-construction drainage plans.







Onshore ornithology

North Falls has undertaken onshore ornithological surveys during both non-breeding and breeding seasons and considered potential direct impacts such as habitat loss, as well as indirect impacts due to construction disturbance, such as noise and light, and operation and maintenance activities. Mitigation measures will be integral to the EMP mentioned above and will include design and construction methodology and habitat reinstatement.



North Falls conducted an historic environment walkover survey, geoarchaeological desk-based assessment, further research and an archaeological geophysical survey, with further trial trenching investigations also taking place throughout 2023. The work highlighted that indirect and direct physical impacts are predicted to occur on heritage assets, both non-designated and designated. The cable route will be further refined and micro-sited to avoid areas of high archaeological potential and there will be a need to undertake additional surveys to refine the archaeological mitigation requirements.



Noise and vibration

Baseline surveys have been conducted near the proposed landfall and onshore substation zones to assess potential noise and vibration impacts. Site selection has considered nearby residential properties, with noise and vibration mitigation to be detailed in the CoCP. This is likely to include: restricted use of plant, speed limits, use of quieter working methods, and phasing of works to avoid sensitive times.

During operation, certain onshore substation equipment would be enclosed and vibration isolation mounts used.

Three developments in addition to North
Falls were scoped into the cumulative impacts
assessment for further review due to their scale
and potential for overlapping. Namely: East Anglia
GREEN, Five Estuaries Offshore Wind Farm and
Little Bromley Battery Energy Storage System.
Whichever construction contractor North Falls uses
would be required to coordinate with the other
relevant contractors to minimise the potential for
cumulative impacts. Details on that liaison and on
mitigations will be specified in the final Construction
Environmental Management Plan (CEMP) and
Construction Traffic Management Plan (CTMP).

Traffic and transportation

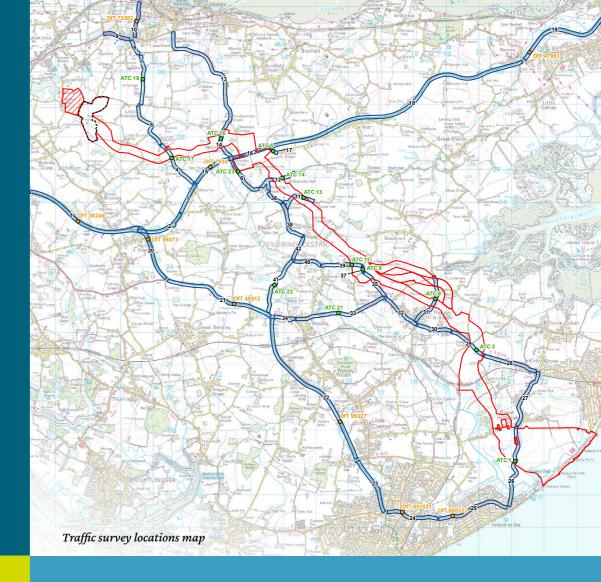
The impacts assessed in the project's traffic and transport reviews included: traffic-induced community separation, pedestrian and cyclist amenity, highway safety, and traffic delays due to delivery of abnormal loads.

These issues can be reduced by restricting timeframes for heavy goods vehicle (HGV) movements, through the use of temporary haul roads along the onshore cable route, by creating vehicle crossovers and controlling project vehicle routes. HGV movements would be restricted through Thorpe-le-Soken and vehicles routed from certain sensitive roads to the temporary haul road, or along other designated routes. No construction traffic will be permitted to travel via alternative routes.

The full strategy for traffic and transport management during construction will be covered in the Outline CTMP, which will be submitted with the development consent order application. This will contain details of how HGV movements would be controlled, monitored and enforced and will provide details of the mechanisms for managing access design and offsite highway works.

Feedback question:

Do you have any comments about any of the onshore-related assessments or on the mitigation measures proposed?





PEIR reference

Chapter 24. Onshore Ornithology

Chapter 25. Onshore Archaeology and

Cultural Heritage

Chapter 26. Noise and Vibration

Chapter 27. Traffic and Transport





PROJECT-WIDE TOPICS

Human health

Landscape and visual

In assessing the landscape and visual impacts of the onshore elements of North Falls, those factors considered included potential changes to landscape elements and fabric; changes to landscape character; changes to landscape designations; and changes to visual amenity.

Mitigation measures were incorporated as part of the site selection process, as well as in the choice of construction methods, through proposed habitat reinstatement and within the project design. Additional landscape mitigation and biodiversity enhancement, which includes new hedgerow and woodland planting, will also be undertaken. Further details on these can be read in the project's Design Vision.

Seascape, landscape and visual

The study area for seascape, landscape and visual impacts was defined as a 60km radius around the proposed array areas, including parts of the Thames estuary, Suffolk, Essex, and Kent. The assessment is based on the maximum potential turbine size to ensure it was future-proofed in case of technological advances.

North Falls is predicted to impact views from certain Suffolk coastal areas such as Sizewell Beach, sections of the Suffolk Coast Path and Suffolk Coast and Heaths AONB due to visibility of its turbines during operation influencing the seascape and landscape character.

Photomontages are available in the PEIR chapter (Chapter 29) to enable those with an interest to see how the wind farm could look. There is also a 3D computer-generated interactive model with 17 different viewpoints to provide further visual examples in different conditions. Please use the QR code to view the model

Climate change

The project was assessed for greenhouse gas emissions throughout its lifecycle with the main emissions sources being embodied emissions from within onshore and offshore materials, and those from marine vessels, road traffic, and construction machinery. Mitigation has been incorporated into the project design to reduce, eliminate, and/or compensate for emissions.

Given the emissions reduction the wind farm will represent when compared with electricity production from fossil fuels, North Falls is predicted to have a significant benefit in relation to climate change.



Socio-economics

reviewed as well as adverse effects on: and mineral resources.

The benefits predicted for the project value of goods and services of the local and national economy) and job-creation through use of the local supply chain infrastructure, disturbance (noise, air, and minerals. For these adverse effects, a wide range of mitigation measures will engagement, and during operations

Tourism and recreation

Marine, coastal and onshore tourism and recreational assets in Essex and Suffolk were reviewed for all project phases. For the project's construction phase impacts assessed were road traffic disruption, a reduction in tourist numbers and spending, and the availability of holiday accommodation due to non-resident workers. During the project's operation, impacts assessed were related to negative perceptions of offshore wind farms.

The project's comprehensive site selection process aimed to minimise impacts on the natural surroundings, on designated areas, ancient monuments or listed buildings, and tourist destinations. At the start of the project underground cables were specified, and other mitigation measures proposed include a rolling construction programme, implementation of flexible management plans and good communications throughout any works.

Do you have any further comments or feedback on the project?

PEIR reference

Chapter 28. Human Health

Chapter 31. Socio-economic

Chapter 29. Seascape, Landscape and

Chapter 30. Landscape and Visual (LVIA)

Schedule of Mitigation

Chapter 32. Tourism and Recreation



include increases in gross value added (the visual), plus potential disruption to fishing

WAYS TO HAVE YOUR SAY

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

Face-to-face events

We are holding five face-to-face events at locations near the project search area as well as two webinars at 6pm on Tuesday 13 June and 6pm on Wednesday 21 June. Details of the events and where/how to join are at the front of this booklet.

Online consultation

All information and links to consultation documents, including the online feedback questionnaire, can be found via the consultation portal: stat.northfallsoffshore.com which can also be accessed via our website: www.northfallsoffshore.com

The consultation portal also includes a consultation map where you can pinpoint specific locations you have questions or comments on.

Feedback questionnaire

A feedback questionnaire is available at our face-to-face events, online or by request via phone or email. To mail a response you can download the PDF questionnaire or request a hard copy, and once completed send it to: FREEPOST North Falls.

Website

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

Email and telephone:

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

To send your response by mail please use: FREEPOST North Falls. No stamp required.

To stay in touch

Sign up to email updates or let us know if you would prefer a printed version of the information to be sent to your home.

Other contact details

If you are a landowner with related queries please contact the project's land agent Dalcour Maclaren:

Address: Unit 1 Staplehurst Farm, Western on the Green, Bicester, Oxfordshire, OX25 3QU

E: northfalls@dalcourmaclaren.com T: 01622 623025

If you are from the fisheries industry please contact our fisheries consultants Brown & May Marine Ltd:

Address: Progress Way, Mid Suffolk Business Park Eye, Suffolk, IP23 7HU E: northfalls@brownmay.com

T: **01379 772871**

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





Offshore Wind Farm



CONTACT US

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