NORTH FALLS

Offshore Wind Farm

ENVIRONMENTAL STATEMENT

Chapter 1: Introduction

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Glossary of Acronyms

AfL	Agreement for Lease
DCO	Development Consent Order
DESNZ	Department for Energy Security and Net Zero
EIA	Environmental Impact Assessment
EPP	Evidence Plan Process
ES	Environmental Statement
GGOW	Greater Gabbard Offshore Wind Farm
GW	Gigawatt
HRA	Habitats Regulations Assessment
IEMA	Institute of Environmental Management and Assessment
km	Kilometre
MEEB	Measures of Equivalent Environmental Benefit
MW	Megawatt
NFOW	North Falls Offshore Wind Farm Limited
NGET	National Grid Electricity Transmission
NSIP	Nationally Significant Infrastructure Project
NTS	Non-Technical Summary
OCSS	Offshore Coordination Support Scheme
Ofgem	Office of Gas and Electricity Markets
OFTO	Offshore Transmission Owner
OSP	Offshore Substation Platform
OTNR	Offshore Transmission Network Review
PEIR	Preliminary Environmental Information Report
RWE	RWE Renewables UK Swindon Limited
SSER	SSE Renewables Offshore Windfarm Holdings Limited
UK	United Kingdom
WTG	Wind Turbine Generator

Glossary of Terminology

Array area	The offshore wind farm area, within which the wind turbine generators, array cables, offshore substation platform(s) and / or offshore converter platform will be located.
Array cables	Cables which link the wind turbine generators with each other, the offshore substation platform(s) and / or the offshore converter platform.
Five Estuaries	Five Estuaries Offshore Wind Farm
Landfall	The location where the offshore export cables come ashore at Kirby Brook.
National grid connection point	The grid connection location for the Project. National grid is proposing to construct new electrical infrastructure to allow the Project to connect to the grid, and this new infrastructure will be located at the national grid connection point.
Offshore cable corridor	The corridor of seabed from array area to the landfall within which the offshore export cables will be located.
Offshore converter platform	Should an offshore connection to an HVDC interconnector cable be selected, an offshore converter platform would be required. This is a fixed structure located within the array area, containing HVAC and HVDC electrical equipment to aggregate the power from the wind turbine generators, increase the voltage to a more suitable level for export and convert the HVAC power generated by the wind turbine generators into HVDC power for export to shore via a third party HVDC interconnector cable.
Offshore export cables	The cables which bring electricity from the offshore substation platform(s) to the landfall, as well as auxiliary cables.
Onshore cable route	Onshore route within which the onshore export cables and associated infrastructure would be located.
Onshore export cables	The cables which take the electricity from landfall to the onshore substation. These comprise High Voltage Alternative Current (HVAC) cables and ancillary cables, buried underground.
Onshore project area	The boundary within which all onshore infrastructure required for the Project will be located (i.e. landfall; onshore cable route, accesses, construction compounds; onshore substation and national grid substation extension), as considered within the PEIR.
Onshore substation	A compound containing electrical equipment required to transform and stabilise electricity generated by the Project so that it can be connected to the national grid.
Onshore substation works area	Area within which all temporary and permanent works associated within the onshore substation are located, including onshore substation, construction compound, access, landscaping, drainage and earthworks.
National grid substation connection works	Infrastructure required to connect the Project to the national grid connection point.
Bentley Road improvement works	Works involving the widening and improvement of the carriageway along Bentley Road, required to facilitate heavy goods vehicles and abnormal indivisible load access to the onshore cable route and the onshore substation.
The Applicant	North Falls Offshore Wind Farm Limited (NFOW).
The Project Or 'North Falls'	North Falls Offshore Wind Farm, including all onshore and offshore infrastructure.

1 Introduction

1.1 Purpose of this document

1. This document is the Environmental Statement (ES) for North Falls Offshore Wind Farm (herein 'North Falls' or 'the Project'). This ES is submitted as part of an application for a Development Consent Order (DCO) pursuant to Section 37 of the Planning Act 2008. Further detail on the legislative context for North Falls is provided in ES Chapter 3 Policy and Legislative Context (Document Reference: 3.1.5).
2. The purpose of the ES is to provide the decision-maker, stakeholders and all interested parties with the environmental information required to develop an informed view of any likely significant effects identified during the Environmental Impact Assessment (EIA), as required by The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations 2017).
3. This ES describes the baseline environment; EIA methodology; likely significant effects (assessed to date); and any proposed mitigation measures. It also sets out the consultation undertaken to date on the EIA (ES Chapter 7 Technical Consultation, Document Reference: 3.1.9).
4. The EIA considers likely significant effects associated with the construction, operation, maintenance and decommissioning phases of North Falls for the Project alone and provides an assessment of the cumulative effects with other plans and projects.

1.1.1 Consultation

5. This ES has been informed by the following consultation:
   - A Scoping Opinion was provided by the Planning Inspectorate in August 2021.
   - Ongoing technical consultation via the Evidence Plan Process (EPP) (discussed further in ES Chapter 7 Technical Consultation, Document Reference: 3.1.9).
   - Public and stakeholder consultation under Sections 42, 47 and 48 of the Planning Act 2008 including consultation on the Preliminary Environmental Information Report (PEIR).
6. Feedback from the consultation has been taken into consideration and, where practicable and appropriate, used to inform the design of North Falls and the scope of the EIA.

1.2 Background to North Falls

7. In February 2017, The Crown Estate launched an opportunity for existing wind farms to apply for project extensions. North Falls Offshore Wind Farm Limited (NFOW) applied for a lease to develop an extension to the western boundary of the existing Greater Gabbard Offshore Wind Farm (GGOW). In August 2019, The Crown Estate consulted on and then concluded a plan-level Habitats Regulations Assessment (HRA) for the proposed extension projects and confirmed that

Greater Gabbard Extension, now named North Falls Offshore Wind Farm would be among seven projects that would be awarded an Agreement for Lease (AfL).

8. North Falls would make an important contribution to United Kingdom (UK) policies and targets through the generation of clean, low carbon, renewable electricity (see ES Chapter 2 Need for the Project, Document Reference: 3.1.4).

9. The North Falls project area comprises:

   - The offshore project area:
     - The offshore wind farm area (hereafter the 'array area') - within which the wind turbine generators (WTG), offshore substation platform(s), offshore converter platform (if required), platform interconnector cable and array cables will be located;
     - Offshore cable corridor - the corridor of seabed from the array area to the landfall within which the offshore export cables will be located;
   - The onshore project area:
     - Landfall - the location where the offshore export cables come ashore at Kirby Brook on the Essex coast;
     - Onshore cable route - the route within which the onshore export cables and associated infrastructure, including accesses and temporary working areas, would be located;
     - Onshore substation works area – the area within which all temporary and permanent works associated within the onshore substation are located, including the onshore substation, construction compound, earthworks, access, landscaping and drainage;
     - National grid substation connection works – infrastructure required to connect the Project to the national grid connection point; and
     - Bentley Road widening works – areas of road amendments along Bentley Road, required to facilitate access to the onshore cable route and the onshore substation.

10. The North Falls array area is 95km^2 and is located approximately 40km (at the closest point) off the East Anglian coastline.

11. The offshore cable corridor runs from the array area to the landfall area at Kirby Brook, Essex, routing around various constraints discussed further in ES Chapter 4 Site Selection and Assessment of Alternatives (Document Reference: 3.1.6).

12. Onshore export cables will then transport the electricity to the onshore substation located near Ardleigh within the Tendring district of Essex before it enters the national grid. The offshore and onshore project locations are shown in ES Figures 1.1 and 1.2 (Document Reference: 3.2.1), respectively. Details of the Project Design Envelope are provided in ES Chapter 5 Project Description (Document Reference: 3.1.6).

1.3 Co-operation with other projects

13. Recognising feedback received from stakeholders to date, NFOW has committed to exploring coordinated network designs, along with other relevant projects in East Anglia. As such, NFOW is currently reviewing the following options for the Project's national grid connection point:

- Option 1: Onshore electrical connection at a national grid connection point within the Tendring peninsula of Essex, with a project alone onshore cable route and onshore substation infrastructure;
- Option 2: Onshore electrical connection at a national grid connection point within the Tendring peninsula of Essex, sharing an onshore cable route and onshore cable duct installation (but with separate onshore export cables) and co-locating separate project onshore substation infrastructure with Five Estuaries; or
- Option 3: Offshore electrical connection supplied by a third party.

14. These options are discussed further in ES Chapter 5 Project Description (Document Reference: 3.1.7) and the relevant worst case scenarios are assessed in each technical chapter (ES Chapters 8 to 33 (Document References: 3.1.10 to 3.1.35)).

15. A decision on the selected option would be made post-consent. Option 2 is subject to North Falls and Five Estuaries achieving consent and financial close in timescales which are sufficiently aligned. In addition, Option 3 is subject to complex commercial, legislative and regulatory hurdles which need to be resolved to make this feasible.

16. NFOW co-operated with the Department for Energy Security and Net Zero (DESNZ) to explore grid connection options, as part of the Offshore Transmission Network Review (OTNR) process which is now complete. The OTNR considered changes to the national grid, that would pave the way for more coordinated grid opportunities. This review has brought together Government departments and industrial bodies, as well as key stakeholders involved in the delivery of offshore wind, interconnectors and offshore networks.

17. To compliment arrangements made as part of the OTNR, the Offshore Coordination Support Scheme (OCSS) was also launched in 2022 by DESNZ. The primary objective of the OCSS is for DESNZ to provide grant payments to projects to enable the development of coordinated options for offshore transmission, in order to allow developers to assess if such options are a viable alternative to radial connections. NFOW has applied to the OCSS scheme in consortium with National Grid Electricity Transmission (NGET) and Five Estuaries for connection to Sea Link, a marine cable between Suffolk and Kent proposed by NGET as part of their Great Grid Upgrade.

18. NFOW continues to engage with Government, Office of Gas and Electricity Markets (Ofgem) and other developers to explore the potential options. Opportunities for co-operation will continue to be explored throughout the project development phase, taking into account the relevant policy requirements at the time.

1.4 The Applicant and the North Falls team

19. NFOW is a joint venture between SSE Renewables Offshore Windfarm Holdings Limited (SSER) and RWE Renewables UK Swindon Limited (RWE), both of which are highly experienced developers. Both organisations are committed to developing renewable energy in the UK.

20. SSER (owned by SSE Renewables Limited) is a leading developer, owner and operator of renewable energy across the UK and Ireland, with a portfolio of

around 4 gigawatts (GW) of onshore wind, offshore wind and hydro. Part of the SSER strategy is to drive the transition to a net zero future through the world class development, construction and operation of renewable energy assets.

21. SSER is a partner in the following existing UK offshore wind farms (operational or under construction):

    - Beatrice – operational in north Scotland (588 megawatts (MW));
    - Greater Gabbard – operational off the cost of Suffolk (504MW);
    - Dogger Bank A, B and C offshore wind farms (formerly known as Creyke Beck A and B, and Teesside A) – under construction, off the coast of north-east England (3600MW (3.6GW) in total); and
    - Seagreen – operational off the east of Scotland (1,075MW (1.075GW)). Consent for a further 36 turbines has also been granted for Seagreen 1A.

22. RWE is one of the world's leading renewable energy companies. The company has onshore and offshore wind farms, photovoltaic plants and battery storage facilities with a combined pro-rata capacity of approximately 9GW.

23. RWE is a partner or full owner in the following existing UK offshore wind farms (operational or under construction) and has recently had consent granted for Awel-y-Mor, off the coast of North Wales:

    - Greater Gabbard (as above);
    - Galloper – operational off the coast of Suffolk (353MW);
    - Gwynt y Môr – operational in North Wales (576MW);
    - Humber Gateway - operational off the coast of East Yorkshire (219MW);
    - London Array - operational off the coast of Kent / Essex (630MW);
    - Rampion - operational off the coast of Sussex (400MW);
    - Rhyl Flats – operational in North Wales (90MW);
    - Robin Rigg - operational in the Solway Firth (174MW);
    - Scroby Sands - operational off the coast of Norfolk (60MW);
    - Sofia – under construction, off the coast of north-east England (1,400MW); and
    - Triton Knoll – operational off the coast of Lincolnshire (857MW).

24. This extensive portfolio provides NFOW with valuable lessons learned and experiences from consenting, constructing and operating offshore wind farms, which will be used to inform the design of North Falls. It also provides a sound understanding of the potential impacts of the Project through the ability to draw on available monitoring data.

25. In addition to their portfolios of existing offshore wind farms, RWE and SSER are each in the process of consenting a range of other wind farms. For example:

    - RWE is leading the development of Five Estuaries off the east coast of England, Rampion 2, of the south coast of England and Dogger Bank South offshore wind farms, off the north-east coast of England.

- SSER is leading the development of Berwick Bank offshore wind farm off the east coast of Scotland; and is a partner in the Ossian offshore wind farm off the east coast of Scotland; and Dogger Bank D offshore wind farm, off the north-east coast of England.

26. Royal HaskoningDHV has been commissioned by NFOW as the consultant to lead the North Falls EIA, with support from additional consultants who are responsible for specialist topics.

27. Royal HaskoningDHV has provided environmental, development and consenting support on over 18.5GW of offshore wind farms over the last 20 years. Its EIA activities and ESs are accredited by the Institute of Environmental Management and Assessment (IEMA) under the EIA Quality Mark Scheme. This demonstrates Royal HaskoningDHV's expertise in the field and commitment to ensuring EIA is maintained at high quality, in accordance with best practice and therefore satisfies the requirements of the EIA Regulations 2017 which state that the developer must ensure the ES is prepared by competent experts.

1.5 Purpose of North Falls

28. Climate change as a result of greenhouse gas emissions is a global issue associated with impacts on weather, ecosystems, human health and welfare. The UK has made commitments internationally and domestically to limit global temperature increases and reduce carbon emissions (further detail is provided in ES Chapter 3 Policy and Legislative Context, (Document Reference: 3.1.5)). Production of electricity using clean, renewable sources such as offshore wind is a critical component in achieving these commitments.

29. North Falls would make a substantial contribution, both to the achievement of UK decarbonisation targets and to global commitments to mitigating climate change. By generating low carbon, renewable and low cost electricity in the UK, North Falls will also help to reduce the UK's reliance on imported energy and to improve energy security. Further detail is provided in ES Chapter 2 Need for the Project (Document Reference: 3.1.4).

1.6 Consent and EIA process

30. The overall objective of the EIA process is to identify likely significant effects resulting from a project, and to allow adverse effects to be avoided or minimised where practicable.

31. North Falls has a planned capacity of more than 100MW and therefore is considered a Nationally Significant Infrastructure Project (NSIP) under the Planning Act 2008. As noted above, the EIA Regulations 2017 apply to the DCO application for North Falls.

32. The assessment methodology that has been applied to the development of the ES is explained in further detail in ES Chapter 6 EIA Methodology (Document Reference: 3.1.8). This methodology has been developed in consultation with relevant technical stakeholders, discussed further in ES Chapter 7 Technical Consultation (Document Reference: 3.1.9).

1.7 The ES structure

33. The ES reports on the likely significant effects associated with the onshore and offshore infrastructure required for North Falls, described further in ES Chapter 5 Project Description (Document Reference: 3.1.7).

34. The ES comprises three volumes:

    - Volume 3.1: ES Chapters (chapter list shown in Table 1.1);
    - Volume 3.2: Figures; and
    - Volume 3.3: Appendices.

35. In addition to the above, a Non-Technical Summary (NTS) (Document Reference: 3.1.1) is provided which summarises the key baseline data and findings of the ES.

36. A Report to Inform Appropriate Assessment (Document Reference: 7.1.1 to 7.1.6) and Habitats Regulations Derogation (Document Reference: 7.2), including in-principle compensation proposals, where appropriate, and a Marine Conservation Zone Assessment Report (Document Reference: 7.3) are also provided with the DCO application.

Table 1.1 ES Volume 3.1 chapter list

Section	Chapter headings
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Project wide (onshore and offshore)	Chapter 29 Seascape, Landscape and Visual Impact Assessment

Section	Chapter headings
	Chapter 30 Landscape and Visual Impact Assessment Chapter 31 Socio-economics Chapter 32 Tourism and Recreation Chapter 33 Climate Change Chapter 34 Major Accidents and Disasters

1.8 References

The Planning Inspectorate (2021) Scoping Opinion: Proposed North Falls Offshore Wind Farm. Available online at:

https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010119/EN010119-000054-EN010119%20-%20Scoping%20Opinion.pdf

NORTH FALLS

Offshore Wind Farm

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HARNESSING THE POWER OF NORTH SEA WIND

North Falls Offshore Wind Farm Limited

A joint venture company owned equally by SSE Renewables and RWE.

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