NORTH FALLS

Offshore Wind Farm

ENVIRONMENTAL STATEMENT

Chapter 18 Infrastructure and Other Users

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Contents

Tables

Figures (Volume 3.2)

Glossary of Acronyms

AfL	Agreement for Lease
BEIS	Department for Business, Energy and Industrial Strategy
CEA	Cumulative Effect Assessment
DCO	Development Consent Order
DESNZ	Department for Energy Security and Net Zero
EIA	Environmental Impact Assessment
ES	Environmental Statement
ESCA	European Subsea Cable UK Association
GGOW	Greater Gabbard Offshore Wind Farm
GWF	Galloper Wind Farm
HVAC	High Voltage Alternative Current
ICPC	The International Cable Protection Committee
MCZ	Marine Conservation Zone
MoD	Ministry of Defence
NFOW	North Falls Offshore Wind Farm Limited
NPS	National Policy Statement
NRA	Navigational Risk Assessment
NSIP	Nationally Significant Infrastructure Project
OGA	Oil and Gas Authority
OWF	Offshore Wind Farm
PEIR	Preliminary Environmental Information Report
PEXA	Practice and Exercise Area
SAR	Search and Rescue
UK	United Kingdom
UXO	Unexploded Ordinance
VEOWL	Five Estuaries Offshore Wind Farm Limited
WTG	Wind Turbine Generator
ZoI	Zone of Influence

Glossary of Terminology

Array area	The offshore wind farm area, within which the wind turbine generators, array cables, platform interconnector cable, offshore substation platform(s) and/or offshore converter platform will be located. 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.
The Project or 'North Falls'	North Falls Offshore Wind Farm, including all onshore and offshore infrastructure.
The Applicant	North Falls Offshore Wind Farm Limited (NFOW).
Landfall	The location where the offshore cables come ashore at Kirby Brook.
Offshore cable corridor	The corridor of seabed from array areas to the landfall within which the offshore export cables will be located.
Offshore export cables	The cables which bring electricity from the offshore substation platform(s) to the landfall.
Offshore project area	The overall area of the array area and the offshore cable corridor.
Offshore converter platform (OCP)	Should an offshore connection to a third party 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. 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 an HVDC interconnector cable.
Offshore substation platform(s) (OSP)	Fixed structure(s) located within the array area, containing HVAC electrical equipment to aggregate the power from the wind turbine generators and increase the voltage to a more suitable level for export to shore via offshore export cables.
Onshore export Cables	The cables which take the electricity from landfall to the onshore substation. These comprise High Voltage Alternative Current (HVAC) cables and auxiliary cables, buried underground.
Platform interconnector cable	Cable connecting the offshore substation platforms (OSP); or the OSP and offshore converter platform (OCP).
Safety zones	A marine zone outlined for the purposes of safety around a possibly hazardous installation or works / construction area.
Scour protection	Protective materials to avoid sediment being eroded away from the base of the wind turbine generator foundations and offshore substation platform(s) or / and offshore converter platform (OCP) foundations as a result of the flow of water.
Search and Rescue (SAR)	The search and provision of aid to people who are in distress or imminent danger.
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.
Wind turbine generator (WTG)	Power generating device that is driven by the kinetic energy of the wind.

18 Infrastructure and Other Users

18.1 Introduction

1. This chapter of the Environmental Statement (ES) considers the likely significant effects of the North Falls Offshore Wind Farm (OWF) (hereafter "North Falls" or "the Project") on infrastructure and other users. The chapter provides an overview of the existing environment for the offshore project area, followed by an assessment of the likely significant effects for the construction, operation, maintenance and decommissioning phases of the Project.
2. This chapter has been written by Royal HaskoningDHV, with the assessment undertaken with specific reference to the relevant legislation and guidance, of which the primary source is the National Policy Statements (NPS). Details of these and the methodology used for the Environmental Impact Assessment (EIA) and Cumulative Effect Assessment (CEA) are presented in Section 18.4.
3. The assessment should be read in conjunction with following linked ES chapters (Volume 3.1):
    - Chapter 14 Commercial fisheries (Document Reference: 3.1.16);
    - Chapter 15 Shipping and navigation (Document Reference: 3.1.17); and
    - Chapter 17 Aviation and radar (Document Reference: 3.1.19).

18.2 Consultation

4. Consultation with regard to infrastructure and other users has been undertaken in line with the general process described in ES Chapter 6 EIA Methodology (Document Reference: 3.1.8). The key elements to date have included scoping and ongoing consultation with owners and operators of assets in proximity to North Falls. The feedback received has been considered in preparing the ES. Table 18.1 provides a summary of how the consultation responses received to date have influenced the approach that has been taken.
5. Consultation was undertaken on the Preliminary Environmental Information Report (PEIR) during May to July 2023. Feedback on the PEIR has been considered during the production of the ES.
6. Feedback from other users, related to commercial fisheries and shipping and navigation are discussed in ES Chapters 14 (Document Reference: 3.1.16) and 15 (Document Reference: 3.1.17), respectively. This chapter has been updated following the consultation on the PEIR in order to produce the final assessment. Full details of the consultation process are presented in the Consultation Report, submitted as part of the Development Consent Order (DCO) application.

Table 18.1 Consultation responses

Consultee	Document / Date	Comment	Response / where addressed in the ES
Natural England	16/08/2021 Scoping Opinion	Overlapping subsea cables in the southern array area could lead to the placing of cable crossings/protection within the Kentish Knock	The boundary for the Project has been amended to avoid

Consultee	Document / Date	Comment	Response / where addressed in the ES
		East Marine Conservation Zone (MCZ), which partially overlaps with the southern array. The potential impact of cable crossings/protection in the Kentish Knock MCZ will need to be assessed.	any overlap with the Kentish East MCZ. A MCZ assessment of indirect effects is submitted alongside this ES.
Natural England	16/08/2021 Scoping Opinion	North Falls array areas and export cable corridor overlap closed disposal sites. The interconnector cable overlaps the Inner Gabbard East disposal site. Construction (and decommissioning) activities could potentially release contaminated sediment or sediment that is not the same as the surrounding seabed during construction. Offshore surveys should be considered for the North Falls OWF site and offshore export cable corridor to determine if any contaminants from previous disposal activities are present.	Impacts associated with the potential release of contaminated sediment are addressed in ES Chapter 9 Marine Water and Sediment Quality (Document Reference: 3.1.11). The northern array area and interconnector cable corridor have been removed from the offshore project area. Sampling and analysis for contaminants was undertaken, in consultation with Natural England, the MMO and Cefas.
Natural England	16/08/2021 Scoping Opinion	Mineral aggregate extraction areas adjacent to/overlapping the array(s) and/or export cable corridor. Further consideration of the cumulative effects of North Falls construction and aggregate extraction activities on the release of suspended sediments into the water column, sediment transport processes and nearby designated sites (e.g., Kentish Knock East MCZ) should be presented in the ES.	This is assessed in ES Chapter 8 Marine Geology, Oceanography and Physical Processes (Document Reference: 3.1.10).
The Planning Inspectorate	26/08/2021 Scoping Opinion	Potential cumulative impacts during all phases. The Inspectorate does not agree that this matter can be scoped out as insufficient justification has been provided to support the approach, including an absence of detail of proposed mitigation measures referred to in the Scoping Report (i.e. development of crossing agreement or similar) and the Inspectorate considers that there is potential for likely significant cumulative effects with other planned wind farm developments, including the extension to [Galloper Offshore Wind Farm] GOWF, East Anglia ONE North and East Anglia TWO.	The cumulative effects with other planned OWF are addressed in Section 18.7.
The Planning Inspectorate	26/08/2021 Scoping Opinion	The Inspectorate notes that there are no oil and gas pipelines or platforms in proximity to the scoping boundary, and no oil and gas licensed blocks overlap the scoping boundary. It is unclear from Section 2.13 as to whether impacts to these users are scoped into the ES. The Inspectorate considers that this matter can be scoped out of the ES on the basis that there is no oil or gas infrastructure within the scoping	North Falls Offshore Wind Farm Ltd (NFOW) agrees that oil and gas users are scoped out of the assessment.

Consultee	Document / Date	Comment	Response / where addressed in the ES
		boundary and therefore no significant effects are likely to occur.	
The Planning Inspectorate	26/08/2021 Scoping Opinion	The Inspectorate notes that there is potential for wartime unexploded Ordinance (UXO) to be located in the southern North Sea, but in this section of the Scoping Report it is stated that it is not proposed to ascertain the locations and develop any mitigation until after any DCO is granted. The Inspectorate considers that there is potential for UXO to give rise to significant effects if they are present within the scoping boundary, e.g., in relation to clearance activities there could be impact to offshore archaeology (see Section 2.11.3.1) and marine mammal ecology (Section 2.7.3.1). The ES should be supported by survey information to identify the potential location of UXO within the DCO boundary and an outline mitigation plan, in order to support an assessment of the worst case scenario associated with UXO clearance.	A UXO survey will be undertaken post-consent once the Project layout is known. This approach is in line with other consented OWFs. The UXO clearance would be subject to additional licencing. An estimate of number of clearance operations is provided in Section 5.5.4.1.2 of ES Chapter 5 Project Description (Document Reference: 3.1.7) and is included in the worst case scenario for assessment (Section 18.3.2)
The Planning Inspectorate	26/08/2021 Scoping Opinion	The Inspectorate notes that the offshore export cable corridor forming part of the Proposed Development has been provisionally located to minimise overlap with the planned dredging area for Harwich Approach Channel. It is unclear from Section 2.13 as to whether impacts to these users are scoped into the ES. The Inspectorate considers that where there is potential for likely significant effects to occur, this matter should be scoped into the ES. If it is a planning development, it should form part of the assessment of cumulative effects. The location of the planned dredging area should be shown on a figure within the ES.	Section 18.5.5 details that the offshore project area does not overlap with Harwich Approach Channel dredging area and is shown in Figure 18.2 (Document Reference: 3.2.14). Assessment of impacts on shipping and navigation is provided in ES Chapter 15 (Document Reference: 3.1.17).
The Planning Inspectorate	26/08/2021 Scoping Opinion	The Inspectorate notes that there is potential for cables and cable crossing/ protection to be located in the Kentish Knock East MCZ; the MCZ should be scoped into the ES as a receptor.	The boundary for the array area has been reduced, avoiding direct overlap with the MCZ and therefore there will be no North Falls infrastructure, including cables and cable protection in the MCZ.
The Planning Inspectorate	26/08/2021 Scoping Opinion	The Scoping Report states that the “EIA will be based on existing data and information gathered through consultation”. A study area is not defined, and no information is presented about the methodology that will be used to assess impacts, nor is any criteria presented to identify how significance of effect will be determined. The ES should be clear on how the assessment has been undertaken, taking into account relevant guidance and using an aspect specific methodology where practicable.	The study area and methodology are described in Sections 18.3.1 and 18.4, respectively.

Consultee	Document / Date	Comment	Response / where addressed in the ES
Defence Infrastructure Organisation (DIO)	16/08/2021 Scoping Opinion	The scoping report notes, at Section 2.13, that the project area falls within, passes through, or is close to, parts of five PEXAs, Kentish Knock (X5119), North Galloper (X5121), Outer Gabbard (X5117), South Galloper (X5120), and Gunfleet (X5118). Following an initial assessment of the scheme, we do not anticipate there to be any concerns relating to military maritime activities however, the Ministry of Defence (MOD) will review detailed submissions in relation to its maritime interests. Within the same section of the report the potential presence of UXO is identified as a relevant consideration. The potential presence of UXO and disposal sites should also be a relevant consideration to the installation of cables and other intrusive works that may be undertaken in the maritime environment. The developer should note that there is a disused, designated explosives dumping ground within the eastern part of the Gunfleet PEXA (X5118), this should be considered when cable routes are being designed.	Disposal and PEXAs areas are discussed in Sections 18.5.5 and 18.5.6. An estimate of number of clearance operations is provided in Section 5.5.4.1.2 of ES Chapter 5 Project Description (Document Reference: 3.1.17) and is included in the worst case scenario for assessment (Section 18.3.2) The disused UXO dumping ground in the eastern part of Gunfleet PEXA X5118 has been avoided through the route selection of the offshore cable corridor, discussed further in ES Chapter 4 Site Selection and Assessment of Alternatives (Document Reference: 3.1.6)
Cemex	28/09/2021 Meeting	The closest Cemex licence area is Shipwash 507/6 which is approximately 200m from the North Falls northern array boundary. The closest boundary is measured from the southern edge of Area 507/6. 507/6 is relatively small site, and experiences fast tides, so the dredgers need additional space to turn beyond the confines of the dredge area so they can fully dredge from the south to north boundaries, or vice versa depending on the tidal direction. With the wind farm to the south this would effectively sterilise part of the southern section of 507/6 as in a flood (i.e., southbound) tide the vessel would be lining up to start their dredge run from the south in order to stem the tide. It would be ok in an ebb tide as they dredge up to the boundary then turn away. Adjacency is also less of an issue along the eastern boundary of the dredge area which the planned NFOW northern array boundary runs parallel to (north-south) due to the direction of dredging. Cemex have experience of working in proximity to other wind farms, e.g., in the Humber and South coast, but never as close as 507/6 to North Falls. If a ship lost power and drifted towards the wind farm, there could be interaction with subsea cables if they are unable to bring the drag-head up quickly.	The northern array has been removed from the application, and the closest Cemex licence area is now c.21km from the remaining array area boundary.
DEME	05/04/2024 Meeting	Discussion around the planned activities of DEME at aggregates production agreement area 524 and the proposed activities for North Falls. Both parties agreed collaboration and liaison procedures should be put in place, whereby	North Falls has committed to liaison procedures via the Navigation Risk Assessment (ES Volume 3.3, Appendix 15.1, Document Reference: 3.3.16).

Consultee	Document / Date	Comment	Response / where addressed in the ES
		each are informed in advance of the other's plans.	
Cemex	11/04/2024 Email	The removal of the northern array is welcomed, as it had the potential to significantly impact our operations in Cemex's adjacent site.	Noted. The removal of the northern array is embedded mitigation, discussed in Section 18.3.3.

18.3 Scope

18.3.1 Study area

7. Direct overlap of activities is limited to the offshore project area (encompassing all Project infrastructure). The study area is then extended to 50km using expert judgement of the zone of influence (ZoI) for indirect effects and allows for potential interaction with a wide range of other users, both offshore and onshore.

8. The assessment considers existing as well as planned projects and activities, where information is within the planning system, otherwise publicly available, or has been made available through the consultation process.

18.3.2 Realistic worst-case scenario

9. The final design of the Project will be confirmed through detailed engineering design studies that will be undertaken post-consent. In order to provide a precautionary but robust impact assessment at this stage of the development process, realistic worst-case scenarios have been defined in terms of the likely significant effect that may arise. This approach to EIA, referred to as the Rochdale Envelope, is common practice for developments of this nature, as set out in Planning Inspectorate Advice Note Nine (2018). The Rochdale Envelope for a Project outlines the realistic worst-case scenario for each individual impact, so that it can be safely assumed that all other scenarios within the design envelope will have less impact. Further details are provided in ES Chapter 6 EIA Methodology (Document Reference: 3.1.8).

10. One area of optionality is in relation to the National Grid connection point (discussed further in ES Chapter 5, Project Description (Document Reference: 3.1.7)). The following grid connection options are included in the Project design envelope:

    - 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 (but with separate onshore export cables) and co-locating separate project onshore substation infrastructure with Five Estuaries Offshore Wind Farm (Five Estuaries hereafter); or
    - Option 3: Offshore electrical connection, supplied by a third party.

11. The realistic worst-case scenarios for the likely significant effects scoped into the EIA for the infrastructure and other users assessment are summarised in Table 18.2. These are based on the Project parameters described in Chapter 5 Project Description (Document Reference: 3.1.7), which provides further details regarding specific activities and their durations. For the purposes of infrastructure and other users, options 1 and 2 would be the same, and these represent the worst case scenario described in Table 18.2 and assessed in Section 18.6. For option 3 there would be no project export cables to shore and therefore there would be a lesser effect on any users in proximity to the offshore cable corridor. Within the array area, under options 1 and 2 there would be two offshore substation platforms (OSPs); whereas for option 3 there would be one offshore converter platform (OCP) and up to one OSP (hereafter, collectively referred to as ‘offshore electrical platforms'). The options for OSPs or OCP would represent the same level of effect significance on infrastructure and other users.

Table 18.2 Realistic worst case scenarios

Potential impact	Parameter	Notes
Construction		
Impact 1: Potential interference with other wind farms Impact 2: Physical Impacts on subsea cables Impact 3: Impacts on disposal sites Impact 4: Impacts on dredging Impact 5: Impacts on MoD activities	Maximum North Falls offshore infrastructure: • 57 wind turbines; • 2 offshore electrical platforms, • 170km of array cable with up to 20% of the cable length requiring surface laid cable protection; • 20km of platform interconnector cable with up to 20% of the cable length requiring surface laid cable protection; • 125.4km of export cable with up to 10% of the cable length requiring surface laid cable protection. Safety zones around potentially hazardous installation or works / construction area will be identified as required by the shipping and navigation assessment (ES Chapter 15 Shipping and Navigation, Document Reference: 3.1.17). An estimated 40 UXO clearance operations are predicted during preparation for construction (15 in the array area and 25 in the offshore cable corridor). Offshore construction duration: 2 years Maximum vessels on site: 35 Maximum vessel movements: 2,532 over two year offshore construction period.	The worst case is based on the Project envelope options that would result in the installation of the greatest amount of project infrastructure interacting with other infrastructure and users.
Operation		
Impact 1: Potential interference with other wind farms Impact 2: Physical Impacts on subsea cables Impact 3: Impacts on disposal sites Impact 4: Impacts on dredging	Maximum North Falls offshore infrastructure: • 57 wind turbines; • 2 offshore electrical platforms, • 34km of array cable protection; • 4km of platform interconnector cable protection; • 12.5km of export cable protection. Safety zones around potentially hazardous installation or works / construction area will be identified as required by the shipping and navigation assessment (ES Chapter 15, Shipping and Navigation, Document Reference: 3.1.17). One UXO clearance per year anywhere in the offshore project area.	The worst case is based on the Project envelope options that would result in the installation of the greatest amount of project infrastructure interacting with other infrastructure and users.

Potential impact	Parameter	Notes
Impact 5: Impacts on MoD activities	Indicative design life: 30 years Indicative peak vessel movements per year: 1,222	
Decommissioning		
Impact 1: Potential interference with other wind farms Impact 2: Physical impacts on subsea cables Impact 3: Impacts on disposal sites Impact 4: Impacts on dredging Impact 5: Impacts on MoD activities	Removal of the maximum North Falls offshore infrastructure: • 57 wind turbines; • 2 offshore electrical platforms, • 170km of array cable; • 20km of platform interconnector cable; • 125.4km of export cable. Decommissioning duration: 2 years The following infrastructure is likely to be decommissioned *in situ* depending on available information at the time of decommissioning: • Scour protection; and • Cable protection.	The worst case scenario in terms of interactions with infrastructure and other users during the decommissioning phase is based on the Project envelope options that would result in the greatest amount of activity during the phase. The impact of leaving infrastructure in situ would be considered as part of determining the decommissioning strategy. Should certain infrastructure be left in situ, the impacts would be comparable to the operational phase.

18.3.3 Summary of mitigation embedded in the design

12. The location of the offshore project area has been selected to reduce potential interactions with neighbouring infrastructure. This is the key embedded mitigation with regard to infrastructure and other users. Significant reductions to the former array areas at PEIR have been made to arrive at the array area included in the DCO application. This includes the removal of the northern array area in its entirety, and in excess of a 25% reduction of developable area of the southern array. ES Chapter 4 Site Selection and Assessment of Alternatives (Document Reference: 3.1.6) describes the key site selection principles, including avoidance or minimisation of overlap with the following existing, closed or proposed infrastructure:

- Aggregates sites;
- Disposal sites;
- Dredging areas;
- Pipelines
- Cables

Table 18.3 Embedded mitigation measures

Parameter	Mitigation measures embedded into North Falls design
Promulgation of information	Advance warning and accurate location details of construction, maintenance and decommissioning operations, associated safety zones and advisory passing distances will be given via Notices to Mariners and Kingfisher Bulletins and other appropriate media. This will be secured through the DCO / Deemed Marine Licence (DML) conditions. Relevant shipping and navigation mitigations are described in ES Chapter 15 Shipping and Navigation (Document Reference: 3.1.17).
Crossing and proximity agreements	Crossing and proximity agreements will be agreed post-consent with the relevant asset owners.
Marking and lighting	Consultation with Trinity House to determine appropriate lighting and marking.
Unimpeded Search and Rescue (SAR) access	Alignment of turbines as required under Marine Guidance Note (MGN) 654 to provide obstruction free SAR access.

18.4 Assessment methodology

18.4.1 Legislation, guidance and policy

18.4.1.1 National Policy Statements

13. The assessment of likely significant effects upon infrastructure and other users has been made with specific reference to the relevant National Policy Statements (NPS). These are the principal decision-making documents for Nationally Significant Infrastructure Projects (NSIPs). The Overarching National Policy Statement (NPS) for Energy (EN-1) and NPS for Renewable Energy Infrastructure (EN-3) (DESNZ, 2023a and b) are of most relevance to infrastructure and other users.

14. The specific assessment requirements for infrastructure and other users, as detailed in the NPS, are summarised in Table 18.4 together with an indication of the section of the ES chapter where each is addressed.

Table 18.4 NPS assessment requirements

NPS Requirement	NPS Reference	ES Reference
Overarching NPS for Energy (EN-1) from early 2024		
Applicants for a Development Consent Order must take account of any relevant Marine Plans and are expected to complete a Marine Plan assessment as part of their project development, using this information to support an application for development consent.	4.5.8	The relevant Marine Plans have been considered throughout the ES and in this chapter, are covered in Section 18.4.1.2. In addition, a Marine Plan Assessment (Document Reference: 7.5) is provided with the DCO application.
Applicants are encouraged to refer to Marine Plans at an early stage, such as in pre-application, to inform project planning, for example to avoid less favourable locations as a result of other uses or environmental constraints.	4.5.9	
NPS for Renewable Energy Infrastructure (EN-3) from early 2024		
'There may be constraints imposed on the siting or design of offshore wind farms because of restrictions resulting from the presence of other offshore infrastructure or activities.'	Section 2.8, paragraph 2.8.34	ES Chapter 4 Site Selection and Assessment of Alternatives (Document Reference: 3.1.4) provides the rationale for the location of the array area and offshore cable corridor, which includes consideration of constraints associated with other offshore infrastructure.
Applicants should consult the Government's Marine Plans (further detailed in Section 4.5 of EN-1) which are a useful information source of existing activities and infrastructure.	Section 2.8, paragraph 2.8.36	The East Inshore and East Offshore Marine Plans (MMO, 2014) have been considered in the preparation of this chapter and a Marine Plan Assessment (Document Reference: 7.5) is provided with the DCO application.
Prior to the submission of an application involving the development of the seabed, applicants should engage with The Crown Estate to ensure they are aware of any current or emerging interests on or underneath the seabed which might give rise to a conflict with a specific application.	Section 2.8, paragraph 2.8.37	In order to secure an Agreement for Lease (AfL) with The Crown Estate, a proximity check was undertaken.
Applicants are encouraged to work collaboratively with those other developers and sea users on co-existence/co-location opportunities, shared mitigation, compensation and monitoring where appropriate. Where applicable, the creation of statements of common ground between developers is recommended. Work is ongoing between government and industry to support effective collaboration and find solutions to facilitate to greater co-existence/co-location.	Section 2.8, paragraph 2.8.38	As discussed in Section 18.3.2, NFOW is working with Government and other developers to collaborate on transmission infrastructure, where practicable.
'Where a potential offshore wind farm is proposed close to existing operational offshore infrastructure or has the potential to affect activities for which a licence has been issued by Government, the applicant should undertake an assessment of the potential effect of the proposed development on such existing or permitted infrastructure or activities. The assessment should be undertaken for all stages of the lifespan	Section 2.8, paragraph 2.8.187	The potential impacts are assessed in Section 18.6.

NPS Requirement	NPS Reference	ES Reference
of the proposed wind farm in accordance with the appropriate policy for offshore wind farm EIAs.'		
The assessment should be undertaken for all stages of the lifespan of the proposed wind farm in accordance with the appropriate policy and guidance for offshore wind farm EIAs.	Section 2.8, 2.8.188	Section 18.6 assesses the potential impacts of the construction (18.6.1), operation (18.2) and decommissioning phases (18.3).
Applicants should use marine plans (paragraph 2.8.7 of this NPS and Section 4.5 of EN-1) in considering which activities may be most affected by their proposal and thus where to target their assessment.	Section 2.8, 2.8.189	The relevant Marine Plans have been considered throughout the ES and in this chapter, are covered in Section 18.4.1.2.
'Applicants should engage with interested parties in the potentially affected offshore sectors early in the development phase of the proposed offshore wind farm, with an aim to resolve as many issues as possible prior to the submission of an application'	Section 2.8, paragraph 2.8.190	Consultation with owners and operators of offshore infrastructure is being undertaken by NFOW, consultation responses received to date are shown in Table 18.1.
'Such stakeholder engagement should continue throughout the life of the proposed development including construction, operation and decommissioning phases where necessary. As many of these offshore industries are regulated by Government, the relevant Secretary of State should also be a consultee where necessary. Such engagement should be taken to ensure that solutions are sought that allow offshore wind farms and other users of the sea to successfully co-exist'.	Section 2.6, paragraph 2.8.191	Consultation with the Secretary of State has been undertaken as part of the scoping phase. Extracts from the scoping opinion from the Secretary of State in relation to the infrastructure and other users are shown in Table 18.1.
As many offshore industries are regulated by government, the relevant Secretary of State should also be a consultee where necessary.	Section 2.8, 2.8.192	Consultation with the Secretary of State has been undertaken as part of the scoping phase. Extracts from the scoping opinion from the Secretary of State in relation to infrastructure and other users are shown in Table 18.1
Such engagement should be taken to ensure that solutions are sought that allow offshore wind farms and other uses of the sea to successfully co-exist.	Section 2.8, 2.8.193	

18.4.1.2 Other legislation, policy and guidance

15. In addition to the NPS, there are a number of pieces of legislation, policy and guidance applicable to the assessment of infrastructure and other users. These include:

- South East Inshore Marine Plan (HM Government, 2021)
- East Inshore and East Offshore Marine Plans (MMO, 2014)
- European Subsea Cable UK Association (ESCA) Guideline No. 6 – The Proximity of Offshore Renewable Energy Installations and Submarine Cable Infrastructure in UK Waters (ESCA, 2016);
- The International Cable Protection Committee (ICPC) has issued a series of recommendations for marine cables, specifically:
    - Recommendations No. 2 – Recommended Routing and Reporting Criteria for Cables in Proximity to Others (ICPC, 2015);

- Recommendations No. 3 – Criteria to be Applied to Proposed Crossings Submarine Cables and/or Pipelines (ICPC, 2014);
- Recommendations No. 13 – The Proximity of Offshore Renewable Wind Energy Installations and Submarine Cable Infrastructure in National Waters (ICPC, 2013); and

- UK Offshore Energy Strategic Environmental Assessment 4 (OESEA4) future leasing/licensing for offshore renewable energy, offshore oil & gas and gas storage and associated infrastructure (BEIS, 2022).
- Oil and gas licensing rounds information (Oil and Gas Authority, 2018).

16. Further detail is provided in ES Chapter 3 Policy and Legislative Context (Document Reference: 3.1.5).

18.4.2 Data sources

18.4.2.1 Site specific

17. The data sources that have been used to inform the assessment are listed in Table 18.5.

Table 18.5 Other available data and information sources

Data Set	Spatial Coverage	Year	Notes
Offshore Cables	UK	2023	https://kis-orca.org/
Wind farms	UK and EU	2023	https://www.4coffshore.com/offshorewind/
Oil and Gas Infrastructure	UK	2023	https://ogauthority.maps.arcgis.com/home/index.html
Aggregate Sites	UK	2023	https://thecrownestate.maps.arcgis.com/home/index.html
Dredger Transit Routes	UK	2009	https://bmapa.org/issues/renewable_energy.php
Disposal Sites	UK	2023	https://data.cefas.co.uk/view/407

18.4.3 Impact assessment methodology

18. ES Chapter 6 EIA Methodology (Document Reference: 3.1.8) explains the general impact assessment methodology applied to the Project. The following sections describe the methods used to assess the likely significant effects on infrastructure and other users.

19. The assessment of impacts on infrastructure and other users has focused on establishing potential for overlaps, interactions and the consequential potential for conflict between activities in both a geographical and temporal context. This

information has additionally been obtained through statements made in publicly available literature (e.g., information in an EIA or Scoping Report).

18.4.3.1 Definitions

20. For each potential impact, the assessment identifies receptors within the study area which are sensitive to that impact and implements a systematic approach to understanding the impact pathways and the level of impacts (i.e., magnitude) on given receptors. The definitions of sensitivity and magnitude for the purpose of the infrastructure and other users assessment are provided in Table 18.6 and Table 18.7.

Table 18.6 Definition of sensitivity

Sensitivity	Definition
High	High value activity/activity fundamental to the operator or infrastructure that is of international or national economic importance. No redundancy available in the event of impact. Asset very sensitive to the impact. For example, gas pipeline, electrical infrastructure or telecommunication cable supporting UK or European activity or nationally important aggregates area where extraction company has no access to areas of equal quality aggregates.
Medium	Medium value activity. Impact to asset would significantly reduce operators' activities but not result in complete failure to continue operations. Limited redundancy available. Asset regionally important. Asset has limited tolerance of impact. For example, gas pipeline, electrical infrastructure or telecommunication cable, where asset owners have some potential for redundancy planning. Aggregates areas where extraction company has some, but limited access to equal quality aggregate.
Low	Low value activity. Impact to asset would have limited implications on operator/public either due to the availability of redundancy or limited pathway for impact. Asset has some tolerance of impact. For example, electrical or telecommunication cable with ability to undertake redundancy planning to limit impact. Aggregates area where extraction company has access to large area of equal quality aggregate.
Negligible	Low value activity, operators' activities would not be significantly reduced by impact. Asset generally tolerant of impact. Limited impact to asset owners or local community in case of damage or failure.

Table 18.7 Definition of magnitude

Magnitude	Definition
High	Loss of resource and / or quality and integrity of receptor; severe damage to key characteristics, features or elements. For example, accidental damage to asset resulting in permanent or long term inoperability or complete loss of access to economically important asset.
Medium	Loss of resource, but not adversely affecting integrity of resource; partial loss of / damage to key characteristics, features or elements. For example, damage to an asset that results in either short term, complete inoperability or long term reduced functionality. Partial loss of access to economically important asset, or short term complete loss of access.
Low	Some measurable change in attributes, quality or vulnerability, minor loss of, or alteration to, one (maybe more) key characteristics, features or elements. For example, accidental damage to asset resulting in short term reduction of functionality but not complete loss of function. Short term disruption to access of asset.
Negligible	Very minor loss or detrimental alteration to one or more characteristics, features or elements, and / or slight alteration to activity.

18.4.3.2 Significance of effect

21. The assessment of significance of an effect is a function of the sensitivity of the receptor and the magnitude of the impact (see ES Chapter 6 EIA Methodology (Document Reference: 3.1.8) for further details). The determination of

significance is guided by the use of significance of effect matrix, as shown in Table 18.8. Definitions of each level of significance are provided in Table 18.9.

22. Should major or moderate effects be identified within the assessment, these would be regarded within this chapter as significant. Should the assessment indicate any likely significant effect, mitigation measures would be identified, where possible, in consultation with the regulatory authorities and relevant stakeholders. The aim of mitigation measures is to avoid or reduce the overall significance of effect to determine a residual effect upon a given receptor.

Table 18.8 Significance of effect matrix

		Negative Magnitude				Beneficial Magnitude			
		High	Medium	Low	Negligible	Negligible	Low	Medium	High
Sensitivity	High	*Major*	*Major*	*Moderate*	*Minor*	*Minor*	*Moderate*	*Major*	*Major*
	Medium	*Major*	*Moderate*	*Minor*	*Minor*	*Minor*	*Minor*	*Moderate*	*Major*
	Low	*Moderate*	*Minor*	*Negligible*	*Negligible*	*Negligible*	*Minor*	*Minor*	*Moderate*
	Negligible	*Minor*	*Negligible*	*Negligible*	*Negligible*	*Negligible*	*Negligible*	*Negligible*	*Minor*

Table 18.9 Definition of effect significance

Significance	Definition
Major	Very large or large change in receptor condition, both adverse or beneficial, which is likely to be important considerations because they affect the achieving national objectives (e.g. Marine Plans) or could result in breaches of legislation.
Moderate	Intermediate change in receptor condition, which are likely to be important considerations at a local level.
Minor	Small change in receptor condition, which may be raised as local issues but are unlikely to be important in the decision making process.
Negligible	No discernible change in receptor condition.
No change	No impact, therefore, no change in receptor condition.

18.4.4 Cumulative effects assessment methodology

23. The cumulative effects assessment (CEA) considers other plans, projects and activities that may interact cumulatively with the Project. ES Chapter 6 EIA Methodology (Document Reference: 3.1.8) provides further details of the general framework and approach to the CEA.

24. For infrastructure and other users, these activities include other OWF projects, shore-based maintenance works, oil and gas development activities and active restricted areas.

18.4.5 Transboundary effects assessment methodology

25. Transboundary effects on infrastructure and other users have been scoped out in line with the scoping opinion (Planning Inspectorate, 2021), therefore no further assessment has been undertaken.

18.4.6 Assumptions and limitations

26. Characterisation of the existing environment and the resulting impact assessment is based on publicly available information, purchased data or information gained directly from the relevant operators / organisations during consultation. There may be elements of uncertainty associated with the locations of some existing infrastructure and where this is the case, this will be discussed with the owners / operators and / or established during pre-construction surveys as necessary. For the purposes of the assessment, it is assumed that North Falls infrastructure could be anywhere within the Project boundaries.

18.5 Existing environment

27. The following infrastructure and other users are scoped into the EIA, in accordance with the scoping opinion (Planning Inspectorate, 2021):

- OWFs;
- Cables;
- Outfall pipes;
- Dredging sites;
- Disposal sites; and
- MoD activities.

18.5.1 UK southern North Sea wind farms

28. UK waters and the southern North Sea in particular, are a focus of significant offshore wind development activity, having been subject to several phases of offshore wind development under The Crown Estate's various leasing rounds (Round 1, Round 2, Round 1 and 2 extensions, Round 3 and Round 4 developments).

18.5.1.1 Operational offshore wind farms

29. North Falls is adjacent to the parent Greater Gabbard offshore wind farm (GGOW), and also Galloper wind farm (GWF). North Falls is an extension to GGOW which is a 504MW OWF which has been operational since 2012. Both projects are owned by SSE Renewables (50%) and RWE Renewables (50%). SSE Renewables acts as the operator of the GGOW on behalf of the consortium.

30. GWF is an earlier extension to GGOW with a capacity of 353MW, which became operational in 2018. GWF is owned by a consortium of RWE Renewables (25%), Equitix (25%), Siemens Financial Services (25%), Spring Infrastructure (12.5%) and ESB (12.5%).

31. The next nearest operational wind farm to the Project is London Array, located c. 20km to the west of North Falls, London Array has a capacity of 630MW and has been operational since 2012 (RWE, 2023).

32. Other nearby operational OWFs include Thanet, Gunfleet Sands (I, II and Demo), Kentish Flats and East Anglia ONE (Figure 18.1, Document Reference:3.2.14). A summary of all OWFs in the vicinity of the Project is provided in Table 18.10.

33. NFOW will ensure that the development of North Falls is undertaken in such a way to limit and, where practicable, avoid any likely significant effects on existing OWFs.

18.5.1.2 Offshore wind farm export cables

34. The North Falls offshore export cables would make landfall at Kirby Brook on the Tendring Peninsula of Essex, over 1km to the north east of the existing offshore export cable landfall for the Gunfleet Sands I and II operational wind farms (Figure 18.1, Document Reference: 3.2.14).

35. The export cables for the OWFs discussed in Section 18.5.1.1 make landfall in different regions to the North Falls landfall area, with GGOW and GWF making landfall in Suffolk, and London Array in Kent.

36. There is a slight overlap between the North Falls array area and the GGOW export cables which interconnect the two GGOW arrays. The GWF export cables are c 5.5km from the North Falls offshore project area (at the closest point) (Figure 18.1, Document Reference: 3.2.14).

18.5.1.3 Consented offshore wind farms

37. The consented East Anglia TWO and East Anglia ONE North wind farms are c.31km and 65km from the North Falls array area. These wind farms are expected to complete construction prior to North Falls.

18.5.1.4 Offshore wind farms in planning

38. Within the study area, the Five Estuaries, an extension to GWF being developed by RWE, is in the pre-Examination stage of the planning process (at the time of writing), with the overall consenting and construction programme on a similar timescale to North Falls.

18.5.1.5 Offshore wind farm summary

39. A summary of existing and consented OWFs in the study area is provided in Table 18.10.

Table 18.10 Offshore wind farms in the southern North Sea

Offshore Wind Farm	Status	Developer[1]	Distance from North Falls (km)
GGOW	Operational	Greater Gabbard Offshore Winds Limited	0

[1] Information derived from 4COffshore https://www.4coffshore.com/

Offshore Wind Farm	Status	Developer[1]	Distance from North Falls (km)
GWF	Operational	Galloper Wind Farm Limited	0
Five Estuaries	In planning	VEOWL	0
East Anglia TWO	Consented	East Anglia TWO Limited	31.5
East Anglia ONE	Operational	East Anglia One Limited	53.1
London Array	Operational	London Array Limited	20.6
Gunfleet Sands II	Operational	Gunfleet Sands II Limited	39.0
East Anglia ONE North	Consented	East Anglia ONE North Limited	65.0
Thanet	Operational	Vattenfall Wind Power Limited	24.9
Gunfleet Sands Demo	Operational	Ørsted Gunfleet Sands Demo (UK) Limited	45.1
Gunfleet Sands I	Operational	Gunfleet Sands Limited	41.6
Kentish Flats	Operational	GREP UK Marine Ltd	54.9
Kentish Flats Extension	Operational	Vattenfall	54.59

18.5.2 Subsea cables

40. In addition to the OWF cables discussed in Section 18.5.1.2, the southern North Sea is crossed by many cables, and the majority of those not related to offshore wind are telecommunication cables between the UK and mainland Europe (Figure 18.2, Document Reference: 3.2.14). Several electrical interconnector cables also connect the power grids of the UK and mainland Europe.

41. There are currently two operational cables, one telecommunication and one electrical, that cross the Project array area. The Atlantic Crossing 1 is a telecommunications cable connection between the UK and the Netherlands. The Britned HVDC is an electrical interconnector cable connecting the UK and the Netherlands.

42. Construction of the Neuconnect interconnect commenced in 2023 and the cable is expected to be operational by 2028.

43. In addition, there are three proposed interconnector cables in the study area; Consultation on a PEIR for SeaLink was undertaken in October 2023, and Nautilus and Lion Link are in the early stages of the planning process.

Table 18.11 Summary of offshore cables in the study area

Asset Name	Status	Asset Type	Operator	General Trajectory	Interaction
Greater Gabbard export cables	Active	Offshore wind export cable	Greater Gabbard Offshore Transmission Operator (OFTO)	South to north	Runs c.20km north of North Falls array area
Greater Gabbard interconnector	Active	Offshore wind interconnector		South to north	Bisects the North Falls array area
Galloper export cable	Active	Offshore wind export cable	Diamond Transmission Partners Galloper Limited	South to north	Runs c.21km north of North Falls array area
Atlantic Crossing 1	Active	Telecommunications cable	Century Link	North to south	Overlaps with the North Falls array area
Britned	Active	Interconnector cable	Britned	West to east	Overlaps with the North Falls array area
Gunfleet Sands export cables	Active	Offshore wind export cable	Gunfleet Sands OFTO	North to south	c. 1km from the landfall area
Gunfleet Sands Demo export cables	Active	Offshore wind export cable	Gunfleet Sands Demo Limited	North to south	c. 7km from the landfall area
NeuConnect	Under construction	Interconnector cable	NeuConnect	West to east	Bisects the North Falls offshore cable corridor
Nautilus	Proposed	Interconnector cable	National Grid Ventures (NGV)	West to east	Cable route unknown at the time of writing, however, there is potential interaction with the North Falls offshore project area.
Lion Link	Proposed	Interconnector cable	NGV	West to east	Cable route unknown at the time of writing, however, there is potential interaction with the North Falls offshore project area.
South & East Anglia (SEA) Link	Proposed	Interconnector cable	National Grid Electricity Transmission	North to south	Bisects the North Falls offshore cable corridor

18.5.3 Outfall pipes

44. There are outfall pipes in proximity to the landfall area. The closest is a sewage outfall pipe located to the north east of Frinton Golf Course, which is c. 0.2km from the North Falls offshore cable corridor, at the closest point.

18.5.4 Disposal sites

45. There are four closed disposal sites which overlap the offshore project area:

- Galloper OWF (TH057) overlapping the array area; and
- Britned (NS100) overlapping the array area.
- Warren Spring Exptl Area 2/1 (TH024) overlapping the offshore cable corridor area.
- Warren Spring Exptl Area 2 (TH025) overlapping the offshore cable corridor area.

46. Sediment quality in the area is detailed in ES Chapter 9 Marine Water and Sediment Quality (Document Reference: 3.1.11).

47. There is no overlap of the offshore project area with open disposal sites. The nearest open disposal sites to the array area is South Falls (TH070) at c. 8km south east while Harwich Haven (TH027), Inner Gabbard (TH052) and Inner Gabbard East (TH056) are at least c 5km from the offshore cable corridor (Figure 18.2, Document Reference: 3.2.14).

48. The Ministry of Defence confirmed in the Scoping Opinion (Planning Inspectorate, 2021) that the eastern extent of the Gunfleet X5118 PEXA (see Section 18.5.5) has a disused UXO disposal area. This area has been avoided through the offshore cable corridor site selection process. The offshore cable corridor was routed to avoid direct overlap with open or closed disposal sites, where practicable, with the exception of the Warren Spring EXPTL Area 2/1 (TH024) which is a large disposal site which partially overlaps the offshore cable corridor.

18.5.5 Dredging sites

49. There are no aggregate production agreement areas or exploration and option areas located within the offshore project area.

50. Table 18.12 shows the aggregate sites in the study area.

51. The nearest production agreement area to the array area is licenced to DEME Building Materials Ltd (524). This area is adjacent to the south-east of the array area.

52. In addition to aggregate dredging, the North Falls offshore cable corridor site selection was undertaken to avoid the Harwich Haven approach channel dredging area (discussed in ES Chapter 4 Site Selection and Assessment of Alternatives, Document Reference: 3.1.6). The tip of the Harwich Haven dredging channel (Figure 18.2, Document Reference: 3.2.14) is c.0.18km from the North Falls offshore cable corridor.

Table 18.12 Dredging sites in the study area

Project	Closest distance from the array area (km)	Closest distance from the export cable corridor (km)
Outer OTE aggregate exploration and option area 528/2	9.4	14
Thames D aggregates production agreement area 524	0	12.5
Southwold East aggregates production agreement area 430	50.12	48.4
North Inner Gabbard aggregate production area 498	24.7	24
Shipwash aggregate exploration and option area 507	19.6	9.8
Harwich Haven approach channel	23.2	0.18
Longsand aggregate exploration and option area 508	13.9	5.8
Longsand aggregate exploration and option area 509	13.9	2.1
Longsand aggregate exploration and option area 510	9.5	3.5
North Falls East aggregate exploration and option area 501	13.2	27.5

18.5.6 Ministry of Defence activities

53. The following non-danger military PEXAs overlap or are in proximity to the North Falls offshore project area:

- Kentish Knock – X5119 (overlaps the array area);
- North Galloper – X5121 (adjacent to the eastern boundary of the array area);
- Outer Gabbard – X5117 (located to the north of the array area);
- South Galloper – X5120 (overlaps the array area); and
- Gunfleet – X5118 (overlaps the offshore cable corridor).

54. No danger PEXAs overlap with the offshore project area. The closest danger PEXA is c. 11km to the south of the offshore cable corridor.

55. There is also potential for wartime UXO within the southern North Sea (EAOW, 2012). Locations of any UXO would be determined post-consent and mitigation agreed with the MMO, in consultation with Natural England. Based on engineering experience, an estimated 15 UXO clearance operations are included in the worst case scenario (Table 18.2).

18.5.7 Future trends in baseline conditions

56. The deployment of offshore wind in the UK is set to continue with an existing pipeline of projects in planning. Therefore, offshore wind deployment in the

southern North Sea and wider North Sea is likely to increase over the next decade.

57. There are plans to further integrate the UK electrical network and the European markets through the installation of interconnector cables. This is likely to lead to an increase in electricity transmission cables across the southern North Sea, such as the Britned interconnector.

58. New disposal sites associated with proposed OWFs are likely to be designated, the areas of which will align with the OWF agreement for lease areas.

59. The East Anglia coast (i.e., Norfolk and Suffolk) has been highlighted in the East Marine Plan and South East Inshore Marine Plan (HM Government, 2014; HM Government, 2021) as being an important area for aggregates for the UK, with a view of facilitating growth of the aggregates industry in this area of the UK seabed. It is expected that aggregate extraction activity will increase over the next 10-20 years (HM Government, 2014) as a strategic industry for this area.

60. Potential future dredging of the approach channel for Harwich Haven is assessed in ES Chapter 15 Shipping and Navigation (Document Reference: 3.1.17).

18.6 Assessment of significance

61. The likely significant effects on infrastructure and other users that may occur during construction, operation, maintenance and decommissioning of North Falls are assessed in this section. The worst-case scenarios listed in Table 18.2 for each impact are assessed using the methodology described in Section 18.4.3 and in ES Chapter 6 EIA Methodology (Document Reference: 3.1 8).

18.6.1 Likely significant effects during construction

18.6.1.1 Impact 1: Potential interference with other wind farms

18.6.1.1.1 Magnitude of impact

62. As an extension of GGOW, North Falls OWF is planned to be adjacent to it and to GWF. Other operational wind farms are all located more than 30km from the Project area (see Table 18.10). Interference of North Falls with other wind farms could arise from the following:

- Navigational safety issues;
- Aviation (i.e., helicopter operations); and
- Increased pressure on port facilities.

63. Issues arising from shipping/navigation and aviation are assessed in ES Chapter 15 Shipping and Navigation (Document Reference: 3.1.17) and ES Chapter 17 Aviation and Radar (Document Refence: 3.1.19) respectively.

64. ES Chapter 15 Shipping and Navigation (Document Reference: 3.1.17) concludes that the activities associated with shipping and navigation will be managed and regulated to ensure safe operations, therefore the effect of North Falls on the shipping and navigation of other projects is expected to be tolerable or broadly acceptable and therefore not significant.

65. ES Chapter 17 Aviation and Radar (Document Reference: 3.1.19) concludes that the effects of the creation of an aviation obstacle and increased air traffic related to wind farm activities would not be significant.

66. NFOW will ensure that the development of North Falls is undertaken in such a way to reduce effects on existing OWFs where practicable. Appropriate buffers between North Falls infrastructure and the existing wind turbines of GGOW and GWF, as well as the GGOW export cables, will be agreed between NFOW and the owners of GGOW and GWF, to avoid any likely significant effects.

67. Port facilities location(s) will be identified post consent. This approach is standard for OWFs. However, this service will be provided through a contract agreement and as part of the procurement process, bidders interested in providing the service will need to demonstrate their capability to meet the demand for the required service. Therefore, no likely significant pressures to port facilities are expected.

68. Given the conclusions of ES Chapter 15 (Document Reference: 3.1.17) and ES Chapter 17 Aviation and Radar (Document Reference: 3.1.19) the magnitude of impact on vessels and helicopters associated with other OWFs will be negligible.

18.6.1.1.2 Sensitivity of receptor

69. Wind farm construction activities have the potential to interfere with the activities of other wind farms. Disruption caused to other wind farms could potentially impact the construction schedules of other wind farm projects, therefore increasing the likelihood of navigational safety issues. The sensitivity of OWFs to interference is medium.

18.6.1.1.3 Significance of effect

70. Based on the worst case negligible magnitude of impact and medium sensitivity of receptor, the significance of effect would be minor adverse, which is not significant in EIA terms.

18.6.1.2 Impact 2: Physical impacts on subsea cables and pipelines

18.6.1.2.1 Magnitude of impact

71. Wind farm construction activities, such as cable and foundation installation, vessel anchoring and debris clearing operations in proximity to subsea cables and pipelines would have the potential to cause damage to these structures. Any damage caused to subsea cables or pipelines would be expensive to repair and could disrupt the telecommunications or power supply of the subsea cable operations or the flow of fluid being transported by pipelines.

72. The precise number of cable crossings is not yet known as the array cable layout will be determined post consent and information on the routes of a number of planned interconnector cables is not available.

73. Cable owners are, and will continue to be, consulted by the Applicant during the pre-construction development of the Project. All commercial and technical agreements would be put in place ahead of the commencement of construction. Crossing and proximity agreements would be agreed post-consent during the wind farm design period. The crossing and proximity agreements will determine how cable crossings are enabled and outline the proximity arrangements of construction activities to the existing subsea cables. The resultant locations,

design and construction methodologies will aim to reduce the physical impact upon other cables which may affect their operation.

74. No impact is predicted on the outfall pipes in proximity to the landfall area as the landfall site selection has sought to avoid physical impact on these pipes.

75. Taking into account the embedded mitigation measures outlined in Section 18.3.3, including securing proximity and crossings agreements with operators, any impact is extremely unlikely and therefore the impact magnitude is negligible.

18.6.1.2.2 Sensitivity of receptor

76. A worst-case scenario is assumed as being accidental damage to a subsea cable from the wind farm construction activities which may reduce the subsea cables capacity or make the subsea cables operation redundant. It is therefore considered that the sensitivity of cables is high.

77. The sewage outfall pipe in the landfall search area is also considered to have high sensitivity to accidental damage.

18.6.1.2.3 Significance of effect

78. Based on the worst case negligible magnitude of impact and high sensitivity of subsea cables and pipelines, the significance of effect would be minor adverse which is not significant in EIA terms.

18.6.1.3 Impact 3: Impacts on disposal sites

79. The construction activities within the array area and offshore cable corridor will not interfere with disposal operations at the nearest open disposal site, South Falls (TH070) (c. 8km from the offshore project area). There is therefore no impact and the significance of effect would be 'no change'.

80. Impacts associated with sediment quality related to open and disused disposal sites (and other sources of contamination) are assessed in ES Chapter 9 Marine Sediment and Water Quality (Document Reference: 3.1.11).

18.6.1.4 Impact 4: Impacts on dredging

18.6.1.4.1 Magnitude of impact

81. As discussed in Section 18.5.5, the array area of North Falls is adjacent to site 524 which is licenced for aggregate extraction until December 2036. North Falls offshore construction duration would be up to 2 years and is expected to occur between 2027 and 2031, with the aim of commissioning around 2030/31 and therefore during the period of potential active production licence at site 524. The Project could therefore interfere with the dredging activities of site 524. Aggregate extraction is undertaken on the basis of supply and demand and therefore the amount of overlap in activities during this time is uncertain, but an increase in demand is expected.

82. Due to the proximity of the North Falls offshore project area to site 524, the presence of infrastructure and vessels could restrict dredging operations.

83. Consultation with the site operator, DEME will continue throughout the Project's development, construction and operation phases, while DEME's aggregate production agreement is in place (discussed further in ES Chapter 15 Shipping and Navigation, Document Reference: 3.1.17). ES Chapter 15 (Document Reference: 3.1.17) concludes that the effects on aggregate dredging will be

Tolerable, on the basis of suitable mitigation being agreed (e.g. stakeholder engagement and promulgation of information) to ensure the impact is as low as reasonably practicable. The magnitude of impact is therefore expected to be low with some measurable change in attributes of the aggregate extraction.

84. Impacts on other aggregate dredging sites are expected to be less than that on site 524, therefore the overall impact magnitude on aggregate dredging sites is low.

85. Impacts on the dredging of the approach channel for Harwich Haven would also be of low magnitude, as a worst case scenario, due to the avoidance of this area during site selection. Consultation with Harwich Haven will continue through the Project development phase to ensure impacts on vessels using the approach channel are tolerable and as low as reasonably practicable as discussed in ES Chapter 15 Shipping and Navigation (Document Reference: 3.1.17).

18.6.1.4.2 Sensitivity of receptor

86. Any potential disruption caused to dredging activities could result in some loss of access to the aggregate sites. It is therefore considered that the sensitivity of the receptor is medium.

18.6.1.4.3 Significance of effect

87. Based on the worst case low magnitude of impact and medium sensitivity of receptor, the significance of effect would be minor adverse, which is not significant in EIA terms.

18.6.1.5 Impact 5: Impacts on MoD activities

18.6.1.5.1 Magnitude if the impact

88. The North Fall's offshore project area overlaps non-danger military PEXAs as detailed in Section 18.5.6.

89. The Projects embedded mitigation measures detailed in Section 18.3.3, include engagement with stakeholders such as the DIO and promulgation of information.

90. In accordance with the Defence Infrastructure Organisation (DIO) response to the Scoping Report (provided in the Scoping Opinion; Planning Inspectorate, 2021, see Section 18.2), they state "*we [DIO] do not anticipate there to be any concerns relating to military maritime activities however, the MOD will review detailed submissions in relation to its maritime interests."* Since this scoping opinion was received, there has been significant further mitigation through reduction in the offshore project area and associated infrastructure. Thus, the magnitude assigned for this impact is negligible.

18.6.1.5.2 Sensitivity of the receptor.

91. The sensitivity/value of military activities is high given its national importance.

18.6.1.5.3 Significance of effect

92. Based on the worst case negligible magnitude of impact and high sensitivity of receptor, the significance of effect would be minor adverse, which is not significant in EIA terms.

18.6.2 Likely significant effects during operation

18.6.2.1 Impact 1: Potential interference with other wind farms

18.6.2.1.1 Magnitude of impact

93. During operation and maintenance, effects on other OWFs would relate to vessel and/or helicopter movements.

94. Any conflicts with vessel and/or aviation activities are detailed in ES Chapter 15 Shipping and Navigation (Document Reference: 3.1.17) and ES Chapter 17 Aviation and Radar (Document Reference: 3.1.19).

95. ES Chapter 15 (Document Reference: 3.1.17) concludes that the activities associated with shipping and navigation will be managed and regulated to ensure safe operations, therefore the effect of North Falls on the shipping and navigation of other projects is expected to be tolerable or broadly acceptable and therefore not significant.

96. ES Chapter 17 (Document Reference: 3.1.19) concludes that the effects of the creation of an aviation obstacle and increased air traffic related to wind farm activities would not be significant.

97. Given the conclusions of ES Chapter 15 and Chapter 17 (Volume 3.1), the magnitude of impact will be negligible.

18.6.2.1.2 Sensitivity of receptor

98. Potential disruption inflicted on other wind farms could impact the operation and maintenance of other wind farm projects, therefore increasing the likelihood of navigational safety issues. The sensitivity of OWFs to interference is therefore medium.

18.6.2.1.3 Significance of effect

99. Based on the worst case negligible magnitude of impact and medium sensitivity of receptor, the significance of effect would be minor adverse, which is not significant in EIA terms.

18.6.2.2 Impact 2: Physical impacts on subsea cables and pipelines

18.6.2.2.1 Magnitude of impact

100. During operation and maintenance, effects on subsea cables and pipelines and damage to subsea cables and pipelines are expected to be significantly less than for the construction phase.

101. Maintenance of North Falls infrastructure has potential to interact with existing cables e.g., through the placement of jack up vessels and repairs or reburial of the North Falls cables (if required). However, the potential requirement for maintenance will be taken into account during the final design of project infrastructure locations.

102. Due to the distance from the outfall pipes and use of horizontal directional drilling at landfall, North Fall's export cables would be buried and there would be no impact on the outfall pipes in proximity to the landfall during operation and maintenance.

103. Taking into account the embedded mitigation measures outlined in Section 18.3.3, including crossings and proximity agreements, any impact is extremely unlikely and therefore the impact magnitude is negligible.

18.6.2.2.2 Sensitivity of receptor

104. A worst-case scenario is assumed as being accidental damage to a subsea cable from the wind farm construction activities which may reduce the subsea cables capacity or make the subsea cables operation redundant. The sensitivity of these receptors is considered to be high.

18.6.2.2.3 Significance of effect

105. Based on the worst case negligible magnitude of impact and high sensitivity of receptor, the significance of effect would be minor adverse, which is not significant in EIA terms.

18.6.2.3 Impact 3: Impacts on disposal sites

106. As with construction (Section 18.6.1.3), due to the distance of the nearest open disposal site, South Falls (TH070) (c. 8km from the offshore project area) there will be no negative repercussions to the integrity of any disposal sites during operation and maintenance. The effect significance will therefore be 'no change'.

18.6.2.4 Impact 4: Impacts on dredging

18.6.2.4.1 Magnitude of impact

107. During operation and maintenance, effects on dredging sites are expected to be significantly less than for the construction phase.

108. Effects on disposal sites could arise from maintenance vessel movements and the presence of infrastructure in proximity to the dredging areas, as there is no direct overlap with North Falls.

109. Consultation with DEME and Harwich Haven has been undertaken to inform the Navigational Risk Assessment (NRA) and is discussed further in Chapter 15 Shipping and Navigation.

110. The magnitude of impact is low, with the application of the embedded mitigation discussed in Section 18.3.3 (Table 18.3).

18.6.2.4.2 Sensitivity of receptor

111. Any potential disruption caused to dredging activities could result in short term loss of access. It is therefore considered that the sensitivity of the receptor is medium.

18.6.2.4.3 Significance of effect

112. Based on the worst case low magnitude of impact and medium sensitivity of receptor, the significance of effect would be minor adverse, which is not significant in EIA terms.

18.6.2.5 Impact 5: Impacts on MoD activities

18.6.2.5.1 Magnitude if the impact

113. As with construction (Section 18.6.1.5), operation and maintenance would be of negligible magnitude on MOD activities due to the implementation of the embedded mitigation measures detailed in Section 18.3.3, which includes stakeholder engagement and promulgation of information.

18.6.2.5.2 Sensitivity of the receptor.

114. The sensitivity/value of military activities is high given its national importance.

18.6.2.5.3 Significance of effect

115. Based on the worst case negligible magnitude of impact and high sensitivity of receptor, the significance of effect would be minor adverse, which is not significant in EIA terms.

18.6.3 Likely significant effects during decommissioning

116. Effects upon infrastructure and other marine users during decommissioning of the Project are anticipated to be comparable to or less than the construction phase.

117. A decision regarding the final decommissioning policy is yet to be decided as it is recognised that rules and legislation change over time in line with industry practice. The decommissioning methodology and programme would be finalised nearer to the end of the lifetime of the proposed North Falls to ensure it is in line with the most recent guidance, policy and legislation.

118. The worst case scenario (Table 18.2), in terms of interactions with infrastructure and other users during the decommissioning phase is based on the project envelope options that would result in the greatest amount of activity during the phase.

119. Should certain infrastructure be left in situ, the impacts would be comparable to the operational phase.

18.6.3.1 Impact 1: Potential interference with other wind farms

120. The sensitivity of receptors and magnitude of impact would be comparable to those identified for the construction phase. Namely, medium sensitivity and negligible magnitude.

18.6.3.1.1 Significance of effect

121. The significance of effect for interference with other wind farms is therefore minor adverse, which is not significant in EIA terms.

18.6.3.2 Impact 2: Physical impacts on subsea cables and pipelines

122. The sensitivity of receptors and magnitude of impact would be comparable to those identified for the construction phase. Namely, high sensitivity and negligible magnitude.

18.6.3.2.1 Significance of effect

123. The significance of effect for physical impacts on subsea cable and pipelines is therefore minor adverse, which is not significant in EIA terms.

18.6.3.3 Impact 3: Impacts on disposal sites

124. During decommissioning there will be no negative repercussions to the integrity of any disposal sites. The effect significance will therefore be no change.

18.6.3.4 Impact 4: Impacts on dredging

125. The sensitivity of receptors and magnitude of impact would be comparable to those identified for the construction phase. Namely, medium sensitivity and low magnitude.

18.6.3.4.1 Significance of effect

126. The significance of effect for impacts on dredging is therefore minor adverse, which is not significant in EIA terms.

18.6.3.5 Impact 5: Impacts on MoD activities

127. The sensitivity of receptors and magnitude of impact would be comparable to those identified for the construction phase. Namely, high sensitivity and negligible magnitude.

18.6.3.5.1 Significance of effect

128. The significance of effect for impacts on MOD activities is therefore minor adverse, which is not significant in EIA terms.

18.7 Cumulative effects

18.7.1 Identification of potential cumulative effects

129. The first step in the CEA process is the identification of which residual effects assessed for North Falls on their own have the potential for a cumulative effect with other plans, projects and activities. This information is set out in Table 18.13. Only likely significant effect assessed in Section 18.6.1. as negligible adverse or above are included in the CEA (i.e., those assessed as 'no impact' are not taken forward as there is no potential for them to contribute to a cumulative effect).

Table 18.13 Potential cumulative effects

Impact	Potential for cumulative effects	Rationale
Potential interference with other OWFs	Yes	Plans and projects currently in planning have potential to have cumulative effects on existing OWFs
Physical impacts on subsea cables	Yes	Plans and projects currently in planning have potential to have cumulative effects on existing subsea cables.
Physical impacts on subsea cables and pipelines	No	As the Project does not interfere with any pipelines or outfall pipes no cumulative effects on this receptor is expected
Potential impacts on dredging	Yes	Plans and projects currently in planning have potential to have cumulative effects on dredging
Impacts on disposal sites	No	No change from North Falls is predicted
Impacts on MoD activities	Yes	Plans and projects currently in planning have potential to have cumulative effects on MOD activities

18.7.2 Other plans, projects and activities

130. The second step in the cumulative assessment is the identification of the other plans, projects and activities that may result in cumulative effects for inclusion in the CEA (described as 'project screening'). This information is set out in Table 18.14 below, together with a consideration of the relevant details of each, including current status (e.g. under construction), planned construction period, closest distance to North Falls, status of available data and rationale for including or excluding from the assessment.

131. The Project screening (shown in Table 18.14) has been informed by the development of a CEA project list which forms an exhaustive list of plans, projects and activities within the study area (Section 18.3.1) relevant to North Falls. The list has been appraised, based on the confidence in being able to

undertake an assessment from the information and data available, enabling individual plans, projects and activities to be screened in or out.

132. The likely significant cumulative effects of North Falls with other plans and projects is assessed in Section 18.6. The CEA considers the cumulative effect of plans and projects that are not yet installed (shown in Table 18.14) on projects that are in place within the study area (Section 18.3.1).

Table 18.14 Summary of projects considered for the CEA in relation to infrastructure and other users (project screening)

Project	Status	Construction period	Closest distance from the array area (km)	Closest distance from the offshore cable corridor (km)	Confidence in data	Included in the CEA (Y/N)	Rationale
Five Estuaries OWF	In Planning	Assumed late 2020s	0	12.9 from the Five Estuaries array areas (0km from the Five Estuaries offshore cable corridor)	Medium	Yes	Potential for cumulative effect during construction and operational phases due to the proximity of the projects.
East Anglia TWO OWF	Consent granted	Construction planned mid 2020s	31.5	36.7	High	Yes	
NeuConnect Interconnector	Construction	2022-2028	2.5	0	High	Yes	The NeuConnect Interconnector bisects the North Falls offshore cable corridor and there is potential for temporal overlap of cable installation activities.
Nautilus	Pre-application	2025-2028	Cable route currently unknown (although the offshore study area for Nautilus intersects with the North Falls offshore project area)		Low	No	Insufficient information is available to assess.
South & East Anglia (SEA) Link	Pre-planning	2026-2030	5.4	0	Medium	Yes	The SeaLink Interconnector bisects the North Falls offshore cable corridor and there is potential for temporal overlap of cable installation activities.
Lion Link Interconnector	Pre-planning	2027-2030	Cable route unknown	Cable route unknown	Low	No	Insufficient information is available to assess.
Tarchon Energy Interconnector	Pre-planning	2027-2030	Cable route unknown	Cable route unknown	Low	No	Insufficient information is available to assess.

Project	Status	Construction period	Closest distance from the array area (km)	Closest distance from the offshore cable corridor (km)	Confidence in data	Included in the CEA (Y/N)	Rationale
Outer OTE aggregate exploration and option area 528/2	Unknown	2016-2024	9.4	14	Low	Yes	There is potential for some interaction between dredging and aggregate exploration on navigational safety. Presence of multiple vessels have the potential to have a cumulative effect.
Thames D aggregates production agreement area 524	Production agreement secured 2022	2022-2036	0	10.3	Low	Yes	
Southwold East aggregates production agreement area 430	Operational since 2012	2012-2025	50.1	48.4	Medium	Yes	
North Inner Gabbard aggregate production area 498	Operational since 2015	2012-2030	24.7	24	Medium	Yes	
Shipwash aggregate production area 507	Operational since 2016	2012-2031	19.6	9.8	High	Yes	
Longsand aggregate production area 508	Operational since 2014	2014-2029	13.9	5.8	Medium	Yes	
Longsand aggregate production area 509	Operational since 2015	2015-2030	13.8	2.1	Medium	Yes	

Project	Status	Construction period	Closest distance from the array area (km)	Closest distance from the offshore cable corridor (km)	Confidence in data	Included in the CEA (Y/N)	Rationale
Longsand aggregate production area 510	Operational since 2015	2015-2030	9.5	3.5	Medium	Yes	
North Falls East aggregate production area 501	Operational since 2017	2017-2032	13.2	25.3	Medium	Yes	

18.7.3 Assessment of cumulative effects

18.7.3.1 Overview

133. The following sections provide an assessment of cumulative effects for those effects and projects screened into the CEA (Sections 18.7.1 and 18.7.2, respectively).

134. It should be noted that the plans and projects screened into the CEA (Table 18.14) are being developed in accordance with the East Inshore and Offshore Marine Plans. In addition, in order to secure an AfL with The Crown Estate, a proximity check was undertaken to ensure no significant interference with other AfLs is likely. It can therefore be expected that cumulative effects on infrastructure and other users will be not significant.

18.7.3.2 Cumulative effect 1: Potential interference with other offshore wind farms

135. As with the effect of North Falls alone on other OWFs (Section 18.6.1.1), the cumulative effect of North Falls with the other plans and projects screened into the CEA could arise from the following:

- Navigational safety issues;
- Aviation (i.e., helicopter operations); and
- Increased pressure on port facilities.

136. Issues arising from shipping/navigation and aviation are assessed in ES Chapter 15 Shipping and Navigation (Document Reference: 3.1.17) and ES Chapter 17 Aviation and Radar (Document Reference: 3.1.19), respectively.

137. The CEA for ES Chapter 15 Shipping and Navigation (Document Reference: 3.1.17) concludes that the cumulative effects will be tolerable or broadly acceptable on the basis of embedded mitigation which will ensure the impact is as low as reasonably practicable.

138. ES Chapter 17 (Document Reference: 3.1.19) concludes that the cumulative effects of the creation of an aviation obstacle and increased air traffic related to wind farm activities would also not be significant. As discussed in Section 18.6.1.1, port facilities location(s) for North Falls will be identified post consent. This service will be provided through a contract agreement and as part of the procurement process, bidders interested in providing the service will need to demonstrate their capability to meet the demand for the required service. Therefore, no likely significant pressures to port facilities are expected.

139. Taking into account the embedded mitigation measures outlined in Section 18.3.3, the magnitude of impact will be low. The receptor sensitivity is medium (as described in Section 18.6.1.1.2) and therefore the significance of effect would be minor adverse, which is not significant in EIA terms.

18.7.3.3 Cumulative effect 2: Physical impacts on subsea cables

140. The requirement for proximity and crossing agreements would apply to all projects screened into the CEA, where relevant, therefore, this embedded mitigation would ensure the cumulative impact magnitude is negligible. The receptor sensitivity is high (as described in Section 18.6.1.2.2) and therefore

the significance of effect would be minor adverse, which is not significant in EIA terms.

18.7.3.4 Cumulative effect 3: Impacts on dredging activities

141. There is potential for cumulative effects with North Falls and the projects screened into the CEA, primarily arising from navigational safety issues due to increased vessel traffic in the study area.

142. ES Chapter 15 Shipping and Navigation (Document Reference: 3.1.17) concludes that the cumulative effects will be tolerable or broadly acceptable on the basis of embedded mitigation which will ensure the impact is as low as reasonably practicable.

143. Considering the embedded mitigation measures outlined in Section 18.3.3, the magnitude of impact will be low. The receptor sensitivity is medium and therefore the significance of effect would be minor adverse, which is not significant in EIA terms.

18.7.3.5 Cumulative effect 4: Impacts on MOD activities

144. There is potential for cumulative effects with North Falls and the projects screened into the CEA, primarily arising from potential interactions with military PEXAs.

145. Considering the embedded mitigation measures outlined in Section 18.3.3, including engagement with stakeholders such as the DIO and promulgation of information, the magnitude of impact will be low. The receptor sensitivity is high and therefore the significance of effect would be minor adverse, which is not significant in EIA terms.

18.8 Interactions

146. Table 18.15 presents the interactions between impacts discussed in this chapter and those discussed in other ES chapters (Volume 3.1).

Table 18.15 Infrastructure and Other Users interactions

Topic and description	Related chapter (Volume 3.1)	Where addressed in this chapter
Potential interference with other wind farms	Chapter 15 Shipping and Navigation, Chapter 17 Aviation and Radar	Section 18.6.1.1
Physical impacts on subsea cables and pipelines	Chapter 15 Shipping and Navigation	Section 18.6.1.2
Impacts on disposal sites	Chapter 9 Marine Water and Sediment Quality	Section 18.6.1.3
Impacts on dredging sites	Chapter 9 Marine Water and Sediment Quality, and Chapter 15 Shipping and Navigation	Section 18.6.1.4
Impacts on MoD activities	Chapter 17 Aviation and Radar	Section 18.6.1.5

18.9 Inter-relationships

147. There is no potential for inter-relationships between impacts on the different infrastructure and other users described in this chapter as these are all separate, non-related receptors.

18.10 Summary

148. This chapter has provided a characterisation of the existing Infrastructure and Other Users informed by a desk base review. The data sources used in this assessment are summarised in Table 18.5.

149. Table 18.16 presents the predicted impacts on infrastructure and other users during the construction, operation and decommissioning of the Project. As shown, the effects of North Falls on infrastructure and other users are not anticipated to exceed minor adverse significance (not significant in EIA terms).

150. The assessment has determined that impacts on Infrastructure and Other Users during the construction, operation and decommissioning phases of North Falls are considered no greater than 'minor adverse'.

151. The potential cumulative effects (Section 18.7), including Potential Interference with other wind farms, Physical Impacts on subsea cables, impacts on dredging and Impacts on MoD activities have also been assessed as minor adverse.

152. No transboundary effects on infrastructure and other users have been identified and therefore have been scoped out of this assessment in line with the scoping opinion (Planning Inspectorate, 2021).

153. Effects on infrastructure and other users also have the potential to affect other receptors and these effects are fully considered in the topic-specific chapters. These receptors are outlined in Table 18.15, and the topic-specific chapters below:

- ES Chapter 9 - Marine Water and Sediment Quality (Document Reference: 3.1.11)
- ES Chapter 15 - Shipping and Navigation (Document Reference: 3.1.17)
- ES Chapter 17 - Aviation and Radar (Document Reference: 3.1.19).

154. No potential inter-relationships have been identified for the impacts on the different infrastructure and other users described in this chapter.

Table 18.16 Summary of likely significant effects on infrastructure and other users topic

Potential impact	Receptor	Sensitivity	Magnitude of impact	Significance of effect	Additional mitigation measures	Residual effect
	Construction					
Impact 1: Potential Interference with other wind farms	OWFs	Medium	Negligible	Minor	N/A	Minor
Impact 2: Physical Impacts on subsea cables and pipelines	Subsea cables and pipelines	High	Negligible	Minor	N/A	Minor
Impact 3: Impacts on disposal sites	Disposal site operators	No impact	No impact	No change	N/A	No change
Impact 4: Impacts on dredging	Dredging site operators	Medium	Low	Minor	N/A	Minor
Impact 5: Impacts on MoD activities	MOD	High	Negligible	Minor	N/A	Minor
	Operation					
Impact 1: Potential Interference with other wind farms	OWFs	Medium	Negligible	Minor	N/A	Minor
Impact 2: Physical Impacts on subsea cables and pipelines	Subsea cables and pipelines	High	Negligible	Minor	N/A	Minor
Impact 3: Impacts on disposal sites	Disposal site operators	No impact	No impact	No change	N/A	No change
Impact 4: Impacts on dredging	Dredging site operators	Medium	Low	Minor	N/A	Minor
Impact 5: Impacts on MoD activities	MOD	High	Negligible	Minor	N/A	Minor
	Decommissioning					
Impact 1: Potential Interference with other wind farms	OWFs	Medium	Negligible	Minor	N/A	Minor

Potential impact	Receptor	Sensitivity	Magnitude of impact	Significance of effect	Additional mitigation measures	Residual effect
Impact 2: Physical Impacts on subsea cables and pipelines	Subsea cables and pipelines	High	Negligible	Minor	N/A	Minor
Impact 3: Impacts on disposal sites	Disposal site operators	Negligible	Negligible	Negligible	N/A	Negligible
Impact 4: Impacts on dredging	Dredging site operators	Medium	Low	Minor	N/A	Minor
Impact 5: Impacts on MoD activities	MOD	High	Negligible	Minor	N/A	Minor
Cumulative effects						
Impact 1: Potential Interference with other wind farms	OWFs	Medium	Negligible	Minor	N/A	Minor
Impact 2: Physical Impacts on subsea cables	Subsea cables	High	Negligible	Minor	N/A	Minor
Impact 3: Impacts on dredging	Dredging site operators	Medium	Low	Minor	N/A	Minor
Impact 4: Impacts on MoD activities	MOD	High	Negligible	Minor	N/A	Minor

18.11 References

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