DOGGER BANK D WIND FARM

Artificial Nesting Structure Compensation Measure

Preliminary Environmental Information Report Non-Technical Summary

February 2026

sse Renewables

equinor

www.doggerbankd.com

Contents

1. Introduction

An Artificial Nesting Structure (ANS) is a purpose built structure designed to provide nesting spaces for seabirds.

The need for an ANS arises as a result of a potential impact identified on the breeding population of kittiwake at the Flamborough and Filey Coast Special Protection Area (SPA) when the effects of Dogger Bank D Offshore Wind Farm (hereafter 'the Project' or DBD') are considered in-combination with other offshore wind farm developments. DBD is proposing compensation for those impacts in the form of an offshore ANS.

Following site selection, three Areas of Search (AoS) have been identified for the ANS (see **Figure 2-1** on **page 7**). The AoS were not included within the Offshore Development Area and were not assessed within the main Project Preliminary Environmental Information Report (PEIR) consulted on in 2025. As the ANS will form Associated Development within the Development Consent Order (DCO) application, a targeted consultation is being undertaken under Section 42 of the Planning Act 2008.

This consultation relates solely to the ANS and not to the main Dogger Bank D development. It is supported by a standalone ANS PEIR and accompanying documents, including a Habitats Regulations Assessment Screening Report and Report to Inform Appropriate Assessment (RIAA) (see **Appendix A**), a Marine Conservation Zone Assessment (MCZA) Screening Report (see **Appendix B**), a Commitments Register (see **Appendix C**), and Scoping Rationale (see **Appendix D**). Together, these documents provide the basis for the targeted consultation and present preliminary assessment of the likely significant effects of the ANS.

This document is the Non-Technical Summary (NTS) of the ANS PEIR. It provides an accessible, high-level overview of the proposed ANS, a summary of the preliminary environmental information and explains the likely significant effects for all stages of the ANS, from construction through to operation and decommissioning.

Further detail on the environmental assessment of the ANS is provided in the full PEIR. All consultation documents can be accessed at: **www.doggerbankd.com**.

1.1 Project Background

The Dogger Bank D Offshore Wind Farm is the fourth phase of the Dogger Bank Wind Farm. The Project will be capable of exporting up to 1.5GW of renewable electricity, thereby supporting the decarbonisation of the UK energy system as well as contributing to the UK's energy security.

The Project's offshore Array Area is located in the Dogger Bank region of the southern North Sea, approximately 210km from the Yorkshire coast at its closest point. The Array Area comprises wind turbines connected to an offshore platform by subsea inter-array cables. Electricity generated offshore will be transmitted to shore via offshore export cables, making landfall to the south-east of Skipsea in East Riding of Yorkshire.

From the landfall point, electricity will be transferred via underground cables to an onshore converter station zone. From there, the cables will connect to the proposed Birkhill Wood Substation, located south of Beverley. This substation is being developed by National Grid Electricity Transmission and is not part of the Project's proposals. **Figure 2-1** shows the offshore and onshore areas associated with the Project.

Statutory consultation on the main development was undertaken between 10 June and 5 August 2025 and was supported by a separate PEIR.

1.2 The Team Behind DBD

DBD is being developed as a 50 / 50 joint venture between SSE Renewables and Equinor with SSE Renewables leading the development of the Project on behalf of the joint venture.

Both companies have extensive experience in developing and operating offshore wind farms, having previously been involved in designing and securing planning consent for the Dogger Bank Wind Farm, which is currently the largest offshore wind farm under construction in the world.

1.3 What is an Artificial Nesting Structure and why is it proposed?

An ANS is a purpose-built structure installed at sea and fixed to the seabed, designed to provide nesting spaces for seabirds (specifically kittiwake), that may be impacted by offshore wind farm development.

As part of the Habitats Regulations Assessment (HRA), the Project considers whether the offshore wind farm could affect protected sites and species. This assessment concludes that a potential Adverse Effect on Integrity (AEoI) on the Flamborough and Filey Coast (FFC) Special Protection Area (SPA) cannot be ruled out. This means there could be a risk of collision mortality for kittiwakes at a level which may impact the breeding population at FFC SPA, when the Project is considered in combination with other offshore wind farms.

To address this potential impact, the Project is proposing an offshore ANS as a compensation measure to offset potential kittiwake mortality by providing additional nesting opportunities.

1.4 Legislative and Policy Context

The Project must comply with a range of international, national and local legislation, policies and plans.

As DBD will generate more than 100 megawatts (MW) of renewable energy, it is classified as a Nationally Significant Infrastructure Project (NSIP). Projects of this scale require a DCO from the Secretary of State under the Planning Act 2008. As part of the DCO application, an Environmental Statement (ES) must be prepared in line with the Environmental Impact Assessment Regulations 2017. These regulations set out the legal requirement to identify and assess any likely significant environmental effects of the Project, including its Associated Development.

The proposed ANS is classified as Associated Development and will be included within the DCO application for the Project. "Associated Development" refers to infrastructure linked to the main NSIP that helps to construct, operate or address its environmental impacts. The PEIR provides an assessment of the likely significant environmental effects of the ANS. An ES for the ANS will be submitted with the DCO application.

Consultation requirements

Section 42 of the Planning Act 2008 requires that statutory consultation is carried out during the pre-application stage. The ANS PEIR and associated appendices forms part of this consultation.

Habitats Regulations

The Project must comply with environmental and nature conservation laws. In England and Wales, these include the Habitats Regulations, which implement European directives to protect internationally important habitats and species. Under these regulations, any project that could affect protected sites within the National Site Network, such as existing and newly designated Special Areas of Conservation (SAC) and Special Protection Areas (SPA), must undergo assessment.

A dedicated report has been prepared called the HRA Screening Report and Draft Report to Inform Appropriate Assessment (RIAA) (see **Appendix A**). The RIAA is part of the HRA process, and it provides the evidence needed to assess any potential effects of the ANS on protected sites. The RIAA has concluded that there are no potential for AEoI on any designated sites or species for the project alone or in combination with other projects.

Marine and Coastal Access Act

The Project is also subject to the Marine and Coastal Access Act 2009 (MCAA), which protects Marine Conservation Zones (MCZ). In line with the HRA process, a separate MCZA Screening Report has been prepared for the ANS (see **Appendix B**). The MCZA Screening Report concludes that the proposed ANS presents no significant risk to the conservation objectives of the nearby MCZs, either alone or in combination with other plans and projects.

Policy and Guidance

The PEIR has also been informed by several advice notes published by the Planning Inspectorate (PINS), helping to ensure the approach meets all relevant planning and environmental standards.

Further details on the relevant legislation and policy are provided in **Chapter 2 Legislative Background** of the PEIR**.**

2. About the ANS

The Project is assessing three Areas of Search (AoS) as potential locations for the ANS, shown in Figure 2-1.

2.1 Overview

The ANS will consist of a foundation and a topside containing the nesting spaces. The topside will feature external nesting ledges, and will include internal stairs and walkways for access, observation and chick ringing.

The ANS topside will measure up to 30m in width and length, reach up to 40m in height, and extend up to 65m above Lowest Astronomical Tide (LAT) (or 80m including lighting protection). The ANS dimensions are driven by the number of nesting spaces required and design features that enhance the structures success, such as inclined walls.

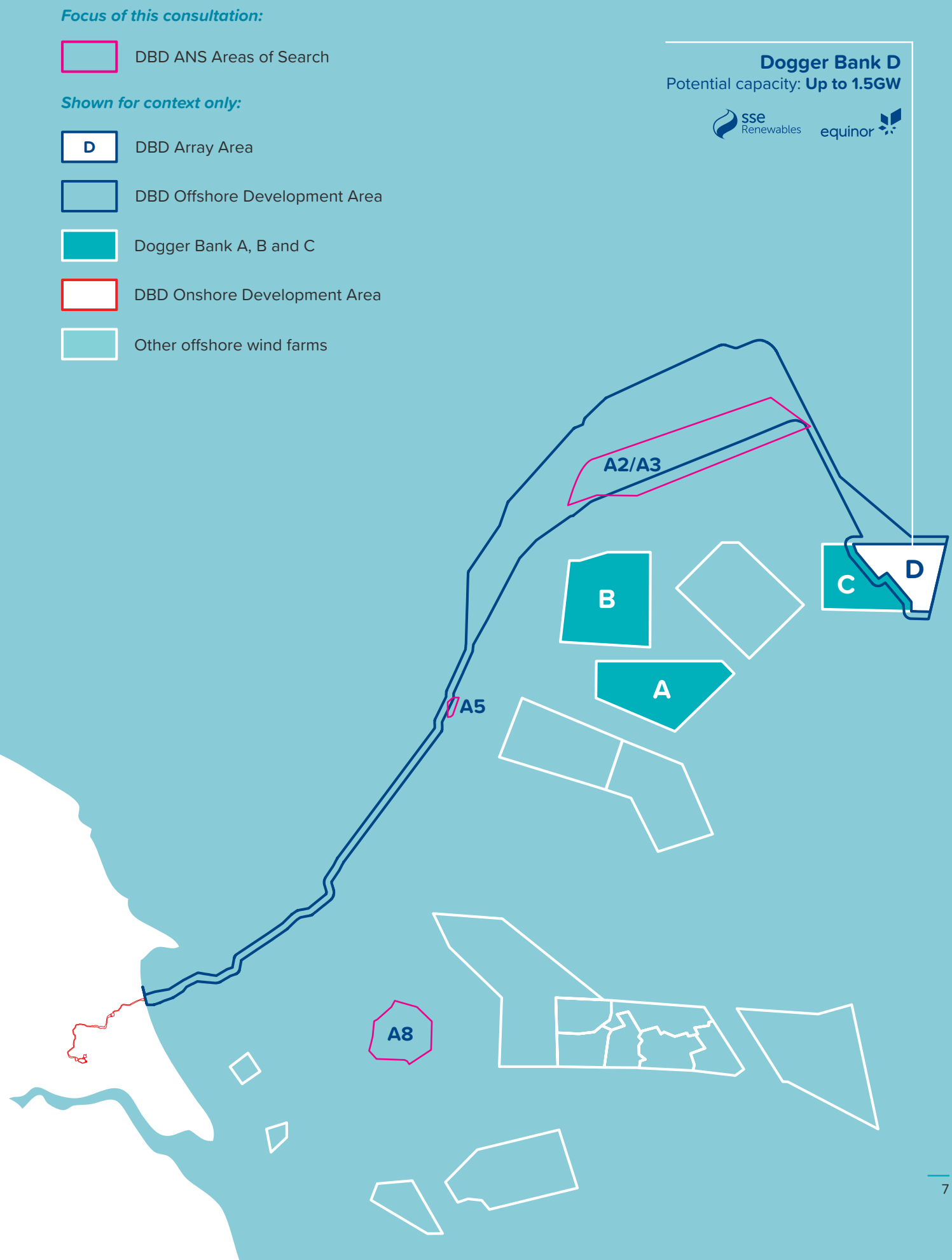
Foundation designs will depend on several environmental factors such as seabed conditions and water depths, as well as engineering parameters and supply chain considerations. There are two types of foundation under consideration:

- **Monopile:** a singular tubular piece, formed of several steel cylinders welded together and driven into the seabed; and
- **Gravity base:** a concrete or steel structure floated or transported by barge to the site and then ballasted onto the seabed.

Scour protection such as sand bags, rock bags and mattress protection will be used as the primary mitigation measure to prevent seabed erosion and the formation of scour around the ANS foundation. The amount of scour protection required will vary depending on the foundation type and the final installation method will be decided post-consent.

The ANS design is indicative and based on a concept design which will continue to evolve as the EIA and site selection work progress.

Figure 2-1 — *Dogger Bank D development areas and ANS Areas of Search*



2.2 How will the ANS be installed?

The ANS foundation and topside will be built onshore and transported to its chosen location at sea from an appropriate marshalling port which is likely to be within the UK. The foundation will be installed first (either pile driven for a monopile foundation or sinking a gravity base foundation using ballast). The topside will then be lifted onto the foundation using a crane.

To keep vessels and personnel safe, advisory 500m safe passing distances will be put in place around the ANS during construction. Once the structure is installed, the advisory safety zone will reduce to approximately 50m during operation and maintenance (O&M) activities, expanding temporarily to 500m only when major maintenance is undertaken.

Information about the ANS location and construction activity will be shared in advance through Notices to Mariners (NtM) and other marine communication.

2.3 Construction Programme

Construction of the ANS is expected to take up to six months and will be completed a minimum of two breeding seasons before operation of the first turbine.

2.4 Operations and maintenance

Following construction, the Project will enter the O&M phase which is expected to last over 37 years. An O&M strategy will be finalised once the technical specifications and location are confirmed.

Two types of O&M activities are expected:

- **Preventative maintenance** such as planned servicing of the ANS and its foundation, surveys and modifications; and
- **Corrective maintenance** such as repairs, replacements and remedial works to the ANS and its foundation and scour protection.

Researchers will also visit the structure to monitor the breeding kittiwakes and carry out ecological surveys.

2.5 Decommissioning

Decommissioning will typically follow a reverse sequence of the construction methodology and will involve similar numbers of vessels and equipment. In many cases the scale of the activities during the decommissioning phase will be equivalent to, or less than, the activities during construction.

Further details regarding the description of the ANS are provided in **Chapter 4 Description of the Associated Development** of the PEIR.

3. Site Selection for the ANS

A site selection process for the ANS has been undertaken, in consultation with relevant stakeholders, to identify three AoS as potential locations for the ANS.

The Project proposes a single ANS which would be located within one of the zones presented in **Figure 2-1**.

Site selection is ongoing and follows an iterative process guided by engineering, environmental and socio-economic considerations as well as engagement with statutory bodies. The aim is to identify the most suitable location to compensate for potential impacts on the kittiwake population of the Flamborough and Filey Coast SPA.

The key steps of the site selection process are shown below:

Step 1
Defining the Areas of Search

↓

Step 2
Identification of Long List Options

↓

Step 3
Black, Red, Amber, Green Assessment

↓

Step 4
Identification of Short List Options

↓

Step 5
Selection and Refinement of Preferred Option(s)

Further details regarding the site selection process are provided in **Chapter 3 Site Selection Process** of the PEIR.

4. Environmental Impact Assessment (EIA) Methodology

4.1 Project Design Envelope

The PEIR assessments use a flexible approach called the 'Design Envelope' (also known as the 'Rochdale Envelope'). This allows for changes in certain design parameters that have yet to be decided, such as foundation type or exact location of the structure within the AoS. For the EIA, a range of possibilities are considered to identify a 'realistic worst-case scenario' - the option with the greatest potential impact. The assessment then focuses on this scenario to ensure all potential effects are properly considered.

The Design Envelope will be further refined as the EIA and site selection progress and will be confirmed in the ES.

4.2 Environmental Impact Assessment

An EIA is being carried out to understand the likely significant effects of the ANS on the environment. This process ensures that relevant impacts are identified and assessed. The EIA is based on professional expertise, recognised industry standards, and best practice guidance, using a structured and transparent approach to make sure the assessment is thorough and consistent across all environmental topics.

The assessment approach used for the ANS EIA follows the same method as the main development. The assessment primarily considers the impacts of construction and O&M activities, as effects during decommissioning are expected to be similar in nature but of a lower magnitude than those identified during the construction phase.

The PEIR provides an assessment of the likely significant effects based on the current design and understanding of baseline conditions at the three AoS. Where required, any updates or changes will be presented in the ES for the ANS which will be submitted with the DCO application.

For each topic scoped into assessment, the following process is followed:

- **Characterisation of the Baseline Environment:** The baseline environment is characterised to understand the current state of the environment before the development begins and any receptors identified, including their sensitivity, value, and importance. This involves reviewing existing data sources, assessing potential impacts, checking data quality, collecting additional information if required, and identifying relevant receptors within the Study Area.
- **Scoping of Impacts:** Potential impacts for each receptor are reviewed and scoped. Impacts where there are no likely significant effects are removed from further assessment. The rationale for scoping is provided in **Appendix D** Scoping Rationale. The impacts that are scoped in have then been subsequently assessed.
- **Determination of Impact Magnitude:** The magnitude of impacts that may arise from the development are determined using factors such as scale, spatial extent, duration, likelihood and frequency.
- **Assessment of Likely Significant Effects:** The determination of the scale of an impact on a receptor when considered in the context of its sensitivity, value, and importance. A matrix approach (see **Table 4-1**) is used to ensure consistency and transparency in the assessment process and draw conclusions on the significance of the impacts.

Table 4-1 – *EIA significance matrix*

		Adverse Effect				Beneficial Effect			
		Impact Magnitude							
		High	Medium	Low	Negligible	Negligible	Low	Medium	High
Receptor Sensitivity	High	Major	Major	Moderate	Minor	Minor	Moderate	Major	Major
	Medium	Major	Moderate	Minor	Minor	Minor	Minor	Moderate	Major
	Low	Moderate	Minor	Minor	Negligible	Negligible	Minor	Minor	Moderate
	Negligible	Minor	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Minor

Mitigation which is designed into the project from the outset, for example industry standard good practice, is referred to as embedded or design mitigation and is considered as part of the assessment. Where the assessment subsequently identifies a likely significant environmental effect, additional mitigation measures are proposed to avoid or reduce these impacts to acceptable levels, where possible. These mitigation measures are agreed upon through ongoing consultation with relevant statutory bodies and other key stakeholders. Once additional mitigation is applied, the effect is reassessed to determine the final residual effect.

Mitigation measures, which aim to avoid, prevent or minimise likely significant effects are captured in the Commitments Register (see **Appendix C**). Each commitment has a unique identification reference so they can be tracked across PEIR documents and through subsequent stages of the EIA / DCO process.

The EIA will also assess:

- **Inter-relationships and interactions:** where impacts on one receptor can have a knock-on impact on another (for example, an impact on a fish population may lead to reduced prey for birds and marine mammals) or where multiple effects act on a single receptor or receptor group;
- **Cumulative impacts:** where the effects of the development are considered alongside predicted impacts from other nearby projects such as other offshore wind farms; and
- **Transboundary impacts:** where activities in other countries may be impacted (for example, through shipping routes or fishing activities). Given the small scale of the ANS and the locations of the AoS, the potential for transboundary impacts is expected to be limited.

Further details on the EIA methodology are provided in **Chapter 6 Methodology** and more information on the Design Envelope approach can be found in **Chapter 4 Description of the Associated Development** of the PEIR.

5. Consultation

Consultation with statutory and non-statutory consultees prior to the submission of a DCO application is an inherent part of the DCO process.

Consultation and engagement on the ANS have taken place through the Evidence Plan Process. This has included Expert Topic Group meetings and wider technical discussions with key stakeholders, in addition to statutory consultation on the PEIR for the main development.

5.1 Purpose of this consultation

This PEIR consultation seeks feedback on the assessment approach, the initial conclusions, and any further constraints or considerations that should inform ANS site selection. Stakeholders are also invited to identify any additional environmental, technical, operational, or regulatory risks that should be considered.

Further details regarding the consultation process are provided in **Chapter 5 Consultation** of the PEIR.

6. Environmental Impact Assessment Topics

The following sections provide a summary of the impact assessments presented in the PEIR.

For each environmental topic the sections provide details of:

- The baseline: the current state of the environment for the specific topic;
- The impacts considered in the assessment of effects;
- Key proposed mitigation measures (where applicable); and
- A summary of the environmental effects and next steps (where applicable).

- Marine Physical Processes
- Marine Water and Sediment Quality
- Benthic Ecology
- Fish and Shellfish Ecology
- Marine Mammals
- Offshore Ornithology
- Commercial Fisheries
- Shipping and Navigation
- Aviation, Radar and Military
- Offshore Archaeology
- Other Marine Users
- Socio-Economics, Tourism and Recreation
- Human Health
- Major Accidents and Disasters
- Climate Change

6.1 Marine Physical Processes

6.1.1 Background and Baseline

This chapter considers the potential effects of construction, O&M, and decommissioning of the ANS on Marine Physical Processes.

Information for this chapter was gathered using both existing datasets and site-specific surveys, including geophysical, geotechnical and benthic surveys. Seabed sediment samples were collected during the site-specific surveys and modelling was used to predict how tides, waves, and sediment would be affected in the area.

The seabed within the AoS is mostly sandy, with smaller areas of gravelly sand and mud. Water depths within the AoS range from 26m to 50m below Lowest Astronomical Tide (LAT), with water levels being predominately driven by semi-diurnal tides that enter from the Atlantic Ocean. Due to their exposed locations, the AoS experience relatively high levels of wave energy.

6.1.2 Assessment of Effects

Potential effects considered for Marine Physical Processes have been assessed and are shown in **Table 6-1**. A full list of effects, including associated impacts IDs, is available in the PEIR.

6.1.3 Mitigation Measures

Sediment released during drilling, dredging, and foundation installation is expected to settle quickly rendering effects as localised and temporary. Therefore, there are no embedded or additional mitigation proposed for Marine Physical Processes.

6.1.4 Summary of Effects and Next Steps

Overall, the preliminary assessment indicates that there are **no significant effects** on Marine Physical Processes as all potential effects are of negligible adverse significance or no change. These effects will not be considered in further detail at ES stage.

Further details are available in **Chapter 7 Marine Physical Processes** in the PEIR.

Impact ID	Impact	Activity	Project Phase
MPP-C-03 MPP-C-04	Changes in suspended sediment concentration, transport, and seabed level.	Seabed preparation and drilling for ANS foundation installation.	Construction
MPP-C-07	Indentations on the seabed.	Presence of installation vessels.	Construction
MPP-O-01 MPP-O-02 MPP-O-03	Changes in the tidal current regime, wave regime and water circulation.	Presence of infrastructure (ANS foundation).	O&M
MPP-O-04	Changes in bedload sediment transport and seabed morphology.	Presence of infrastructure (ANS foundation).	O&M
MPP-O-08	Indentations on the seabed.	Presence of repair and maintenance vessels.	O&M

Table 6-1 — *Potential effects considered for Marine Physical Processes*

6.2 Marine Water and Sediment Quality

6.2.1 Background and Baseline

This chapter considers the potential effects of construction, O&M, and decommissioning of the ANS on Marine Water and Sediment Quality.

Information for this chapter was gathered using existing datasets, as well as site-specific surveys, including collecting sediment samples.

Sediments in the Study Area vary by AoS, with A2/3 containing primarily sand and gravelly sand, A5 mostly sand, and A8 a mix of sand, gravelly sand, and some gravelly muddy sand. Particle size distribution analyses from 2023-2025 and supporting surveys indicate predominantly sandy sediments with localised gravel or mud, with levels of contaminants below any thresholds of concern.

6.2.2 Assessment of Effects and Summary

Potential effects considered for water and sediment quality included changes in suspended sediment concentrations and the re-mobilisation of existing contaminated sediments. Given that no exceedances of contaminant levels have been recorded in any AoS and the potential for significant increases in suspended sediment concentrations is very limited, all impacts in relation to Marine Water and Sediment Quality have been scoped out and will not be considered further at ES stage (see **Appendix D** Scoping Rationale).

Further details are available in **Chapter 8 Marine Water and Sediment Quality** in the PEIR.

6.3 Benthic Ecology

6.3.1 Background and Baseline

This chapter considers the potential effects of construction, O&M, and decommissioning of the ANS on benthic ecology.

Information for this chapter was gathered using publicly available datasets, as well as site-specific benthic surveys.

The benthic habitats identified within the AoS generally comprise of sand, coarse and mixed sediment, and mud. The Study Area contains one protected area, Dogger Bank SAC, designated for sandbanks which are slightly covered by sea water all the time and this SAC is considered further through the ANS RIAA (Appendix A). The MCZ Assessment Screening (Appendix B) also considers nearby MCZs with protected benthic features.

6.3.2 Assessment of Effects

Potential effects associated with Benthic Ecology have been considered and are shown in **Table 6-3**. A full list, including associated impacts IDs, is available in the PEIR.

Impact ID	Impact	Activity	Project Phase
BEN-C-01	Temporary habitat loss and physical disturbance.	Installation of the foundation, seabed preparation (dredging) and indentations on the seabed from jack-up vessels and anchoring.	Construction
BEN-C-03	Increased suspended sediments and sediment re-deposition.	Seabed preparation (for gravity base), installation of the foundation, and any scour protection.	Construction
BEN-C-07	Disturbance from noise and vibration.	Installation of the foundation (pile driving), vessel traffic and unexploded ordnance clearance.	Construction
BEN-O-01	Temporary habitat loss and physical disturbance.	Indentations on the seabed due to jack-up vessels undertaking foundation repairs and anchoring – if any.	O&M
BEN-O-02	Habitat loss and alteration.	Presence of infrastructure and scour protection.	O&M
BEN-O-03	Increased suspended sediments and sediment re-deposition.	Operations and maintenance activities	O&M
BEN-O-11	Colonisation of introduced substrate.	Presence of infrastructure and scour protection.	O&M

Table 6-3 — *Potential effects considered for Benthic Ecology*

6.3.3 Mitigation Measures

Mitigation of potential effects has been considered during the assessment and incorporated into the ANS design through specific commitments including the development of a Project Environmental Management Plan (**Commitment ID CO115**).

No further mitigation is proposed for Benthic Ecology.

A list of mitigation measures are presented in the PEIR chapter and the Commitments Register (see **Appendix C**).

6.3.4 Summary of Effects

Overall, the preliminary assessment indicates that there are **no significant effects** on benthic receptors as all potential effects are of **negligible** or **minor adverse** significance. These effects will not be considered in more detail at the ES stage.

Further details are available in **Chapter 9 Benthic Ecology** in the PEIR.

6.4 Fish and Shellfish Ecology

6.4.1 Background and Baseline

This chapter considers the potential effects of construction, O&M, and decommissioning of the ANS on Fish and Shellfish Ecology.

The information for this chapter was gathered using publicly available datasets.

Natural populations within the Study Area have been characterised via a review of existing literature, environmental data and fish landings data. The Study Area supports diverse, commercially important fish and shellfish including haddock, whiting, herring, dab, plaice, Atlantic mackerel, lobster, crab, Norway lobster and king scallop. Species of conservation concern include cod, Atlantic salmon, and critically endangered blue and flapper skates. Key spawning and nursery grounds exist for herring, sandeel, plaice, and dab, though no AoS overlaps high-confidence herring or sandeel habitat. eDNA surveys (2023–2025) and regional data indicate assemblages typical of the central North Sea.

6.4.2 Assessment of Effects

Potential effects considered for Fish and Shellfish Ecology are presented in **Table 6-4**. A full list, including associated impacts IDs, is available in the PEIR and the Impacts Register.

6.4.3 Mitigation Measures

Mitigation of potential effects has been considered during the assessment and incorporated into the ANS design through specific commitments including the development of a Project Environmental Management Plan (Commitment ID CO115). No further mitigation is proposed at this stage.

A list of mitigation measures are presented in the PEIR chapter and the Commitments Register (see **Appendix C**).

Impact ID	Impact	Activity	Project Phase
FSE-C-02	Temporary habitat loss and physical disturbance.	Installation of the foundation, seabed preparation (dredging) and indentations on the seabed from jack-up vessels and anchoring activities.	Construction
FSE-C-04	Increased suspended sediments and sediment re-deposition.	Seabed preparation (for gravity base), installation of the foundation, and any scour protection.	Construction
FSE-C-07	Underwater noise and vibration.	Installation of the foundation (pile driving), vessel traffic and unexploded ordnance clearance.	Construction
FSE-O-02	Temporary habitat loss and physical disturbance.	Indentations on the seabed due to jack-up vessels undertaking foundation repairs and anchoring.	O&M
FSE-O-03	Habitat loss and alteration.	Presence of infrastructure and scour protection.	O&M

Table 6-4 — *Potential effects considered for Fish and Shellfish Ecology*

6.4.4 Summary of Effects and Next Steps

The potential impacts on Fish and Shellfish Ecology from the ANS are limited and localised. While construction activities could temporarily affect some species, including those with high tendency to return to sites such as sandeel and spawning herring, no AoS overlap the highest potential spawning grounds, and only a single ANS will be installed.

Overall, the preliminary assessment indicates that there are **no significant effects** on fish and shellfish as all potential effects are of **negligible** adverse significance.

However, underwater noise and vibration will be further assessed at the ES stage using site-specific underwater noise modelling to validate and accurately quantify potential impacts during piling. Cumulative underwater noise effects with other offshore activities will also be considered.

Further details are available in **Chapter 10 Fish and Shellfish Ecology** in the PEIR.

6.5 Marine Mammals

6.5.1 Background and Baseline

This chapter considers the potential effects of construction, O&M, and decommissioning of the ANS on Marine Mammals.

DBD site-specific surveys, together with existing data from surveys from other offshore wind farms and other publicly available information for the region have informed this assessment.

Based on the available data, it is expected that only seven marine mammal species occur regularly in the Study Area:

- Harbour porpoise;
- White-beaked dolphin;
- Bottlenose dolphin;
- Common dolphin;
- Minke whale;
- Harbour seal; and
- Grey seal.

The Study Area contains one protected area for Marine Mammals, Southern North Sea SAC. This SAC is considered further through the ANS RIAA (see **Appendix A**).

6.5.2 Assessment of Effects

Potential effects associated with Marine Mammals in **Table 6-5**. A full list, including associated impact IDs, is available in the PEIR chapter.

Impact ID	Impact	Activity	Project Phase
MM-C-01 MM-C-02 MM-C-05 MM-C-06	Physical and auditory injury and behavioural impacts caused by underwater noise affecting hearing and can lead to displacement.	Pile driving and other construction activities (dredging and rock placement) along with the presence of vessels used for construction activities.	Construction
MM-C-08	Disturbance at seal haul-out sites from piling works and vessel transits.	Piling and vessel movements to and from site.	Construction
MM-C-09	Vessel interaction and associated collision risk.	Vessels used for construction activities.	Construction
MM-O-06	Behavioural impacts caused by underwater noise affecting hearing and can lead to displacement.	The presence of vessels used for maintenance activities.	O&M
MM-O-09	Vessel interaction and associated collision risk.	Vessels used during O&M.	O&M

Table 6-5 — *Potential effects considered for Marine Mammals*

White-beaked dolphin

6.5.3 Mitigation Measures

Mitigation of potential effects has been considered during the assessment and has been incorporated into the ANS design through specific commitments. These include the development of a Marine Mammal Mitigation Protocol to provide appropriate mitigation and monitoring during piling (Commitment ID CO114), and the development of a Project Environmental Management Plan (Commitment ID CO115). No further mitigation is proposed at this stage.

A list of mitigation measures are presented in the PEIR chapter and the Commitments Register (see **Appendix C**).

6.5.4 Summary of Effects and Next Steps

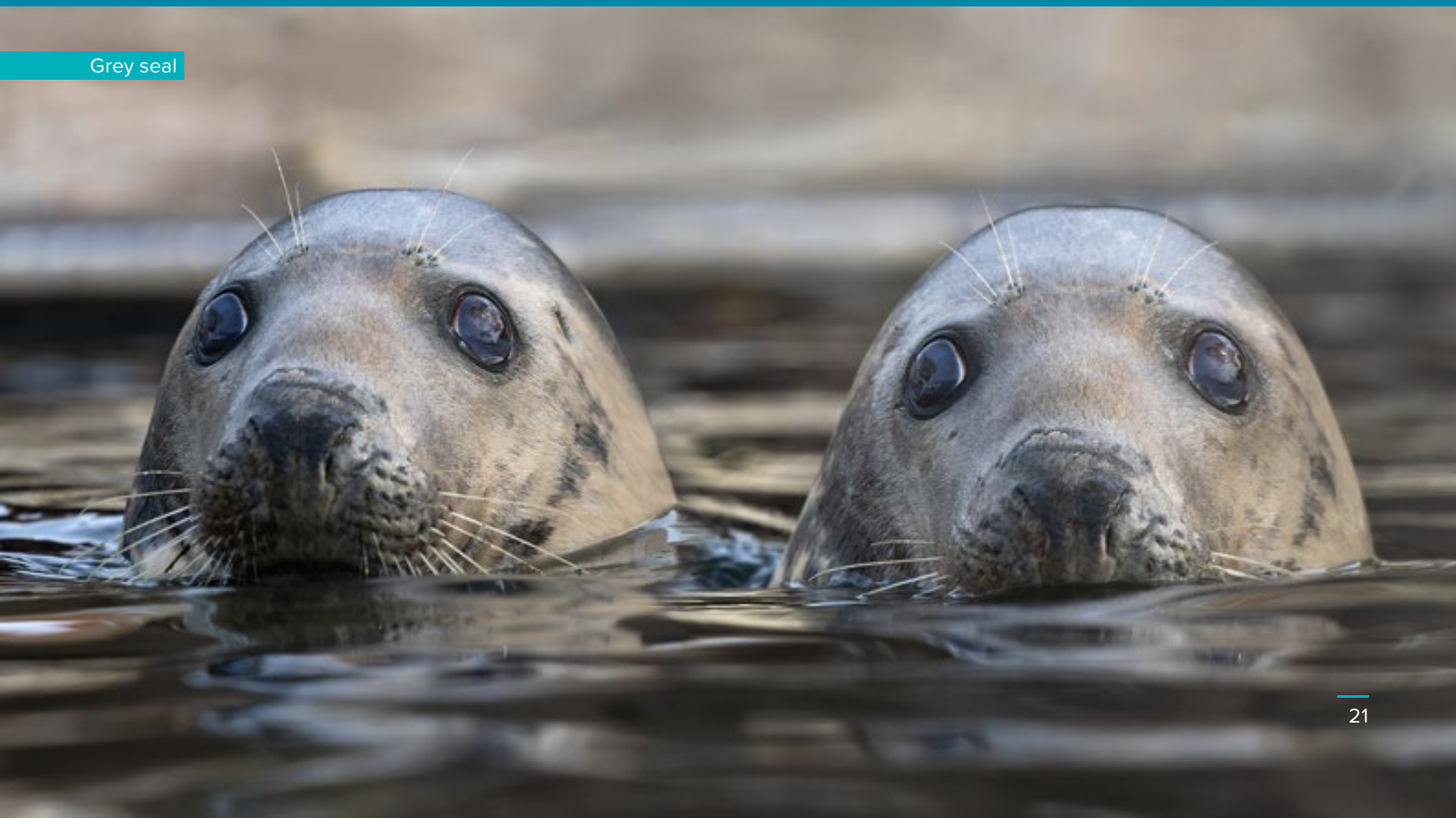
The extent of potential impacts on marine mammals from the ANS will be limited and short term and temporary given that a single ANS is being installed. Potential impacts to marine mammal receptors during the operation phase will be lower in magnitude due to the absence of pile driving, and fewer vessels required for O&M activities than construction.

Overall, the preliminary assessment indicates that there are **no significant effects** on marine mammals as all potential effects are of **negligible** to **minor adverse** significance.

However, underwater noise and vibration will be further assessed at the ES stage using site-specific underwater noise modelling to validate and quantify in detail the potential impacts during piling. Cumulative underwater noise effects with other offshore activities will also be considered.

Further details are available in **Chapter 11 Marine Mammals** in the PEIR.

Grey seal



6.6 Offshore Ornithology

6.6.1 Background and Baseline

This chapter considers the potential effects of construction, O&M and decommissioning of the ANS on Offshore Ornithology.

DBD site-specific surveys, together with existing data from surveys from other offshore wind farms and other publicly available information for the North Sea region have informed this assessment.

There is no overlap between any AoS and SPAs or other designated sites with seabirds as qualifying species. In the breeding season, the AoS is expected to be used by kittiwake and other species for foraging and resting on water as the AoS lie within published foraging range of breeding seabirds.

6.6.2 Assessment of Effects

Potential effects considered for Offshore Ornithology are presented in **Table 6-6**. A full list, including associated impact IDs, is available in the PEIR chapter.

Impact ID	Impact	Activity	Project Phase
ORN-C-01	Direct disturbance and displacement at the ANS location or en-route from Project ports.	Vessel movements and presence, including visual disturbance and underwater noise and vibration.	Construction
ORN-C-05	Indirect impacts via habitat and prey availability.	Seabed preparation, installation of the foundation and scour protection, underwater noise and vibration caused by vessels (both construction and O&M).	Construction
ORN-O-01	Direct disturbance and displacement at the ANS location or en-route from Project ports.	Vessel movements and presence of maintenance vessels.	O&M
ORN-O-05	Indirect impacts via habitat and prey availability.	Movement and presence of maintenance vessels, plus underwater noise from maintenance activities.	O&M

Table 6-6 — *Potential effects considered for Offshore Ornithology*

Black-Legged Kittiwakes

6.6.3 Mitigation Measures

Mitigation of potential effects has been considered during the assessment and incorporated into the ANS design through specific commitments. These include the development of a Project Environmental Management Plan (Commitment ID CO115) and, minimising routine maintenance at the ANS during the kittiwake breeding season (March to August). No further mitigation is proposed at this stage.

A list of mitigation measures are presented in the PEIR chapter and the Commitments Register (see **Appendix C**).

6.6.4 Summary of Effects and Next Steps

Overall, the preliminary assessment indicates that there are **no significant effects** on offshore ornithology as all potential effects are of **negligible** to **minor adverse** significance. These effects will not be considered in more detail at the ES stage.

Further details are available in **Chapter 12 Offshore Ornithology** in the PEIR.

6.7 Commercial Fisheries

6.7.1 Background and Baseline

This chapter considers the potential effects of construction, O&M, and decommissioning of the ANS in relation to Commercial Fisheries, defined as legally permitted fishing where the catch is sold for profit.

The information for this assessment has been gathered using DBD site surveys, together with existing data.

Key species landed in the Study Area include brown crab, lobster, plaice and turbot using a variety of fishing methods such as pots, trawls and dredges.

6.7.2 Assessment of Effects

Potential effects associated with Commercial Fisheries in **Table 6-7**. A full list, including associated impact IDs, is available in the PEIR chapter.

Impact ID	Impact	Activity	Project Phase
CF-C-02	Reduction in access to, or exclusion from established fishing grounds.	Construction activities, including the presence of installation vessels and the presence of the ANS.	Construction
CF-C-03	Displacement leading to gear conflict and increased fishing pressure on adjacent / alternative grounds.	Construction activities, including the presence of installation vessels and the presence of the ANS.	Construction
CF-O-02	Reduction in access to, or exclusion from established fishing grounds.	Maintenance activities and the presence of the ANS.	O&M
CF-O-03	Displacement leading to gear conflict and increased fishing pressure on adjacent / alternative grounds.	Presence of the ANS.	O&M

Table 6-7 — *Potential effects considered for Commercial Fisheries*

Courtesy of Brown and May Marine Ltd

6.7.3 Mitigation Measures

Mitigation of potential effects has been considered during the assessment and incorporated into the ANS design through specific commitments. These include providing advance notice of planned construction activities to fishers via Notices to Mariners and maintaining ongoing communication throughout the construction period (Commitment IDs CO7, CO9, CO11, CO12, CO16, CO31, CO113 and CO115). No further mitigation is proposed at this stage.

A list of mitigation measures are presented in the PEIR chapter and the Commitments Register (see **Appendix C**).

6.7.4 Summary of Effects and Next Steps

For A2/3 and A5, the preliminary assessment indicates that there are **no significant effects** on commercial fisheries as all potential effects are of **negligible** to **minor adverse** significance.

For A8, the preliminary assessment indicates that there are **no significant effects** during construction on commercial fisheries with the exception of UK potting activities which are predicted to be of **medium** adverse significance. **No significant effects** are identified during operation for all fisheries within A8.

There is potential for temporary impacts during construction on potting fisheries within A8 relating to reduced access to established fishing grounds and possible displacement into neighbouring areas, that could increase gear conflict or fishing pressure. If A8 is progressed following site refinement, these construction impacts relating to UK potting will be further assessed in the ES.

Further details are available in **Chapter 13 Commercial Fisheries** in the PEIR.

6.8 Shipping and Navigation

6.8.1 Background and Baseline

This chapter considers the potential effects of construction, O&M, and decommissioning of the ANS on Shipping and Navigation.

The information for this assessment has been gathered using available data sources relating to shipping activity in the North Sea.

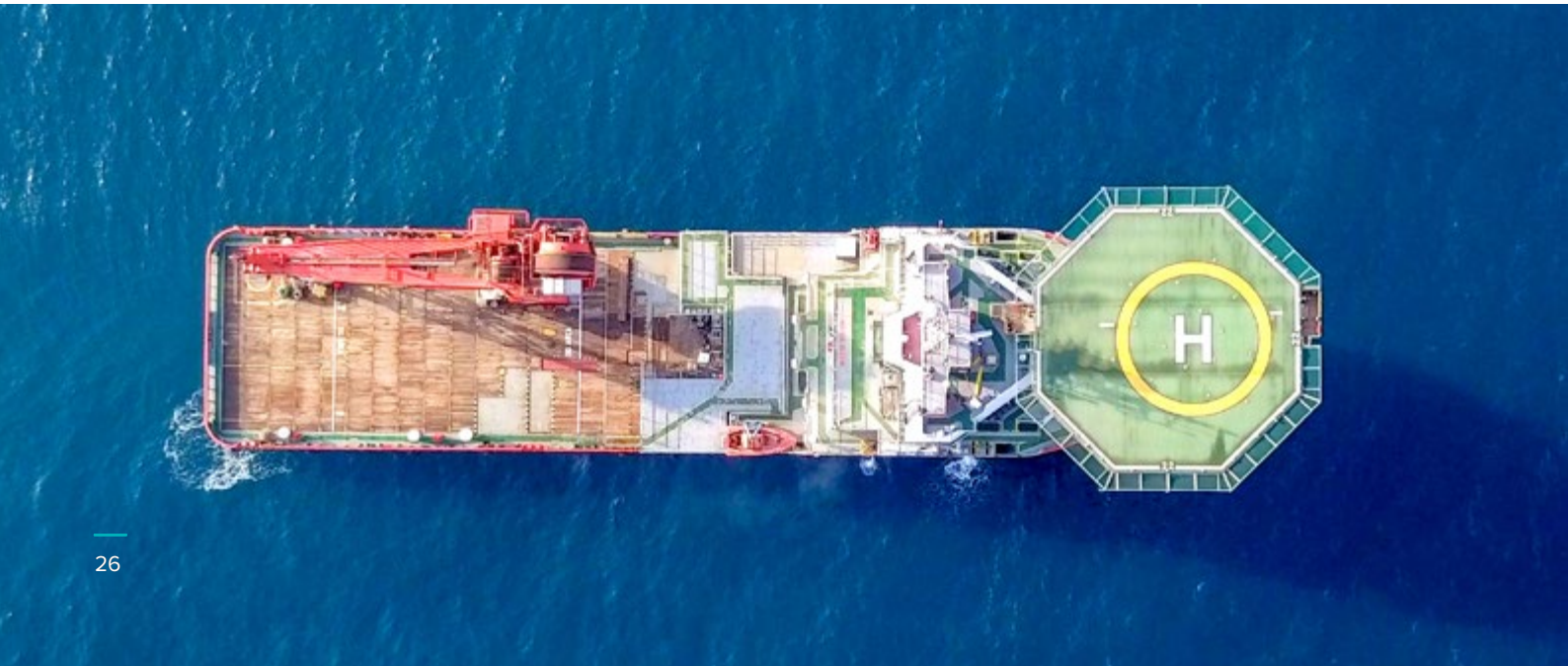
A preliminary feasibility assessment using available data indicates that cargo vessels and tankers are the main vessel types operating within the Study Area, along with oil and gas vessels routeing to and from neighbouring oil and gas platforms. Commercial shipping routes pass within or close to each Ao.

6.8.2 Assessment of Effects

Potential effects associated with Shipping and Navigation receptors are presented in **Table 6-8**. A full list of potential impacts, including associated impact IDs, is provided in the PEIR chapter.

Table 6-8 — *Potential effects considered for Shipping and Navigation*

Impact ID	Impact	Activity	Project Phase
SN-C-01	Vessels displaced from their existing routes or activity.	Construction activities.	Construction
SN-C-02	Increased vessel to vessel collision risk between third-party vessels and between third-party and project vessels due to vessel displacement.	Construction activities and the presence of the ANS.	Construction
SN-C-04	Vessel to structure allision risk for third-party vessels colliding with the ANS.	The presence of the ANS during construction.	Construction
SN-O-01	Vessels displaced from their existing routes or activity.	Maintenance activities.	O&M
SN-O-02	Increased vessel to vessel collision risk between third-party vessels and between third-party and project vessels due to vessel displacement.	Maintenance activities and the presence of the ANS.	O&M
SN-O-04	Vessel to structure allision risk for third-party vessels colliding with the ANS.	The presence of the ANS during operation.	O&M



6.8.3 Mitigation Measures

Mitigation of potential effects has been considered in the assessment and incorporated into the ANS design through specific commitments. Measures include appropriate marking and lighting of obstacles to minimise collision risk, the use of guard vessels and providing advance notice of planned construction activities to fishers via Notices to Mariners (Commitment IDs CO7, CO9, CO11, CO12, CO16 and CO115).

No further mitigation is proposed at this stage.

A list of mitigation measures are presented in the PEIR chapter and the Commitments Register (see **Appendix C**).

6.8.4 Summary of Effects and Next Steps

The preliminary assessment indicates that all of the potential effects on vessel displacement, third-party to third-party vessel collision, and vessel to structure allision are not significant when considered alone. However, the assessment identifies the potential for cumulative effects, which will depend on the final ANS location.

A navigational risk assessment will be carried out to validate the conclusions of the PEIR.

Further details are available in **Chapter 14 Shipping and Navigation** in the PEIR.

6.9 Aviation, Radar and Military

6.9.1 Background and Baseline

This chapter considers the potential effects of construction, O&M, and decommissioning of the ANS associated with Aviation, Radar and Military.

A range of desk-based data sources was used to establish the baseline for aviation, radar and military activities in the Study Area.

Civil and military aircraft use the airspace above the Study Area, and the most of the AoS overlap with military danger zones. There are 12 offshore helidecks within nine nautical miles of A8.

6.9.2 Assessment of Effects

Potential effects associated with Aviation, Radar and Military receptors are presented in **Table 6-9**. A full list of potential impacts, including associated impact IDs, is provided in the PEIR chapter.

Impact ID	Impact	Activity	Project Phase
ARM-C-03	The creation of an aviation obstacle environment.	The use of high crane vessels used during construction.	Construction
ARM-O-03	The creation of an aviation obstacle environment.	Presence of installed infrastructure.	O&M
ARM-O-07	Risk of bird strikes for nearby aircraft.	Bird activity near the installed infrastructure.	O&M

Table 6-9 — *Potential effects considered for Aviation, Radar and Military*

6.9.3 Mitigation Measures

Mitigation of potential effects has been considered during the assessment and incorporated into the ANS design through specific commitments. These include notifying relevant parties of the location, height and lighting status of the ANS, ensuring appropriate marking and lighting of obstacles (Commitment IDs CO7, CO8 and CO9).

No further mitigation is proposed at this stage.

A list of mitigation measures are presented in the PEIR chapter and the Commitments Register (see **Appendix C**).

6.9.4 Summary of Effects

Overall, the preliminary assessment indicates that there are **no significant effects** on Aviation, Radar and Military receptors as all potential effects are of **minor adverse** significance. These effects will not be considered in more detail at the ES stage.

Further details are available in **Chapter 15 Aviation, Radar and Military** in the PEIR.

6.10 Offshore Archaeology

6.10.1 Background and Baseline

This chapter considers the potential effects of construction, O&M, and decommissioning of the ANS in relation to Offshore Archaeology.

The assessment is based on existing data and site-specific surveys.

There are currently no known submerged prehistoric sites within the AoS, although previously undiscovered remains (including geoarchaeological/ paleoenvironmental deposits) may still be present. Ongoing archaeological and geophysical surveys for nearby offshore wind farm projects are mapping the wider prehistoric landscape, which will help inform the assessment of potential submerged prehistoric remains in the ES for the Project and AoS.

There are no designated/protected wrecks or aircraft crash sites within any of the AoS. However, there are records of previously identified wrecks and obstructions across A5 and A8.

6.10.2 Assessment of Effects

Potential effects in relation to Offshore Archaeology are presented in **Table 6-10**. A full list of potential impacts, including associated impact IDs, is provided in the PEIR chapter.

Table 6-10 — *Potential effects considered for Offshore Archaeology*

Impact ID	Impact	Activity	Project Phase
OFA-C-01 OFA-C-02	Direct physical impacts, or damage, to known and potential heritage assets.	Construction activities such as foundation installation, scour protection, seabed clearance, anchoring or the use of jack-up vessels.	Construction
OFA-C-03	Indirect impacts to heritage assets associated with changes to Marine Physical Processes.	Seabed preparation and drilling for ANS foundation installation and presence of construction vessels.	Construction
OFA-O-03	Indirect impacts to heritage assets associated with changes to Marine Physical Processes.	Presence of the ANS.	O&M
OFA-O-04	Changes to the setting of heritage assets and historic seascape character.	Presence of the ANS.	O&M

6.10.3 Mitigation Measures

Mitigation of potential effects has been considered during the assessment and incorporated into the ANS design through commitments. Commitment ID CO112 (see **Appendix C**) includes the establishment of exclusion zones around archaeological sites to ensure that the ANS foundation and scour protection are not placed within these areas, the implementation of an Offshore Written Scheme of Investigation in consultation with Historic England, and the adoption of a Protocol for Archaeological Discoveries to account for any unexpected discoveries.

No further mitgation is proposed at this stage.

A list of mitigation measures are presented in the PEIR chapter and the Commitments Register (see **Appendix C**).

6.10.4 Summary of Effects

Overall, the preliminary assessment indicates that there are **no significant effects** on Offshore Archaeology as all potential effects are of **minor** to **no adverse** significance. Therefore, no effects are to be further assessed in the ES. However, analysis of marine geophysical data is ongoing, and the results will be included in the ES to determine the presence of any previously unidentified archaeological remains and to define any necessary exclusion areas.

Further details are available in **Chapter 16 Offshore Archaeology** in the PEIR.

6.11 Other Marine Users

6.11.1 Background and Baseline

This chapter considers the potential effects of construction, O&M and decommissioning of the ANS on Other Marine Users.

A range of desk-based data sources was used to establish the baseline for Other Marine Users in the Study Area and to identify potential interactions with the ANS.

A2/3 has minimal activity with a few wells, nearby cables, and a disposal site. A5 is near wind projects, some oil and gas infrastructure, overlapping carbon capture and storage (CCS) areas, and a defence exercise area. A8 has extensive oil and gas infrastructure, nearby wind projects, multiple subsea cables, a CCS area, a disposal site, and a defence exercise area.

Commercial Fisheries and Shipping and Navigation are considered separately (see Section 6.7 and Section 6.8).

6.11.2 Assessment and Summary

Potential effects on other marine users, including offshore wind farms, oil and gas activities, subsea cables and pipelines, carbon capture and storage sites, aggregate dredging, disposal sites, and Ministry of Defence activities, have been considered.

As the distances between the ANS and existing offshore wind projects, marine aggregate, and disposal infrastructure, as well as the ability to microsite the ANS to avoid impacts on oil and gas infrastructure, subsea cables, and CCS projects all impacts for other marine users are proposed to be scoped out for assessment at this stage (see **Appendix D**). Therefore, no preliminary assessment has been undertaken, and no further assessment of other marine users is required at ES stage.

Further details are available in **Chapter 17 Other Marine Users** in the PEIR.

6.12 Socio-Economics, Tourism and Recreation

6.12.1 Background and Baseline

This chapter considers the potential effects of construction, O&M and decommissioning of the ANS on Socio-Economics, Tourism and Recreation.

Information for this chapter is based publicly available data and no new surveys were conducted for this assessment.

The baseline considered local economic activity and, while there are no visitor attractions within or close to any of the AoS, the assessment also considered recreational activities in the wider marine environment such as boating, angling and scuba diving.

6.12.2 Assessment of Effects

Potential effects associated with Socio-Economics, Tourism and Recreation are presented in **Table 6-12**. A full list of potential impacts, including associated impact IDs, is provided in the PEIR chapter.

Impact ID	Impact	Activity	Project Phase
SOC-C-01 SOC-C-02	Direct economic benefits and increase in employment.	From supply chain expenditure on goods and services in the socio-economic Study Areas and construction of the ANS requiring labour, potentially attracting workers from other regions.	Construction
SOC-O-01 SOC-O-02	Direct economic benefits and increase in employment.	Maintenance of the ANS will involve ongoing expenditure, which will create a demand for labour.	O&M

Table 6-12 — *Potential effects considered for Socio-Economics, Tourism and Recreation*

6.12.3 Summary of Effects

The preliminary assessment indicates that there are **no significant effects** on socio-economics, tourism and recreation with all potential effects being of negligible beneficial significance.

Given the minimal benefit of the ANS on socio-economics, tourism and recreation receptors, this topic will not be considered further at the ES stage.

Further details are available in **Chapter 18 Socio-Economics, Tourism and Recreation** in the PEIR.

6.13 Human Health

6.13.1 Background and Baseline

This chapter considers the potential effects of construction, O&M, and decommissioning of the ANS in relation to Human Health. The key effects relate to employees and other users of the offshore environment as there are no permanent or temporary human residences in the offshore area adjacent to the AoS, as well as those in proximity to port activities. This chapter is informed by available data.

Any potential population health effects are most likely to arise from port activities supporting construction and operation. As specific port locations have not yet been confirmed, the assessment considers the regional health Study Area of Yorkshire and the Humber, consistent with the Socio-Economics assessment.

6.13.2 Assessment and Summary

Given the limited scale of works during construction and operation, the offshore location of the activities (or where onshore within existing ports) the effects of the ANS on human health have been scoped out, and therefore no further assessment for the ANS has been undertaken (see **Appendix D**). This conclusion is supported by existing protections for the offshore workforce under health and safety legislation, as well as navigational safety requirements.

Further details are available in **Chapter 19 Human Health** in the PEIR.

6.14 Major Accidents and Disasters

6.14.1 Background and Baseline

This chapter considers the potential effects of construction, O&M, and decommissioning of the ANS in relation to Major Accidents and Disasters. In line with IEMA guidance on Major Accidents and Disasters (2020), these issues are assessed within the relevant technical chapters of the PEIR.

The baseline considers risks from existing operational installations and external natural and human-related factors that could affect the ANS, such as vulnerability to natural hazards and future climate change.

It is noted that the ANS will not be located in an area known for natural disasters such as hurricanes, tornadoes, volcanic eruptions, earthquakes, or tsunamis.

6.14.2 Assessment and Summary

A separate Major Accidents and Disasters assessment is not required because any relevant risks are already fully addressed within other PEIR topic chapters. Potential events such as vessel collisions, aviation safety issues, and accidental pollution are assessed within the Shipping and Navigation, Aviation, Radar and Military, Marine Water and Sediment Quality, and Human Health chapters.

The ANS itself is a fixed, immobile structure and does not generate discharges or involve activities that could act as a source of a major accident or disaster.

Given there are no predicted impacts, Major Accidents and Disasters has been scoped out of further assessment (see **Appendix D**).

Further details are available in **Chapter 20 Major Accidents and Disasters** in the PEIR.

6.15 Climate Change

This chapter considers the potential effects of construction, O&M, and decommissioning of the ANS associated with Climate Change.

The assessment uses desk-based information from publicly available datasets and reports produced by government and industry sources. No baseline surveys are required for this assessment.

All greenhouse gas (GHG) emissions affect the same receptor - the global atmosphere - rather than a specific local area. Any emissions released or avoided as a result of the ANS will have the same effect on overall atmospheric GHG levels, regardless of where they occur. As a result, no geographically defined Study Area is used for the GHG assessment.

6.15.1 Assessment and Summary

Given the limited scale of the ANS, its construction and operation activities, and the large scale of the potential receptors, the effects of the ANS on Climate Change have been scoped out of further assessment (see Appendix D). However, the ANS will be included within the DBD Project ES Climate Change chapter to ensure all elements of the Project are accounted for.

Further details are available in **Chapter 21 Climate Change** in the PEIR.

7. Summary

Many topics assessed in the ANS PEIR have either been scoped out entirely or were found to have no significant effects, and therefore these effects will not be considered in more detail at the ES stage.

Some topics and individual impacts will be further assessed at the ES stage, where additional information may be available from site-specific studies or project-wide data.

8. Next Steps

DBD is inviting feedback on the ANS consultation documents, with the statutory consultation opening on Tuesday 17 February 2026 and ending at 11.59pm on Monday 30 March 2026.

Documents are available at www.doggerbankd.com.

Feedback can be submitted by emailing contact@doggerbankd.com.

Comments received by **11:59pm on Monday 30 March 2026** will be considered and will help shape the final proposals, which will be assessed and reported in a separate ES submitted with the DCO application.