

Offshore Wind Farm

Marine Conservation Zone Assessment

Appendix 1 Screening Report

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Glossary of Acronyms

AfL	Agreement for Lease	
BCRC	Blackwater, Crouch Roach and Colne (Estuaries MCZ)	
CEA	Cumulative Effects Assessment	
DCO	Development Consent Order	
DML	Deemed Marine Licence	
EPP	Evidence Plan Process	
ETG	Expert Topic Groups	
GGOW	Greater Gabbard Offshore Wind Farm	
HRA	Habitats Regulations Assessment	
JNCC	Joint Nature Conservation Committee	
MCAA	Marine and Coastal Access Act	
MCZ	Marine Conservation Zone	
MCZA	Marine Conservation Zone Assessment	
ММО	Marine Management Organisation	
NFOW	North Falls Offshore Wind Farm Ltd	
OCP	Offshore converter platform	
OSP	Offshore substation platform	
O&M	Operation and maintenance	
RWE	RWE Renewables UK Swindon Limited	
SACO	Supplementary Advice on Conservation Objectives	
SNCB	Statutory Nature Conservation Body	
SSC	Suspended sediment concentrations	
SSER	SSE Renewables Offshore Windfarm Holdings Limited	
WTG	Wind turbine generator	

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.
Array cables	Cables which link the wind turbine generators with each other, the offshore substation platform(s) and/or the offshore converter platform.
Former array areas The two distinct offshore wind farm areas (including the 'northern a and 'southern array area') which comprised the North Falls offshore at scoping and PEIR stage.	
National Grid connection point	The grid connection location for the Project. National Grid are proposing to construct new electrical infrastructure (a new substation) to allow the Project to connect to the grid, and this new infrastructure will be located at the National Grid connection point.

Offshore cable corridor	The corridor of seabed from the array area to the landfall within which the offshore export cables will be located.	
Offshore converter platform	Should an offshore connection to a third party HVDC cable be selected, an offshore converter platform would be required. This is a fixed structure located within the array area, containing HVAC and HVDC electrical equipment to aggregate the power from the wind turbine generators, increase the voltage to a more suitable level for export and convert the HVAC power generated by the wind turbine generators into HVDC power for export to shore via a third party HVDC interconnector cable.	
Offshore export cables	The cables which bring electricity from the offshore substation platform(s) to the landfall, as well as auxiliary cables.	
Offshore project area	The overall area of the array area and the offshore cable corridor.	
Offshore substation platform(s)	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 cable route	Onshore route within which the onshore export cables and associated infrastructure would be located.	
Onshore export cables	The cables which take the electricity from landfall to the onshore substation. These comprise High Voltage Alternative Current (HVAC) cables, buried underground.	
Onshore substation	substation A compound containing electrical equipment required to transform and stabi electricity generated by the Project so that it can be connected to the Nation Grid.	
Platform interconnector cable	Cable connecting the offshore substation platforms (OSP); or the OSP and offshore converter platform (OCP)	
Scour protection	Protective materials to avoid sediment being eroded away from the base of the wind turbine generator foundations and offshore substation platform (OSP) or / and offshore converter platform (OCP) foundations as a result of the flow of water.	
Wind turbine generator (WTG)	Power generating device that is driven by the kinetic energy of the wind	

1 Introduction

1.1 Purpose of this document

- 1. This document provides the screening stage of the Marine Conservation Zone Assessment (MCZA) process for the North Falls Offshore Wind Farm (hereafter 'North Falls' or 'the Project').
- 2. The MCZA comprises up to three stages (see Section 3). The aim of this stage is to determine whether or not an activity is capable of affecting (other than insignificantly) the protected features or physical processes of a marine conservation zone (MCZ), either directly or indirectly. This enables the competent authority to ensure compliance with the Marine and Coastal Access Act 2009 (MCAA).
- 3. Where it is considered that there is no potential for a significant effect as a result of the Project, it is proposed that the MCZ (or relevant feature of the MCZ) is 'screened out' from further consideration. Where the potential for a significant effect on the conservation objectives cannot be discounted, it remains 'screened in' and further assessment will be undertaken.
- 4. This document has been used to inform stakeholder consultation. Agreement on whether sites and features should or should not be screened out have been sought through the Evidence Plan Process (EPP) through the Seabed Expert Topic Group (ETG).

1.2 Project background

- 5. North Falls is an extension to the Greater Gabbard Offshore Wind Farm (GGOW), located approximately 40km from the East Anglian coast, England. GGOW was commissioned in 2012 and in February 2017, The Crown Estate launched an opportunity for existing wind farms to apply for project extensions. North Falls Offshore Wind Ltd (NFOW) is a joint venture between SSE Renewables Offshore Windfarm Holdings Limited (SSER) and RWE Renewables UK Swindon Limited (RWE) applied for an Agreement for Lease (AfL) to develop an extension to GGOW, which was granted in 2020.
- 6. 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 and onshore duct installation (but with separate onshore export cables) and colocating separate project onshore substation infrastructure with Five Estuaries; or
 - Option 3: Offshore electrical connection, supplied by a third party.

- 7. The North Falls project area comprises:
 - The offshore project area:
 - The offshore wind farm area (hereafter the 'array area') within which the wind turbine generators, offshore substation platform(s), offshore converter platform, platform interconnector cable and array cables will be located:
 - Offshore cable corridor (under Options 1 and 2) the corridor of seabed from array area to the landfall within which the offshore export cables will be located; and
 - The onshore project area (Options 1 and 2).
- 8. Following consultation feedback (Section 2) on the Preliminary Environmental Information Report (PEIR) and preliminary MCZA, the array area has been reduced from 149.5km² down to 95km². This has involved the removal of the northern array and a reduction in the size of the southern array (now referred to as the 'array area'). The southern array area refinement removed any overlap with the Kentish Knock East (KKE) MCZ. An interconnector cable corridor between the former array areas has also been removed.

1.3 Offshore project description

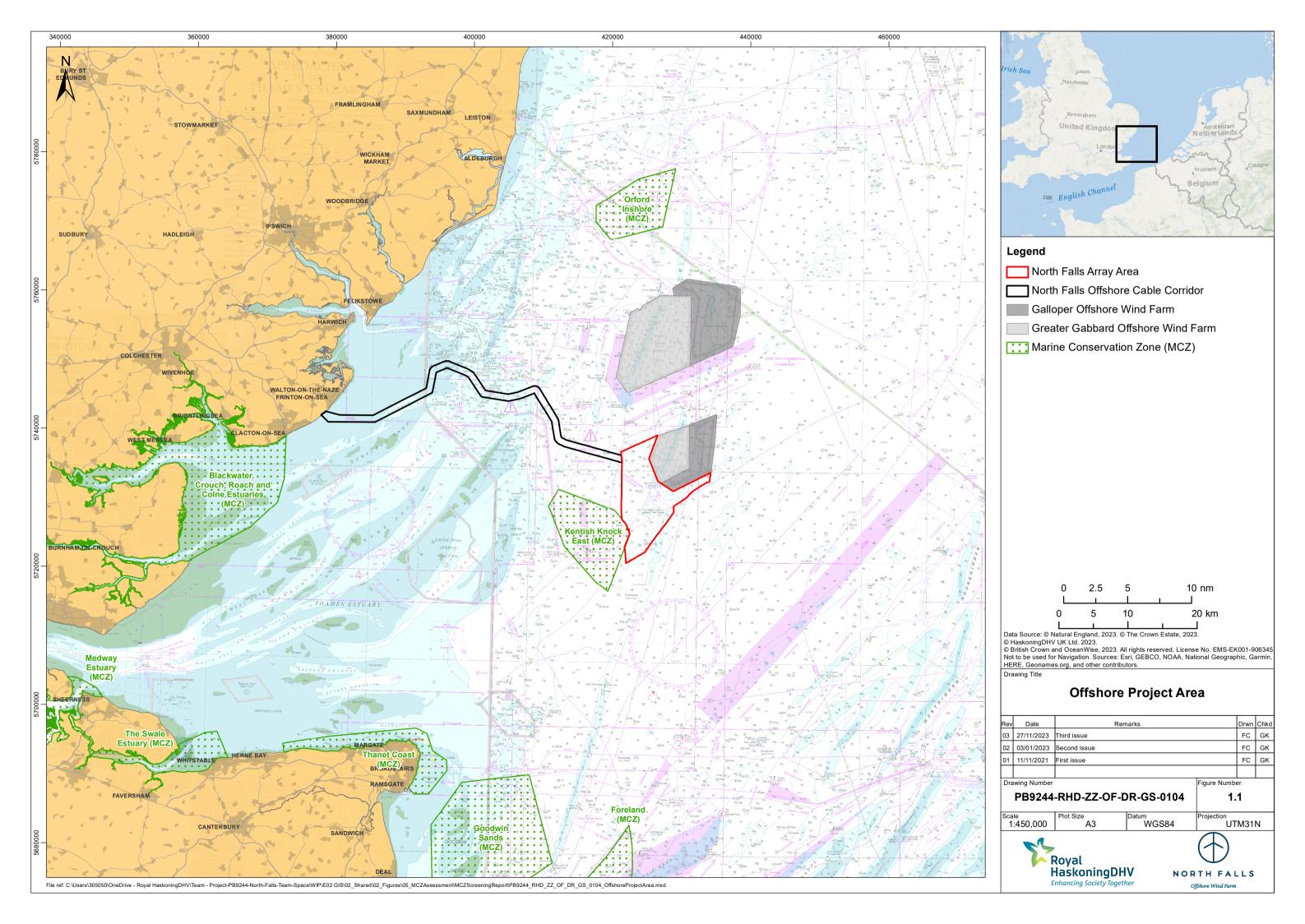
9. The key components of the offshore project are described in Table 1.1. In accordance with the Rochdale Envelope approach, the parameters in Table 1.1 represent the limits of the envelope and should not be combined (i.e., the maximum tip height would not occur with the minimum clearance above sea level).

Table 1.1 Offshore project characteristics

Feature	Worst case parameters
All grid connection options	
Number of Wind turbine generators (WTGs)	57
Array area	95km²
Array area distance to shore (closest distance)	40km
Maximum WTG rotor diameter	337m
Maximum rotor tip height	377.4m above Mean High Water Springs (MHWS)
Minimum rotor tip clearance above sea level	27m above MHWS
Minimum separation between WTGs	1,180m in the downwind direction; and 944m in the crosswind direction.
Maximum array cable length	170km
Maximum platform interconnector cable length	20km
Array and platform interconnector cable target minimum burial depth (where buried)	0.6m
Options 1 and 2 only	

Feature	Worst case parameters
Offshore cable corridor length	57km
No. of cable circuits	2
Offshore export cable target minimum burial depth (where buried)	0.6m
No. of Offshore Substation Platform (OSP)	2
Option 3 only	
No. of Offshore Convertor Platform (OCP)	1
No. of OSP	1

- 10. The offshore project area lies within the Outer Thames Estuary. Within the array area, WTGs, array cables and offshore platforms (substations) will be installed.
- 11. The array boundary covers an area of approximately 95km² and lies approximately 40km from shore.
- 12. The electricity will be connected to the shore by offshore export cables which will be located within an offshore cable corridor which is proposed to run from the array area and make landfall area at Kirby Brook in the Tendring peninsula of Essex.
- 13. This offshore project area is shown in Figure 1.1.



1.3.1.1 Wind turbine generators

14. Based on industry developments to date, WTGs are likely to increase in size from those currently available and therefore the MCZA will be undertaken on a range of number of WTGs installed and size (dimensions) of WTG and associated foundations, in order to future proof the assessment and Development Consent Order (DCO). The Project has the potential to consist of up to 57 WTGs.

1.3.1.2 Foundations

- 15. The design of foundations for the WTGs and platforms will be informed by site investigation and procurement, post consent. The following foundation design options are currently being considered:
 - · Monopiles;
 - Mono suction bucket;
 - Gravity base system (GBS);
 - Jacket with 3 or 4 legs attached to the seabed by:
 - o Pin-piles;
 - Suction buckets; and
 - Gravity/ballast legs.

1.3.1.3 Offshore electrical infrastructure

- 16. The following three 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; or
 - Option 3: Offshore electrical connection, supplied by a third-party.

1.4 Legislation, Policy and Guidance

1.4.1 Marine & Coastal Access Act 2009

- 17. The MCAA establishes a range of measures to manage the marine environment, including establishing MCZs. The MCZ Project was established in 2008 by the Joint Nature Conservation Committee (JNCC) and Natural England to work with regional stakeholder led projects to identify and recommend MCZs to Government. MCZs were designated in three tranches (2013, 2016 and 2019) and the process is now complete.
- 18. Section 126 of the MCAA describes the duties of public authorities in relation to certain decisions and applies where;

- A public authority has the function of determining an application (whenever made) for authorisation of the doing of an act, and
- The act is capable of affecting (other than insignificantly)
 - o the protected features of an MCZ;
 - any ecological or geomorphological process on which the conservation of any protected feature of an MCZ is (wholly or in part) dependent.
- 19. The Statutory Nature Conservation Body (SNCB) (in this case Natural England) has responsibility under the MCAA to give advice on how to further the conservation objectives for the MCZ and identify the activities that are capable of affecting the designated features and the processes which they are dependent upon.

1.4.2 Guidance

- 20. The MCZA Screening gives consideration to the Marine Management Organisation (MMO) (2013) 'Marine Conservation Zones and Marine Licensing' guidance.
- 21. It also considers, best practice advice for offshore wind applications at the examination stage (Natural England and Defra, 2022).
- 22. The Stage 1 MCZA is also informed by the Supplementary Advice on Conservation Objectives (SACO) for each relevant site, where available.

2 Consultation

23. This section provides a summary of the consultation undertaken in relation to MCZA screening.

Table 2.1 Consultation feedback

Consultee	Date / document	Section	Comment	Response / where addressed in the report	
Natural England	16 December 2021 Draft MCZ Screening	Point 30, Section 3.4: Cumulative Effects	With regard to projects or plans that existed at the time of MCZ designation or the latest status reports, we would advise that these may not form part of the baseline environment if modifications, remediation, and/or maintenance work is ongoing or permitted.	Natural England has since advised (14 July 2023) that the cumulative tiers as presented in Natural	
Natural England	16 December 2021 Draft MCZ Screening	Point 31, Section 3.4: Cumulative Effects	The TEIR approach is currently being updated to consider projects beyond Round 3, availability of data at PEIR stage, and potential ongoing impacts from the operational phase (e.g. operational cable reburial and repair licenses). We will provide any updated version of this	England and Defra (2022) should be used. These are included in Table 3.1	
Natural England	16 December 2021 Draft MCZ Screening	Point 66, Section 5.2.2: Conservation Objectives [Kentish Knock East MCZ]	Natural England advises that any impacts which persist for the lifetime of the project are not temporary, and that the conservation objectives for the site would be hindered.	The array area has been reduced in size and no longer overlaps the Kentish Knock East MCZ. Therefore, there will be no infrastructure placed on the seabed within the MCZ and therefore no impacts which persist for the lifetime of the Project in the MCZ.	
Natural England	16 December 2021 Draft MCZ Screening	Point 70, Section 5.2.3.1: Construction [Kentish Knock East MCZ]	Please can you confirm if seabed preparation will include UXO clearance? We note that UXO clearance is usually considered as part of site preparation works.	Temporary physical disturbance is no longer assessed due to the array area having been reduced in size and it no longer overlaps the Kentish Knock East MCZ. Therefore assessment of UXO clearance is not required	
Natural England	16 December 2021 Draft MCZ Screening	Point 75, Section 5.2.3.2: Operation [Kentish Knock East MCZ]	We would disagree with the assumption that the magnitude of temporary impacts due to maintenance activities will be significantly lower than those seen during construction. There is no guarantee that these impacts would be lower in relation to cable reburial, repair, and replacement, and these impacts would further hinder the recovery of the site.	Repair and reburial works during maintenance will be targeted at the specific section of the cable requiring repair/reburial (if required). The spatial area will therefore be less than during installation of the entire cable length. Assumptions for the lengths/areas which may be affected by cable maintenance are included in the Stage 1 MCZ assessment.	
Natural England	16 December 2021	Point 85, Section 5.3.2: Conservation	Natural England advises that any impacts which persist for the lifetime of the project are not temporary, and that the conservation objectives for the site would be hindered.	There will be no infrastructure placed in the Orford Inshore MCZ and therefore no impacts which persist for the lifetime of the Project in the MCZ.	

Consultee	Date / document	Section	Comment	Response / where addressed in the report
	Draft MCZ Screening	Objectives [Orford Inshore MCZ]		
Natural England	16 December 2021 Draft MCZ Screening	Point 99, Section 9: Cumulative Effects	Please see our earlier comments on the TIER table. We do not necessarily agree that plans and projects that existed at the time of MCZ designation or the latest status reports may be considered part of the baseline environment. A project that has been completed or constructed may still undergo modifications post-completion or construction and, thus, cannot necessarily be considered part of the baseline environment.	Natural England has since advised that the cumulative tiers as presented in Natural England and Defra (2022) should be used. These are included in Table 3.1.
Natural England	16 December 2021 Draft MCZ Screening	Section 7.1: Cumulative Impacts – Plans and Project Screening	This should also consider operation and maintenance activities.	Now included in Table 6.1.
ММО	15 December 2021 Draft MCZ Screening	N/A	The MMO does not have any comments on the MCZ screening report and defer to the Statutory Nature Conservation Bodies. However, we would like to be consulted on the next stage of the MCZ as any potential mitigation measures could be conditions within the Deemed Marine License (DML).	Noted.
The Wildlife Trusts	14 December 2021 Draft MCZ Screening	Table 5.3	We believe Table 5.3 incorrectly lists the general management approaches for the subtidal sand and subtidal coarse sediment protected features. These should be listed as Subtidal coarse sediment – recover to favourable condition Subtidal sand – maintain in favourable condition	Amended in Table 5.3.
The Wildlife Trusts	14 December 2021 Draft MCZ Screening	74	The potential for direct/indirect impacts from the movement of rock protection in the MCZ, both within the array area and potentially outside of the array boundary should also be considered further at this stage. The southern North Sea is a dynamic sediment environment and the movement of rock protection within this region has been known to occur.	Rock protection will be designed not to move, in order for it to provide the required function of protecting cables and for scour protection.
The Wildlife Trusts	14 December 2021	Table 7.1	We agree that North Falls Offshore Wind Farm has the potential to hinder the conservation objectives of the Kentish Knock East MCZ.	The array area has been reduced in size and no longer overlaps the Kentish Knock East MCZ.

Consultee	Date / document	Section	Comment	Response / where addressed in the report
	Draft MCZ Screening		The North Falls OWF array area of search overlaps with Kentish Knock East MCZ, where two of the three designated features are already in unfavourable condition (subtidal coarse sediment and subtidal mixed sediments). We look forward to discussing with the RWE how this site will be avoided, especially considering two of the three designated features are already in unfavourable condition (subtidal coarse sediment and subtidal mixed sediments; see Comment 1). Avoidance is an essential part of the mitigation hierarchy and proposals must demonstrate that the hierarchy has been followed e.g. Section 126 of the Marine and Coastal Access Act 2009, Policy SE-MPA-1 Marine protected areas of the South East Marine Plan. It is important that adequate time is allowed for these discussions to take place before the application is entered to the Planning Inspectorate.	Therefore, there will be no infrastructure placed on the seabed within the Kentish Knock East MCZ.
The Wildlife Trusts	14 December 2021 Draft MCZ Screening	101	We are disappointed that fishing has been considered as part of the baseline and has not been included in the cumulative assessment. Fishing is a licensable activity that has the potential to have an adverse impact on the marine environment. This is supported in the leading case C-127/02 Waddenzee [2004] ECR I-7405, the CJEU held at para. 6. "The act that the activity has been carried on periodically for several years on the site concerned and that a licence has to be obtained for it every year, each new issuance of which requires an assessment both of the possibility of carrying on that activity and the site where it may be carried on, does not itself constitute an obstacle to considering it, at the time of each application, as a distinct plan or project within the meaning of the Habitats Directive". This case law demonstrates that fishing is considered a plan or a project and therefore, not part of the baseline.	This approach is consistent with the approach taken by numerous offshore wind farms which have been consented since Waddenzee 2004.
The Wildlife Trusts	14 December 2021 Draft MCZ Screening	N/A	For future stages of the MCZ assessment, TWT highlight that it is now standard practice for assessments to be to the same standard as an Habitat Regulations Assessment (HRA) assessment. This further supported by Defra draft guidance on marine compensation which	The MCZA Stage 1 Report provides an assessment to the same standard as an HRA. The array area has been reduced in size and no longer overlaps the Kentish Knock East MCZ.

Consultee	Date / document	Section	Comment	Response / where addressed in the report
			states "equal consideration of the effect of proposals should be given to all MPAs, regardless of the legislation they were designated under". We request that to avoid habitat loss within the MCZ, the array area of search should be refined to avoid the site. If the array area of search is not re-routed, we expect that Measures of Equivalent Environmental Benefit (MEEB) will be required. As outlined in the draft Defra guidance, MEEB and compensation area to be treated to the same standard. Therefore, it is essential to develop MEEB which would ensure the coherence of the UK MPA network. TWT highlight that MEEB is extremely difficult to deliver for benthic habitats. We would be happy to engage in a further conversation in this area.	Therefore, there will be no infrastructure placed on the seabed within the MCZ.
Natural England	14 July 2023 MCZ Screening	Figure 1.1	Natural England notes that avoidance of infrastructure is possible within the KKE MCZ (including a suitable buffer). Natural England advises that this needs to be fully addressed within the Environmental Statement (ES). We strongly encourage that placement of infrastructure within the KKE MCZ is avoided.	The array area has been reduced in size and no longer overlaps the Kentish Knock East MCZ. Therefore, there will be no infrastructure placed on the seabed within the MCZ.
Natural England	14 July 2023 MCZ Screening	Table 3.1	Natural England advises that our TIER table to inform the scope of incombination/cumulative assessment, as included within our best practice guidance, is followed. Information on accessing Natural England's best practice guidance can be found in the main letter.	The tiered approach has been incorporated into the cumulative effects assessment (CEA), with each project or plan assigned the suitable tier number throughout.
Natural England	14 July 2023 MCZ Screening	Figure 6.1	We advise that this figure is out of date. For example, EA1N and EA2 are both consented. We advise that this this is updated to reflect the current situation.	Figure 6.1 has now been updated.
Natural England	14 July 2023 MCZ Screening	Figure 4.1	We note that the zone of potential tidal current influence overlaps with Kentish Knock East MCZ, Orford Inshore MCZ, Blackwater, Crouch, Roach and Colner Estuaries MCZ (BCRC). We note that North Falls have not collected any project-specific wave/tide/sediment data, nor have they carried out any plume modelling. The project has instead relied on the results of modelling from previous projects.	Updated baseline information on tidal currents, waves and sediments that are bespoke to the project are provided in Section 8.5 of Chapter 9 Marine Geology, Oceanography and Physical Processes of the North Falls ES, Volume 3.1.

Consultee	Date / document	Section	Comment	Response / where addressed in the report
			Natural England has highlighted concerns regarding the use of out-of-date data from previous projects in our Marine Processes comments. Until this issue is resolved we cannot provide our final advice on the appropriateness of any screen regarding suspended sediment concentrations.	

3 MCZA screening methodology

- 24. Section 126 of the MCAA, places specific duties on all public bodies in undertaking their licensing activities where they are capable of affecting (other than insignificantly) the conservation objectives of an MCZ. To undertake its marine licensing function, the MMO has introduced a three stage sequential assessment process for considering impacts on MCZs, in order for it to deliver its duties under Section 126 of the MCAA.
- 25. The first stage is the screening process (this document) which is required to determine whether Section 126 of the MCAA (2009) should apply to the application. All relevant applications go through an initial screening stage to determine whether:
 - The plan, project or activity is within or near to an MCZ;
 - The plan, project or activity is capable of significantly affecting (without mitigation) (i) the protected features of an MCZ, or (ii) any ecological or geomorphological processes on which the conservation of the features depends.
- 26. The MCZA screening stage is summarised in Figure 3.1.

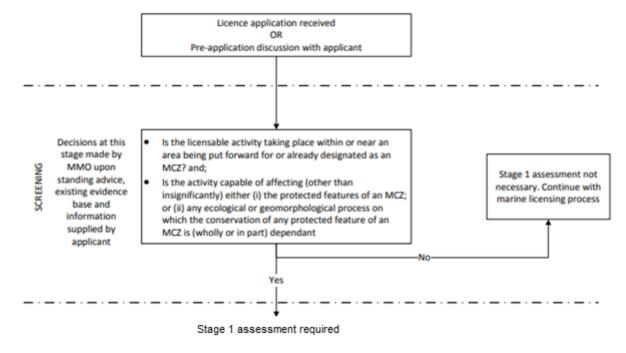


Figure 3.1 MCZA Screening Process (source MMO, 2013)

3.1 Cumulative effects

27. The MCAA does not provide any legislative requirement for explicit consideration of cumulative effects on the protected features of MCZs. However, the MMO guidelines (MMO, 2013) state that the MMO considers that in order for the MMO

- to fully discharge its duties under Section 69 (1) of the MCAA, cumulative effects must be considered.
- 28. The Planning Inspectorate (PINS) Advice Note Seventeen (PINS, 2019) provides guidance on plans and projects that should be considered in the Cumulative Impact Assessment (CIA) including:
 - Projects that are under construction;
 - Permitted applications, not yet implemented;
 - Submitted applications not yet determined;
 - Projects on the PINS's Program of Projects;
 - Development identified in relevant Development Plans, with weight being given as they move closer to adoption and recognising that much information on any relevant proposals will be limited; and
 - Sites identified in other policy documents as development reasonably likely to come forward.
- 29. Only projects which are reasonably well described and sufficiently advanced to provide information on which to base a meaningful and robust assessment will be included in the cumulative assessment.
- 30. Offshore cumulative impacts may come from interactions with the following activities and industries:
 - Other wind farms:
 - Aggregate extraction and dredging;
 - Licensed disposal sites;
 - Navigation and shipping;
 - Commercial fisheries;
 - Sub-sea cables and pipelines
 - Port/harbour development;
 - · Oil and gas activities; and
 - Fisheries management areas.
- 31. Plans and projects that existed at the time of the relevant MCZ designation or the latest status reports, undertaken every 6 years (whichever is most recent) are considered to be part of the baseline environment.
- 32. The assessment will present relevant cumulative effects of projects based on their stage of development using the tiered approach as devised by Natural England (Natural England and Defra, 2022) and presented in Table 3.1.

Table 3.1 Cumulative tiers

Tier	Consenting Or Construction Phase	Data Availability
Tier 1	Built and operational projects should be included within the cumulative assessment where they have not been included within the environmental characterisation survey, i.e. they were not operational when baseline surveys were undertaken, and/or any residual impact may not have yet fed through to and been captured in estimates of "baseline" conditions e.g. background" distribution or mortality rate for birds.	Pre-construction (and possibly post-construction) survey data from the built project(s) and environmental characterisation survey data from proposed project (including data analysis and interpretation within the ES for the Project).
Tier 2	Tier 1 + projects under construction	As Tier 1 but not including post construction survey data
Tier 3	Tier 2 + projects that have been consented (but construction has not yet commenced)	Environmental characterisation survey data from proposed project (including data analysis and interpretation within the ES for the Project) and possibly preconstruction
Tier 4	Tier 3 + projects that have an application submitted to the appropriate regulatory body that have not yet been determined	Environmental characterisation survey data from proposed project (including data analysis and interpretation within the ES for the Project)
Tier 5	Tier 4 + projects that have produced a PEIR and have characterisation data within the public domain.	Environmental characterisation survey data from proposed project (including data analysis and interpretation within the ES for the Project) as well as information provided within the PEIR.
Tier 6	Tier 5 + projects that the regulatory body are expecting an application to be submitted for determination (e.g. projects listed under the PINS programme of projects), including projects where a Preliminary Environmental Information Report (PEIR) has been undertaken and submitted	Possibly environmental characterisation survey data (but strong likelihood that this data will not be publicly available at this stage.
Tier 7	Tier 6 + projects that have been identified in relevant strategic plans or programmes (e.g. projects identified in Round 3 wind farm ZAP documents)	Historic survey data collected for other purposes/by other projects or industries or at a strategic level.

- 33. Projects classified under Tiers 1-4 are included in the MCZA screening. Tier 5 and 6 projects will be considered where sufficient information is available.
- 34. For this screening assessment, North Falls activities and associated pressures are reviewed to determine whether they are capable of significantly affecting MCZs when combined with equivalent activities and associated pressures from other plans and projects. The potential for projects to act cumulatively on MCZs is considered in the context of the likely spatial and temporal extent of pressures.

4 Is the activity within or near to an MCZ?

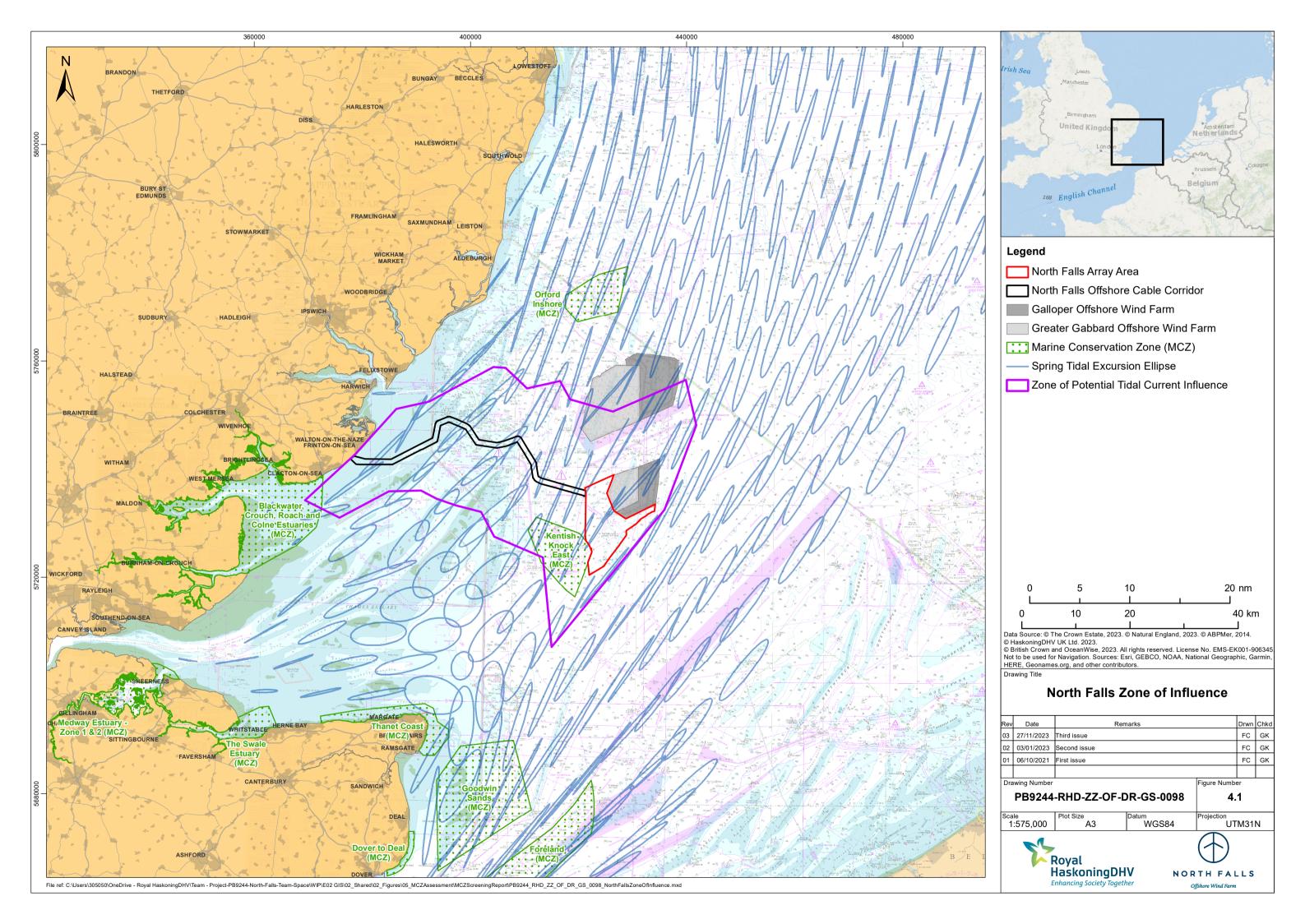
- 35. The first stage of the screening assessment is to determine whether the Project and associated activities take place within or near an MCZ.
- 36. A Zone of Influence (ZoI) from North Falls has been analysed based on an understanding of the tidal regime. The ZoI is based on the maximum range of effects from construction, operation and maintenance, and decommissioning of WTG, OSP(s), OCPs foundations, and cables (array cables, offshore export

cables and platform interconnector cables). It is expected that changes associated with the marine physical processes would have returned to background levels immediately outside the excursion of one spring tidal ellipse (approximately 15km from the North Falls offshore project area), shown in Figure 4.1. A highly conservative, 30km study area is used for the MCZ screening.

- 37. Table 4.1 shows the MCZs within this study area, along with the distances measured to the nearest point of the North Falls offshore project area (array area and offshore cable corridor).
- 38. All other MCZs are over 30km from the North Falls offshore project area and therefore there is no potential pathway for impact from North Falls, alone or cumulatively with other projects.
- 39. The MCZs listed in Table 4.1 are considered further in Section 5.

Table 4.1 Distances from North Falls to MCZs in the screening study area

MCZ	Distance (km)			
IVICZ	Array Area	Offshore Cable Corridor		
BCRC	49	5.9		
Kentish Knock East	0 (adjacent)	6.2		
Orford Inshore	29	23.8		



5 Screening of impacts on protected features

- 40. Of the MCZs identified above, this section considers the potential for any impacts as a result of North Falls, alone or cumulatively with other plans and projects, on the protected features of the MCZ or any physical processes on which the features are dependent.
- 41. As there is no overlap of the offshore project area with any MCZs, all direct effects are screened out.

5.1 Blackwater, Crouch, Roach and Colne Estuaries

5.1.1 Protected Features

42. Table 5.1 shows the features designated by the BCRC MCZ.

Table 5.1 Protected features of the BCRC MCZ (source: Defra, 2013)

Protected Feature	Type of Feature	Management Approach
Intertidal mixed sediments	Broadscale marine habitat ¹	Maintain in favourable condition
Native oyster Ostrea edulis beds	Feature of Conservation Interest	Recover to favourable condition
Native oyster Ostrea edulis	Feature of Conservation Interest	Recover to favourable condition
Clacton Cliffs and Foreshore	Feature of Geological Interest	Maintain in favourable condition

43. The MCZ comprises the most important area for both wild and cultivated native oyster (*Ostrea edulis*) in the south-east region. The Clacton Cliffs and Foreshore is a geological feature of international importance which extends from the land into the subtidal area of the MCZ. It has been identified as one of the best Ice Age sites in Britain and contains an abundance of molluscan and mammalian fossil remains which were deposited during the interglacial periods. (Natural England, 2013).

5.1.2 Conservation Objectives

- 44. The overarching conservation objectives for the site is for its designated features either to be maintained in, or brought into, favourable condition (see Table 5.1) (Natural England, 2017).
- 45. For each protected feature, favourable condition means that, within a zone:
 - Its extent is stable or increasing; and
 - Its structure and functions, its quality, and the composition of its characteristic biological communities (including diversity and abundance of species forming part or inhabiting the habitat) are sufficient to ensure that its condition remains healthy and does not deteriorate.

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¹ Broadscale marine habitats represent a range of similar habitats and associated species grouped together.

- 46. Any temporary deterioration in condition is to be disregarded if the habitat is sufficiently healthy and resilient to enable its recovery.
- 47. For each species of marine fauna, favourable condition means that the population within a zone is supported in numbers which enable it to thrive, by maintaining:
 - The quality and quantity of its habitat; and
 - The number, age and sex ratio of its population.
- 48. Any temporary reduction of numbers of a species is to be disregarded if the population is sufficiently thriving and resilient to enable its recovery.
- 49. For the feature of geological interest, favourable condition means that, within a zone:
 - Its extent, component elements and integrity are maintained;
 - Its structure and functioning are unimpaired; and
 - Its surface remains sufficiently unobscured to determine the above points are satisfied.
- 50. Any alteration to a feature brought about entirely by natural processes is to be disregarded when determining whether a protected feature is in favourable condition.

5.1.3 Potential impacts

- 51. The potential impacts from the Project have been identified within the Scoping Report (NFOW, 2021) and Scoping Opinion (Planning Inspectorate, 2021). This section summarises the sources of pressures with the potential to have significant effects on the protected features of the BCRC MCZ.
- 52. As shown in Table 4.1 and Figure 4.1, the MCZ is c. 5.9km from the offshore cable corridor with the closest distance being to landfall. The array area is c. 49km from the MCZ and therefore potential impacts are limited to those associated with the offshore export cables in the nearshore and at landfall.
- 53. The impacts screened in (discussed below) will be assessed for North Falls alone and cumulatively with other plans and projects.

5.1.3.1 Construction

- 54. During construction of the Project, the installation of offshore export cables has potential to cause indirect effects of increased suspended sediment concentrations (SSC) and sediment deposition.
- 55. Intertidal mixed sediments have low sensitivity to changes in suspended sediment and deposition and at a distance of 5.9km, there is no potential for North Falls (alone or cumulatively) to hinder the conservation objectives of the MCZ for this feature. There is also no pathway for the Project to hinder the conservation objectives of the Clacton Cliffs and Foreshore geological feature.
- 56. Native oyster has high sensitivity to suspended sediments and deposition. Noting the objective to recover this feature to favourable condition, further assessment

- is required, native oyster and native oyster beds are therefore screened into the MCZA Stage 1 Report.
- 57. The potential for impacts associated with invasive non-native species will also be considered in the MCZA Stage 1 Report.
- 5.1.3.2 Operation and maintenance (O&M)
- 58. As with construction, any potential impacts associated with suspended sediment and deposition from maintenance activities will be assessed in the MCZA Stage 1 Report. The potential for impacts associated with invasive non-native species will also be considered.
- 59. There is no pathway for operational impacts such as electromagnetic fields (EMFs) to affect the features of the BCRC MCZ and therefore this is screened out.
- 5.1.3.3 Decommissioning
- 60. The potential impacts arising during the decommissioning phase are envisaged to be similar to those described for the construction phase, as a worst-case scenario.
- 5.1.3.4 Summary of pressures screened into MCZA Stage 1 Report
- 61. Screening of pressures associated with construction, operation and decommissioning is shown in Table 5.2 for each feature of the MCZ.

Table 5.2 Summary of potential pressures, and those screened in (\checkmark) and scoped out (*)

Potential Pressure	Construction	O&M	Decommissioning		
Intertidal mixed sediments					
Direct impacts	×	×	×		
Increased suspended sediment concentrations	×	×	×		
Re-mobilisation of contaminated sediments	×	×	×		
Sediment deposition (smothering)	×	×	×		
Invasive species	×	×	×		
EMFs	×	×	×		
Clacton Cliffs and Foreshore					
Direct impacts	×	×	×		
Increased suspended sediment concentrations	N/A	N/A	N/A		
Re-mobilisation of contaminated sediments	N/A	N/A	N/A		
Sediment deposition (smothering)	N/A	N/A	N/A		
Invasive species	N/A	N/A	N/A		
EMFs	N/A	N/A	N/A		
Native oyster and oyster beds					
Direct impacts	×	×	×		

Potential Pressure	Construction	O&M	Decommissioning
Increased suspended sediment concentrations	✓	✓	✓
Re-mobilisation of contaminated sediments	✓	✓	✓
Sediment deposition (smothering)	✓	✓	✓
Invasive non-native species	✓	✓	✓
EMFs	×	×	×

5.2 Kentish Knock East MCZ

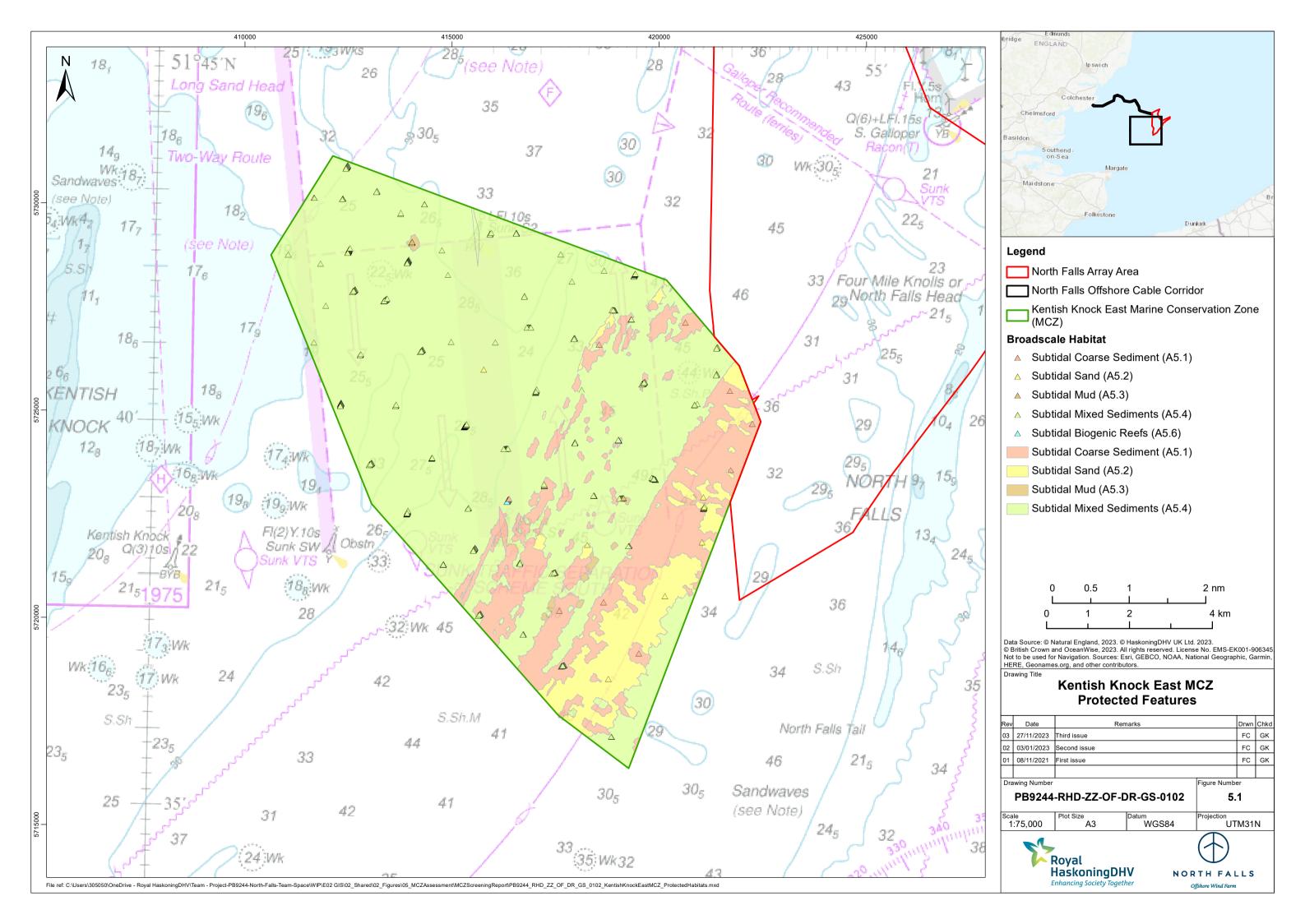
5.2.1 Protected Features

62. The Kentish Knock East MCZ is designated for three broadscale marine habitat features (Table 5.3).

Table 5.3 Protected features of the Kentish Knock East MCZ (source: Defra, 2019)

Protected Feature	Type of Feature	Management Approach
Subtidal coarse sediment	Broadscale marine habitat	Recover to favourable condition
Subtidal sand	Broadscale marine habitat	Maintain in favourable condition
Subtidal mixed sediments	Broadscale marine habitat	Recover to favourable condition

- 63. Kentish Knock East contains a range of sediment types, from fine sand through to coarse gravel and pebble. This range of sediment habitats support a variety of fauna including worms, sponges, bivalve molluscs and echinoderms such as brittlestars and sea urchins. This diversity of species found on the surface and within the sediment also supports fish species including the small spotted cat shark and commercially important flatfish species such as sole and plaice. (Defra, 2019).
- 64. Mapping of the protected features provided by Defra (2019b) is shown in Figure 5.1, adjacent to the array area.



5.2.2 Conservation Objectives

- 65. The overarching conservation objectives for the site are for its designated features either to be maintained in, or brought into, favourable condition (see Table 5.3).
- 66. For each protected feature, favourable condition means that, within a zone:
 - Its extent is stable or increasing; and
 - Its structure and functions, its quality, and the composition of its characteristic biological communities (including diversity and abundance of species forming part or inhabiting the habitat) are sufficient to ensure that its condition remains healthy and does not deteriorate.
- 67. The reference to the composition of the characteristic biological communities of a habitat includes a reference to the diversity and abundance of species forming part of, or inhabiting, that habitat.
- 68. For the purposes of this MCZ, any temporary deterioration in condition is to be disregarded if the habitat is sufficiently healthy and resilient to enable its recovery, and for the purpose of determining whether a protected feature is in favourable condition within the meaning of this designation, any alteration to that feature brought about entirely by natural processes is to be disregarded.

5.2.3 Potential impacts

- 69. This section summarises the sources of pressures with the potential to have significant effects on the protected features of the Kentish Knock East MCZ.
- 70. The North Falls array area lies immediately adjacent to the subtidal coarse sediment, mixed sediment and subtidal sand feature of the MCZ (Figure 5.1). All features of this MCZ are therefore screened into the MCZA Stage 1 Report and the assessment is informed by the targeted North Falls benthic survey completed in 2021.
- 71. The impacts screened in (discussed below) are assessed for North Falls alone and cumulatively with other plans and projects.

5.2.3.1 Construction

- 72. During construction of the Project, the seabed preparation, foundation installation, cable installation and vessel jack-up and anchoring will have an indirect effect on the seabed habitats and associated communities.
- 73. Indirect effects are increased SSC and sediment deposition, and where sediments are remobilised, there is potential to release sediment-bound contaminants into the water, if present.
- 74. Vessel traffic increases the risk of introducing marine non-native species.
- 75. Similarly, there is a potential pathway for underwater noise and vibration effects on the communities supported by the protected habitats, from construction activities, including from foundation piling and UXO clearance.

5.2.3.2 Operation and maintenance

- 76. Maintenance activities have the potential to result in temporary impacts, similar to those seen during construction, but lower in magnitude.
- 77. Turbine operation is a source of underwater noise and vibration, conducted through the tower and foundations into the water. The magnitude of underwater noise and vibration from wind farm operation is much lower than for activities like piling during construction.
- 78. EMFs resulting from the presence of cables in proximity to the MCZ may be detected by some benthic species.

5.2.3.3 Decommissioning

- 79. The potential impacts arising during the decommissioning phase are envisaged to be similar to those described for the construction phase.
- 5.2.3.4 Summary of pressures screened into MCZA Stage 1 Report
- 80. Screening of pressures associated with construction, operation and decommissioning is shown in Table 5.4 for each feature of the MCZ.

Table 5.4 Summary of potential pressures, and those scoped in (✓) and scoped out (✗)

Potential Pressure	Construction	O&M	Decommissioning
Direct impacts	×	×	×
Increased suspended sediment concentrations	✓	✓	✓
Re-mobilisation of contaminated sediments	✓	✓	✓
Effects on bedload sediment transport	✓	✓	✓
Underwater noise and vibration	✓	✓	✓
Invasive non-native species	✓	✓	✓
EMFs	×	✓	×

5.3 Orford Inshore MCZ

5.3.1 Protected Features

81. The Orford Inshore MCZ is designated for the broad-scale habitat, subtidal mixed sediment (Table 5.5).

Table 5.5 Protected feature of the Orford Inshore MCZ (source: Defra, 2019c)

Protected Feature	Type of Feature	Management Approach
Subtidal mixed sediments	Broadscale marine habitat	Recover to favourable condition

82. Subtidal mixed sediments provide important nursery and spawning grounds for many fish species including Dover sole, lemon sole and sandeels. Several nationally important shark species are also found within the site, including the small-spotted catshark. In addition, the area is important for foraging seabirds and harbour porpoise (JNCC, 2020).

5.3.2 Conservation Objectives

- 83. The overarching conservation objectives for the site is for its designated feature either to be maintained in, or brought into, favourable condition (see Table 5.5).
- 84. Favourable condition means that:
 - Its extent is stable or increasing, and
 - Its structure and functions, its quality, and the composition of its characteristic biological communities are such to ensure that it remains in a condition which is healthy and not deteriorating.
- 85. The reference to the composition of the characteristic biological communities of the protected feature includes a reference to the diversity and abundance of species forming part of, or inhabiting, the protected feature.
- 86. Any temporary deterioration in condition is to be disregarded if the protected feature is sufficiently healthy and resilient to enable its recovery.
- 87. For the purpose of determining whether the protected feature is in a favourable condition, any alteration to that feature brought about entirely by natural processes is to be disregarded.

5.3.3 Potential impacts

- 88. This section summarises the sources of pressures with the potential to have significant effects on the protected features of the Orford Inshore MCZ.
- 89. Coarse sediments disturbed during construction will settle rapidly to the seabed. Finer sand and mud that is present in the sediment would form a passive plume which would become advected by tidal currents and be indistinguishable from background levels. Due to the increased distance from the offshore project area

- following the revised array area (Section 1.2), the Orford Inshore MCZ is beyond the ZoI for North Falls alone or in-combination and therefore this is screened out.
- 90. There is no pathway for vessel traffic to increase the risk of introduction of marine non-native species due to distance between the Orford Inshore MCZ and the North Falls offshore project area. This impact is screened out.
- 91. There is no pathway for underwater noise and vibration effects from construction activities on species supported by the subtidal mixed sediment due to the 23.8km distance between Orford Inshore MCZ and the North Falls offshore project area. This impact is screened out.
- 92. At a distance of 23.8km, there is no potential for EMFs to affect the species supported by the mixed sediment feature of the Orford Inshore MCZ and therefore this is screened out.
- 5.3.3.1 Summary of pressures screened into MCZA Stage 1 Report
- 93. Screening of pressures associated with construction, operation and decommissioning is shown in Table 5.1 for each feature of the MCZ.

Table 5.6 Summary of potential pressures, and those scoped in (\checkmark) and scoped out (*)

Potential Pressure	Construction	Operation	Decommissioning
Direct impacts	×	×	×
Increased suspended sediment concentrations	×	×	×
Re-mobilisation of contaminated sediments	×	×	×
Sediment deposition (smothering)	×	×	×
Underwater noise and vibration	×	×	×
Invasive non-native species	×	×	×
EMFs	×	×	×

6 Cumulative effects

- 94. In order to screen plans and projects which have the potential to cumulatively interact with the impacts of North Falls, a conservative range of two spring tidal ellipse excursions (i.e. 30km) from the North Falls offshore project area has been used (Figure 6.1).
- 95. Plans and projects that existed at the time of MCZ designation or the latest status reports, undertaken every 6 years (whichever is most recent) are considered to be part of the baseline environment. BCRC MCZ was included in the Defra (2018) Marine Protected Areas Network Report. Kentish Knock East MCZ and Orford Inshore MCZ were designated in 2019. Plans and projects prior to 2018 are therefore considered part of the baseline and are screened out of the cumulative assessment. Table 6.1 provides the screening of plans and projects to be considered in the MCZA Stage 1 Report cumulative assessment.

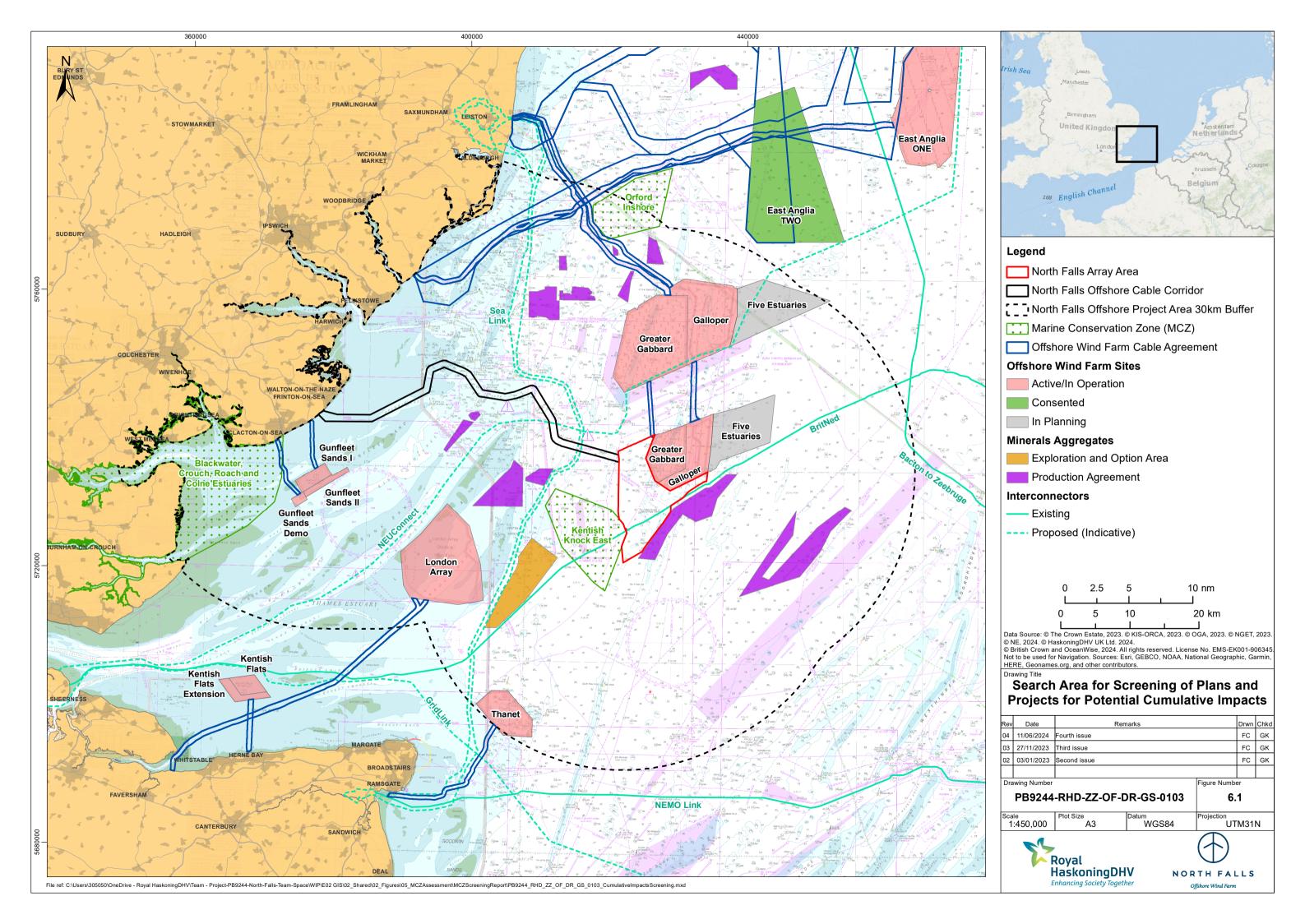


Table 6.1 Plans and projects screened into the MCZA cumulative impacts assessment

	Plan/project has potential to impact MCZ?					
Plan or Project	Tier status²	KKE MCZ	BCRC MCZ	Component of Baseline?	Programme	Screened In?
NeuConnect Interconnector	2	Yes	Yes	No	Construction began in 2023, aiming to be operational in 2028.	Yes
BritNed Interconnector	1	Yes	Yes	Yes, operational since 2009	N/A	No, included in the baseline environment
Tarchon Energy Ltd – EA Green Interconnector	6	Cable route currently unknown		No	Conducting marine surveys in 2025, submitting planning application in 2026, beginning construction in 2027, aiming for final commissioning in 2030.	No. Insufficient information available
Nautilus	6	Cable route currently unknown		No	Timescales unknown	No. Insufficient information available
South & East Anglia (SEA) Link	5	Yes	No	No	Statutory consultation completed from October 2023 to December 2023.	Yes
East Anglia ONE – Cable, Wind Export, Active/In Operation	1	No	No	Yes, operational since 2020	The export cable has been operational since 2020.	No. No potential to interact with the KKE and BCRC MCZs
Atlantic Crossing 1 – Telecom, Active	1	No	No	Yes	The Atlantic Crossing 1 cable has been operational since 1999.	No, included in the baseline environment

² Tiers in accordance with Natural England and Defra (2022) and based on project status at the time of writing.

		pote	roject has ential to ct MCZ?			
Plan or Project	Tier status²	KKE MCZ	BCRC MCZ	Component of Baseline?	Programme	Screened In?
Farland North – BT, Telecom cable, Active	1	No	No	Yes	The Farland North Cable has been operational since 1998.	No, included in the baseline environment
Concerto – Telecom, Active	1	No	No	Yes	The Concerto cable has been operational since 1999.	No, included in the baseline environment
Mercator – BT, Telecom, Proposed	6	Yes	No	No	The Mercator cable is proposed to be placed approximately 11.5km south of Kentish Knock East MCZ. Construction was planned for 2020/2021 however there are no further updates to the programme schedule.	No, insufficient information available to assess
Commercial fisheries	1	Yes	Yes	Yes, ongoing	N/A	No, included in the baseline environment
Greater Gabbard offshore wind farm	1	Yes	No	Yes, operational since 2012	N/A	Yes
Galloper offshore wind farm	1	Yes	No	Yes, operational since 2018	N/A	Yes
Five Estuaries offshore wind farm	6	Yes	Yes	No	DCO submitted in March 2024.	Yes
East Anglia TWO offshore wind farm	3	No	No	No	Construction planned mid 2020s	No. No potential to interact with the MCZs
Thanet offshore wind farm	1	Yes	No	Yes, operational since 2010	N/A	No. Any ongoing effects of maintenance activity from these offshore wind farms will be highly

Plan/project has potential to impact MCZ?						
Plan or Project	Tier status²	KKE MCZ	BCRC MCZ	Component of Baseline?	Programme	Screened In?
London Array offshore wind farm	1	Yes	No	Yes, operational since 2013	N/A	localised and therefore, given the distance from the North Falls offshore project area and MCZs, there is no pathway for significant cumulative effects.
Gunfleet Sands offshore wind farm	1	No	Yes	Yes, operational since 2010	N/A	
Outer OTE aggregate exploration and option area 528/2	4	Yes	No	No	Unknown	No. Agreement is limited to exploration and option. agreement. There is no information available with regards to effects of the exploration on MCZs.
Thames D aggregates production agreement area 524	1	Yes	No	No, production agreement secured 2022	Commenced 2023	Yes
Southwold East aggregates production agreement area 430	1	No	No	Yes, Operational since 2012	N/A	No, included in the baseline environment
North Inner Gabbard aggregate production area 498	1	No	No	Yes, Operational since 2015	N/A	No, included in the baseline environment
Shipwash aggregate production agreement area 507	1	No	No	Yes, Operational since 2016	N/A	No, included in the baseline environment
Longsand aggregate production agreement area 508	1	Yes	No	Yes, Operational since 2014	N/A	No, included in the baseline environment

Plan/project has potential to impact MCZ? KKE **BCRC** Component Tier Plan or Project **Programme** Screened In? status² MCZ MCZ of Baseline? Longsand aggregate Yes, Operational production N/A No, included in the baseline environment No Yes since 2015 agreement area 509 Longsand aggregate Yes, Operational production Yes No N/A No, included in the baseline environment since 2015 agreement area 510 North Falls East Yes, Operational since 2017 aggregate N/A Yes No No, included in the baseline environment production agreement 501

7 Screening summary

96. Table 7.1 provides a summary of the MCZs screened in for further consideration of the potential for North Falls to hinder the conservation objectives of the features of each site, alone or cumulatively with other plans and projects.

Table 7.1 Sites, features and impacts screened into Stage 1 MCZA

Site	Features Screened In	Relevant North Falls Components	Impacts Screened In (Alone and Cumulatively)
		In-direct effects from North Falls offshore export cables (landfall and nearshore)	Increased suspended sediment concentrations
BCRC MCZ	Native oyster and oyster beds		Re-mobilisation of contaminated sediments
			Sediment deposition (smothering)
			Invasive non-native species
Kentish Knock East MCZ	Subtidal coarse sediment Subtidal sand Subtidal mixed sediments	In-direct effects of North Falls array area (foundations and array cables, including associated works)	Increased suspended sediment concentrations
			Re-mobilisation of contaminated sediments
			Effects on bedload sediment transport
			Underwater noise and vibration
			Invasive non-native species
			EMFs

7.1 Cumulative impacts - Plans and projects screening

- 97. The following plans and projects are screened into the cumulative impact assessment:
 - NeuConnect Interconnector;
 - South & East Anglia (SEA) Link;
 - Greater Gabbard offshore wind farm;
 - Galloper offshore wind farm;
 - Five Estuaries offshore wind farm; and
 - Thames D aggregates production agreement area 524.

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