

RWE Renewables UK Dogger Bank South (West) Limited RWE Renewables UK Dogger Bank South (East) Limited

Dogger Bank South Offshore Wind Farms

Environmental Statement

Volume 7

Appendix 14-1 Shipping and Navigation Consultation Responses

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Glossary

Term	Definition
Allision	The act of striking or collision of a moving vessel against a stationary object.
Array Areas	The DBS East and DBS West offshore Array Areas, where the wind turbines, offshore platforms and array cables would be located. The Array Areas do not include the Offshore Export Cable Corridor or the Inter-Platform Cable Corridor within which no wind turbines are proposed. Each area is referred to separately as an Array Area.
Automatic Identification System (AIS)	A system by which vessels automatically broadcast their identity and key statistics including location, destination, length, speed and current status, e.g., under power. Most commercial vessels and United Kingdom/European Union fishing vessels over 15m length are required to carry AIS.
Baseline	The existing conditions as represented by the latest available survey and other data which is used as a benchmark for making comparisons to assess the impact of the Projects.
Collision	The act or process of colliding (crashing) between two moving objects.
Cumulative Effects	The combined effect of the Projects in combination with the effects of a number of different (defined cumulative) schemes, on the same single receptor / resource.
Cumulative Effects Assessment (CEA)	The assessment of the combined effect of the Projects in combination with the effects of a number of different (defined cumulative) schemes, on the same single receptor/resource.
Export Cable Platform Search Area	The Export Cable Platform Search Area is located mid-way along the Offshore Export Cable Corridor and is the area of search for the Electrical Switching Platform (ESP).



Term	Definition
Future Case	The assessment of risk based on the predicted growth in future shipping densities and traffic types as well as foreseeable changes in the marine environment.
Main Commercial Route	Defined transit route (mean position) of commercial vessels identified within each Shipping and Navigation Study Area.
Marine Guidance Note (MGN)	A system of guidance notes issued by the Maritime and Coastguard Agency which provide significant advice relating to the improvement of the safety of shipping at sea, and to prevent or minimise pollution from shipping.
Navigational Risk Assessment (NRA)	A document which assesses the hazards to shipping and navigation of a proposed Offshore Renewable Energy Installation based upon Formal Safety Assessment.
Offshore Export Cable Corridor	This is the area which will contain the offshore export cables (and potentially the ESP) between the Offshore Converter Platforms and Transition Joint Bays at the landfall.
Radio Detection and Ranging (Radar)	An object-detection system which uses radio waves to determine the range, altitude, direction or speed of objects.
Regular Operator	Commercial operator whose vessel(s) are observed to transit through a particular region on a regular basis.
Safety Zone	Legislated under the Energy Act 2004, safety zones are rolling buffer areas which protect construction activities by preventing unauthorised vessels from entering their boundary.
Scoping Opinion	The report adopted by the Planning Inspectorate on behalf of the Secretary of State.
Scoping Report	The report that was produced in order to request a Scoping Opinion from the Secretary of State.



Term	Definition
The Applicants	The Applicants for the Projects are RWE Renewables UK Dogger Bank South (East) Limited and RWE Renewables UK Dogger Bank South (West) Limited. The Applicants are themselves jointly owned by the RWE Group of companies (51% stake) and Masdar (49% stake).
The Projects	DBS East and DBS West (collectively referred to as the Dogger Bank South Offshore Wind Farms).



Acronyms

Term	Definition
AIS	Automatic Identification System
CD	Chart Datum
CEA	Cumulative Effect Assessment
DBS	Dogger Bank South
DCO	Development Consent Order
ES	Environmental Statement
ESP	Electrical Switching Platform
HVDC	High Voltage Direct Current
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
IHO	International Hydrographic Organization
INNS	Non-Native Species
m	Metre
MCA	Maritime and Coastguard Agency
MDA	Managed Danger Area
MGN	Marine Guidance Note
nm	Nautical Mile
NPS	National Policy Statement
NRA	Navigational Risk Assessment
PEIR	Preliminary Environmental Information Report

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Term	Definition
PEXA	Practice and Exercise Area
Radar	Radio Detection and Ranging
RYA	Royal Yachting Association
SAR	Search and Rescue
UK	United Kingdom
VHF	Very High Frequency



14.1. Consultation Reponses

14.1.1. Introduction

- 1. This appendix covers those statutory consultation responses that have been received as a response to the Scoping Report (2022), the Preliminary Environmental Information Report (PEIR) (2023) and various consultation meetings including the Hazard Workshops.
- 2. Response from stakeholders and regard given by the Applicants have been captured in **Table 14-1-1**.

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Table 14-1-1 Consultation Responses Related to Chapter 14 Shipping and Navigation

Comment	Project Response
Pre-Scoping meeting with the United Kingdom (UK) Chamber of Shipping 21/09/2021	
A singular Offshore Export Cable Corridor would be preferable to minimise impacts.	The Offshore Export Cable Corridor has been refined from that considered at the scoping and PEIR stages, with only one landfall area now considered. Offshore the corridor separates into two to serve the two Dogger Bank South (DBS) Array Areas.
Queries whether a substation may be required along the Offshore Export Cable Corridor.	An Electrical Switching Platform (ESP) is included in the design envelope and may be located either within the Array Areas or Offshore Export Cable Corridor.
Pre-Scoping meeting with the Maritime and Coastguard Agency (MCA) and Trinity House 27	7/09/2021
Satisfied with the survey methodology proposed, noting that the data when collected will need to be reviewed.	Survey methodology has been agreed as appropriate by the MCA and Trinity House as acknowledged in the assessment methodology in section 14.4 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) .
Queried whether changes to the National Policy EN-3 will be considered.	The latest National Policy Statement (NPS) for Renewable Energy Infrastructure (EN-3) has been considered in section 14.4 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14).
Initial Scoping response from the Ministry of Defence (MoD) 07/12/2021	
It is acknowledged that the DBS array areas may fall wholly or partially within the Southern Managed Danger Area (MDA) Practice and Exercise Areas (PEXA) D323A, D323B, D323C, D323D, D323E, D323F, and D323G. The lower vertical limits of blocks of danger area airspace are also noted and the export cables may pass through the Danger Area D307 (Donna Nook).	Military practice and exercise areas have been acknowledged in the existing environment in section 14.5 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) .
Initial Scoping response from Trinity House 08/12/2021	
Expected that a comprehensive vessel traffic analysis is undertaken in accordance with Marine Guidance Note (MGN) 654.	Seasonal vessel traffic surveys have been undertaken for the DBS array areas and export cable platform search area with related analysis carried out, as acknowledged in the assessment methodology in section 14.4 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) , with the findings outlined in section 14.5.
The possible cumulative and in-combination effects on shipping routes and patterns should be adequately assessed including the potential 'corridor' between the project and Dogger Bank A.	A full Cumulative Effects Assessment (CEA) has been provided in section 14.8 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) . The gap between DBS West and Dogger Bank A has been considered in the assessment of the Projects in-isolation in section 14.6 since Dogger Bank A is considered part of the baseline.
The development will need to be marked with marine aids to navigation in accordance with the general principles outlined in International Association of Marine Aids to Navigation and	Lighting and marking guidance will be adhered to as acknowledged in the assessment methodology in section 14.4 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14). Lighting and marking is included as mitigation embedded in the





Comment	Project Response
Lighthouse Authorities (IALA) Recommendation O-139 as a risk mitigation measure and agreed with Trinity House.	design in section 14.3 of Volume 7, Chapter 14 Shipping and Navigation (application ref: 7.14) .
Additional aids to navigation such as buoys may be necessary to mitigate the risk posed to the mariner, particularly during the construction phase.	Implementation of construction buoyage will be applied as acknowledged in the mitigation embedded in the design in section 14.3 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) .
A Decommissioning Plan, which includes a scenario where upon decommissioning and completion of removal operations an obstruction considered a danger to navigation is left on site should be considered. Such an obstruction may require to be marked until such time as it is either removed or no longer considered a danger to navigation.	Development of a Decommissioning Plan is acknowledged in the mitigation embedded in the design in section 14.3 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) .
There may be a requirement for navigational marking of the export cables and the vessels laying them. If it is necessary for the cables to be protected by rock armour, concrete mattresses or similar protection which lies clear of the surrounding seabed, the impact on navigation and the requirement for appropriate risk mitigation measures needs to be assessed.	Any protection for export cables will adhere to the requirements of MGN 654 and a Cable Specification and Installation Plan will be produced prior to installation, as acknowledged in the mitigation embedded in the design in section 14.3 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) .
Initial Scoping response from the UK Chamber of Shipping 13/01/2022	
It is important to widen the routeing shipping and navigation study area for the project, far beyond the ten nautical mile (nm) traffic study area, given the cumulative impact to the surrounding area as the number of wind farms increases.	The cumulative assessment, as per the methodology detailed in section 14.8 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) , screens offshore wind farm developments up to 50nm from the Projects.
Scoping Opinion response from the Planning Inspectorate 02/09/2022	
The Scoping Report seeks to scope out the following (during the construction and decommissioning phases only):	The assessment of significance (see section 14.6 of Volume 7, Chapter 14 Shipping and Navigation (application ref: 7.14)) considers each impact across each phase of the Projects where appropriate.
Vessel to structure allision risk;	
Reduction of under keel clearance; In our part of an interpreting with a charge public(a).	
Increased anchor interaction with subsea cable(s); Interference and the province and institute and another another and another another and another another and another another another and another a	
Interference with marine navigation, communications and position fixing equipment; and Deduction of apparatus properties in all plants of apparatus properties.	
Reduction of emergency response provision including Search and Rescue (SAR) capability. The least state to the search and the state of the sta	
The Inspectorate has assumed that these impacts are considered only relevant to the operation phase and subject to this assumption being correct, agrees to scope them out of the Environmental Statement (ES). The ES should explain the impacts relevant to each project phase, including where impacts are limited to a particular phase of the project.	
The Scoping Report notes a requirement for additional traffic surveys if a surface structure is required within the Offshore Export Cable Corridor as part of the Proposed Development. The	Vessel traffic surveys have been undertaken for the export cable platform search area (see section 14.4 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) and the export cable platform search area was discussed at the Hazard Workshops (with all data





Comment	Project Response
Inspectorate advises that careful consideration is given to the implications of the timing of this design decision for the ES (and the Navigational Risk Assessment (NRA) which will inform it).	used for baseline characterisation presented at the second Hazard Workshop) (see 09/11/2023 entries).
The Scoping Report states that safety zones of up to 500 metres (m) will be applied during construction, maintenance, and decommissioning phases. The ES should provide more information regarding the safety zones and include details of any diversions to navigational routes which will be required for existing vessels to avoid the Proposed Development. The ES should also include details of any other mitigation measures to be adopted that the assessment has relied upon.	Routeing displacement has been considered in the impact assessment (see section 14.6 of Volume 7, Chapter 14 Shipping and Navigation (application ref: 7.14)).
The Applicant is advised to consult with relevant stakeholders on the design and implementation of any safety zones and other mitigation measures adopted, and the ES should reflect the outcomes of this consultation.	An application for safety zones is acknowledged in the mitigation embedded in the design in section 14.3 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) , and includes standard safety zones for offshore renewable developments.
	Mitigation embedded in the design has been discussed with relevant stakeholders at the Hazard Workshops.
The Applicant should ensure that any structures which would be placed outside the array areas are included in the assessment of effects. If cable protection is likely to be required, then the assessment should use a worst case scenario based on the maximum extent of cable protection expected to be used.	A realistic worst case scenario has been established for shipping and navigation in section 14.3 of Volume 7, Chapter 14 Shipping and Navigation (application ref: 7.14) , including in relation to structures outside the DBS array areas and cable protection.
This aspect chapter should cross-refer to the relevant assessments of the ES, including assessments which consider the potential for vessel movements which could facilitate the spread of Invasive Non-Native Species (INNS) (e.g., through ballast water, accidents, and	Pollution is considered as a potential consequence where appropriate in the impact assessment (see section 14.6 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14)).
spillages) or which displace shipping traffic into designated wildlife sites.	The potential for vessels to facilitate the spread of INNS is covered in Volume 7, Chapter 9 Benthic Habitats (application ref: 7.9) .
Scoping Opinion response from the MCA 02/09/2022	
The area carries moderate traffic volumes including several important routes to/from UK ports – attention should be paid to routeing, particularly in adverse weather and cumulative effects should be considered.	Main commercial routes have been identified using the principles set out in MGN 654 (see section 14.5 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14)) and routeing displacement, including in adverse weather, has been considered in the impact assessment (see section 14.6). A full CEA has been provided in section 14.8 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) .
An NRA is required in accordance with MGN 654 including the MGN 654 Checklist.	An NRA has been undertaken (see Volume 7, Appendix 14-2 Navigational Risk Assessment (application ref: 7.14.14.2) and includes a completed MGN 654 Checklist.
Vessel traffic surveys should consist of a minimum of 28 days of seasonal data using Automatic Identification System (AIS), Radio Detection and Ranging (Radar) and visual observations recorded within 24 months prior to Development Consent Order (DCO) application.	Details of the vessel traffic surveys, which are compliant with MGN 654 requirements, are provided in section 14.4 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) .





Comment	Project Response
Cumulative impacts of other nearby offshore wind farms, particularly Dogger Bank A, Dogger Bank B, Dogger Bank C and Sofia, should be assessed as they will change routeing.	A full CEA has been provided in section 14.8 of Volume 7, Chapter 14 Shipping and Navigation (application ref: 7.14) .
	The cumulative assessment, as per the methodology detailed in section 14.8 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) , screens offshore wind farm developments up to 50nm from the Projects, noting that Dogger Bank A, Dogger Bank B, and Sofia are considered part of the baseline given that offshore construction is ongoing.
Attention should be given to oil and gas activity in the area.	Oil and gas vessels have been considered in the characterisation of vessel traffic movements in section 14.5 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) .
A Burial Protection Index study should be undertaken for cable burial with the MCA willing to accept a 5% reduction in surrounding depths reference to Chart Datum (CD).	Any protection for export cables will adhere to the requirements of MGN 654 and a Cable Specification and Installation Plan will be produced prior to installation, as acknowledged in the mitigation embedded in the design in section 14.3 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) .
Implications to SAR resources should be considered and recognition of the level of Radar interference, AIS and shore-based Very High Frequency (VHF) radio coverage – a SAR Checklist will also need to be completed.	Reduction of emergency response capability (including SAR access) has been considered in the impact assessment including the need to complete a SAR Checklist (see section 14.6 of Volume 7, Chapter 14 Shipping and Navigation (application ref: 7.14)).
Scoping Opinion response from MoD 02/09/2022	
The Offshore Export Cable Corridor passes through D323K, D323D and D323C. The MoD has highly surveyed routes which may be relevant to the installation of the export cables and associated infrastructure.	Military practice and exercise areas have been acknowledged in the existing environment in section 14.5 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14).
Scoping Opinion response from Trinity House 02/09/2022	
Comprehensive vessel traffic analysis is expected in accordance with MGN 654.	Seasonal vessel traffic surveys have been undertaken for the DBS array areas and export cable platform search area with related analysis carried out, as acknowledged in the assessment methodology in section 14.4 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) , with the findings outlined in section 14.5 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) .
The possible cumulative effects on routes should be adequately assessed.	A full CEA has been provided in section 14.8 of Volume 7, Chapter 14 Shipping and Navigation (application ref: 7.14) and includes consideration of commercial routeing.
The potential 'corridor' between the DBS array areas and Dogger Bank A, including future traffic patterns, should be considered and assessed.	The gap between DBS West and Dogger Bank A has been considered in section 14.6 of Volume 7, Chapter 14 Shipping and Navigation (application ref: 7.14).
Lighting and marking will be required in accordance with IALA G1162 and in agreement with Trinity House – additional aids to navigation such as buoys may be necessary to mitigate the risk posed, particularly during construction.	Lighting and marking guidance will be adhered to as acknowledged in the assessment methodology in section 14.4 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14). Lighting and marking is included as mitigation embedded in the





Comment	Project Response	
	design in section 14.3 of Volume 7, Chapter 14 Shipping and Navigation (application ref: 7.14) .	
Assessment should be included of the impact on existing aids to navigation (both offshore and shore based).	Impacts on existing aids to navigation are considered in the impact assessment (see section 14.6 of Volume 7, Chapter 14 Shipping and Navigation (application ref: 7.14)).	
A decommissioning plan should be considered.	A Decommissioning Programme will be developed prior to decommissioning based on the relevant guidance and legislation at the time. This is included as mitigation embedded in the design in section 14.3 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) .	
Pre-PEIR meeting with the MCA and Trinity House 23/01/2023		
Queried whether there will be a separate risk assessment for platforms in the Offshore Export Cable Corridor.	The impact assessment for the export cable platform search area has been incorporated in section 14.6 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) .	
MCA reconfirmed they are content with the vessel traffic survey data collected including the time periods.	Acknowledged in section 14.4 of Volume 7, Chapter 14 Shipping and Navigation (application ref: 7.14).	
The Hornsea developments should be considered cumulatively including impacts on DFDS Seaways' Immingham-Gothenburg routes in relation to Hornsea Four.	The Hornsea developments have been screened into the CEA (see section 14.8 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14)).	
Platforms within the Offshore Export Cable Corridor will need to be marked as standalone structures.	This has been considered in the impact assessment for the export cable platform search area in section 14.6 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) .	
Pre-PEIR meeting with the UK Chamber of Shipping 01/02/2023		
It is normal procedure to hold a Hazard Workshop prior to the PEIR and for its results to feed into the PEIR.	Consultation has been undertaken with key stakeholders (MCA, Trinity House, UK Chamber of Shipping) pre-PEIR and the Hazard Workshops undertaken have informed the impact assessment at the ES stage.	
Use of a long term 12-month AIS dataset was queried.	More specific on-site surveys have been used as a secondary source featuring piggyback data (see Appendix E in Volume 7, Chapter 14 Shipping and Navigation (application ref: 7.14)).	
Important to check tanker routes and port pairings rather than specific operators.	This has been considered when identifying Regular Operators.	
First Hazard Workshop feedback from the MCA 25/04/2023		
No concerns are noted with the array layout [presented at PEIR] based on the main commercial routeing including the placement of platforms on the periphery.	Noted.	





Comment	Project Response
First Hazard Workshop feedback from the UK Chamber of Shipping 25/04/2023	
The south-west corner of DBS West should be investigated for allision risk.	Refinement of DBS West from the PEIR stage has resulted in this issue being mitigated and this has been acknowledged by the UK Chamber of Shipping (see UK Chamber of Shipping 09/11/2023 entry).
The number of vessels per week should be presented for route numbers in the NRA.	The number of vessels per week for each main commercial route associated with the DBS array areas and export cable platform search area have been included in section 14.5 of Volume 7, Chapter 14 Shipping and Navigation (application ref: 7.14) .
First Hazard Workshop feedback from the Cruising Association 25/04/2023	
The low volume of recreational traffic recorded in the vessel traffic surveys is to be expected and it is likely that those traversing this section of the North Sea would primarily be using AIS given the distance offshore.	Acknowledged in the characterisation of the baseline environment for the DBS array areas in section 14.5 of Volume 7, Chapter 14 Shipping and Navigation (application ref: 7.14) .
The majority of recreational vessels would path around the arrays.	Acknowledged in the assessment of vessel displacement and internal allision risk in section 14.6 of Volume 7, Chapter 14 Shipping and Navigation (application ref: 7.14) .
First Hazard Workshop feedback from the Neptune Energy 25/04/2023	
It is likely that Route 8 passing between DBS West and Dogger Bank A will be maintained postwind farm construction.	Route 8 has been included in the future case commercial traffic routeing in section 15 of Volume 7, Appendix 14-2 Navigational Risk Assessment (application ref: 7.14.14.2).
PEIR Consultation, MCA 26/06/2023	
1. Navigation Risk Assessment (NRA) and MGN Checklist – General Comments Dogger Bank South windfarm is considered in three distinct sections namely, Dogger Bank Southeast, Dogger Bank Southwest (referred to collectively as Dogger Bank South Offshore Windfarms) and the Offshore Export Cable Corridor. A full marine traffic survey of 28 days duration has been undertaken as per MGN 654 requirements for each of these sections in summer and winter of 2022. The general dates of the surveys are presented in Table 14.5 and more specifically in Table 5.1 from Appendix 14-1, Navigation Risk Assessment (NRA). Chapter 14 Paragragh 30 highlights that the first winter vessel traffic survey was caried out preconstruction of Dogger Bank A and therefore this survey is considered as a secondary source only. The MCA is encouraged by the inclusion of commercial/established route identification along with predicted potential diversions of these routes post construction as presented in Figure 10.2 and 14.1 of the NRA respectively. It is noted that since the scoping report the export cable corridor has been refined with only one landfall area now being considered. We note under Chapter 14, paragraph 228 of the PEIR that "the consultation effort is not yet complete. In particular, a Hazard Workshop with relevant stakeholders in which the impacts associated with the DBS array areas and offshore export cable corridor (including potential platforms) has	Noted, consultation has on the topic of Shipping and Navigation has continued following the publication of PEIR, with relevant comments being included in this report. See Volume 7, Appendix 14-2 Navigational Risk Assessment (application ref: 7.14.14.2) for updates made following PEIR.





Dogger Bunk South Offshore Wind Full	
Comment	Project Response
not been undertaken." We also note that Section 18, paragraph 472 of the NRA states; "Although this NRA considers the requirements of the MGN 654 Checklist (see Appendix A), it is acknowledged that various additional steps will be required post PEIR to ensure a comprehensive NRA is submitted at the ES stage." The MCA agrees with the 12 steps identified in this paragraph and recognises that these have led to 8 outstanding items on the MGN 654 Checklist which are highlighted in table A-1 from Appendix A to the NRA. We expect further engagement with relevant stakeholders, the completion of a Hazard Identification Workshop and the NRA to be updated with the additional data incorporated. The MCA will provide further comments once this is completed.	
Layout We appreciate that the layout as presented currently is indicative of a 'worst case' as described in section 6.2 (figures 6.2 and 6.3) of the NRA. The turbine layout design will require MCA agreement prior to construction to minimise the risks to surface vessels, including rescue boats, and Search and Rescue aircraft operating within the site. As such, MCA will seek to ensure all structures are aligned in straight rows and columns, including any platforms. Any additional navigation safety and/or Search and Rescue requirements, as per MGN 654 Annex 5, will be agreed at the approval stage.	Noted.
Hydrographic Survey Data MGN 654 requires that hydrographic surveys should fulfil the requirements of the International Hydrographic Organisation (IHO) Order 1a standard, with the final data supplied as a digital full density data set, and survey report to the MCA Hydrography Manager and the UKHO. Further information can be found in MGN 654 Annex 4 supporting document titled 'Hydrographic Guidelines for Offshore Developers', available on our website: https://www.gov.uk/guidance/offshorerenewable-energy-installations-impact-onshipping. This includes surveys during the pre-construction, post-construction and post-decommissioning stages.	Hydrographic surveys will be undertaken in line with MGN 654 noting that compliance with MGN 654 is included as a mitigation embedded in the design in section 14.3 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) .
Cable Routes Particular attention should be paid to cabling routes and where appropriate burial depth for which a Burial Protection Index study should be completed and subject to the traffic volumes, an anchor penetration study may be necessary. Owing to the large volume of traffic including deeper draft vessels landward of the array areas, particular attention to burial depths and protection measures (if needed) will be required. It is noted in section 15, paragraph 388 of the NRA that the Cable Burial Risk Assessment (CBRA) will be carried out to inform this and the target burial depth is 0.5-1.0m. If cable protection measures are required e.g. rock bags or concrete mattresses, the MCA would be willing to accept a 5% reduction in surrounding depths referenced to Chart Datum. This will be particularly relevant where depths are decreasing towards shore and potential impacts on navigable water increase, such as at the HDD location. It is noted that both High Voltage Direct Current (HVDC) and High Voltage Alternating Current (HVAC) transmission infrastructure are to be used. Regarding HVDC there is a potential impact on ships compasses from the electro-magnetic field generated. A pre-construction compass deviation study will be	Noted. As detailed in section 14.3.2.2 of Volume 7, Chapter 14 Shipping and Navigation (application ref: 7.14), HVAC technologies have been removed from the Projects design envelope. Further details regarding potential electromagnetic Interference are provided in section 13.6 of Volume 7, Appendix 14-2 Navigation Risk Assessment (application ref: 7.14.14.2).





Comment	Project Response
required on the expected electro-magnetic field, and we would be willing to accept a three-degree deviation for 95% of the cable route. For the remaining 5% of the cable route no more than five-degree deviation will be attained. If this requirement cannot be met, further mitigation measures may be required including a post installation deviation survey of the cable route. This data must then be provided to the MCA and UKHO, as a precautionary notation may be required on the appropriate Admiralty Charts regarding possible magnetic anomalies along the cable route.	
Emergency Response An Emergency Response Cooperation Plan is required to meet the requirements of MGN 654 Annex 5 and will need to be in place prior to construction. The ERCoP is an active operational document and must remain current at all stages of the project including during construction, operations & maintenance and decommissioning. A SAR checklist will be discussed as the project progresses to track all requirements detailed in MGN 654 Annex 5.	Marine coordination would be implemented to manage project vessels throughout construction and maintenance periods, and will be detailed in one or more Emergency Response Cooperation Plans (ERCoPs) produced in compliance with MGN654. The Applicants have committed to this through the following Deemed Marine Licences (DMLs) within Volume 3, Draft DCO (application ref: 3.1) : • DML 1 & 2 - Condition 18 • DML 3 & 4 - Condition 16 • DML 5 - Condition 12
The CEA should take the Dogger Bank A Offshore Windfarm and Cavendish platform developments into consideration.	These developments have been considered as part of the baseline assessment in section 14.6 of Volume 7, Chapter 14 Shipping and Navigation (application ref: 7.14).
Hydrographic surveys fulfilling the requirements of the International Hydrographic Organization (IHO) Order 1a standard should be undertaken.	Hydrographic surveys will be undertaken in line with MGN 654 noting that compliance with MGN 654 is included as a mitigation embedded in the design in section 14.3 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) .
PEIR Consultation, Trinity House 14/07/2023	
Any navigable channel or corridor between Dogger Bank A and the DBS array areas should comply with MGN 654.	Refinement of the DBS array areas following PEIR have resulted in the length of the gap between DBS West and Dogger Bank A being shortened and is MGN 654 compliant as discussed in section 14.6 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) .
The Kingfisher Information Service of Seafish, must be informed of details of the vessel routes, timings and locations relating to the construction of the authorised project or any part thereof by email to kingfisher@seafish.co.uk:- a) at least 14 days prior to the commencement of offshore activities, for inclusion in the Kingfisher Fortnightly Bulletin and offshore hazard awareness data, and; b) as soon as reasonably practicable and no later than 24 hours of completion of all offshore activities. Confirmation of notification must be provided to the MMO within 5 days.	Noted, the Applicants have committed to this through the following DMLs within Volume 3 , Draft DCO (application ref: 3.1) : • DML 1 & 2 - Condition 9 • DML 3 & 4 - Condition 7 • DML 5 - Condition 5





Comment	Project Response
The undertaker must ensure that a local notification to mariners is issued at least 14 days prior to the commencement of the authorised project or any part thereof advising of the start date of each Work No. <insert> and the expected vessel routes from the construction ports to the</insert>	Noted, the Applicants have committed to this through the following DMLs within Volume 3 , Draft DCO (application ref: 3.1) : • DML 1 & 2 - Condition 9
relevant location.	DML 1 & 2 - Condition 7 DML 3 & 4 - Condition 7
Copies of all notices must be provided to the MMO, MCA and UKHO within 5 days	DML 5 - Condition 5
The undertaker must ensure that local notifications to mariners are updated and reissued at weekly intervals during construction activities and at least 5 days before any planned	Noted, the Applicants have committed to this through the following DMLs within Volume 3, Draft DCO (application ref: 3.1) :
operations (or otherwise agreed) and maintenance works and supplemented with VHF radio broadcasts agreed with the MCA in accordance with the construction and monitoring	DML 1 & 2 - Condition 9
programme approved under deemed marine licence condition <insert>.</insert>	DML 3 & 4 - Condition 7
	DML 5 - Condition 5
Copies of all notices must be provided to the MMO and UKHO within 5 days.	
The undertaker must notify the UKHO of the completion (within 14 days) of the authorised project or any part thereof in order that all necessary amendments are made to nautical charts.	Noted, the Applicants have committed to this through the following DMLs within Volume 3 , Draft DCO (application ref: 3.1) :
Copies of all notices must be provided to the MMO and MCA within 5 days.	DML 1 & 2 - Condition 10
	• DML 3 & 4 - Condition 8
	DML 5 - Condition 6
In case of damage to, or destruction or decay of, the authorised project seaward of MHWS or any part thereof, excluding the exposure of cables, the undertaker shall as soon as reasonably	Noted, the Applicants have committed to this through the following DMLs within Volume 3 , Draft DCO (application ref: 3.1) :
practicable and no later than 24 hours following the undertaker becoming aware of any such damage, destruction or decay, notify MMO, MCA, Trinity House, UKHO, the Kingfisher Infor-	DML 1 & 2 - Condition 9 and 18
mation Service of Seafish and regional fisheries contacts.	DML 3 & 4 - Condition 7 and 20
	DML 5 - Condition 5 and 14
In case of buried cables becoming exposed on or above the seabed, the undertaker must within three days following identification of a cable exposure, notify mariners, regional fisheries	Noted, the Applicants have committed to this through the following DMLs within Volume 3, Draft DCO (application ref: 3.1) :
contacts and the Kingfisher Information Service of Seafish of the location and extent of exposure. Copies of all notices must	DML 1 & 2 - Condition 9 and 18
be provided to the MMO, MCA, Trinity House, and the UKHO within 5 days.	DML 3 & 4 - Condition 7 and 20
	DML 5 - Condition 5 and 14
Aids to Navigation:	Noted, the Applicants have committed to this through the following DMLs within Volume 3, Draft DCO (application ref: 3.1) :



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Comment	Project Response
1) The undertaker shall during the whole period from the commencement of construction of the authorised project to the completion of decommissioning exhibit such lights, marks, sounds, signals and other aids to navigation, and to take such other steps for the prevention of	DML 1 & 2 - Condition 9, 10 and 18
	DML 3 & 4 - Condition 7, 8 and 20
danger to navigation as Trinity House may from time to time direct.	DML 5 - Condition 5, 6 and 14
2) The undertaker must during the whole period from the commencement of construction of the authorised project to the completion of decommissioning keep Trinity House and the MMO informed of progress of the authorised project including;	
a. notice of commencement of construction of the authorised project within 24 hours of commencement having occurred;	
b. notice within 24 hours of any aids to navigation being established by the undertaker; and	
c. notice within 5 days of completion of construction of the authorised project.	
3) The undertaker must provide reports to Trinity House on the availability of aids to navigation inaccordance with the frequencies set out in the aids to navigation management plan agreed pursuant to condition <insert> using the reporting system provided by Trinity House.</insert>	
4) The undertaker must during the whole period from the commencement of construction of the authorised project to the completion of decommissioning notify Trinity House and the MMO of any failure of the aids to navigation and the timescales and plans for remedying such failures, as soon as possible and no later than 24 hours following the undertaker becoming aware of any such failure.	
Colouring of structures:	Noted.
1) Except as otherwise required by Trinity House the undertaker must paint all structures forming part of the authorised project yellow (colour code RAL 1023) from at least HAT to a height as directed by Trinity House. Unless the MMO otherwise directs, the undertaker must paint the remainder of the structures grey (colour code RAL 7035).	
Construction Monitoring	Monitoring of vessel traffic will be undertaken for the duration of the construction phase and during the first three years of the operation and maintenance phase.
1) Construction monitoring must include vessel traffic monitoring by automatic identification system for the duration of the construction period. An appropriate report must be submitted to the MMO, Trinity House and the MCA at the end of each year of the construction period.	This would be secured through carrying out vessel traffic monitoring in accordance with the
	Outline Marine Traffic Monitoring Plan (application ref: 8.30).
	The Applicants have committed to this through the following DMLs within Volume 3, Draft DCO (application ref: 3.1) :
	• DML 1 & 2 - Conditions 19 & 20
	DML 3 & 4 - Conditions 21 & 22





Comment	Project Response
	DML 5 - Conditions 15 & 16
Post-construction plans and documents	Monitoring of vessel traffic will be undertaken for the duration of the construction phase and during the first three years of the operation and maintenance phase.
1) The undertaker must conduct a swath bathymetric survey to IHO Order 1a of the installed export cable route and provide the data and survey report(s) to the MCA and UKHO. The MMO should be notified once this has been done, with a copy of the Report of Survey also sent to the MMO.	This would be secured through carrying out vessel traffic monitoring in accordance with the Outline Marine Traffic Monitoring Plan (application ref: 8.30). the Applicants have committed to this (with the exception of the post-decommissioning
2) On post decommissioning, the undertaker must conduct a swath bathymetric survey to IHO	points) through the following DMLs within Volume 3, Draft DCO (application ref: 3.1) :
Order 1a of the cable route and the installed generating assets area and provide the data and survey report(s) to the MCA and UKHO. [Decommissioning is not consented at this stage so this	• DML 1 & 2 - Conditions 19 & 20
can't be included in the DCO/DML]	DML 3 & 4 - Conditions 21 &22
This should fulfil the requirements of MGN654 and its supporting 'Hydrographic Guidelines for Offshore Renewable Energy Developers', which includes the requirement for the full density data and reports to be delivered to the MCA and the UKHO for the update of nautical charts and publications.	DML 5 - Conditions 15 & 16
3) Post construction monitoring must include vessel traffic monitoring by automatic identification system for a duration of three consecutive years following the completion of construction of authorised project, unless otherwise agreed in writing by the MMO. An appropriate report must be submitted to the MMO, Trinity House and the MCA at the end of each year of the three year period.	
Completion of Construction	Noted.
(1) The undertaker must submit a close out report to the MMO, MCA, UKHO and the relevant statutory nature conservation body within three months of the date of completion of construction. The close out report must confirm the date of completion of construction and must include the following details—	
(2) the final number of installed wind turbine generators;	
(3) as built plans; and	
(4) latitude and longitude coordinates of the centre point of the location for each wind turbine generator and offshore platform, substation, booster station and meteorological mast; provided as Geographical Information System data referenced to WGS84 datum.	
(5) latitude and longitude coordinates of the inter array and export cable routes; provided as Geographical Information System data referenced to WGS84 datum.	
Pre-construction plans and documents:	Noted.
The authorised project shall not commence until the following have been submitted to and approved by the MMO. Each programme, statement, plan, protocol, scheme or other detail required to be approved under this condition must be submitted to the MMO for approval at	



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least 6 months prior to the commencement of the authorised project except where otherwise stated.	
1) A plan to be agreed in writing with the MMO following appropriate consultation with Trinity House, the MCA and UKHO, setting out proposed details of the authorised project, including the:	
a) number, dimensions, specification, foundation type(s) and depth for each WTGs, offshore platforms, substations and meteorological masts;	
b) the grid coordinates of the centre point of the proposed location for each WTG, platform, substation and meteorological mast;	
c) proposed layout of all cables; and	
d) location and specification of all other aspects of the authorised project.	
2) An Aids to Navigation Management Plan to be agreed in writing by the MMO following appropriate consultation with Trinity House specifying how the undertaker will ensure compliance with conditions (1) to (4) of 'Aids to Navigation' from the commencement of construction of the authorised project to the completion of decommissioning.	
3) No part of the authorised project may commence until the MMO, in consultation with the MCA, has confirmed in writing that the undertaker has taken into account and, so far as is applicable to that stage of the project, adequately addressed all MCA recommendations as appropriate to the authorised project contained within MGN654 "Offshore Renewable Energy Installations (OREIs) – Guidance on UK Navigational Practice, Safety and Emergency Response Issues" and its annexes.	
4) A construction method statement in accordance with the construction methods assessed in the environmental statement and including details of – i) Cable specification, installation and monitoring, to include:	
a) technical specification of offshore cables below MHWS;	
b) a detailed cable laying plan for the Order limits, incorporating a burial risk assessment encompassing the identification of any cable protection that exceeds 5% of navigable depth referenced to chart datum and, in the event that any area of cable protection exceeding 5% of navigable depth is identified, details of any steps (to be determined following consultation with the MCA and Trinity House) to be taken to ensure existing and future safe navigation is not compromised or such similar assessment to ascertain suitable burial depths and cable laying techniques, including cable protection; and	
c) proposals for monitoring offshore cables including cable protection during the operational lifetime of the authorised scheme which includes a risk based approach to the management of unburied or shallow buried cables.	



	Dogger Bank South Offshore Wind Farms
Comment	Project Response
Pre-construction monitoring and surveys	Noted.
5) A swath bathymetric survey to IHO Order 1a of the area within the Offshore Order Limits extending to an appropriate buffer around the site, must be undertaken. The survey shall include all proposed cable routes. This should fulfil the requirements of MGN654 and its supporting 'Hydrographic Guidelines for Offshore Renewable Energy Developers', which includes the requirement for the full density data and reports to be delivered to the MCA and the UKHO for the update of nautical charts and publications. This must be submitted as soon as possible, and no later than [three months] prior to construction. The Order Limit shapefiles must be submitted to MCA. The Report of Survey must also be sent to the MMO.	
PEIR Consultation, UK Chamber of Shipping 17/07/2023	
Cumulative Spatial Build Out of OWF in UK Exclusive Economic Zone	The DBS array areas have been refined as described in Section 6 of Volume 7 , Appendix 14 -
The Chamber notes that the two proposed developments of DBS have a total power rating of 1500MW and areas for lease of approximately 500km2. This equates to an energy generating density of approximately 3MW per km2, which by modern and present development standards is a low density and may be considered unnecessarily so.	2 Navigational Risk Assessment (application ref: 7.14).
The Chamber recognises the necessity for large scale deployment of offshore wind as part of the UK energy mix to reach net zero and therefore calls upon the developer to be frugal in its usage of the seabed and reduce the footprint of the OWF or not build out to the full red line boundary.	
The UK EEZ is finite and unnecessary use of the seabed squanders the valuable wind resource the UK has. Through reducing the seabed area developed by DBS, it means there is available sea-room set aside for other activities, including commercial navigation, along with the potential for more build out of offshore wind in later rounds.	
Decommissioning	No final decision regarding the final decommissioning policy for the offshore project
The Chamber notes from Chapter 14 Shipping and Navigation that no final decision regarding decommissioning has been made yet.	infrastructure has yet been made, as discussed in section 14.3 of Volume 7, Chapter 14 Shipping and Navigation (application ref: 7.14) .
The Chamber strongly advocates for the full removal of all infrastructure above and below the seabed, acknowledging BATNEEC when it comes to turbine foundations which penetrate deep into the seabed. The Chamber is aware that various developments have a preference for cabling to remain in situ. The Chamber objects to this for a number of reasons as detailed below.	
Firstly, the Chamber has concerns that buried cables left in situ may become exposed and therefore pose a hazard to anchoring activity, especially in an emergency when such activity is most likely to take place. This has been highlighted by the International Hydrographic Organization (IHO) who at their Assembly meeting held at Monaco in April 2017 highlighted:	
"Mariners are also warned that the seafloor where cables were originally buried may have changed and cables become exposed; therefore particular caution should be taken when	

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operating vessels in areas where submarine cables exist especially where the depth of water means that there is a limited under-keel clearance"	
Such risk is minimised during the economic life of the wind farm, as navigational traffic through the development will be reduced and it is expected that regular monitoring of the cabling and its protection will be carried out with any necessary remedial works. However once decommissioned, the site will be open to a greater extent to surface navigation and other activity. The Chamber is not aware of commitments by developers post commissioning to regularly monitor and rebury or remove cabling which has become exposed.	
Secondly, it is widely recognised that ships' anchors pose a significant hazard to submarine cables as they are designed to penetrate the seabed. The depth of penetration will depend on the size and type of anchor and the nature of the seabed. Hence, the Chamber is concerned that cable burial at typical depths does not fully safeguard against anchor fouling and entanglement. This was exemplified through the incident of the Stema Barge II incident in the English Channel when emergency anchoring led to the IFA interconnector being fouled and cut though. Passing the cost of potential fouling and disentanglement to the shipping company, authorities, insurers and any Search and Rescue (SAR) services required is not desirable.	
Thirdly, through the leaving of cabling in situ, future seabed activity in the area is significantly constrained, either rendered unfeasible, or costly for the next seabed user to remove or work around such cabling.	
PEIR Consultation, Orsted 17/07/2023	
Important to ensure that all environmental impacts of the Projects are properly and fully assessed including any potential cumulative or in combination effects with Hornsea Four.	Hornsea Project Four has been screened into the CEA (see section 14.8 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14)).
Post-PEIR meeting with the MCA and Trinity House 09/10/2023	
Clarity should be made between the rationale behind which array layout is worst case for each impact.	The array layout defined as worst case for each impact has been outlined in section 6 of Volume 7, Appendix 14-2 Navigational Risk Assessment (application ref: 7.14).
A commitment to a desk-based High Voltage Direct Current (HVDC) engineering study should be made in the NRA.	Necessity of a desk-based study has been described in section 13 of Volume 7, Appendix 14-2 Navigational Risk Assessment (application ref: 7.14) .
Agree that the worst case location of the ESP should be at the southern edge of the export cable platform search area.	This has been applied for the allision modelling in section 16 of Volume 7 , Appendix 14-2 Navigational Risk Assessment (application ref: 7.14) .
It is a reasonable assumption that vessels on Route 9, unlike Route 8, will around the DBS array areas given the ability to passage plan and the available sea room to the north.	Route 9 has been deviated around the DBS array areas as shown in section 15 of Volume 7 , Appendix 14-2 Navigational Risk Assessment (application ref: 7.14) .
Acknowledge that the gap between DBS West and Dogger Bank A abides by the 20-degree rule from MGN 654, and all parties agree that no further detailed assessment is required.	The compliance of the gap between DBS West and Dogger Bank A with MGN 654 is discussed in section 14.6 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14) .





Comment	Project Response
Second Hazard Workshop feedback from the MCA 09/11/2023	
Preference for displacement and collision risk to be considered separately in the hazard log with the most likely consequence for collision risk still being a collision.	This has been applied to the hazard log in Appendix B of Volume 7, Appendix 14-2 Navigational Risk Assessment (application ref: 7.14).
Second Hazard Workshop feedback from the UK Chamber of Shipping 09/11/2023	
Cumulatively it would be useful to present the main commercial routes in relation to the wider scope of developments within 50nm.	Future case commercial traffic routeing on a cumulative level has been presented with a wide extent encompassing the screened in CEA developments in section 15 Volume 7, Appendix 14-2 Navigational Risk Assessment (application ref: 7.14).
Previous concerns with the south-west corner of DBS West for allision risk have now been alleviated.	Noted.
Post-Section 42 Meeting with the Royal Yachting Association (RYA) and Cruising Association 29/11/2023	
If layouts are compact then it is more likely that a recreational vessel would go around the arrays altogether.	Acknowledged in section 14.6 of Volume 7, Chapter 14 Shipping and Navigation (application ref: 7.14).
Construction is the most sensitive phase with use of guard vessels and notifications as required important.	Use of guard vessels and promulgation of information are included as mitigation embedded in the design in section 14.3 of Volume 7 , Chapter 14 Shipping and Navigation (application ref: 7.14).
It is displacement of larger vessels tends to cause issues for recreational vessels but is not a major issue in this area.	Acknowledged in section 14.6 of Volume 7, Chapter 14 Shipping and Navigation (application ref: 7.14).
There is very limited recreational activity at the location of the DBS array areas.	Acknowledged in section 14.5 of Volume 7, Chapter 14 Shipping and Navigation (application ref: 7.14).

RWE Renewables UK Dogger Bank South (West) Limited

RWE Renewables UK Dogger Bank South (East) Limited

Windmill Hill Business Park Whitehill Way Swindon Wiltshire, SN5 6PB