

MONA OFFSHORE WIND PROJECT

Environmental Statement

Volume 2, Chapter 10: Other sea users

Document Number: MOCNS-J3303-RPS-10048

Document Reference: F2.10

APFP Regulations: 5(2)(a)

February 2024

F01



Image of an offshore wind farm

MONA OFFSHORE WIND PROJECT

Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
F01	Application	RPS	Mona Offshore Wind Ltd	Mona Offshore Wind Ltd	Feb 2024

Prepared by:

RPS

Prepared for:

Mona Offshore Wind Limited.

MONA OFFSHORE WIND PROJECT

Contents

10	OTHER SEA USERS.....	1
10.1	Introduction	1
10.1.1	Overview	1
10.2	Legislative and policy context.....	1
10.2.1	Planning policy context.....	1
10.2.1	National Policy Statements	1
10.2.2	Welsh National Marine Plan.....	4
10.2.3	North West Inshore and North West Offshore Marine Plans	4
10.3	Consultation	5
10.4	Baseline methodology	11
10.4.1	Relevant guidance.....	11
10.4.2	Scope of the assessment	11
10.4.3	Study area	13
10.4.4	Desktop study.....	15
10.4.5	Site specific surveys.....	16
10.5	Baseline environment	16
10.5.1	Regional other sea users study area	16
10.5.2	Local other sea users study area	19
10.5.3	Radar Early Warning Systems (REWS) study area	29
10.5.4	Future baseline scenario	29
10.5.5	Data limitations	30
10.6	Impact assessment methodology	30
10.6.1	Overview	30
10.6.2	Impact assessment criteria	30
10.7	Key parameters for assessment.....	32
10.7.1	Maximum Design Scenario	32
10.8	Measures adopted as part of the Mona Offshore Wind Project	38
10.9	Assessment of significant effects	40
10.9.1	Overview	40
10.9.2	Displacement of recreational activities.....	40
10.9.3	Increased SSCs and associated deposition affecting recreational diving and bathing sites	42
10.9.4	Impacts to existing cables or restriction of access to cables or pipelines.....	44
10.9.5	Reduction or restriction of other offshore energy activities	46
10.9.6	Interference with the performance of REWS located on oil and gas platforms	48
10.9.7	Potential impact of rerouted traffic on REWS alarm rates	50
10.9.8	Future monitoring	53
10.10	Cumulative Effects Assessment methodology	53
10.10.1	Methodology.....	53
10.10.2	Maximum Design Scenario	58
10.11	Cumulative Effects Assessment	60
10.11.1	Displacement of recreational activities.....	60
10.11.2	Interference with the performance of REWS located on oil and gas platforms	61
10.11.3	Potential impact of rerouted traffic on REWS alarm rates	63
10.12	Transboundary effects	65
10.13	Inter-related effects.....	65
10.14	Summary of impacts, mitigation measures and monitoring.....	66
10.15	References	69

MONA OFFSHORE WIND PROJECT

Tables

Table 10.1: Summary of the NPS EN-3 provisions relevant to other sea users.	2
Table 10.2: Summary of the NPS EN-3 policy relevant to other sea users.	3
Table 10.3: Welsh National Marine Plan policies of relevance to other sea users.	4
Table 10.4: North West Inshore and North West Offshore Marine Plan policies of relevance to other sea users.	5
Table 10.5: Summary of key consultation issues raised during consultation activities undertaken for the Mona Offshore Wind Project relevant to other sea users.....	6
Table 10.6: Issues considered within this assessment.	11
Table 10.7: Impacts scoped out of the assessment for other sea users.	12
Table 10.8: Summary of key data sources and desktop reports.	15
Table 10.9: Marine aggregate extraction areas in the vicinity of the Mona Offshore Wind Project.	16
Table 10.10: Offshore wind farms in the east Irish Sea.	23
Table 10.11: Cables which intersect the local other sea users study area.	24
Table 10.12: Definition of terms relating to the magnitude of an impact.	30
Table 10.13: Definition of terms relating to the sensitivity of the receptor.	31
Table 10.14: Matrix used for the assessment of the significance of the effect.....	31
Table 10.15: Maximum Design Scenario considered for the assessment of potential impacts on other sea users.	33
Table 10.16: Measures adopted as part of the Mona Offshore Wind Project.	38
Table 10.17: Estimated change in yearly alarm rates against the base case for platforms where an increase in alarms was observed.	52
Table 10.18: List of other projects, plans and activities considered within the CEA for other sea users.	54
Table 10.19: Maximum design scenario considered for the assessment of potential cumulative effects on other sea users.	59
Table 10.20: Estimated change in yearly alarm rates against the base case for platforms where an increase in alarms was observed in the cumulative scenario for Mona Offshore Wind Project alongside Morgan Generation Assets	64
Table 10.21: Summary of potential environmental effects, mitigation and monitoring.	67
Table 10.22: Summary of potential cumulative environmental effects, mitigation and monitoring.	68

Figures

Figure 10.1: The other sea users study areas.	14
Figure 10.2: Marine aggregate extraction and disposal sites in the vicinity of the Mona Offshore Wind Project.....	17
Figure 10.3: Recreational activities in the vicinity of the Mona Offshore Wind Project.	18
Figure 10.4: Other offshore wind farms and cables in the vicinity of the Mona Offshore Wind Project.	22
Figure 10.5: Oil and gas licence blocks in the vicinity of the Mona Offshore Wind Project.....	26
Figure 10.6: CCS and oil and gas activities in the vicinity of the Mona Offshore Wind Project.	27
Figure 10.7: REWS in the vicinity of the Mona Offshore Wind Project.....	28
Figure 10.8: Other projects, plans and activities screened into the CEA for other sea users.	57

Annexes

Annex number	Annex title
10.1	Radar Early Warning System technical report

MONA OFFSHORE WIND PROJECT

Glossary

Term	Meaning
Marine aggregate	Marine dredged sand and/or gravel.
Marine aggregate extraction	The process of removing naturally occurring sand and gravels.
Notice to Mariners	Issued from a number of different sources, such as the UK Hydrographic Office, Trinity House or Local Harbour Authorities. Contain important navigational information such as chart updates, changes in buoyage, prior warning of activities such as dredging, exclusion zones, harbour closures and byelaws etc.
Seismic survey	The technique involves releasing pulses of acoustic energy along designated lines, the energy penetrates the sub-surface rocks and is reflected back to the surface where it can be detected by acoustic transducers and relayed to a recording vessel.
Tidal excursion	The net horizontal distance travelled by a water particle from Mean Low Water Springs (MLWS) to Mean High Water Springs (MHWS) or vice versa.

Acronyms

Acronym	Description
AfL	Agreement for Lease
AIS	Automatic Identification System
AtoNMP	Aids to Navigation Management Plan
BEIS	Department for Business, Energy and Industrial Strategy
CCS	Carbon Capture and Storage
CCUS	Carbon Capture, Usage and Storage
CEA	Cumulative Effects Assessment
CPA	Closest Point of Approach
CSIP	Cable Specification and Installation Plan
CTV	Crew Transfer Vessel
DCO	Development Consent Order
DESNZ	Department for Energy Security and Net Zero
dML	Deemed Marine Licence
EIA	Environmental Impact Assessment
ESCA	European Subsea Cables Association
ICPC	International Cable Protection Committee
IEMA	Institute of Environmental Management and Assessment
LoS	Line of Sight
MDS	Maximum Design Scenario
MHWS	Mean High Water Springs

MONA OFFSHORE WIND PROJECT

Acronym	Description
MLWS	Mean Low Water Springs
MMO	Marine Management Organisation
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
NRA	Navigational Risk Assessment
NSTA	North Sea Transition Authority
OCMS	Offshore Construction Method Statement
OPRED	Offshore Petroleum Regulator for Environment and Decommissioning
OSI	Offshore Storage Installation
OSP	Offshore Substation Platform
OTNR	Offshore Transmission Network Review
PDE	Project Design Envelope
PEIR	Preliminary Environmental Information Report
REWS	Radar Early Warning Systems
RYA	Royal Yachting Association
SOV	Service Operation Vessel
SSC	Suspended Sediment Concentration
TCE	The Crown Estate
TCPA	Time to Closest Point of Approach
UKCS	United Kingdom Continental Shelf
UKHO	United Kingdom Hydrographic Office
WSAC	World Shore Angling Championships

Units

Unit	Description
%	Percentage
m	Metres
m ²	Metres squared
m ³	Metres cubed
MW	Megawatt
nm	Nautical mile
km	Kilometres
km ²	Kilometres squared

10 Other sea users

10.1 Introduction

10.1.1 Overview

10.1.1.1 This chapter of the Environmental Statement presents the assessment of the potential impact of the Mona Offshore Wind Project on other sea users. Specifically, this chapter considers the potential impact of the Mona Offshore Wind Project seaward of Mean High Water Springs (MHWS) during the construction, operations and maintenance, and decommissioning phases.

10.1.1.2 The assessment presented is informed by the following technical chapters:

- Volume 2, Chapter 1: Physical processes of the Environmental Statement
- Volume 2, Chapter 2: Benthic subtidal and intertidal ecology of the Environmental Statement
- Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement
- Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement.

10.1.1.3 This chapter also draws upon information contained within the following technical reports:

- Volume 5, Annex 3.1: Underwater sound technical report of the Environmental Statement
- Volume 6, Annex 10.1: Radar Early Warning System (REWS) and Microwave Communication Links technical report of the Environmental Statement.

10.1.1.4 Potential impacts on navigational safety are addressed in Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement. Potential impacts on helicopter access to offshore oil and gas platforms is addressed in Volume 4, Chapter 1: Aviation and radar of the Environmental Statement.

10.2 Legislative and policy context

10.2.1 Planning policy context

10.2.1.1 The Mona Offshore Wind Project will be located in Welsh offshore waters (beyond 12 nautical miles (nm) from the Welsh coast) and inshore waters, with the onshore infrastructure located wholly within Wales. As set out in Volume 1, Chapter 1: Introduction of the Environmental Statement, the Mona Offshore Wind Project is an offshore generating station with a capacity of greater than 350 MW located in Welsh waters and therefore it is a Nationally Significant Infrastructure Project (NSIP) as defined by section 15(3) of the Planning Act 2008 (as amended) (the 2008 Act). As such, there is a requirement to submit an application for a Development Consent Order (DCO) to The Planning Inspectorate to be decided by the Secretary of State for the Department for Energy Security and Net Zero (DESNZ).

10.2.1 National Policy Statements

10.2.1.1 There are currently six energy National Policy Statements (NPSs), three of which contain policy relevant to offshore wind development and the Mona Offshore Wind Project, specifically:

MONA OFFSHORE WIND PROJECT

- Overarching NPS for Energy (NPS EN-1) which sets out the UK Government’s policy for the delivery of major energy infrastructure (DESNZ, 2024a)
- NPS for Renewable Energy Infrastructure (NPS EN-3) (DESNZ, 2024b)
- NPS for Electricity Networks Infrastructure (NPS EN-5) (DESNZ, 2024c).

NPS EN-3 includes guidance on what matters are to be considered in the other sea users assessment. These are summarised in Table 10.1. NPS EN-3 also highlights a number of factors relating to the determination of an application and in relation to mitigation, specifically related to other sea users. These are summarised in Table 10.2.

Table 10.1: Summary of the NPS EN-3 provisions relevant to other sea users.

Summary of NPS EN-3 provision	How and where considered in the Environmental Statement
<p>NPS EN-3</p> <p>There may be constraints imposed on the siting or design of offshore wind farms because of the presence of other offshore infrastructure, such as co-existence/co-location, oil and gas, Carbon Capture, Usage and Storage (CCUS), co-location of electrolyzers for hydrogen production, marine aggregate dredging, telecommunications, or activities such as aviation and recreation.</p> <p>(EN-3, paragraph 2.8.44)</p>	<p>The baseline environment considering other offshore infrastructure and activities is presented in section 10.5. Consultation with potentially affected stakeholders has been carried out from the early stages of the Mona Offshore Wind Project and has continued throughout the pre-application consultation process. Details of this are presented in Table 10.5.</p>
<p>The scale and location of future offshore wind development around England and Wales means that development has occurred, and will continue to occur, in or close to areas where there is other offshore infrastructure.</p> <p>Where a potential offshore wind farm is proposed close to existing operational offshore infrastructure, or has the potential to affect activities for which a licence has been issued by government, the applicant should undertake an assessment of the potential effects of the proposed development on such existing or permitted infrastructure or activities.</p> <p>The assessment should be undertaken for all stages of the lifespan of the proposed wind farm in accordance with the appropriate policy and guidance for offshore wind farm Environmental Impact Assessments (EIAs).</p> <p>(EN-3, paragraph 2.8.196 – 2.8.198)</p>	<p>The potential impact on existing or permitted infrastructure or activities has been considered in section 10.4 and, where applicable, an assessment of their likely significance, considering each phase of the development process (i.e. construction, operations and maintenance, and decommissioning) is provided in section 10.9.</p>
<p>Applicants should engage with interested parties in the potentially affected offshore sectors early in the pre-application phase of the proposed offshore wind farm, with an aim to resolve as many issues as possible prior to the submission of an application.</p> <p>Such stakeholder engagement should continue throughout the life of the development including construction, operation and decommissioning phases where necessary.</p> <p>(EN-3, paragraphs 2.8.200 – 2.8.201)</p>	<p>Consultation with potentially affected stakeholders has been carried out from the early stages of the Mona Offshore Wind Project and has continued throughout the pre-application consultation process. Details of this are presented in Table 10.5.</p>

MONA OFFSHORE WIND PROJECT

Table 10.2: Summary of the NPS EN-3 policy relevant to other sea users.

Summary of NPS EN-3 policy	How and where considered in the Environmental Statement
<p>NPS EN-3</p> <p>Where a proposed offshore wind farm potentially affects other offshore infrastructure or activity, a pragmatic approach should be employed by the Secretary of State.</p> <p>Much of this infrastructure is important to other offshore industries as is its contribution to the UK economy.</p> <p>In such circumstances, the Secretary of State should expect the applicant to work with the impacted sector to minimise negative impacts and reduce risks to as low as reasonably practicable.</p> <p>(EN-3, paragraphs 2.8.342 – 2.8.344)</p>	<p>Section 10.9 presents the impact assessment undertaken for the Mona Offshore Wind Project in relation to other sea users. Section 10.8 identifies measures adopted as part of the Mona Offshore Wind Project to minimise adverse impacts.</p>
<p>As such, the Secretary of State should be satisfied that the site selection and site design of the proposed offshore wind farm has been made with a view to avoiding or minimising disruption or economic loss or any adverse effect on safety to other offshore industries. Applicants will be required to demonstrate that risks to safety will be reduced to as low as reasonably practicable.</p> <p>(EN-3, paragraph 2.8.345)</p>	<p>As described in Volume 1, Chapter 4: Site selection and consideration of alternatives of the Environmental Statement, the Mona Offshore Wind Project has been sited to minimise potential impacts on other sea users where possible. In cases where potential impacts have been highlighted through consultation (Table 10.5), the measures adopted as part of the Mona Offshore Wind Project reduce or negate impacts (section 10.8).</p>
<p>Providing proposed schemes have been carefully designed, and that the necessary consultation with relevant bodies and stakeholders has been undertaken at an early stage, mitigation measures may be possible to negate or reduce effects on other offshore infrastructure or operations to a level sufficient to enable the Secretary of State to grant consent.</p> <p>(EN-3, paragraph 2.8.348)</p>	
<p>Detailed discussions between the applicant for the offshore wind farm and the relevant consultees should have progressed as far as reasonably possible prior to the submission of an application. As such, appropriate mitigation should be included in any application, and ideally agreed between relevant parties.</p> <p>(EN-3, paragraph 2.8.261)</p>	
<p>In some circumstances, the Secretary of State may wish to consider the potential to use requirements involving arbitration as a means of resolving how adverse impacts on other commercial activities will be addressed.</p> <p>(EN-3, paragraph 2.8.262)</p>	

MONA OFFSHORE WIND PROJECT

10.2.2 Welsh National Marine Plan

10.2.2.1 The other sea users impact assessment has been made with consideration to the specific policies set out in the Welsh National Marine Plan (Welsh Government, 2019). Key provisions are set out in Table 10.3 along with details as to how these have been addressed within the assessment.

Table 10.3: Welsh National Marine Plan policies of relevance to other sea users.

Policy	Key provisions	How and where considered in the Environmental Statement
SAF_01: Safeguarding existing activity	<p>a. Proposals likely to have significant adverse impacts upon an established activity covered by a formal application or authorisation must demonstrate how they will address compatibility issues with that activity.</p> <p>Proposals unable to demonstrate adequate compatibility must present a clear and convincing case for the proposal to progress under exceptional circumstances.</p> <p>b. Proposals likely to have significant adverse impacts upon an established activity not subject to a formal authorisation must demonstrate how they will address compatibility issues with that activity.</p> <p>Proposals unable to demonstrate adequate compatibility must present a clear and convincing case for proceeding.</p>	<p>As described in Volume 1, Chapter 4: Site selection and consideration of alternatives of the Environmental Statement, the Mona Offshore Wind Project has been sited to minimise potential impacts on other sea users and associated activities where possible. In cases where potential impacts have been highlighted through consultation (Table 10.5), the measures adopted as part of the Mona Offshore Wind Project reduce or negate impacts (section 10.8).</p>

10.2.3 North West Inshore and North West Offshore Marine Plans

10.2.3.1 The other sea users impact assessment has also been made with consideration to the specific policies set out in the North West Inshore and North West Offshore Marine Plans (Marine Management Organisation (MMO), 2021). Key provisions are set out in Table 10.4 along with details as to how these have been addressed within the assessment.

MONA OFFSHORE WIND PROJECT

Table 10.4: North West Inshore and North West Offshore Marine Plan policies of relevance to other sea users.

Policy	Key provisions	How and where considered in the Environmental Statement
NW-AGG-1	Proposals in areas where a licence for extraction of aggregates has been granted or formally applied for should not be authorised, unless it is demonstrated that the proposal is compatible with aggregate extraction.	As shown in Figure 10.2, there is no overlap between the Mona Offshore Wind Project and any marine aggregate extraction sites. The nearest site is Liverpool Bay 457, which is 11 km from the Mona Array Area (Table 10.9).
NW-CO-1	Proposals that may have significant adverse impacts on, or displace, existing activities must demonstrate that they will, in order of preference: <ul style="list-style-type: none"> • Avoid • Minimise • Mitigate adverse impacts so they are no longer significant. If it is not possible to mitigate significant adverse impacts, proposals must state the case for proceeding.	As described in Volume 1, Chapter 4: Site selection and consideration of alternatives of the Environmental Statement, the Mona Offshore Wind Project has been sited to minimise potential impacts on other sea users where possible. Measures adopted as part of the Mona Offshore Wind Project (with relevance to other sea users) are contained in section 10.8, and an assessment of potential impacts is contained in section 10.9.
NW-CAB-1	Preference should be given to proposals for cable installation where the method of protection is burial. Where burial is not achievable, decisions should take account of protection measures for the cable that may be proposed by the applicant. Where burial or protection measures are not appropriate, proposals should state the case for proceeding without those measures.	Cable burial is one of the measures adopted as part of the Mona Offshore Wind Project listed in section 10.8.
NW-CAB-3	Where seeking to locate close to existing subsea cables, proposals should demonstrate compatibility with ongoing function, maintenance and decommissioning activities relating to the cable.	Cable crossing and proximity agreements are measures adopted as part of the Mona Offshore Wind Project listed in section 10.8.
NW-OG-1	Proposals in areas where a licence for oil and gas has been granted or formally applied for should not be authorised unless it is demonstrated that the other development or activity is compatible with the oil and gas activity.	Potential impacts on oil and gas activities are assessed in sections 10.9.4, 10.9.5, 10.9.6 and 10.9.5.

10.3 Consultation

10.3.1.1 A summary of the key issues raised during consultation activities undertaken to date specific to other sea users is presented in Table 10.5 below, together with how these issues have been considered in the production of this chapter.

MONA OFFSHORE WIND PROJECT

Table 10.5: Summary of key consultation issues raised during consultation activities undertaken for the Mona Offshore Wind Project relevant to other sea users.

Date	Consultee and type of response	Issues raised	Response to issue raised and/or where considered in this chapter
20 April 2022	Spirit Energy response to initial invitation to comment	Anticipation of pipeline, cable crossing and/or proximity agreements to be established. Notification of the potential of the construction and placement of wind turbines to effect Radar Early Warning Systems (REWS) effectiveness for collision risk management, and the ability of REWS to detect vessels.	Crossing and proximity agreements are noted as measures adopted as part of the Mona Offshore Wind Project in Table 10.16. Potential impact on REWS is addressed in section 10.9.6.
21 April 2022	Royal Yachting Association (RYA) consultation meeting	Consultation carried out to inform Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement. Introduction to project and discussion of data sources (including RYA Recreational Atlas).	Potential impacts on recreational activities are considered in section 10.9.2.
10 June 2022	Charter Angling stakeholder – Scoping response	Queried the representation of the charter angling boat industry at meetings up to February 2022, and enquired as to the final date for public consultation.	Confirmed that consultation on the Scoping Report represented only the first stage and did not preclude wider consultation. Notified the stakeholder of a series of consultation events through June and July 2022 and that the Applicant was in the process of developing a more targeted stakeholder engagement plan.
15 June 2022	Isle of Man Department of Infrastructure – Scoping response	Notification of the presence of an Ørsted proposed offshore wind farm with an Agreement for Lease (AfL) in place, within Isle of Man territorial waters.	The proposed offshore wind farm has been acknowledged on Figure 10.4 and in Table 10.10.
15 June 2022	Isle of Man Department of Infrastructure – Scoping response	Notification for the purpose of transparency of Manx Utilities plans relating to a second interconnector cable for the Isle of Man, planned to run to the north of the Mona Array Area.	Consultation with Manx Utilities has continued throughout the pre-application stage, including the meeting on 19 June 2023. Full details of all consultation on the Mona Offshore Wind Project is presented in the Consultation Report (Document Reference E3).

MONA OFFSHORE WIND PROJECT

Date	Consultee and type of response	Issues raised	Response to issue raised and/or where considered in this chapter
15 June 2022	Natural Resources Wales (NRW) – Scoping response	Queried whether Porth Eirias Water Sports Centre in Colwyn Bay needs to be included in the baseline environment description.	Acknowledged in the baseline environment description (section 10.4).
21 November 2022	RWE response to pre-consultation questionnaire	Information on Awel y Môr, including proposed activities, cables and future vessel access requirements.	Potential impacts on other offshore energy infrastructure is considered in section 10.9.
24 November 2022	Spirit Energy response to pre-consultation questionnaire	Information on assets in the east Irish Sea and future activity, including intent to decommission the South Morecambe platforms between 2027 and 2031.	Oil and gas receptors are described in the baseline environment (section 10.5), with potential impacts assessed in section 10.9.
24 November 2022	Harbour Energy response to pre-consultation questionnaire	Information on assets in the east Irish Sea and future activity, including intent to decommission Millom West and associated wells by 2024 with subsequent removals.	Oil and gas receptors are described in the baseline environment (section 10.5), with potential impacts assessed in section 10.9.
25 November 2022	Rhyl Charter Anglers meeting to discuss potential impacts of the Mona Offshore Wind Project on charter angling	Discussion of fishing within the Mona Array Area and impacts of previously constructed wind farms in the Irish Sea (e.g. North Hoyle, Gwynt y Môr, Burbo Bank and Rhyl Flats) on charter angling. Charter anglers expressed that it was unlikely that any fishing would occur within the Mona Array Area, especially during construction.	Potential impacts on recreational activities, including recreational fishing, are considered in section 10.9.2.
08 December 2022	Eni response to pre-consultation questionnaire	Information on assets in the east Irish Sea and future activity.	Oil and gas receptors are described in the baseline environment description (section 10.5), with potential impacts assessed in section 10.9.
01 June 2023	Isle of Man Government response to Preliminary Environmental Information Report (PEIR)	With reference to the current UK-IoM interconnector, identified plans for a second electricity interconnector between the UK and the east coast of the Isle of Man, likely within 10 years, and advised to consult with Manx Utilities. Asked if this has been assessed as appropriate.	Consultation with Manx Utilities has continued throughout the pre-application stage, including the meeting on 19 June 2023. Full details of all consultation on the Mona Offshore Wind Project is presented in the Consultation Report (Document Reference E3).

MONA OFFSHORE WIND PROJECT

Date	Consultee and type of response	Issues raised	Response to issue raised and/or where considered in this chapter
01 June 2023	Isle of Man Government response to PEIR	Raised potential for impact (third party damage) on the UK-IoM interconnector from project vessels utilising Douglas Harbour increasing the potential for vessels anchoring in the vicinity of Douglas Bay. Requested the Applicant ensures robust protocols are in place to highlight the existence and positioning of the interconnector to all project vessels.	The Applicant is considering ports to support the construction and operations and maintenance of the Mona Offshore Wind Project. The locations of cables and other offshore assets are marked on local admiralty charts as standard, which ensures vessels are aware of the location of such assets in their passage planning. A Vessel Management Plan will be in place for the Mona Offshore Wind Project which will include information on vessel routing and vessel management and coordination (including anchoring locations) (see Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement).
01 June 2023	Isle of Man Government response to PEIR	Raised potential for impact (third party damage) on the UK-IoM interconnector from displacement of fishing activity, increasing fishing interaction over the interconnector cable route.	The Mona Offshore Wind Project is working with the fishing industry through the Outline fisheries liaison and co-existence plan (Document Reference J13) to ensure the potential for displacement throughout the operations and maintenance phase is minimised. The impacts on commercial fisheries, including displacement, are fully assessed in Volume 2, Chapter 6: Commercial fisheries of the Environmental Statement.
02 June 2023	Ørsted Isle of Man response to PEIR	Potential interactions and impact with the proposed Moir Vannin offshore wind farm and need for cumulative assessment.	The proposed Moir Vannin offshore wind farm is shown in Figure 10.8 and included in the cumulative assessment for other sea users presented in section 10.11.

MONA OFFSHORE WIND PROJECT

Date	Consultee and type of response	Issues raised	Response to issue raised and/or where considered in this chapter
02 June 2023	Barrow Offshore Wind Limited, Burbo Extension Ltd, Ørsted Burbo (UK) Limited, Morecambe Wind Limited, Walney (UK) Offshore Windfarms Limited, Walney Extension Limited response to section 42 consultation	<p>The need for continued access to the offshore wind assets for maintenance, and for any upgrading, repowering or decommissioning activities.</p> <p>Potential for the Mona Offshore Wind Project turbines to interfere with wind speed or wind direction of the existing Barrow, Burbo Bank, Burbo Extension, West of Duddon Sands, Walney 1 and 2, and Walney 3 and 4 offshore wind farms, causing a reduction in energy output.</p>	<p>Potential impact on vessel access to infrastructure is considered in section 10.9.</p> <p>Potential for wake effects is considered in section 10.5.2.</p>
02 June 2023	euNetworks Ltd. response to section 42 consultation	<p>Referred to notification received in May 2023 of geotechnical works planned within the Mona offshore wind farm array areas and the site investigations (SI) locations. The closest SI location is approximately 500 m from the Rockabill cable and there are a number of other SI locations less than 1 km from Rockabill. Requested further consideration of proximity requirements assuming the SI locations relate to potential foundation locations. Requested detail on the plans for proximity of wind turbines to the Rockabill cable as well as any potential cable crossings over the Rockabill cable.</p>	<p>The location of existing cables are discussed in section 10.4 and potential impacts on existing cables are considered in section 10.9. Consultation with euNetworks Ltd. has continued throughout the pre-application stage. Full details of all consultation on the Mona Offshore Wind Project is presented in the Consultation Report (Document Reference E3).</p>
03 June 2023	Scottish Power Renewables response to section 42 consultation	<p>Response provided in relation to the West of Duddon Sands Offshore Wind Farm. Requested that proposed survey and outline construction programmes are shared and discussed and requested a meeting to discuss potential wake effects.</p>	<p>Potential for wake effects is considered in section 10.5.2.</p>
16 June 2023	Meeting with euNetworks Ltd. to discuss the relationship between the Mona Offshore Wind Project and the Rockabill cable	<p>Discussion of specific needs in relation to the Rockabill cable, including protection of the cable during Mona Offshore Wind Project preparation surveys and construction, ability to repair the cable in a limited time scenario, and need for crossing and proximity agreements. Referred to limited sea room for future cables.</p>	<p>Potential impacts on existing cables are considered in section 10.9. Full details of all consultation on the Mona Offshore Wind Project is presented in the Consultation Report (Document Reference E3).</p>

MONA OFFSHORE WIND PROJECT

Date	Consultee and type of response	Issues raised	Response to issue raised and/or where considered in this chapter
16 June 2023	Meeting with BT to discuss the relationship between the Mona Offshore Wind Project and the MT1 and ESAT2 cables	Discussion of the potential interactions between the Mona Offshore Wind Project and the MT1 and ESAT2 cables, such as crossings and proximity.	Potential impacts on existing cables are considered in section 10.9. Full details of all consultation on the Mona Offshore Wind Project is presented in the Consultation Report (Document Reference E3).
23 June 2023	Ministry of Defence (MOD) response to section 42 consultation	The far south of the wind farm array area falls within oil and gas blocks which contain a highly surveyed route. These routes are retained by the MOD to support national defence requirements and are not defined in the public domain. Highly surveyed routes must not be obstructed or impeded by offshore developments such as wind turbines.	The Mona Array Area has been reduced from the version presented in the Preliminary Environmental Information Report (PEIR), and now no longer overlaps with the highly surveyed route.
26 June 2023	Awel y Môr response to section 42 consultation	Identified that the Awel y Môr export cable route and the area where the meteorological mast is planned to be installed were not included in the Mona Offshore Wind Project PEIR drawings.	The cable corridor and met mast for Awel y Môr have been added to Figure 10.4.

10.4 Baseline methodology

10.4.1 Relevant guidance

10.4.1.1 The following guidance documents have been considered throughout the other sea users impact assessment:

- The Royal Yachting Association's (RYA's) position on offshore renewable energy developments: Paper 1 (of 4) – Wind Energy, June 2019 (RYA, 2019)
- European Subsea Cables Association (ESCA) guideline no 6, the proximity of offshore renewable energy installations and submarine cable infrastructure in UK waters (ESCA, 2016)
- Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) guidance on the decommissioning of offshore oil and gas installations and pipelines (OPRED, 2023)
- DESNZ (formerly the Department for Business, Energy and Industrial Strategy (BEIS)) response to consultation on Establishing the offshore decommissioning regime for CO₂ transport and storage networks (BEIS, 2022)
- International Cable Protection Committee (ICPC) recommendations:
 - Recommendation No.2-11B: Cable routing and reporting criteria (ICPC, 2015)
 - Recommendation No.3-10C: Telecommunications cable and oil pipeline/power cables crossing criteria (ICPC, 2014)
 - Recommendation No.13-2C: The proximity of offshore renewable wind energy installations and submarine cable infrastructure in national waters (ICPC, 2013)
- Pipeline crossing agreement and proximity agreement pack (Oil and Gas UK, 2021)
- Submarine cables and offshore renewable energy installations proximity study (The Crown Estate (TCE), 2012).

10.4.2 Scope of the assessment

10.4.2.1 The scope of this Environmental Statement has been developed in consultation with relevant statutory and non-statutory consultees as detailed in Table 10.5. Taking into account the scoping and consultation process, Table 10.6 summarises the issues considered as part of this assessment.

Table 10.6: Issues considered within this assessment.

Activity	Potential impacts scoped into the assessment
Construction phase	
Site preparation	<ul style="list-style-type: none"> • Increased Suspended Sediment Concentrations (SSCs) and associated deposition affecting recreational diving and bathing sites.
Installation of wind turbines, OSPs, cables and associated vessel movements	<ul style="list-style-type: none"> • Displacement of recreational activities • Impacts to existing cables or restriction of access to cables or pipelines • Reduction or restriction of other offshore energy activities (including offshore wind, oil and gas operations, Carbon Capture and Storage (CCS) and underground gas storage).

MONA OFFSHORE WIND PROJECT

Activity	Potential impacts scoped into the assessment
Safety zones associated with construction of infrastructure	<ul style="list-style-type: none"> • Displacement of recreational activities • Impacts to existing cables or restriction of access to cables or pipelines • Reduction or restriction of other offshore energy activities.
Operations and maintenance phase	
Cable repair and reburial	<ul style="list-style-type: none"> • Increased SSCs and associated deposition affecting recreational diving and bathing sites.
The presence of wind turbines, OSPs, cables and associated maintenance vessel movements	<ul style="list-style-type: none"> • Displacement of recreational activities • Impacts to existing cables or restriction of access to cables or pipelines • Reduction or restriction of other offshore energy activities • Interference with the performance of REWS located on oil and gas platforms.
Safety zones associated with maintenance	<ul style="list-style-type: none"> • Displacement of recreational activities • Impacts to existing cables or restriction of access to cables or pipelines • Reduction or restriction of other offshore energy activities.

10.4.2.2 Effects which are not considered likely to be significant have been scoped out of the assessment. A summary of the effects scoped out, together with justification for scoping them out and whether the approach has been agreed with key stakeholders through either scoping or consultation, is presented in Table 10.7.

Table 10.7: Impacts scoped out of the assessment for other sea users.

Potential impact	Justification
Increased SSCs and associated deposition affecting aggregate areas.	As per Figure 10.2, there are no aggregate extraction or disposal sites in the regional other sea users study area. This is due to the reduction in the Mona Array Area from the boundary presented in the PEIR.
Alterations to sediment transport pathways affecting aggregate areas.	As per Figure 10.2, there are no aggregate extraction or disposal sites in the regional other sea users study area. This is due to the reduction in the Mona Array Area from the boundary presented in the PEIR.
Interference with offshore microwave fixed communication links.	The modelling results presented in Volume 6, Annex 10.1: Radar Early Warning technical report of the Environmental Statement show that the Mona Array Area is located sufficiently far from the considered microwave communications links onboard Eni and Spirit Energy platforms so as not to create a potential impact. Based on the modelled parameters for the communications links and wind turbines, the modelling provides the basis for a conclusion that there will be no adverse impact from the Mona Offshore Wind Project.

MONA OFFSHORE WIND PROJECT

10.4.3 Study area

- 10.4.3.1 The other sea users study area varies in scale depending on the receptor. Three study areas have been defined for the assessment of different groupings of other sea user receptors. These are the regional other sea users study area, the local other sea users study area, and the REWS other sea users study area, as shown in Figure 10.1.
- 10.4.3.2 The regional other sea users study area is based on one tidal excursion of the Mona Array Area and the Mona Offshore Cable Corridor and Access Areas, and represents the area with potential increases in suspended sediments arising from activities associated with the Mona Offshore Wind Project. This study area is relevant to those receptors which are susceptible to increases in SSCs:
- Aggregate extraction and disposal sites
 - Recreational activities such as scuba diving and bathing.
- 10.4.3.3 The local other sea users study area is defined as a 1 km buffer around the Mona Array Area and Mona Offshore Cable Corridor and Access Areas. The 1 km buffer is based on the potential for 500 m safety zones around existing infrastructure and 500 m safety zones to be applied for around Mona Offshore Wind Farm infrastructure during construction or maintenance. This area therefore includes the extent of potential direct physical overlap between activities associated with the Mona Offshore Wind Project and the following receptors:
- Recreational receptors (including receptors carrying out activities such as sailing and motor cruising, recreational fishing and inshore water sports)
 - Offshore energy receptors (e.g. other offshore wind farms, oil and gas operations, CCS and underground gas storage)
 - Cable operators.
- 10.4.3.4 The REWS other sea users study area is based on a combination of a 30 km (16 nm) detection range from each platform with REWS installed, taken to be the minimum requirement for REWS to detect and track smaller vessels, and a 20 km boundary around the Mona Array Area to include potential rerouted vessel traffic resulting from the Mona Array Area location. The REWS study area is also the basis for the assessment of potential impact on microwave fixed communication links between offshore oil and gas platforms.
- 10.4.3.5 The cumulative other sea users study area is based on an area within 50 km of the Mona Array Area and Mona Offshore Cable Corridor and Access Areas (see section 10.10).

MONA OFFSHORE WIND PROJECT

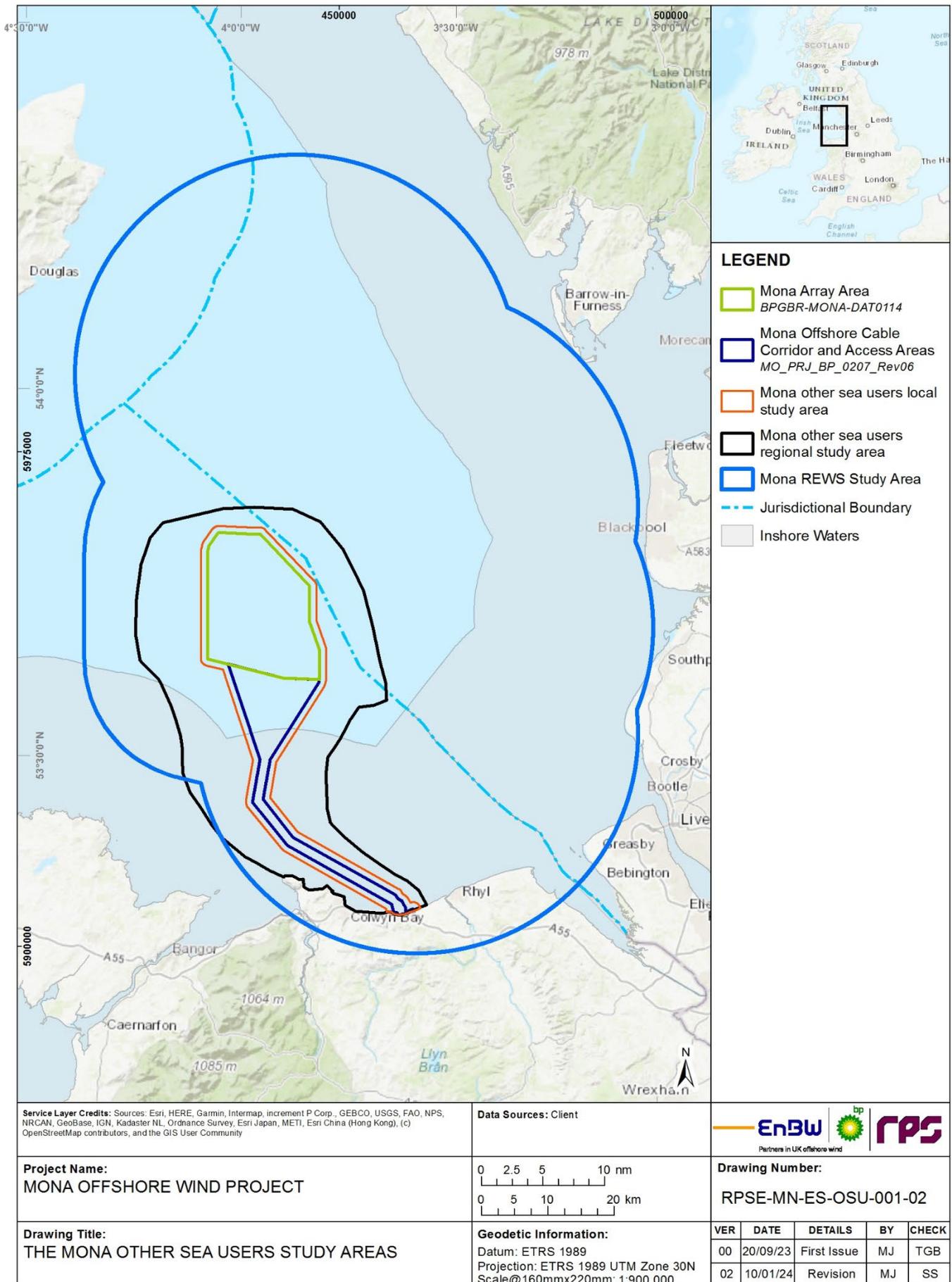


Figure 10.1: The other sea users study areas.

MONA OFFSHORE WIND PROJECT

10.4.4 Desktop study

10.4.4.1 Information on other sea users within the other sea users study areas was collected through a detailed desktop review of existing studies and datasets. These are summarised in Table 10.8 below.

Table 10.8: Summary of key data sources and desktop reports.

Title	Source	Year	Author
Cable routes	Kis-Orca	2021	Kis-Orca
Disposal sites	EMODnet	2015	EMODnet
Offshore wind farms	TCE	2022	TCE
Recipients of oil and gas questionnaire	TCE conflicts check	2021	TCE
Aggregate extraction areas	TCE	2022	TCE
Pipelines	North Sea Transition Authority (NSTA)	2022	NSTA
Wells	NSTA	2022	NSTA
Hydrocarbon platforms	NSTA	2022	NSTA
Subsurface structures	NSTA	2022	NSTA
Hydrocarbon fields	NSTA	2022	NSTA
Oil and gas licence blocks	NSTA	2022	NSTA
United Kingdom Continental Shelf (UKCS) block	NSTA	2022	NSTA
Marinas	UK Coastal Atlas of Recreational Boating	2018	RYA
Recreational activities	UK Coastal Atlas of Recreational Boating	2018	RYA
RYA clubs	UK Coastal Atlas of Recreational Boating	2018	RYA
RYA training centres	UK Coastal Atlas of Recreational Boating	2018	RYA
General boating areas	UK Coastal Atlas of Recreational Boating	2018	RYA
Data from marine vessel traffic surveys	MarineTraffic	2019	MarineTraffic
Wrecks (diving sites)	UK Diving: www.ukdiving.co.uk	2010	UK Diving
Communication links	Consultation	2022/2023	Platform operators
Recreational fishing	Cefas British Sea Fishing	2021 2020	Cefas British Sea Fishing

MONA OFFSHORE WIND PROJECT

10.4.5 Site specific surveys

10.4.5.1 No site-specific surveys have been undertaken to inform the Environmental Impact Assessment (EIA) for other sea users. This is because a sufficient amount of information relating to other sea users is already available (Table 10.8). The majority of the data used to inform the EIA for other sea users has been taken from these desktop data sources, together with the results of consultation with other sea users stakeholders. Survey data from two 14-day vessel-based traffic surveys conducted at the Mona Array Area in December 2021 and June/July 2022 was collected to inform Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement and has been referenced within this chapter where relevant.

10.5 Baseline environment

10.5.1 Regional other sea users study area

10.5.1.1 As stated in section 10.4.3, the regional other sea users study area is relevant to those receptors which are susceptible to increases in SSCs:

- Aggregate extraction and disposal sites
- Recreational receptors carrying out activities such as scuba diving and bathing.

10.5.1.2 The baseline environment for these receptors is described below.

Aggregate extraction and disposal sites

10.5.1.3 As shown in Figure 10.2, there are no licenced marine extraction aggregate sites within the regional other sea users study area.

10.5.1.4 There are three licenced marine aggregate extraction areas in the wider east Irish Sea. Information about these three production agreement areas, from north to south, is contained in Table 10.9.

Table 10.9: Marine aggregate extraction areas in the vicinity of the Mona Offshore Wind Project.

Area name	Area number	Operator name	Distance to Mona Array Area (km)
Liverpool Bay	457	Westminster Gravels Ltd.	11.0
Liverpool Bay	1808	Hanson Aggregates Marine Ltd.	20.1
Hilbre Swash	393	Mersey Sand Suppliers	22.4

10.5.1.5 Liverpool Bay has been used since the 19th century for disposal purposes, primarily material from the Mersey Docks. In the wider east Irish Sea, dredged material is the main material being disposed of, associated with dredging activities at Liverpool docks and the River Mersey.

10.5.1.6 As shown in Figure 10.2, there are no marine disposal sites within the regional other sea users study area. The Liverpool Bay (sludge) B site is 13.9 km from the Mona Array Area. This site received sewage sludge and industrial waste for disposal and was closed in 1998. There are no disposal sites for explosive material, chemical munitions disposal sites (post 1945) or radioactive waste sites (1946 to 1993) located within the regional other sea users study area, according to DECC (2011).

MONA OFFSHORE WIND PROJECT

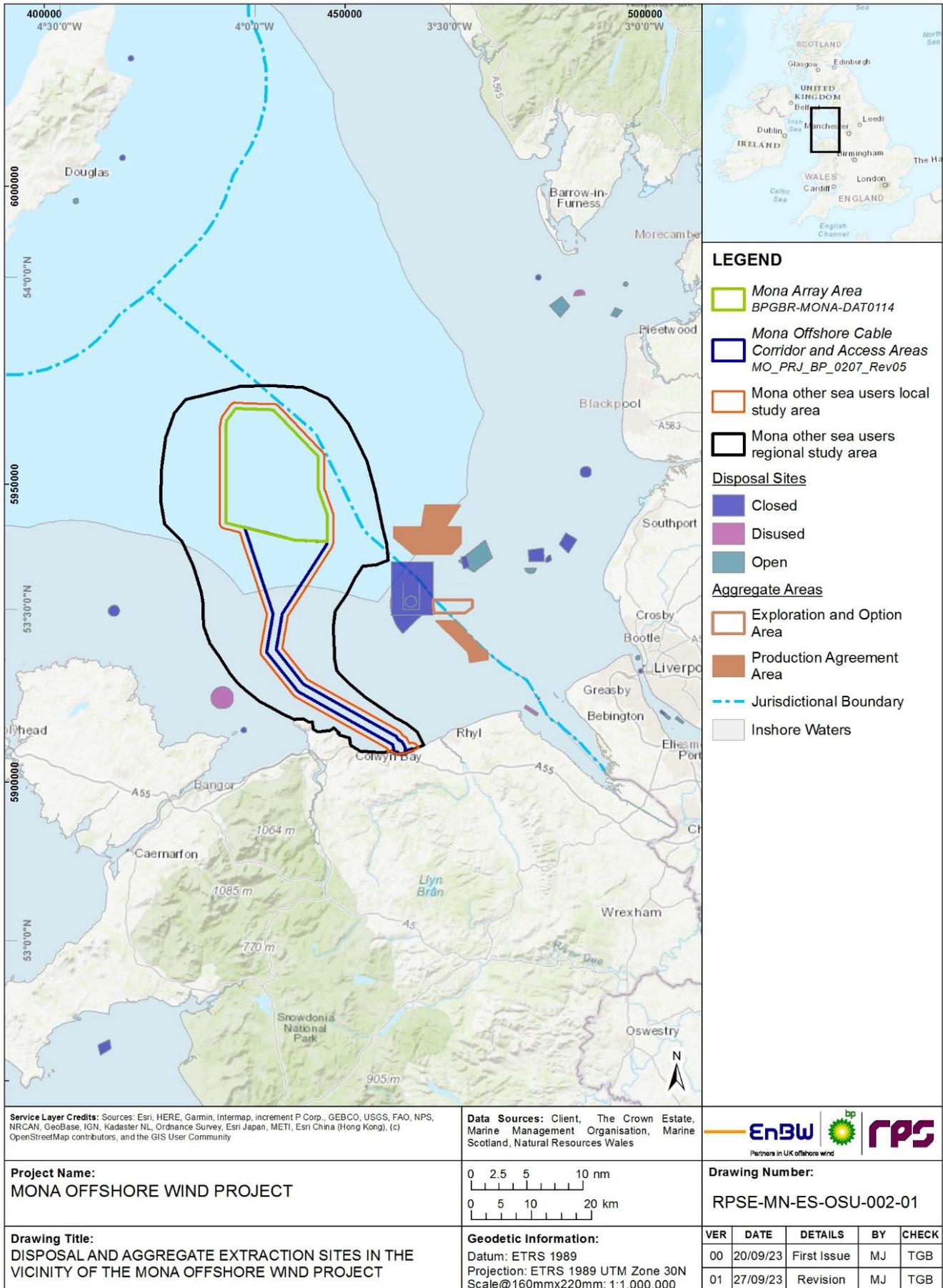


Figure 10.2: Marine aggregate extraction and disposal sites in the vicinity of the Mona Offshore Wind Project.

MONA OFFSHORE WIND PROJECT

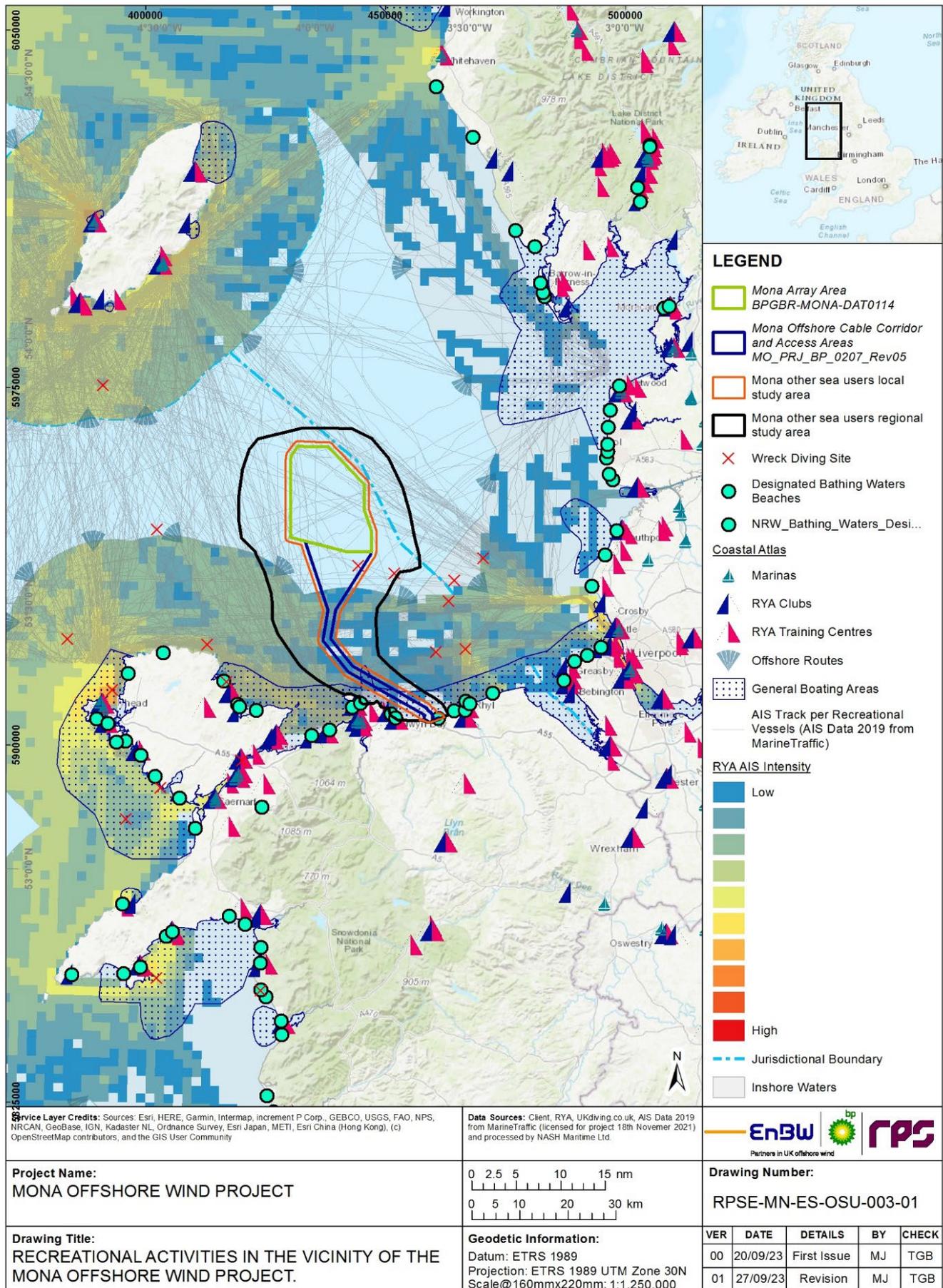


Figure 10.3: Recreational activities in the vicinity of the Mona Offshore Wind Project.

MONA OFFSHORE WIND PROJECT

Recreational dive sites

10.5.1.7 There are two wreck diving sites within the regional other sea users study area (Figure 10.3), including one within the Mona Offshore Cable Corridor and Access Areas near the southern boundary of the Mona Array Area.

Recreational bathing sites

10.5.1.8 There are four recreational bathing sites within the regional other sea users study area (Figure 10.3):

- Llandudno North Shore
- Colwyn Bay
- Colwyn Bay Porth Eirias
- Abergele (Pensarn) – this site overlaps with the Mona Offshore Cable Corridor and Access Areas.

10.5.2 Local other sea users study area

10.5.2.1 As stated in section 10.4.3, the local other sea users study area is relevant to the following types of receptor:

- Recreational receptors (including receptors carrying out activities such as sailing and motor cruising, recreational fishing and inshore water sports)
- Offshore energy receptors (including other offshore wind farms, oil and gas operations, CCS and underground gas storage)
- Cable operators.

Recreational sailing and motor cruising

10.5.2.2 Recreational sailing is generally divided into two categories: offshore and inshore. Offshore sailing is usually undertaken by yachts in the form of either cruising or organised offshore racing. Inshore sailing is typically undertaken by smaller vessels including dinghies and recreational vessels that are used for either cruising at leisure or racing. Cruising may include day trips between local ports and often includes a return journey to the home port on the same day. Inshore racing takes place around racing marks and navigational buoyage.

10.5.2.3 Navigational safety and risk to recreational vessels is considered in Volume 6, Annex 7.1: Navigational Risk Assessment (NRA) of the Environmental Statement. The other sea users Environmental Statement chapter considers receptors undertaking recreational sailing and motor cruising as an activity only. Data collection carried out to inform the NRA has been used as an additional data source to inform the other sea users assessment.

10.5.2.4 Figure 10.3 illustrates that there is low to moderate intensity recreational sailing and motor cruising in inshore areas of the local other sea users study area. The RYA data is limited to inshore waters, but Automatic Identification System (AIS) data tracks show that recreational vessels also transit through offshore waters within the local other sea users study area. Further context is provided in Volume 6, Annex 7.1: Navigational Risk Assessment (NRA) of the Environmental Statement. As described in the NRA, the Mona Array Area is characterised by relatively sparse recreational activity, with most recreational vessels transiting along the coast, particularly along the entrance to Liverpool, and around Holyhead, Douglas, and Rhyl. There are offshore cruising routes between Liverpool, Douglas, Menai Straights, and Morecambe Bay, running

MONA OFFSHORE WIND PROJECT

adjacent to the Mona Array Area. Relatively few yachts were recorded during the 2021/2022 vessel traffic surveys, with less than one per day during the summer survey and none recorded during the winter survey.

- 10.5.2.5 There is a higher intensity of recreational activity near the cable landfall. There is a general boating area overlapping with the southern section of the local other sea users study area, and several RYA clubs and training centres located in close proximity to the landfall.

Recreational fishing

- 10.5.2.6 Sea fishing trips run from Conwy, North Wales and specialise in wreck fishing, deep sea fishing and reef fishing from Anglesey to Liverpool Bay (Sea Fishing Trips in North Wales, 2022). Sea fishing trips also operate from the Isle of Man (Manx Sea Fishing, 2022) and Fleetwood, Lancashire (Blue Mink Boat Charters, 2022) amongst other ports along the coasts of the east Irish Sea.

- 10.5.2.7 North Wales is a popular destination for angling, with Conwy County hosting the World Shore Angling Championships (WSAC) in 2018. The three locations chosen to host the 2018 championships were Penmaenmawr, Colwyn Bay/Rhos-on-Sea and Llandudno.

Inshore water sports

- 10.5.2.8 Water sports such as kite surfing, surfing, wind surfing and kayaking occur almost entirely in coastal waters, usually within 1 nm of the shore. There are two water sports centres (PKS Watersports in Rhyl and Porth Eirias Water Sports Centre in Colwyn Bay) in the vicinity of the Mona Offshore Wind Project. Therefore, a variety of water sports including surfing, kayaking and windsurfing occur within the local other sea users study area.

Offshore energy receptors

Offshore wind farms

- 10.5.2.9 There are a number of existing and proposed offshore wind farms in the east Irish Sea, as shown in Figure 10.4 and listed in Table 10.10.

- 10.5.2.10 The closest operational offshore wind farm to the Mona Array Area is the Gwynt y Môr project, located 17.8 km south west from the Mona Array Area. The consented Awel y Môr project is located 13.5 km from the Mona Array Area, and the proposed Morecambe Offshore Windfarm and Morgan Offshore Wind Project are located 8.9 km and 11.1 km from the Mona Array Area respectively. The closest operational offshore wind farm to the Mona Offshore Cable Corridor and Access Areas is the Rhyl Flats project, located 3.8 km from the Mona Offshore Cable Corridor and Access Areas, with the consented Awel y Môr project located 3.5 km from the Mona Offshore Cable Corridor and Access Areas. The export cables for the Rhyl Flats and Gwynt y Môr offshore wind farms are located within the local other sea users study area (see paragraph 10.5.2.17). No other infrastructure associated with the existing or proposed offshore wind farms is located within the local other sea users study area.

- 10.5.2.11 Consultation with the operators of existing offshore wind farms in the east Irish Sea (see Table 10.5) has raised the potential for the Mona Offshore Wind Project wind turbines to affect wind distribution in relation to the Barrow, Burbo Bank, Burbo Extension, West of Duddon Sands, Walney 1 and 2 and Walney Extension offshore wind farms. The operators have highlighted that as a result of wind distribution (direction/speed) and project siting, the Mona Offshore Wind Project may produce a wake effect for other operational offshore wind farms, similar to the effects already

MONA OFFSHORE WIND PROJECT

experienced by the existing offshore wind farms on each other. These projects are all over 30 km from the Mona Array Area where the wind turbines will be located.

- 10.5.2.12 NPS EN-3 paragraph 2.8.44 recognises that offshore wind development will occur in or close to areas where there is other offshore infrastructure (see Table 10.1). The project boundary requirements in the Round 4 Information Memorandum (TCE, 2019) specified that no offshore wind projects could be located within 7.5 km of an existing offshore wind farm. As described in section 10.5.4, Figure 10.4 and Table 10.10, there are no other operational offshore wind farms located within 7.5 km of the Mona Array Area and therefore the Mona Offshore Wind Project location adheres to the TCE siting criteria. A recent study commissioned by TCE indicated that, for the non-site-specific scenarios modelled, potential wake effects level off with approximately 10 km separation between offshore wind farms, and for separations much larger than 20 km wake effects become vanishingly small (Frazer-Nash Consultancy Limited, 2023).
- 10.5.2.13 The Mona Array Area has been reduced following the statutory pre-application consultation, as described in Volume 1, Chapter 4: Site selection and consideration of alternatives of the Environmental Statement. This has increased the distance from the nearest existing operational wind farm by 4.0 km, and also increased the distance from a number of other operational wind farms, thereby reducing the potential for wake effects.
- 10.5.2.14 On the basis of the distances between the Mona Array Area and other operational wind farms, the potential for wake effects is not considered further.

MONA OFFSHORE WIND PROJECT

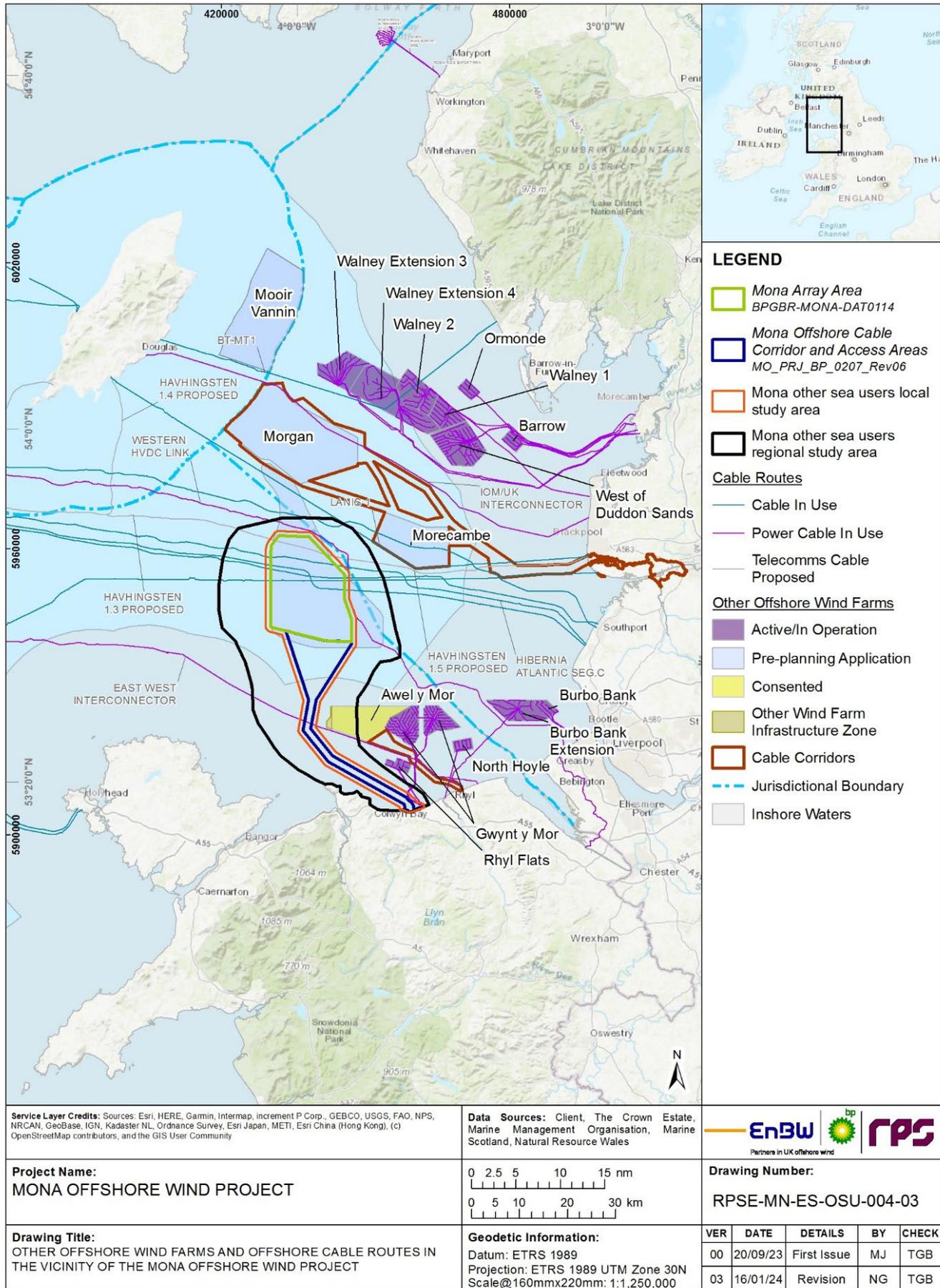


Figure 10.4: Other offshore wind farms and cables in the vicinity of the Mona Offshore Wind Project.

MONA OFFSHORE WIND PROJECT

10.5.2.15 Four bidding areas for leasing under TCE Offshore Wind Leasing Round 4 were released in September 2019, of which the Mona Offshore Wind Project is one. The other two from this leasing round in the Irish Sea, already mentioned above in paragraph 10.5.2.10, are the Morgan Offshore Wind Project (also being developed by a joint venture of bp Alternative Energy Investments Ltd and Energie Baden-Württemberg AG) and Morecambe Offshore Windfarm, being developed by Offshore Wind Ltd. (a joint venture between Cobra Instalaciones y Servicios, S.A. and Flotation Energy). Both the Morgan Offshore Wind Project and Morecambe Offshore Windfarm have been scoped into the Pathways to 2030 workstream under the Offshore Transmission Network Review (OTNR). The output of this process concluded that the Morgan Offshore Wind Project and Morecambe Offshore Windfarm should work collaboratively in connecting the wind farms to the National Grid at Penwortham in Lancashire. The proposed cable corridor is shown in Figure 10.4.

10.5.2.16 Within Isle of Man territorial waters, Ørsted submitted a scoping report for the proposed Moir Vannin project in October 2023.

Table 10.10: Offshore wind farms in the east Irish Sea.

Name	Capacity (MW)	Operator	Distance to Mona Array Area (km)	Distance to Mona Offshore Cable Corridor and Access Areas (km)
Operational				
Gwynt y Môr	576	RWE Renewables	17.8	9.9
Rhyl Flats	90	RWE Renewables	25.6	3.8
North Hoyle	60	RWE npower renewables	29.6	13.7
Burbo Bank Extension	259	Ørsted (Burbo Extension Ltd)	30.6	30.5
Walney Extension (3 and 4)	659	Ørsted (Walney Extension Limited)	30.7	51.8
West of Duddon Sands	389	Morecambe Wind Limited	31.9	42.5
Walney 2	184	Ørsted (Walney (UK) Offshore Windfarms Ltd).	34.1	48.2
Walney 1	184	Ørsted (Walney (UK) Offshore Windfarms Ltd).	35.4	48.2
Burbo Bank	90	Ørsted Burbo (UK) Limited	40.3	40.2
Barrow	90	Ørsted (Barrow Offshore Wind Ltd).	43.3	52.5
Ormonde	150	Ormonde Energy Ltd.	44.0	56.5
Round 4 projects				
Morecambe Offshore Windfarm	480	Offshore Wind Ltd.	8.9	21.5

MONA OFFSHORE WIND PROJECT

Name	Capacity (MW)	Operator	Distance to Mona Array Area (km)	Distance to Mona Offshore Cable Corridor and Access Areas (km)
Morgan Generation Assets	1,500	bp/EnBW	11.1	31.0
Consented				
Awel y Môr	1,100	RWE Renewables	13.5	3.5
Proposed				
Moor Vannin	1,400	Ørsted	34.5	59.9

Cables

10.5.2.17 There are nine active cables and one proposed cable which intersect the local other sea users study area. The details of these are contained in Table 10.11 and shown in Figure 10.4.

Table 10.11: Cables which intersect the local other sea users study area.

Name	Operator
Telecoms Cables	
ESAT-2	BT
Sirius South	Virgin Media
Rockabill	euNetworks
Hibernia Atlantic Segment A	Hibernia Atlantic
Hibernia Atlantic Segment C	Hibernia Atlantic
Havhingsten 1.5 (proposed)	Alcatel Submarine Networks
Power Cables	
East-West Interconnector	EirGrid
Western HVDC Link	National Grid and Scottish Power
Rhyl Flats export cable	RWE Renewables
Gwynt y Môr export cable	RWE Renewables

Oil and gas operations

10.5.2.18 Licences for the exploration and extraction of oil and gas on the UKCS have been offered since 1964 and are granted by the NSTA. These licences are granted for identified geographical United Kingdom Hydrographic Office (UKHO) areas (blocks and sub-blocks) in consecutive rounds. There are no licenced blocks overlapping with the local other sea users study area (Figure 10.5). The nearest licenced block is 7.7 km from the Mona Array Area (110/12a), currently licenced and operated by Eni UK Ltd.

10.5.2.19 The NSTA launched the 33rd Oil and Gas Licensing Round in October 2022, inviting applications for licences to explore and potentially develop 898 blocks and part-blocks, which may lead to over 100 licences being awarded. Two of these blocks overlap with the local other sea users study area (110/6 and 110/7b) (Figure 10.5).

MONA OFFSHORE WIND PROJECT

10.5.2.20 Figure 10.6 shows offshore oil and gas installations and pipelines in the vicinity of the Mona Offshore Wind Project. There are no offshore oil and gas platforms or pipelines within the local other sea users study area. The nearest offshore oil and gas platforms are the South Morecambe cluster to the northeast of the Mona Array Area, operated by Spirit Energy, and the Douglas cluster to the southeast of the Mona Array Area (including the Offshore Storage Installation (OSI), a barge which serves as a floating oil terminal), operated by Eni. Spirit Energy are planning to decommission all of the platforms in the South Morecambe cluster between 2027 and 2031, as part of the development of the Morecambe Net Zero Cluster.

CCS and underground gas storage

10.5.2.21 There are no CCS or underground gas storage projects within the local other sea users study area. Within the wider east Irish Sea, Spirit Energy plans to convert its depleted South Morecambe and North Morecambe gas fields and Barrow Terminals into the Morecambe Net Zero cluster, a CCS operation.

10.5.2.22 To the east of the Mona Array Area, Eni are planning to develop their own CCS project. In October 2020, the OGA awarded Eni a six-year appraisal licence which targets Eni's offshore fields in Liverpool Bay to be utilised as a permanent store for CO₂ (www.eni.com). The development is part of 'HyNet North West', a low carbon cluster project to help UK decarbonisation which also operates a CCS facility off the north coast of Wales (www.hynet.co.uk). The Eni CCS area is shown in Figure 10.6.

MONA OFFSHORE WIND PROJECT

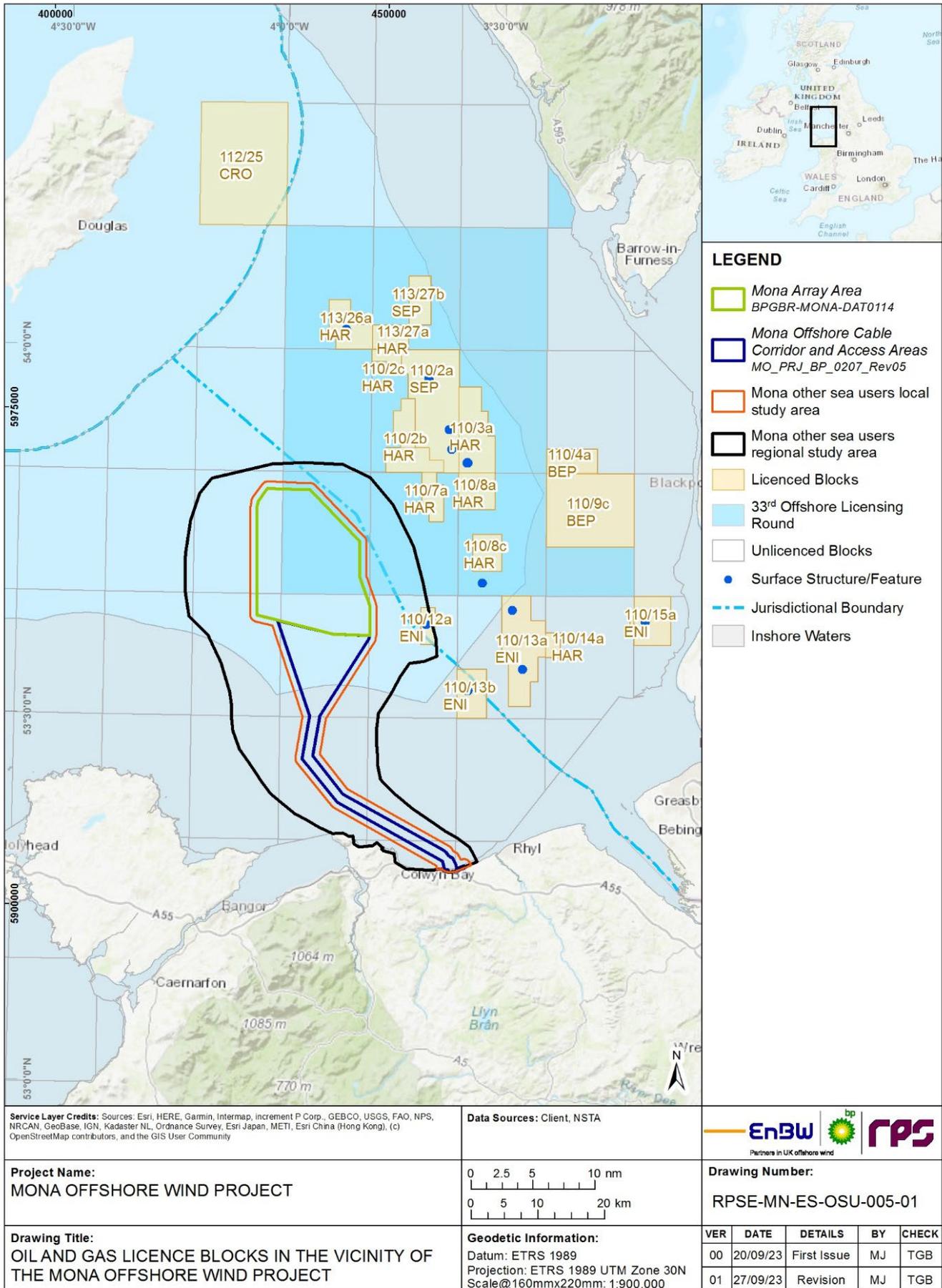


Figure 10.5: Oil and gas licence blocks in the vicinity of the Mona Offshore Wind Project.

MONA OFFSHORE WIND PROJECT

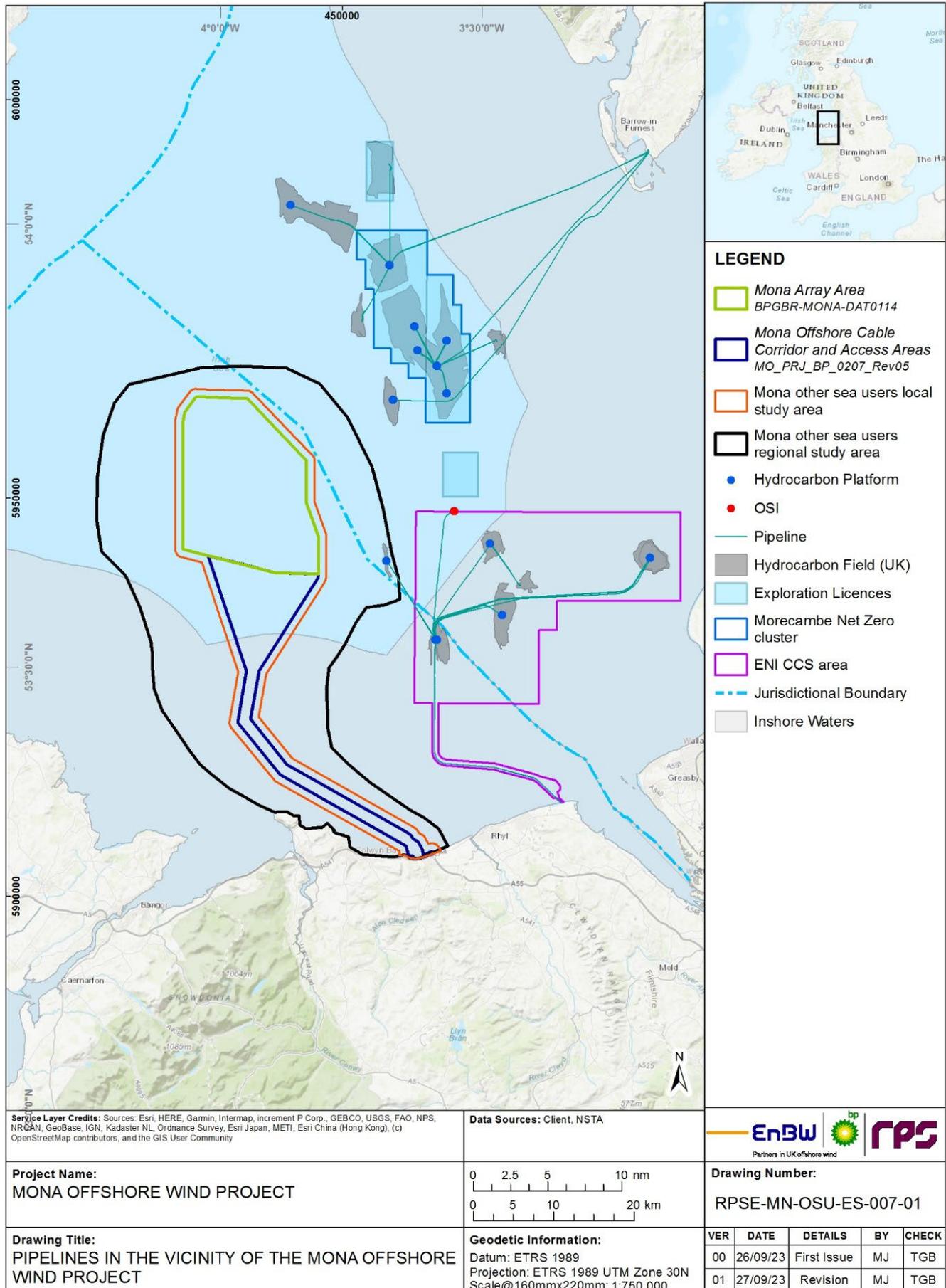


Figure 10.6: CCS and oil and gas activities in the vicinity of the Mona Offshore Wind Project.

MONA OFFSHORE WIND PROJECT

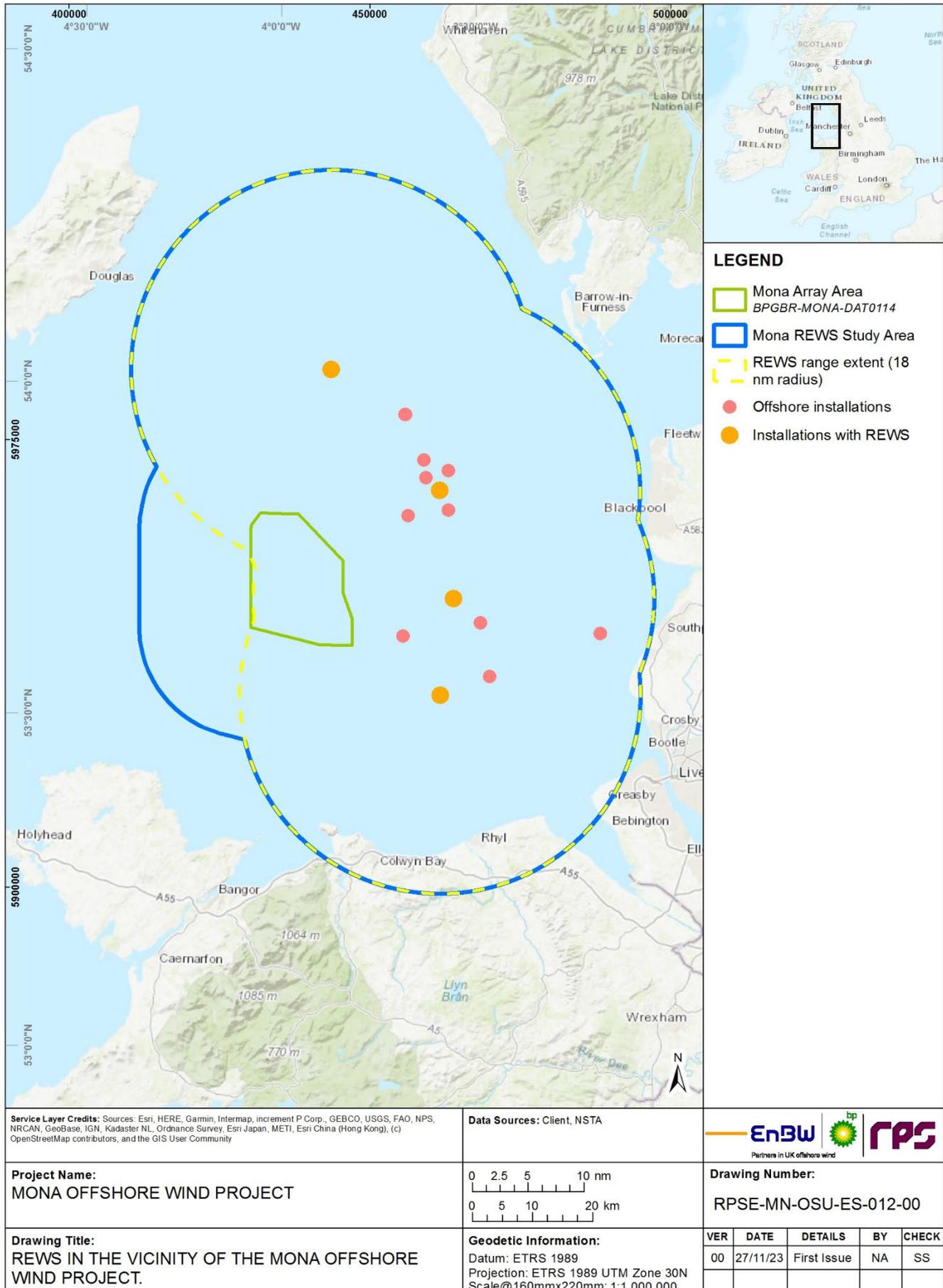


Figure 10.7: REWS in the vicinity of the Mona Offshore Wind Project.

10.5.3 Radar Early Warning Systems (REWS) study area

REWS

10.5.3.1 Radar Early Warning Systems (REWS) are a variety of early warning system used to prevent vessel collision with an offshore oil and gas platform. This system utilises radar mounted on a platform to detect and track vessels and provide collision warning when vessels are in breach of defined Closest Point of Approach (CPA) and Time to Closest Point of Approach (TCPA) parameters. When they reach a certain threshold, an alarm is triggered. This value is set in accordance with the platform operator's own performance standards and typically consists of an amber alert and a red alarm indicating when vessel intervention or emergency procedures are required. The REWS radar does not work in isolation, but together with other radar and AIS data to provide a field wide collision risk management system which protects the whole field. The REWS on one platform (and sometimes combined with the REWS on another platform) therefore protects a range of platforms.

10.5.3.2 The REWS located within the REWS study area are shown in Figure 10.8 together with the platforms that the REWS protect. REWS systems which may be within Line of Sight (LoS) of the Mona Array Area (considered to be a distance out to 35 km) include:

- Millom West platform operated by Harbour Energy
- Douglas platform operated by Eni UK Ltd.
- Offshore Storage Installation (OSI) operated by Eni UK Ltd.
- South Morecambe AP1 platform operated by Spirit Energy.

10.5.3.3 Consultation with Harbour Energy has confirmed that the Millom West platform is planned to be decommissioned and vessel access will be required from 2024 to approximately 2030. Spirit Energy are planning to decommission all of the platforms in the South Morecambe cluster between 2027 and 2031, as part of the development of the Morecambe Net Zero Cluster.

10.5.3.4 The technical information and modelling techniques and results informing the assessments are reported in Volume 6, Appendix 10.1: Radar Early Warning System and Microwave Communication Links technical report of the Environmental Statement.

Offshore microwave fixed communication links

10.5.3.5 Offshore microwave fixed links may be used to facilitate communications between offshore oil and gas platforms.

10.5.4 Future baseline scenario

10.5.4.1 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (Schedule 4) requires that "an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge" is included within the Environmental Statement. In the event that the Mona Offshore Wind Project does not come forward, an assessment of the future baseline conditions has been carried out and is described within this section.

10.5.4.2 The future baseline scenario for recreational activities is considered unlikely to change substantially from that presented in section 10.5, in the absence of the Mona Offshore Wind Project. The future baseline scenario for offshore wind projects has the potential

MONA OFFSHORE WIND PROJECT

to change over time as consented projects are constructed or as existing projects are repowered or decommissioned (which will be subject to the appropriate approvals at the time). The future baseline scenario for offshore cables and marine aggregates is subject to gradual change as new projects and sites are identified. The future baseline scenario for oil and gas activities and associated development (including platforms, wells and pipelines) as well as CCS has the potential to change over time depending on, for example, acquisitions, exploration and development and decommissioning as well as potential licence applications for CCS projects.

10.5.5 Data limitations

10.5.5.1 The data sources used in this chapter are detailed in Table 10.8. The data used is the most up to date publicly available information which can be obtained from the applicable data sources as cited, and data that has been provided through consultation as detailed in Table 10.5. The data is therefore limited by what is available and by what has been made available at the time of writing the Environmental Statement.

10.5.5.2 It is considered that the data employed in the assessment is of a robust nature and is sufficient for the purposes of the impact assessment presented.

10.6 Impact assessment methodology

10.6.1 Overview

10.6.1.1 The other sea users impact assessment has followed the methodology set out in Volume 1, Chapter 5: EIA methodology of the Environmental Statement. Specific to the other sea users impact assessment, the guidance documents listed in section 10.4.1 have also been considered.

10.6.2 Impact assessment criteria

10.6.2.1 The criteria for determining the significance of effects is a two-stage process that involves defining the magnitude of the impacts and the sensitivity of the receptors. This section describes the criteria applied in this chapter to assign values to the magnitude of potential impacts and the sensitivity of the receptors. The terms used to define magnitude and sensitivity are based on those which are described in further detail in Volume 1, Chapter 5: EIA methodology of the Environmental Statement.

10.6.2.2 The criteria for defining magnitude in this chapter are outlined in Table 10.12 below.

Table 10.12: Definition of terms relating to the magnitude of an impact.

Magnitude of impact	Definition
High	Total loss of ability to carry on activities and/or impact is of extended physical extent and/or long term duration (i.e. total life of project) and/or frequency of repetition is continuous and/or effect is not reversible for project phase (Adverse).
Medium	Loss or alteration to significant portions of key components of current activity and/or physical extent of impact is moderate and/or medium to long term duration (i.e. operations and maintenance phase) and/or frequency of repetition is medium to continuous and/or effect is not reversible for project phase (Adverse).
Low	Minor shift away from baseline, leading to a reduction in level of activity that may be undertaken and/or physical extent of impact is low and/or short to medium term duration (i.e. construction phase) and/or frequency of repetition is low to continuous and/or effect is not reversible for project phase (Adverse).

MONA OFFSHORE WIND PROJECT

Magnitude of impact	Definition
Negligible	Very slight change from baseline condition and/or physical extent of impact is negligible and/or short term duration (i.e. less than two years) and/or frequency of repetition is negligible to continuous and/or effect is reversible (Adverse).

10.6.2.3 The criteria for defining sensitivity in this chapter are outlined in Table 10.13 below.

Table 10.13: Definition of terms relating to the sensitivity of the receptor.

Sensitivity	Definition
Very High	Receptor or the activities of the receptor is of critical importance to the local, regional or national economy and/or the receptor or the activities of the receptor is highly vulnerable to impacts that may arise from the project and/or recoverability is long term or not possible.
High	Receptor or the activities of the receptor is of high value to the local, regional or national economy and/or the receptor or the activities of the receptor is generally vulnerable to impacts that may arise from the project and/or recoverability is slow and/or costly.
Medium	Receptor or the activities of the receptor is of moderate value to the local, regional or national economy and/or the receptor or the activities of the receptor is somewhat vulnerable to impacts that may arise from the project and/or has moderate to high levels of recoverability.
Low	Receptor or the activities of the receptor is of low value to the local, regional or national economy and/or the receptor or the activities of the receptor is not generally vulnerable to impacts that may arise from the project and/or has high recoverability.
Negligible	Receptor or the activities of the receptor is of negligible value to the local, regional or national economy and/or the receptor or the activities of the receptor is not vulnerable to impacts that may arise from the project and/or has high recoverability.

10.6.2.4 The significance of the effect upon other sea users is determined by correlating the magnitude of the impact and the sensitivity of the receptor. The particular method employed for this assessment is presented in Table 10.14. Where a range of significance of effect is presented in Table 10.14, the final assessment for each effect is based upon expert judgement.

10.6.2.5 For the purposes of this assessment, any effects with a significance level of minor or less have been concluded to be not significant in terms of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.

Table 10.14: Matrix used for the assessment of the significance of the effect.

Sensitivity of Receptor	Magnitude of Impact				
	No Change	Negligible	Low	Medium	High
Negligible	No change	Negligible	Negligible or Minor	Negligible or Minor	Minor
Low	No change	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate

MONA OFFSHORE WIND PROJECT

Sensitivity of Receptor	Magnitude of Impact				
	No Change	Negligible	Low	Medium	High
Medium	No change	Negligible or Minor	Minor	Moderate	Moderate or Major
High	No change	Minor	Minor or Moderate	Moderate or Major	Major
Very High	No change	Minor	Moderate or Major	Major	Major

10.7 Key parameters for assessment

10.7.1 Maximum Design Scenario

10.7.1.1 The Maximum Design Scenarios (MDSs) identified in Table 10.15 have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. These scenarios have been selected from the Project Design Envelope (PDE) provided in Volume 1, Chapter 3: Project description of the Environmental Statement. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within the PDE (e.g. different infrastructure layout), to that assessed here be taken forward in the final design scheme.

MONA OFFSHORE WIND PROJECT

Table 10.15: Maximum Design Scenario considered for the assessment of potential impacts on other sea users.

^a C=construction, O=operations and maintenance, D=decommissioning

Potential impact	Phase ^a			Maximum Design Scenario	Justification
	C	O	D		
Displacement of recreational activities	✓	✓	✓	<p>Construction phase</p> <ul style="list-style-type: none"> • Four year construction duration • Installation of up to 96 wind turbines with a minimum spacing of 1,400 m, up to four Offshore Substation Platforms (OSPs), up to 325 km inter-array cables with up to 67 cable crossings, up to 50 km of interconnector cables with up to 10 cable crossings, and up to 360 km of export cable with up to 24 cable crossings. • Construction safety zones: 500 m safety zones around wind turbines and OSPs during their construction. 50 m safety zone around each infrastructure during the construction phase where no construction works are taking place on that infrastructure (for example, where a wind turbine is incomplete or is in the process of being tested before commissioning). Rolling advisory clearance distances of 500 m around vessels installing inter-array cables, interconnector cables and subtidal export cables <ul style="list-style-type: none"> – Temporary restrictions to fishing activity and/or anchoring, will also be required in areas where full cable burial to target depth has not yet been achieved and/or surface-laid cable exists (prior to cover by external cable protection). In such areas of temporarily shallow buried/surface-laid cable, the restricted areas will be monitored by guard vessels • Construction vessels: Up to 2,055 installation vessel movements (return trips) during construction (521 main installation/support vessels, 74 tug/anchor handlers, 96 cable lay installation and support vessels, 68 guard vessels, 35 survey vessels, 43 seabed preparation vessels, 1,155 crew transfer vessels (CTVs), 41 scour protection installation vessels and 22 cable protection installation vessels). 	<p>The greatest amount of the largest infrastructure and associated minimum spacing and the greatest extent of safety zones and advisory clearance distances, over the longest construction, operations and maintenance, and decommissioning phases represents the greatest potential for displacement of recreational activities.</p>

MONA OFFSHORE WIND PROJECT

Potential impact	Phase ^a			Maximum Design Scenario	Justification
	C	O	D		
				<p>Operations and maintenance phase</p> <ul style="list-style-type: none"> • 35 year operations and maintenance duration • Presence of up to 96 wind turbines with a minimum spacing of 1,400 m and up to four OSPs • Operational safety zones: 500 m around infrastructure (e.g. wind turbines) during periods of major maintenance • Vessels: Up to a total of 21 operations and maintenance vessels on site at any one time (six CTVs/workboats, three jack-up vessels, four cable repair vessels, four service operation vessels (SOVS) or similar and four excavator/backhoe dredger). Up to 849 operations and maintenance vessel movements (return trips) each year (730 CTVs/workboats, 25 jack-up vessels, 8 cable repair vessels, 78 SOV or similar and 8 excavators/backhoe dredgers) • Cable repair/reburial activities: <ul style="list-style-type: none"> – Inter-array cables: repair of up to 10 km of cable in one event every three years. Reburial of up to 20 km of cable in one event every five years – Interconnector cables: repair of up to 16 km of cable in each of three events every 10 years. Reburial of up to 2 km of cable in one event every five years – Subtidal export cables: repair of up to 32 km of cable in eight events every five years. Reburial of up to 15 km of cable in one event every five years – Intertidal export cables: Repair of 1.6 km of intertidal cable per five years. <p>Decommissioning phase</p> <ul style="list-style-type: none"> • Removal of up to 96 wind turbines and up to four OSPs • Associated safety zones and advisory clearance distances, as per the construction phase • Decommissioning vessel movements. 	

MONA OFFSHORE WIND PROJECT

Potential impact	Phase ^a			Maximum Design Scenario	Justification
	C	O	D		
Increased SSCs and associated deposition affecting recreational diving and bathing sites	✓	✓	✓	<p>The MDS for potential increased SSCs and associated deposition is presented in full in Volume 2, Chapter 1: Physical processes of the Environmental Statement. A summary of the MDS is presented below.</p> <p>Construction phase</p> <ul style="list-style-type: none"> Four year construction duration <p><u>Site preparation:</u></p> <ul style="list-style-type: none"> Sandwave clearance activities undertaken over an approximate 12 month duration within the wider four year construction programme Wind turbines and OSP foundations: sandwave clearance may be required at up to 50% of locations, with a total spoil volume of 8,416,621 m³ and a volume of 247,548 m³ per location Inter-array cables: sandwave clearance along 163 km of cable length, with a total spoil volume of 4,188,876 m³ Interconnector cables: sandwave clearance along 30 km of cable length, with a total spoil volume of 432,000 m³ Offshore export cables: sandwave clearance along 72 km of export cable, with a total spoil volume of 1,504,000 m³ Removal of up to 46 km of disused cables. <p><u>Foundation installation:</u></p> <ul style="list-style-type: none"> Undertaken over an approximate 12 month duration Wind turbines: installation of 45 three-legged jacket piles, with maximum spoil volume of 2,107 m³ per pile Wind turbines: installation of 23 conical gravity base foundations, requiring dredging of a maximum area of 32,761 m² to a maximum depth of 10 m 	Parameters leading to the greatest increase in SSCs and associated deposition represent the greatest potential for impact on recreational diving and bathing sites. The justification for the MDS for potential increased SSCs and associated deposition is presented in full in Volume 2, Chapter 1: Physical processes of the Environmental Statement.

MONA OFFSHORE WIND PROJECT

Potential impact	Phase ^a			Maximum Design Scenario	Justification
	C	O	D		
				<ul style="list-style-type: none"> • OSPs: installation of one OSP with six legs with three piles per leg, with maximum spoil volume of 2,107 m³ per pile. • Two drilled piles installed concurrently at adjacent sites. <p><u>Cable installation:</u></p> <ul style="list-style-type: none"> • Inter-array cables: Installation via trenching of up to 325 km of cable, with a total spoil volume of 2,925,000 m³. Installed over a period of approximately 12 months • Interconnector cables: installation via trenching of up to 50 km of cable, with a total spoil volume of 225,000 m³. Installed over a period of approximately four months • Offshore export cables: installation via trenching of up to 360 km of cable, with a total spoil volume of 1,620,000 m³. Installed over a period of 15 months • Intertidal export cable: installation via trenchless techniques with breakout location offshore of Mean Low Water Springs (MLWS). <p>Operations and maintenance phase</p> <ul style="list-style-type: none"> • 35 year operations and maintenance duration • Inter-array cables: repair of up to 10 km of cable in one event every three years. Reburial of up to 20 km of cable in one event every five years • Interconnector cables: repair of up to 16 km of cable in each of three events every 10 years. Reburial of up to 2 km of cable in one event every five years • Offshore export cables: repair of up to 32 km of cable in eight events every five years. Reburial of up to 15 km of cable in one event every five years. 	

MONA OFFSHORE WIND PROJECT

Potential impact	Phase ^a			Maximum Design Scenario	Justification
	C	O	D		
				Decommissioning phase <ul style="list-style-type: none"> Scour and cable protection will remain <i>in situ</i>. If suction caissons are removed using the overpressure to release them then SSC will be temporarily increased Inter-array and interconnector cables will be removed and disposed of onshore Offshore export cables will be removed up to the cable installation exit pits and disposed of onshore. 	
Impacts to existing cables or restriction of access to cables or pipelines	✓	✓	✓	As for 'Displacement of recreational activities' – see above.	This represents the maximum extent of infrastructure and associated construction and maintenance activities in the vicinity of existing cables or pipelines.
Reduction or restriction of other offshore energy activities	✓	✓	✓	As for 'Displacement of recreational activities' – see above.	The greatest amount of the largest infrastructure and associated minimum spacing and the greatest extent of safety zones and advisory clearance distances, over the longest construction, operations and maintenance, and decommissioning period represents the greatest potential for reduction or restriction of other offshore energy activities.
Interference with the performance of REWS located on oil and gas platforms	×	✓	×	Operations and maintenance phase <ul style="list-style-type: none"> Presence of up to 96 wind turbines, with a rotor diameter of 250 m and minimum spacing 1,400 m. 4,000 m² total radar cross-section of OSPs. 	Parameters representing the greatest number of wind turbines with the greatest radar cross-section.
Potential impact of rerouted traffic on REWS alarm rates	×	✓	×	Operations and maintenance phase <ul style="list-style-type: none"> 35 year operations and maintenance duration Mona Array Area 300 km² Presence of up to 96 wind turbines, with a minimum spacing of 1,400 m and up to four OSPs. 	Parameters that represent the greatest potential to impact vessel routing (area and duration). Potential impact on vessel routing is fully discussed in Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement.

MONA OFFSHORE WIND PROJECT

10.8 Measures adopted as part of the Mona Offshore Wind Project

10.8.1.1 For the purposes of the EIA process, the term 'measures adopted as part of the project' is used to include the following measures (adapted from Institute of Environmental Management and Assessment (IEMA), 2016):

- Measures included as part of the project design. These include modifications to the location or design of the Mona Offshore Wind Project which are integrated into the application for consent. These measures are secured through the consent itself through the description of the development and the parameters secured in the DCO and/or marine licences (referred to as primary mitigation in IEMA, 2016)
- Measures required to meet legislative requirements, or actions that are generally standard practice used to manage commonly occurring environmental effects and are secured through the DCO requirements and/or the conditions of the marine licences (referred to as tertiary mitigation in IEMA, 2016).

10.8.1.2 A number of measures (primary and tertiary) have been adopted as part of the Mona Offshore Wind Project to reduce the potential for impacts on other sea users. These are outlined in Table 10.16 below. As there is a commitment to implementing these measures, they are considered inherently part of the design of the Mona Offshore Wind Project and have therefore been considered in the assessment presented in section 0 below (i.e. the determination of magnitude and therefore significance assumes implementation of these measures).

Table 10.16: Measures adopted as part of the Mona Offshore Wind Project.

Measures adopted as part of the Mona Offshore Wind Project	Justification	How the measure will be secured
Primary measures: Measures included as part of the project design		
<p>The Mona Offshore Wind Project intends to apply for a standard 500 m safety zone (as per the 2007 Safety Zone regulations cited in the justification column), around each of the wind turbines and OSPs whilst construction/decommissioning works are ongoing.</p> <p>Whilst no formal application for a safety zone around cable laying operations is possible under Section 95 of the Energy Act 2004, it is the Applicant's intention to propose rolling advisory clearance distances of up to 500 m around vessels installing export cables, inter-array cables and interconnector cables in the interests of the safety of all users of the sea, and to provide clearance of 500 m from laid cables until burial is confirmed in case of interaction with anchors or fishing gear.</p> <p>Safety zones of 50 m will be sought for incomplete structures where construction/decommissioning activity may be temporarily paused (and therefore the 500 m safety zone has lapsed).</p> <p>During the operations and maintenance phase a 500 m safety zone shall also be applied for around wind turbines and OSPs undergoing major maintenance.</p>	<p>Safety zones are established in the interests of safety to other sea users receptors, in accordance with The Electricity (Offshore Generating Stations) (Safety Zones) (Application Procedures and Control of Access) Regulations 2007.</p>	<p>This is applied for in the Safety Zone Statement (Document Reference J6) submitted as part of the Mona Offshore Wind Project Application.</p>
Tertiary measures: Measures required to meet legislative requirements, or adopted standard industry practice		

MONA OFFSHORE WIND PROJECT

Measures adopted as part of the Mona Offshore Wind Project	Justification	How the measure will be secured
Where the Mona Offshore Wind Project cables will be required to cross an active cable, it is intended that a commercial 'crossing agreement' will be entered into with the cable operator. This is a formal arrangement that establishes the responsibilities and obligations of both parties and allows operations to be managed safely.	To reduce potential conflict at cable crossing locations. Where a cable is inactive, the Applicant will consult with the cable operator to ascertain if such a crossing agreement is required.	In line with standard industry practice, crossing agreements will be negotiated and agreed with operators as required.
Proximity agreements will be established with relevant cable operators, to minimise the potential for any impact in accordance with recognised industry good practice.	This will ensure close communication and planning between both parties to ensure disruption of activities is minimised.	In line with standard industry practice, proximity agreements will be negotiated and agreed with operators as required.
Promulgation of information advising on the nature, timing and location of activities, including through Notices to Mariners.	To ensure other sea users receptors are aware of operations associated with the Mona Offshore Wind Project.	Secured within the deemed marine licence (dML) of the draft DCO (Document Reference C1) and expected to be secured within the standalone NRW marine licence.
Development of an adherence to an Aids to Navigation Management Plan (AtoNMP) and site charting to ensure adequate navigational markers (including lighting), in accordance with the most recent relevant industry guidance and agreed prior to commencement of offshore construction.	To ensure other sea users receptors are aware of the location of the infrastructure associated with the Mona Offshore Wind Project.	AtoNMP and site charting secured within the deemed marine licence of the draft DCO (Document Reference C1) and expected to be secured within the standalone NRW marine licence.
Consultation with other offshore energy operators to promote and maximise cooperation between parties and minimise both spatial and temporal interactions between conflicting activities.	Continued consultation with other offshore energy operators will ensure relevant parties are kept informed of planned activities in order to minimise disruption to either party's operations and to maximise coexistence.	In line with standard industry practice.
Development and adherence to an Offshore Construction Method Statement (OCMS) which includes a Cable Specification and Installation Plan (CSIP) and details of cable monitoring and cable protection.	To ensure that the cable remains secure, is not a hazard to other sea users and does not risk becoming exposed and damaged by tidal currents.	OCMS and CSIP secured within the dML of the draft DCO (Document Reference C1) and expected to be secured within the standalone NRW marine licence.

10.8.1.3 Where significant effects have been identified, further mitigation measures (referred to as secondary mitigation in IEMA, 2016) have been identified to reduce the significance of effect to acceptable levels following the initial assessment. These are measures that could further prevent, reduce and, where possible, offset any adverse effects on the environment. These measures are set out, where relevant, in section 10.9 below.

MONA OFFSHORE WIND PROJECT

10.9 Assessment of significant effects

10.9.1 Overview

- 10.9.1.1 The impacts of the construction, operations and maintenance, and decommissioning phases of the Mona Offshore Wind Project have been assessed on other sea users. The potential impacts arising from the construction, operations and maintenance, and decommissioning phases of the Mona Offshore Wind Project are listed in Table 10.15, along with the MDS against which each impact has been assessed.
- 10.9.1.2 A description of the potential effect on other sea users receptors caused by each identified impact is given below.

10.9.2 Displacement of recreational activities

- 10.9.2.1 Construction, operations and maintenance, and decommissioning of the wind turbines, foundations, OSPs and cables may lead to the displacement of recreational activities such as sailing and motor cruising, recreational fishing and inshore water sports. The MDS is represented by the greatest amount of the largest infrastructure and associated minimum spacing, and the greatest extent of safety zones and advisory clearance distances, over the longest construction, operations and maintenance, and decommissioning phases. This is summarised in Table 10.15.

Construction phase

Magnitude of impact

- 10.9.2.2 The installation of infrastructure and the presence of safety zones and advisory clearance distances may result in the displacement of recreational activities from the Mona Array Area and along the Mona Offshore Cable Corridor and Access Areas.
- 10.9.2.3 The Mona Offshore Wind Project may be constructed over a period of up to four years. The spatial extent of the Mona Array Area is 300 km². There is also potential for safety zones and clearance distances to extend 500 m beyond this area. The impact of safety zones and advisory clearance distances is mostly reversible as once each structure has been installed and commissioned these will be removed. The spatial extent of the potential impact will be relatively small in the context of the available sailing and recreational fishing area in the east Irish Sea, with the potential for localised displacement of recreational craft from the individual safety zones and advisory clearance distances.
- 10.9.2.4 The Mona Array Area is 28.8 km from the nearest coastline (Anglesey), and accordingly the level of recreational activity within the Mona Array Area is considered to be low (see section 10.5.2). The frequency of impact within the Mona Array Area is therefore considered to be low.
- 10.9.2.5 There is low to moderate recreational sailing and motor cruising activity in the inshore area of the Mona Offshore Cable Corridor and Access Areas, with a general boating area and water sports clubs in the vicinity. There is the potential for temporary loss of recreational resource during nearshore/inshore cable installation activities.
- 10.9.2.6 Underwater sound associated with the construction of the Mona Offshore Wind Project has the potential to affect fish and shellfish, which subsequently has the potential to impact upon recreational fishing. Further information on underwater sound is presented in Volume 5, Annex 3.1: Underwater sound technical report of the Environmental Statement. Potential impacts on fish and shellfish behaviour associated

MONA OFFSHORE WIND PROJECT

with underwater sound have been assessed as minor adverse following mitigation in Volume 2, Chapter 3: Fish and shellfish ecology of the Environmental Statement.

- 10.9.2.7 The impact is predicted to be of local spatial extent, short to medium term duration, intermittent and low (Mona Array Area)/high (Mona Offshore Cable Corridor and Access Areas) reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **low**.

Sensitivity of the receptor

- 10.9.2.8 As described in section 10.5.2, the level of recreational activity within the Mona Array Area is considered to be low, and there is low to moderate intensity recreational activity in the vicinity of the Mona Offshore Cable Corridor and Access Areas.

- 10.9.2.9 Recreational vessels are able to alter their route, dependent on the target destination. Notices to Mariners will be promulgated regularly during the construction phase, advising of the location and nature of construction works, and information and notices will be posted at the landfall location, ensuring that recreational activities can be planned accordingly. There are other locations available for sailing and fishing in the east Irish Sea and along the north Wales coastline such that alternatives are available if required during the construction phase.

- 10.9.2.10 The receptor is deemed to be of low vulnerability, high recoverability and low value. The sensitivity of the receptor is therefore, considered to be **low**.

Significance of the effect

- 10.9.2.11 Overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

Operations and maintenance phase

Magnitude of impact

- 10.9.2.12 The presence of infrastructure, including wind turbines and OSPs, and safety zones and advisory clearance distances associated with maintenance works, may result in the displacement of recreational craft and recreational fishing vessels.

- 10.9.2.13 The Mona Offshore Wind Project will be operational for up to 35 years. The spatial extent of the Mona Array Area is 300 km², and there is also potential for temporary 500 m safety zones and advisory clearance distances around infrastructure such as wind turbines during periods of major maintenance. As described in paragraph 10.9.2.3, the spatial extent of the potential impact will be relatively small in the context of the available sailing and recreational fishing area in the east Irish Sea, with the potential for localised displacement of recreational craft.

- 10.9.2.14 The Mona Array Area is 28.8 km from the nearest coastline (Anglesey), and accordingly the level of recreational activity within the Mona Array Area is considered to be low (see section 10.5.2). The frequency of impact within the Mona Array Area is therefore considered to be low.

- 10.9.2.15 There is low to moderate recreational sailing and motor cruising activity in the inshore area of the Mona Offshore Cable Corridor and Access Areas, with a general boating area and water sports clubs in the vicinity. There is potential for temporary loss of recreational resource during nearshore/inshore cable repair or reburial activities.

- 10.9.2.16 For the Mona Array Area, the impact is predicted to be of local spatial extent, long term duration, continuous and low reversibility over the operations and maintenance phase.

MONA OFFSHORE WIND PROJECT

It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **low**.

- 10.9.2.17 For the Mona Offshore Cable Corridor and Access Areas, the impact is predicted to be of local spatial extent, short term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **low**.

Sensitivity of receptor

- 10.9.2.18 As described in section 10.5.2, the level of recreational activity within the Mona Array Area is considered to be low, and there is low to moderate intensity recreational activity in the vicinity of the Mona Offshore Cable Corridor and Access Areas.

- 10.9.2.19 Recreational vessels will be able to access and transit through the Mona Array Area during the operations and maintenance phase, if deemed safe to do so by the vessel master. If required, recreational vessels are able to alter their route, dependent on the target destination. Notices to Mariners will be promulgated during the operations and maintenance phase, advising of the location and nature of major maintenance works, and information and notices will be posted at the landfall location, ensuring that recreational activities can be planned accordingly. There are other locations available for sailing and fishing in the east Irish Sea and along the north Wales coastline such that alternatives are available if required during the operations and maintenance phase.

- 10.9.2.20 The receptor is deemed to be of low vulnerability, high recoverability and low value. The sensitivity of the receptor is therefore, considered to be **low**.

Significance of effect

- 10.9.2.21 Overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

Decommissioning phase

Significance of effect

- 10.9.2.22 The effects of decommissioning activities are expected to be the same or similar to the effects from construction. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

10.9.3 Increased SSCs and associated deposition affecting recreational diving and bathing sites

- 10.9.3.1 Construction, operations and maintenance, and decommissioning of the wind turbines, OSPs and cables have the potential to increase SSCs, affecting recreational diving and bathing sites. The MDS is represented by the maximum volume of sediment disturbed and is summarised in Table 10.15.

Construction phase

Magnitude of impact

- 10.9.3.2 Installation of infrastructure within the Mona Array Area and the Mona Offshore Cable Corridor and Access Areas has the potential to increase SSCs and associated sediment deposition within the regional other sea users study area, affecting recreational diving and bathing sites. Volume 2, Chapter 1: Physical processes of the

MONA OFFSHORE WIND PROJECT

Environmental Statement considers potential elevations in SSC and deposition to the seabed arising from Mona Offshore Wind Project construction phase activities.

10.9.3.3 There is potential that sediment plumes from resuspended sediment could impact recreational dive sites and bathing sites through changes to water quality. Recreational dive sites and bathing sites would only be affected if the amount of fine sediments suspended in the water or settling in the area are significantly above any background levels or contain any contaminants which would not usually be expected in the area. As described in Volume 2, Chapter 1: Physical processes of the Environmental Statement, it is anticipated that any deposited fine sediments would be subject to redistribution under the prevailing coastal processes.

10.9.3.4 The impact is predicted to be of regional spatial extent, short term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **low**.

Sensitivity of receptor

10.9.3.5 As shown in Figure 10.3, there are two known recreational dive sites located within the regional other sea users study area, including one site within the Mona Offshore Cable Corridor and Access Areas. There are four recreational bathing sites within the regional other sea users study area, including one (Abergele) within the Mona Offshore Cable Corridor and Access Areas. These sites may be impacted by an increase in SSCs in the short term, although it is anticipated that any deposited fine sediments would be subject to redistribution under the prevailing coastal processes. Figure 10.3 shows other recreational diving and bathing sites in the east Irish Sea region which may provide alternatives during activities resulting in elevated SSCs, depending on sea conditions and water depth.

10.9.3.6 Notices to Mariners will be promulgated regularly during the construction phase, advising of the location and nature of construction works, and information and notices will be posted at the landfall location, ensuring that recreational activities can be planned accordingly.

10.9.3.7 The receptor is deemed to be of moderate vulnerability, moderate recoverability, and low value. The sensitivity of the receptor is therefore, considered to be **low**.

Significance of effect

10.9.3.8 Overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

Operations and maintenance phase

Magnitude of impact

10.9.3.9 Cable repair and reburial activities within the Mona Array Area and the Mona Offshore Cable Corridor and Access Areas has the potential to increase SSCs and associated sediment deposition within the regional other sea users study area, affecting recreational diving and bathing sites. Volume 2, Chapter 1: Physical processes of the Environmental Statement considers potential elevations in SSC and deposition to the seabed arising from Mona Offshore Wind Project operations and maintenance phase activities.

10.9.3.10 Any suspended sediments and associated deposition will be of the same magnitude as, or lower than, that assessed for the construction phase. For the purposes of this assessment, the impacts of the operations and maintenance phase activities (i.e. cable

MONA OFFSHORE WIND PROJECT

repair and reburial) are predicted to be no greater than those for construction, as set out above. It is anticipated that any deposited fine sediments would be subject to redistribution under the prevailing coastal processes.

- 10.9.3.11 The impact is predicted to be of local spatial extent, short term duration, intermittent and high reversibility. The magnitude is therefore, considered to be **negligible**.

Sensitivity of receptor

- 10.9.3.12 As described in paragraph 10.9.3.5, there are two known recreational dive sites and four recreational bathing sites within the regional other sea users study area. These sites may be impacted by an increase in SSCs in the short term, although it is anticipated that any deposited fine sediments would be subject to redistribution under the prevailing coastal processes. There are other recreational diving and bathing sites in the east Irish Sea region which may provide alternatives during activities resulting in elevated SSCs, depending on sea conditions and water depth.

- 10.9.3.13 Notices to Mariners will be promulgated regularly during the operations and maintenance phase, advising of the location and nature of any maintenance works, and information and notices will be posted at the landfall location, ensuring that recreational activities can be planned accordingly.

- 10.9.3.14 The receptor is deemed to be of moderate vulnerability, moderate recoverability and low value. The sensitivity of the receptor is therefore considered to be **low**.

Significance of effect

- 10.9.3.15 Overall, the magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of **negligible** significance, which is not significant in EIA terms.

Decommissioning phase

Significance of effect

- 10.9.3.16 The effects of decommissioning activities are expected to be the same or similar to the effects from construction. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

10.9.4 Impacts to existing cables or restriction of access to cables or pipelines

- 10.9.4.1 Construction, operations and maintenance, and decommissioning of wind turbines, OSPs and cables may lead to impacts on existing cables, or restriction of access to cables and pipelines. The MDS is represented by the greatest amount of the largest infrastructure and associated minimum spacing and the greatest extent of safety zones and advisory clearance distances, over the longest construction, operations and maintenance, and decommissioning phases. This is summarised in Table 10.15.

Construction phase

Magnitude of impact

- 10.9.4.2 The installation of infrastructure and presence of associated safety zones and advisory clearance distances during the Mona Offshore Wind Project construction phase may impact upon existing cables or restrict access to existing cables and pipelines. The impact of safety zones is mostly reversible as once each structure has been installed and commissioned these will be removed.

MONA OFFSHORE WIND PROJECT

- 10.9.4.3 There are nine active cables and one proposed cable within the local other users study area (see section 10.5.2). The MDS includes for a number of cable crossings within the Mona Array Area and in the Mona Offshore Cable Corridor and Access Areas, as set out in Table 10.15. There are no pipelines within the local other sea users study area.
- 10.9.4.4 Cable crossing and proximity agreements will be established with relevant cable operators and will include the ability of a cable operator to access their infrastructure during the construction of the Mona Offshore Wind Project as far as practical.
- 10.9.4.5 The impact is predicted to be of local spatial extent, short to medium term duration, intermittent and medium reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **low**.

Sensitivity of receptor

- 10.9.4.6 Restriction of access to an active cable for inspection and maintenance activities could be critical to the operator of that cable. However, crossing and proximity agreements are common across the UKCS and there are established mechanisms for controlling the level of impact to both parties, in the form of the ICPC Recommendation 3-10 C guidance. No active pipelines exist within the local other sea users study area.
- 10.9.4.7 The receptor is deemed to be of moderate vulnerability, moderate recoverability and high value. The sensitivity of the receptor is therefore, considered to be **medium**.

Significance of effect

- 10.9.4.8 Overall, the magnitude of the impact is deemed to be **low** and the sensitivity of the receptor is considered to be **medium**. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

Operations and maintenance phase

Magnitude of impact

- 10.9.4.9 The presence and maintenance of infrastructure and associated safety zones and advisory clearance distances during the Mona Offshore Wind Project operations and maintenance phase may impact upon existing cables or restrict access to existing cables and pipelines. The impact of safety zones is mostly reversible as following the completion of any maintenance works these will be removed.
- 10.9.4.10 As described in paragraph 10.9.4.3, there are nine active cables and one proposed cable within the local other users study area, and the MDS includes for a number of cable crossings within the Mona Array Area and in the Mona Offshore Cable Corridor and Access Areas.
- 10.9.4.11 Cable crossing and proximity agreements will be established with relevant cable operators, to minimise the potential for any impact in accordance with recognised industry good practice. These agreements will ensure close communication and planning between both parties to ensure disruption of activities is minimised.
- 10.9.4.12 Loss of access to cables associated with any temporary safety zones during the operations and maintenance phase is considered to be limited in extent and infrequent. Loss of access to cables associated with the presence of structures would be considered in the crossing/proximity agreements to the extent that such a scenario would not be an impediment to operations.

MONA OFFSHORE WIND PROJECT

10.9.4.13 The impact is predicted to be of local spatial extent, short term duration, intermittent and medium reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore considered to be **low**.

Sensitivity of receptor

10.9.4.14 Restriction of access to an active cable for inspection and maintenance activities could be critical to the operator of that cable. However, crossing and proximity agreements are common across the UKCS and there are established mechanisms for controlling the level of impact to both parties in the form of the ICPC Recommendation 3-10 C guidance.

10.9.4.15 Major maintenance activities associated with the Mona Offshore Wind Project will be publicised via Notices to Mariners. The terms of the crossing and proximity agreements will ensure communication between both parties and that loss of access is minimised.

10.9.4.16 The receptor is deemed to be of moderate vulnerability, moderate recoverability and high value. The sensitivity of the receptor is therefore, considered to be **medium**.

Significance of effect

10.9.4.17 Overall, the magnitude of the impact is deemed to be **low** and the sensitivity of the receptor is considered to be **medium**. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

Decommissioning phase

Significance of effect

10.9.4.18 The effects of decommissioning activities are expected to be the same or similar to the effects from construction. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

10.9.5 Reduction or restriction of other offshore energy activities

10.9.5.1 The construction, operations and maintenance, and decommissioning of wind turbines, OSPs and cables may lead to the reduction or restriction of other offshore energy activities in the local other sea users study area. The MDS is represented by the greatest amount of the largest infrastructure and associated minimum spacing, and the greatest extent of safety zones and advisory clearance distances, over the longest construction, operations and maintenance and decommissioning phases. This is summarised in Table 10.15.

Construction phase

Magnitude of impact

10.9.5.2 Installation of the wind turbines, OSPs and cables may lead to the reduction or restriction of other offshore energy activities in the local other sea users study area. Such activities may include surveys, drilling or vessel access to infrastructure for maintenance or decommissioning.

10.9.5.3 Installation of the Mona Offshore Wind Project and the presence of safety zones and advisory clearance distances may reduce or restrict the ability to carry out seismic surveys and drilling within the offered blocks overlapping the local other users study area (110/6 and 110/7b). As infrastructure is installed, the area available for seismic surveys and drilling will be restricted, and the presence of safety zones and advisory clearance distances around infrastructure and vessels may also further restrict the

MONA OFFSHORE WIND PROJECT

ability to use certain alternative survey methods. The impact of safety zones and advisory clearance distances is mostly reversible as once each structure has been installed and commissioned these will be removed. As shown in Figure 10.5, there is still area available within these blocks for survey and drilling activities.

10.9.5.4 As shown on Figure 10.5 and Figure 10.6, there is no other infrastructure associated with any other offshore energy project within the local other sea users study area, such that vessel access is not anticipated to be restricted to any existing offshore energy asset.

10.9.5.5 The impact is predicted to be of local spatial extent, short to medium term duration, intermittent and low reversibility over the construction phase. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **low**.

Sensitivity of receptor

10.9.5.6 As shown in Figure 10.5, there are no currently licenced blocks within the local other sea users study area. There is potential for activity in blocks licenced in the future, for example through the 33rd Oil and Gas Licensing Round, but the assessment of the potential impacts on those receptors is complicated by a degree of uncertainty as these blocks have not yet been awarded.

10.9.5.7 Continued consultation with other offshore energy operators as described in Table 10.16 will ensure relevant parties are kept informed of planned activities in order to minimise both spatial and temporal interactions between conflicting activities and maximise coexistence.

10.9.5.8 The receptor is deemed to be of negligible vulnerability, moderate recoverability and negligible value. The sensitivity of the receptor is therefore, considered to be **negligible**.

Significance of effect

10.9.5.9 Overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be negligible. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

Operations and maintenance phase

Magnitude of impact

10.9.5.10 The presence of wind turbines, OSPs and any temporary safety zones or advisory safety distances associated with maintenance activities may lead to the reduction or restriction of other offshore energy activities in the local other sea users study area. As described in paragraph 10.9.5.3, the presence of the Mona Offshore Wind Project and any safety zones and advisory clearance distances associated with maintenance activities may reduce or restrict the ability to carry out seismic surveys and drilling within the offered blocks overlapping the local other sea users study area during the operations and maintenance phase. The area available for seismic surveys and drilling will be restricted. As described in paragraph 10.9.5.3, there is still area available within these blocks for survey and drilling activities.

10.9.5.11 As shown on Figure 10.5 and Figure 10.6, there is no other infrastructure associated with any other offshore energy project within the local other sea users study area, such that vessel access is not anticipated to be restricted to any existing offshore energy asset.

MONA OFFSHORE WIND PROJECT

10.9.5.12 The impact is predicted to be of local spatial extent, long term duration, continuous and of low reversibility over the operations and maintenance phase. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **low**.

Sensitivity of receptor

10.9.5.13 As shown in Figure 10.5, there are no currently licenced blocks within the local other sea users study area. There is potential for activity in blocks licenced in the future, for example through the 33rd Oil and Gas Licensing Round, but the assessment of the potential impact on those receptors is complicated by a degree of uncertainty as these blocks have not yet been awarded.

10.9.5.14 Continued consultation with other offshore energy operators as described in Table 10.16 will ensure relevant parties are kept informed of planned activities in order to minimise both spatial and temporal interactions between conflicting activities and maximise coexistence.

10.9.5.15 The receptor is deemed to be of negligible vulnerability, moderate recoverability and negligible value. The sensitivity of the receptor is therefore, considered to be **negligible**.

Significance of effect

10.9.5.16 Overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be negligible. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

Decommissioning phase

Significance of effect

10.9.5.17 The effects of decommissioning activities are expected to be the same or similar to the effects from construction. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

10.9.6 Interference with the performance of REWS located on oil and gas platforms

10.9.6.1 Radar Early Warning Systems (REWS) located on offshore oil and gas platforms use radar returns to monitor and track vessels navigating in the vicinity of offshore oil and gas platforms within the detection region. The REWS will alert the operator when a proximity violation or an allision threat is detected.

10.9.6.2 During the operations and maintenance phase of the Mona Offshore Wind Project, wind turbines and offshore structures within the LoS of the REWS could interfere with radar performance and degrade the ability of the REWS to distinguish between wind turbines and associated offshore structures and returns from targets of interest. If the REWS is unable to detect and track vessels within the Mona Array Area, it may cause the REWS to issue delayed Time to Closest Point of Approach (TCPA) alarms, resulting in insufficient response times to deal with potential allision threats.

10.9.6.3 The MDS is represented by the maximum dimensions of the wind turbines. This is summarised in Table 10.15. A summary of the MDS parameters applied to the REWS modelling assessment reported in this section is provided in Volume 6, Annex 10.1: Radar Early Warning System and Microwave Communication Links technical report of the Environmental Statement.

Operations and maintenance phase

Magnitude of impact

- 10.9.6.4 The Mona Offshore Wind Project will be operational for up to 35 years. There are four REWS located on offshore oil and gas platforms within the REWS study area, operated by Eni, Harbour Energy and Spirit Energy to monitor and protect their assets. The region has a number of regular vessels travelling along routes passing through the area. The potential impact of offshore wind farms on REWS may arise from a number of factors such as high radar returns from the wind turbines and associated offshore structures, increased number of detections, false alarm/track generation and potential masking other targets in the area.
- 10.9.6.5 To establish the potential impact of the Mona Offshore Wind Project on REWS installed in the REWS study area (and the ability of REWS to detect vessels within the vicinity of the Mona Array Area), a modelling assessment has been undertaken. The technical information, modelling techniques and results from this analysis are reported in full in Volume 6, Annex 10.1: Radar Early Warning System and Microwave Communication Links technical report of the Environmental Statement. A summary of the findings is provided in this section.
- 10.9.6.6 The results from the REWS modelling indicate that the raw, single scan detection performance of the REWS due to the presence of the Mona Offshore Wind Project will be affected adversely within the wind farm regions. Radar detection of vessels travelling within the Mona Array Area may be lost temporarily as they move close to the modelled turbines located within the radar range. The loss of detection is mainly caused by the elevated threshold levels due to the presence of the wind turbines, while a small number of losses are expected to occur due to shadowing.
- 10.9.6.7 The results show that at close ranges, the REWS easily detects a test vessel as the returns are above the detection threshold. Once the vessel is travelling within the nearby wind farm, the raised threshold over the cells around each wind turbine can cause loss of detection. This effect, in combination with the shadowing effects, may cause the REWS to lose tracks of the vessels.
- 10.9.6.8 Typically, in terms of tracking vessels within the wind farm, tracker software is expected to compensate for most of the detection losses of the vessels. Additionally, the integration of AIS data with the REWS provides an alternative source of vessel information and location which can complement the data when temporary radar losses are experienced. Therefore, the impact of the Mona Offshore Wind Project in isolation on nearby REWS installations is expected to be relatively low and manageable without the need for mitigation measures.
- 10.9.6.9 The overall results show that the REWS can easily detect the test vessel over the majority of the coverage region. Once a vessel is travelling within a wind farm, the raised threshold over the cells around each wind turbine can cause loss of detection. A temporary loss of the radar detection of vessels is expected close to the modelled turbine within the radar range.
- 10.9.6.10 As described in section 10.5.3, the Millom West platform is planned to be decommissioned by approximately 2030 and the South Morecambe platforms are planned to be decommissioned by 2031. The potential impact may therefore occur over an approximately one to two year period for these platform operators, as the Applicant intends for the Mona Offshore Wind Project to be fully operational by 2030 (see Volume 1, Chapter 3: Project description of the Environmental Statement). The duration of the potential impact on REWS will therefore depend on the duration of

MONA OFFSHORE WIND PROJECT

overlap between the operation of the REWS and the Mona Offshore Wind Farm operations and maintenance phase.

- 10.9.6.11 The impact is predicted to be of local spatial extent (within the REWS study area), long term duration/short term duration for those platforms to be decommissioned, continuous and low reversibility for the operations and maintenance phase. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **low**.

Sensitivity of receptor

- 10.9.6.12 There are four platforms with REWS installed near the Mona Array Area and regular vessels travel along routes that pass through the area. REWS are important tools for incident/disaster risk reduction and the protection and management of infrastructure for offshore oil and gas platforms. The performance of REWS and radar detection of vessels travelling within the Mona Array Area may be lost temporarily.
- 10.9.6.13 The detection performance of the REWS due to the presence of the Mona Offshore Wind Project will be affected adversely within the wind farm regions. Tracker software and the integration of AIS data with the REWS is expected to counter most of the detection losses of the vessels. Therefore, the impact of the Mona Offshore Wind Project in isolation on nearby REWS installations is expected to be relatively low and manageable without the need for mitigation measures.
- 10.9.6.14 The receptor is deemed to be of moderate vulnerability, high recoverability and high value. The sensitivity of the receptor is therefore, considered to be **medium**.

Significance of effect

- 10.9.6.15 Overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

10.9.7 Potential impact of rerouted traffic on REWS alarm rates

- 10.9.7.1 REWS provide coverage over offshore oil and gas platforms and early warning to the operators when vessels breach the alarm settings. REWS use the radar returns to monitor and track vessels within the detection region and alert the operator when a proximity violation or an allision threat is detected. REWS provide early warning to the operators according to a defined set of rules (pre-set allision alarm rules) to identify a breach of the Closest Point of Approach (CPA) and TCPA.
- 10.9.7.2 During the operations and maintenance phase of the Mona Offshore Wind Project, some existing shipping routes will be altered by the physical presence of the Mona Offshore Wind Project. The predicted changes to the existing shipping traffic routes are described in detail within Volume 6, Annex 7.1: Navigational Risk Assessment of the Environmental Statement. Vessels may be rerouted nearer existing platforms covered by the REWS as they deviate around the Mona Offshore Wind project. This may cause an increase in the CPA/TCPA alarm rates.
- 10.9.7.3 As an alarm will activate operational safety procedures to protect the platform, a change in CPA and TCPA alarms on oil and gas platforms protected by REWS can represent disruption to operations on oil and gas platforms. There are two aspects that need to be considered; the number of alarms the REWS operator has to deal with, and the system's ability to respond to potential risks of allision.
- 10.9.7.4 The effect of the rerouting of vessel traffic on REWS alarm rates have been considered based on the existing traffic in the region and the predicted alterations to the traffic

MONA OFFSHORE WIND PROJECT

around the Mona Offshore Wind Project. The MDS for the Navigational Risk Assessment (see Volume 6, Annex 7.1: Navigational Risk Assessment of the Environmental Statement) is therefore relevant. The MDS is otherwise represented by the maximum parameters for disruption to vessels over the greatest area for the longest duration during the operations and maintenance phase. This is summarised in Table 10.15.

Operations and maintenance phase

Magnitude of impact

- 10.9.7.5 The Mona Offshore Wind Project will be operational for up to 35 years. To establish the potential impact of rerouted traffic on REWS alarms, a modelling assessment has been undertaken. The technical information and modelling techniques and results from this analysis are reported in full in Volume 6, Annex 10.1: Radar Early Warning System and Microwave Communication Links technical report of the Environmental Statement. A summary of the findings is provided in this section.
- 10.9.7.6 The effect of rerouted shipping routes was assessed for existing offshore platforms protected by REWS (i.e. Conway, Douglas DA, Douglas DW, Hamilton, Hamilton North, Lennox, Calder, Millom West, North Morecambe DPPA, South Morecambe AP1, South Morecambe CPP1, South Morecambe DP1, South Morecambe DP6, South Morecambe DP8 and the OSI). For each of the platforms considered, the assessment referred to the CPA/TCPA parameters (these are set out in Volume 6, Annex 10.1: Radar Early Warning System and Microwave Communications Links technical report of the Environmental Statement. A TCPA/CPA alarm was assumed to be raised whenever a vessel breached the alarm rules.
- 10.9.7.7 The modelling looked at the number of alarms each platform is expected to have in a one-year period and estimated the difference in alarm rates relative to the base case. The modelling results indicate that for the Mona Offshore Wind Project, the estimated change in yearly alarm rates against the base case would represent either a beneficial (i.e. a reduction in alarm rates), or small increase in alarm rates. The results for those platforms that showed a daily increase change in alarm rates are shown in Table 10.17. The largest increase in amber alarms occurred on the Calder Platform, where the predicted change was an increase in alarm rates of 74 over the year (an increase of 0.20 alarms/day). Although this increase may need manual intervention and therefore increase the workload of the REWS operator at Calder, overall, this is considered to be acceptable and the system's ability to respond to potential risks of allision would not be compromised. It is expected that most alarms will be generated by vessels that frequently use the same routes and are known by the REWS operator and are easily contactable. Upon identification and radio contact, the REWS operator may resolve the warning and temporarily switch off the alarm for that particular vessel.

MONA OFFSHORE WIND PROJECT

Table 10.17: Estimated change in yearly alarm rates against the base case for platforms where an increase in alarms was observed.

Platform	Increase in yearly alarm rates (amber alarms)	Increase in yearly alarm rates (red alarms)	Approximate base case for yearly alarm rates
Hamilton North	0.06 per day	0.01 per day	Over 200 total
OSI	0.05 per day	0.002 per day	200 total
S Morecambe Dp4	0.008 per day	0.002 per day	0 total
S Morecambe Complex	0.002 per day	-	900 total
S Morecambe Dp6	0.008 per day	0.002 per day	0 total
Calder	0.20 per day	-	10 total

10.9.7.8 Many of the route changes will see a resulting reduction in the probability of alarms affecting platforms. For other platforms, the increase in alarms is not considered a material change or is one that could be accommodated within existing and standard operations.

10.9.7.9 As described in paragraph 10.9.6.10, the Millom West platform is planned to be decommissioned by approximately 2030 and the South Morecambe platforms are planned to be decommissioned by 2031. The potential impact may therefore occur over an approximately one to two year period for these platform operators, as the Applicant intends for the Mona Offshore Wind Project to be fully operational by 2030 (see Volume 1, Chapter 3: Project description of the Environmental Statement). The duration of the potential impact on REWS alarm rates will therefore depend on the duration of overlap between the operation of the REWS and the Mona Offshore Wind Farm operations and maintenance phase.

10.9.7.10 The impact is predicted to be of local spatial extent, long term duration/short term duration for the operators of those platforms to be decommissioned, intermittent and low reversibility over the operations and maintenance phase. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **low**.

Sensitivity of receptor

10.9.7.11 Traffic rerouted around the Mona Array Area is predicted to cause an adverse change (increase) in CPA and TCPA alarm rates on oil and gas platforms protected by REWS. The CPA and TCPA alarms form an important part of the REWS that provide asset and personnel management to oil and gas platforms in the region.

10.9.7.12 The modelling results indicate that while some platforms will see a small increase of alarm rates due to the rerouting of traffic around the Mona Array Area, others will experience a beneficial effect. The REWS does not work in isolation, but together with other radar and AIS data that provide information for the wider risk management system.

10.9.7.13 The receptor is deemed to be of medium vulnerability, medium recoverability and high value. The sensitivity of the receptor is therefore, considered to be **medium**.

Significance of effect

10.9.7.14 Overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

10.9.8 Future monitoring

10.9.8.1 No monitoring to test the predictions made within the other sea users impact assessment is considered necessary.

10.10 Cumulative Effects Assessment methodology

10.10.1 Methodology

10.10.1.1 The Cumulative Effects Assessment (CEA) takes into account the impact associated with the Mona Offshore Wind Project together with other projects and plans. The projects and plans selected as relevant to the CEA presented within this chapter are based upon the results of a screening exercise (see Volume 5, Annex 5.1: Cumulative effects screening matrix of the Environmental Statement). Each project has been considered on a case by case basis for screening in or out of this chapter's assessment based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved.

10.10.1.2 The other sea users CEA methodology has followed the methodology set out in Volume 1, Chapter 5: EIA methodology of the Environmental Statement. As part of the assessment, all projects and plans considered alongside the Mona Offshore Wind Project have been allocated into 'tiers' reflecting their current stage within the planning and development process.

10.10.1.3 The tiered approach uses the following categorisations:

- Tier 1
 - Under construction
 - Permitted application
 - Submitted application
 - Those currently operational that were not operational when baseline data were collected, and/or those that are operational but have an ongoing impact
- Tier 2
 - Scoping report has been submitted and is in the public domain
- Tier 3
 - Scoping report has not been submitted
 - Identified in a relevant development plan
 - Identified in other plans and programmes.

10.10.1.4 This tiered approach is adopted to provide a clear assessment of the Mona Offshore Wind Project alongside other projects, plans and activities.

10.10.1.5 The specific projects, plans and activities scoped into the CEA, are outlined in Table 10.18 and shown in Figure 10.8.

MONA OFFSHORE WIND PROJECT

Table 10.18: List of other projects, plans and activities considered within the CEA for other sea users.

Project/Plan	Status	Distance from the Mona Array Area (km)	Distance from the Mona Offshore Cable Corridor and Access Areas (km)	Description of project/plan	Dates of construction (if applicable)	Dates of operation (if applicable)	Overlap with the Mona Offshore Wind Project
Tier 1							
Awel y Môr	Consented	13.5	3.6	Awel y Môr offshore wind farm, planning to comprise up to 50 wind turbines.	Anticipated to commence in 2026	1 January 2030 to 1 January 2055	Project construction phase overlaps with the Mona Offshore Wind Project proposed construction phase. Project operational phase overlaps with the Mona Offshore Wind Project proposed operations and maintenance phase.
Tier 2							
Morgan Generation Assets	Pre-application	11.1	31.1	Morgan Offshore Wind Project Generation Assets	1 January 2028 to 31 December 2029	1 January 2030 to 31 December 2065	Project construction phase overlaps with the Mona Offshore Wind Project proposed construction phase. Project operational phase overlaps with the Mona Offshore Wind Project proposed operations and maintenance phase.
Morecambe Offshore Windfarm Generation Assets	Pre-application	8.9	20.2	Morecambe Offshore Windfarm Generation Assets	1 January 2028 to 31 December 2029	1 January 2030 to 31 December 2065	Project construction phase overlaps with the Mona Offshore Wind Project proposed construction phase. Project operational phase overlaps with the Mona Offshore Wind Project proposed operations and maintenance phase.

MONA OFFSHORE WIND PROJECT

Project/Plan	Status	Distance from the Mona Array Area (km)	Distance from the Mona Offshore Cable Corridor and Access Areas (km)	Description of project/plan	Dates of construction (if applicable)	Dates of operation (if applicable)	Overlap with the Mona Offshore Wind Project
Morgan and Morecambe Offshore Wind Farms Transmission Assets	Pre-application	8.9	20.1	Morgan and Morecambe Offshore Wind Farms Transmission Assets	1 January 2028 to 31 December 2029	1 January 2030 to 31 December 2065	Project construction phase overlaps with the Mona Offshore Wind Project proposed construction phase. Project operational phase overlaps with the Mona Offshore Wind Project proposed operations and maintenance phase.
Moor Vannin	Pre-application	34.5	59.9	The proposed Moor Vannin offshore wind farm, located off the northeast coast of the Isle of Man.	Construction anticipated to start in 2030	Planning to be operational from 2033	Project operational phase could overlap with the Mona Offshore Wind Project proposed construction and operations and maintenance phases.
Eni Hynet – Carbon Capture Project	Pre-application	12.1	9.5	CCS project in the east Irish Sea. Works will include installation of a new cable, a new Douglas CCS platform and work on the existing Hamilton, Hamilton North and Lennox wellhead platforms.	Unknown	Unknown	Unknown
Tier 3							
Mares Connect	Pre-application	16.4	0.0	Mares Connect is a proposed 750 MW subsea and underground electricity interconnector system linking the electricity grids in Ireland and Great Britain.	Unknown	Unknown	Unknown

MONA OFFSHORE WIND PROJECT

Project/Plan	Status	Distance from the Mona Array Area (km)	Distance from the Mona Offshore Cable Corridor and Access Areas (km)	Description of project/plan	Dates of construction (if applicable)	Dates of operation (if applicable)	Overlap with the Mona Offshore Wind Project
Morecambe Net Zero Cluster	Pre-application	24.5	39.9	Spirit Energy are planning to convert their depleted South Morecambe and North Morecambe gas fields and Barrow Terminals into a carbon storage cluster.	Unknown	Unknown	Unknown

MONA OFFSHORE WIND PROJECT

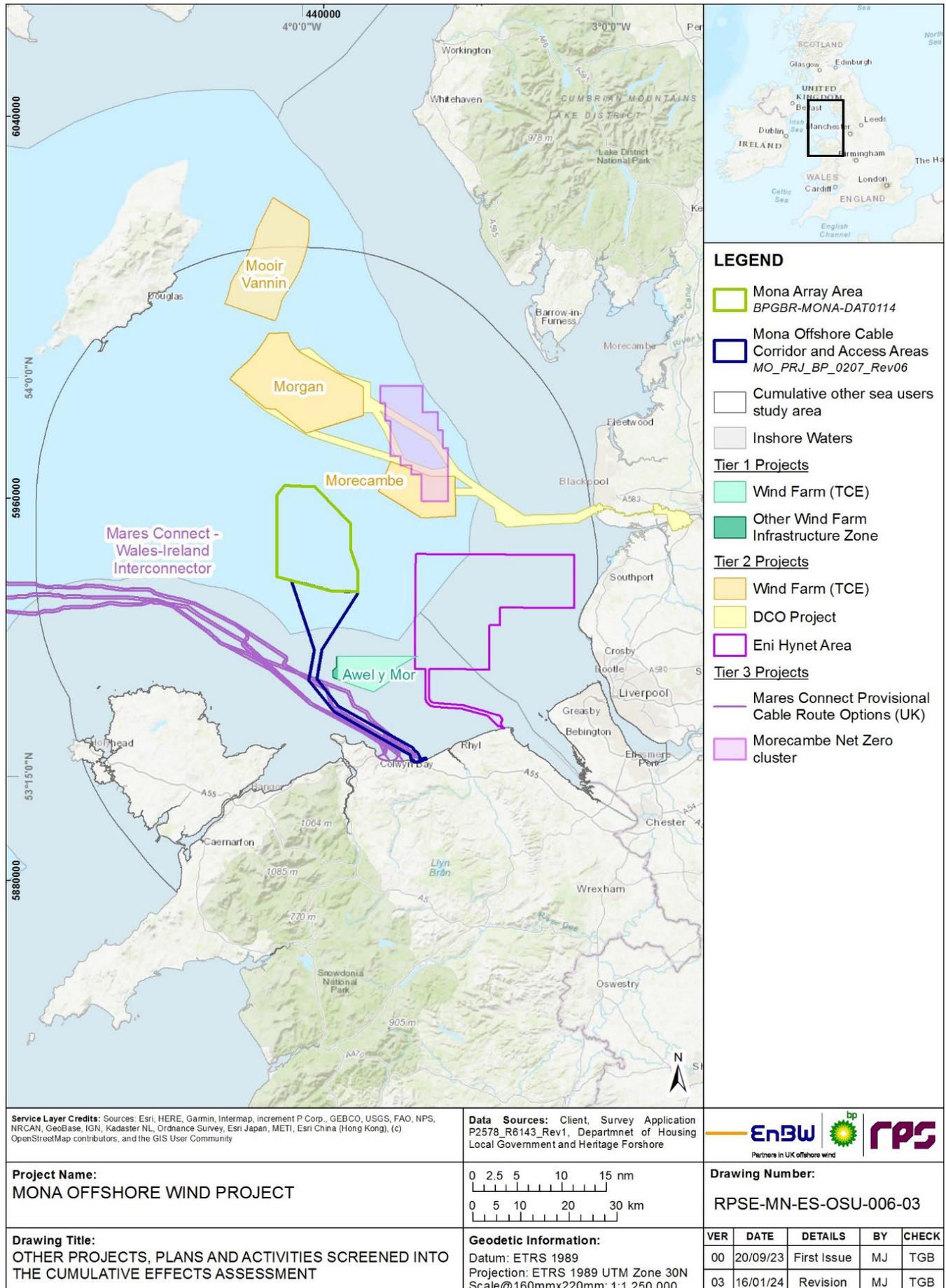


Figure 10.8: Other projects, plans and activities screened into the CEA for other sea users.

MONA OFFSHORE WIND PROJECT

10.10.2 Maximum Design Scenario

- 10.10.2.1 The MDSs identified in Table 10.19 have been selected as the design options having the potential to result in the greatest effect on an identified receptor or receptor group. The cumulative effects presented and assessed in this section are based on the Project Design Envelope provided in Volume 1, Chapter 3: Project description of the Environmental Statement as well as the information available on other projects and plans, in order to inform an MDS. Effects of greater adverse significance are not predicted to arise if the development scenario to be taken forward in the final design scheme is within the PDE.
- 10.10.2.2 The range of potential cumulative impacts identified in Table 10.19 below is a subset of those considered for the Mona Offshore Wind Project alone assessment (Table 10.15). This is for one of two reasons:
- The potential impacts identified and assessed for the Mona Offshore Wind Project alone are relatively localised and have limited, or no, potential to interact with similar impacts associated with other projects
 - The potential significance of impact has been assessed as negligible for the Mona Offshore Wind Project alone and therefore has limited or no potential to interact with similar impacts associated with other projects.
- 10.10.2.3 Of the impacts set out in Table 10.15, the following have not been included in the CEA:
- Displacement of recreational activities during the construction and decommissioning phases is considered to be a localised effect, with limited potential to interact with similar impacts associated with other projects
 - Increased SSCs and associated deposition affecting recreational diving and bathing sites is considered to be of minor adverse significance, and impacts will be localised with limited potential to interact with similar impacts associated with other projects
 - Impacts to existing cables or restriction of access to cables or pipelines is considered to be a localised effect, with limited potential to interact with similar impacts associated with other projects
 - Reduction or restriction of other offshore energy activities within the Mona Array Area is considered to be a localised effect, with limited potential to interact with similar impacts associated with other projects.

MONA OFFSHORE WIND PROJECT

Table 10.19: Maximum design scenario considered for the assessment of potential cumulative effects on other sea users.

^a C=construction, O=operations and maintenance, D=decommissioning

Potential cumulative effect	Phase ^a			Maximum Design Scenario	Justification
	C	O	D		
Displacement of recreational activities	x	✓	x	<p>MDS as described for the Mona Offshore Wind Project (Table 10.15) assessed cumulatively with the following other projects/plans:</p> <p>Tier 1</p> <ul style="list-style-type: none"> • Awel y Môr <p>Tier 2</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Morecambe Offshore Windfarm Generation Assets • Morgan and Morecambe Offshore Wind Farms Transmission Assets • Mooir Vannin • Eni Hynet – Carbon Capture Project. <p>Tier 3</p> <ul style="list-style-type: none"> • Mares Connect • Morecambe Net Zero Cluster. 	<p>Outcome of the CEA will be greatest when the activities of other projects/plans occur within the same recreational area creating the greatest area that will be restricted at any one time for any single receptor.</p> <p>Activities associated with existing operational offshore wind farms are considered to be part of the baseline and are therefore not assessed. Oil and gas activities within existing licenced areas (with the exception of decommissioning activities) are considered to be part of the baseline and are therefore not assessed.</p> <p>Operational activities associated with cables and pipelines (e.g. cable repair activities) are not assessed on the basis that such activities are likely to be of limited spatial extent, infrequent, temporary and short term.</p>
Interference with the performance of REWS located on oil and gas platforms	x	✓	x	<p>Tier 1</p> <ul style="list-style-type: none"> • Awel y Môr <p>Tier 2</p> <ul style="list-style-type: none"> • Morgan Generation Assets • Morecambe Offshore Windfarm Generation Assets. 	<p>Outcome of the CEA will be greatest when considered with scenarios that create the greatest potential interference to radar already affected by the Mona Offshore Wind Project.</p>
Potential impact of rerouted traffic on REWS alarm rates	x	✓	x	<p>Tier 2</p> <ul style="list-style-type: none"> • Morgan Generation Assets. 	<p>Outcome of the CEA will be greatest when considered with scenarios that create the greatest potential for rerouted vessel traffic already affected by the Mona Offshore Wind Project.</p>

10.11 Cumulative Effects Assessment

10.11.1.1 A description of the significance of cumulative effects upon other sea users receptors arising from each identified impact is given below.

10.11.1 Displacement of recreational activities

10.11.1.1 The presence of wind turbines and OSPs and any safety zones and advisory clearance distances associated with the Mona Offshore Wind Project during the operations and maintenance phase, may lead to the displacement of recreational activities such as sailing and motor cruising, recreational fishing and inshore water sports. There is potential for a cumulative effect arising from activities associated with other projects and plans in the vicinity of the Mona Offshore Wind Project.

Tier 1 and Tier 2

Operations and maintenance phase

Magnitude of impact

10.11.1.2 The operations and maintenance phase of the Mona Offshore Wind Project coincides with the operational phase of Awel y Môr. The proposed Awel y Môr development will comprise up to 50 wind turbines. Combined with the MDS of 96 wind turbines for the Mona Offshore Wind Project, there is potential for a cumulative effect on recreational activities due to displacement.

10.11.1.3 The proposed developments of the Morgan Generation Assets and the Morecambe Offshore Windfarm Generation Assets, comprising up to 107 and 40 wind turbines respectively, are planned to be operational during the operations and maintenance phase of the Mona Offshore Wind Project. The Morgan Generation Assets are 11.1 km from the Mona Array Area and 31 km from the Mona Offshore Cable Corridor and Access Areas, while the Morecambe Offshore Windfarm Generation Assets are 8.9 km from the Mona Array Area and 21.5 km from the Mona Offshore Cable Corridor and Access Areas. In addition, the Morgan and Morecambe Offshore Wind Farms Transmission Assets will be operational during the operations and maintenance phase of the Mona Offshore Wind Project. The proposed development of Moir Vannin, comprising up to 100 wind turbines and located 34.5 km from the Mona Array Area, is in the early stages of the application process and may be constructed and in operation during the operations and maintenance phase of the Mona Offshore Wind Project.

10.11.1.4 Mares Connect, the Eni Hynet CCS Project and the Morecambe Net Zero Cluster (located 16.4 km, 12.1 km and 24.5 km from the Mona Array Area respectively) may also be in operation at the same time as the Mona Offshore Wind Project, although programmes for these planned projects have not yet been published. Mares Connect also overlaps with the Mona Offshore Cable Corridor and Access Areas.

10.11.1.5 Recreational vessels may be displaced by the presence of multiple offshore wind projects or any maintenance activities underway, however the frequency of the potential impact is considered to be low as individual offshore cruising routes and activities are unlikely to cross multiple project areas. The spatial extent of the potential impact will be relatively small in the context of the available sailing and recreational fishing area in the east Irish Sea, with the potential for localised displacement of recreational craft around installed infrastructure and any safety zones/advisory safety distances associated with maintenance activities.

MONA OFFSHORE WIND PROJECT

10.11.1.6 The impact is predicted to be of regional spatial extent, long term duration, continuous and low reversibility over the operations and maintenance phase. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **medium**.

Sensitivity of the receptor

10.11.1.7 Recreational activities in the vicinity of the projects within offshore and inshore areas of the east Irish Sea are low to moderate, as described in each of the project assessments (see section 10.5.2, Morgan Offshore Wind Ltd. (2023), Morecambe Offshore Windfarm Ltd. (2023) and Morgan Offshore Wind Limited and Morecambe Offshore Windfarm Limited (2023)). Cumulative effects are more likely to be experienced offshore (rather than inshore) where more than one project may be encountered when sailing offshore routes.

10.11.1.8 Recreational vessels are able to alter their route, dependent on the target destination. Notices to Mariners will be promulgated during the operations and maintenance phase of each project in line with industry standard, advising of the location and nature of any maintenance works, ensuring that recreational activities can be planned accordingly. There are other locations available for sailing and fishing in the east Irish Sea such that alternatives are available if required during the operations and maintenance phase.

10.11.1.9 The receptor is deemed to be of low vulnerability, high recoverability and low value. The sensitivity of the receptor is therefore, considered to be **low**.

Significance of effect

10.11.1.10 Overall, the magnitude of the cumulative impact is deemed to be medium and the sensitivity of the receptor is considered to be low. The cumulative effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

10.11.2 Interference with the performance of REWS located on oil and gas platforms

10.11.2.1 The physical presence of wind turbines may lead to interference with the performance of REWS located on oil and gas platforms. The presence of other projects and plans alongside the Mona Offshore Wind Project may have a cumulative effect on REWS. The impact is limited to the operations and maintenance phase as it is when the wind turbines are constructed and operating that the interference is possible.

Tier 1 and Tier 2

Operations and maintenance phase

Magnitude of impact

10.11.2.2 A cumulative assessment of the Mona Offshore Wind Project on the REWS installations on Eni's Douglas platform, Harbour Energy's Millom West platform, Eni's OSI and Spirit Energy's South Morecambe AP1 platform was undertaken in a similar manner to the process described in paragraph 10.9.6.6.

10.11.2.3 The impact from the Mona Offshore Wind Project was considered alongside Awel y Môr, the Morgan Generation Assets and the Morecambe Generation Assets. The cumulative radar modelling is presented in Volume 6, Annex 10.1: Radar Early Warning System and Microwave Communication Links technical report of the Environmental Statement. The potential impact of the Awel y Môr and the Morecambe

MONA OFFSHORE WIND PROJECT

Generation Assets offshore wind farms was assessed qualitatively based on the information available in the public domain.

- 10.11.2.4 The cumulative modelling found that REWS performance is affected adversely within the wind farm regions. The presence of the Mona Offshore Wind Project and Morgan Generation Assets is predicted to result in gaps in the detection map due to elevated thresholds and shadowing effects from the wind turbines. As with the Mona Offshore Wind Project alone, these effects are expected to be largely mitigated by the advanced tracking techniques within the REWS and AIS data that provides an alternative source of vessel information and location within the zones where the REWS may lose detection. The cumulative effect on detection performance of nearby REWS is expected to be manageable without the need for further mitigation.
- 10.11.2.5 The Morecambe Generation Assets location is closer to the REWS installations in the region and predicted to have a more apparent impact on the REWS. The exact extent of the impact was not assessed or modelled and is considered qualitatively based on the information available in the public domain. Based on the qualitative assessment, the REWS impact from the Morecambe Generation Assets is expected to be more significant than the impact of the Mona Offshore Wind Project. Cumulatively, although the presence of the Mona Offshore Wind Project with the Morgan Offshore Wind Project: Generation Assets and with other proposed offshore wind farms in the REWS study area may add to the overall impact on the REWS, it is expected that the Mona Offshore Wind Project's contribution to the impact will be relatively low and predicted to be manageable without the need for further mitigation measures.
- 10.11.2.6 As described in section 10.5.3.3 and paragraph 10.9.6.10, the Millom West platform is planned to be decommissioned by approximately 2030 and the South Morecambe platforms are planned to be decommissioned by 2031. The potential cumulative impact may therefore occur over an approximately one to two year period for these platform operators. The duration of the potential cumulative impact on REWS will therefore depend on the duration of overlap between the operation of the REWS and the Mona Offshore Wind Farm operations and maintenance phase.
- 10.11.2.7 The impact is predicted to be of regional spatial extent, long term duration/short term duration for the operators of those platforms to be decommissioned, continuous and low reversibility over the operations and maintenance phase. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **low**.

Sensitivity of the receptor

- 10.11.2.8 REWS are important tools for incident/disaster risk reduction and the protection and management of infrastructure for offshore oil and gas platforms. The detection performance of the REWS due to the presence of the Mona Offshore Wind Project alongside other offshore wind projects may be adversely affected within the wind farm regions. There is potential for these effects to be largely mitigated by the advanced tracking techniques within the REWS and AIS data that provides an alternative source of vessel information and location within the zones where the REWS may lose detection.
- 10.11.2.9 The receptor is deemed to be of moderate vulnerability, moderate recoverability and high value. The sensitivity of the receptor is therefore, considered to be **medium**.

Significance of effect

- 10.11.2.10 Overall, the magnitude of the cumulative impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The cumulative effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

MONA OFFSHORE WIND PROJECT

10.11.3 Potential impact of rerouted traffic on REWS alarm rates

10.11.3.1 During the operations and maintenance phase of the Mona Offshore Wind Project, existing shipping routes will be altered by the physical presence of the Mona Offshore Wind Project, and vessels may be rerouted nearer existing platforms covered by REWS. This may have a cumulative effect on the CPA/TCPA alarm rates at oil and gas platforms covered by REWS. There are two aspects that need to be considered; the number of alarms the REWS operator has to deal with, and the system's ability to respond to potential risks of allision.

Tier 1 and Tier 2

Operations and maintenance phase

Magnitude of impact

- 10.11.3.2 As for the Mona Offshore Wind Project alone, shipping routes and reroutes were modelled based on the available data as presented in Volume 6, Annex 7.1: Navigational Risk Assessment of the Environmental Statement. All routes were modelled to establish relative change against base case alarm rates due to the introduction of the Mona Offshore Wind Project, cumulatively with the Morgan Generation Assets.
- 10.11.3.3 The assessment considers the effect of rerouted shipping routes on the existing offshore platforms (i.e. Conway, Douglas DA, Douglas DW, Hamilton, Hamilton North, Lennox, Calder, Millom West, North Morecambe DPPA, South Morecambe AP1, South Morecambe CPP1, South Morecambe DP1, South Morecambe DP6, South Morecambe DP8 and the OSI).
- 10.11.3.4 The modelling provides an estimated difference in alarm rates between the base case and the scenario for the Mona Offshore Wind Project alongside the Morgan Generation Assets. The modelling results indicate that the estimated change in yearly alarm rates for the cumulative scenario against the base case would represent either a beneficial (i.e. a reduction in alarm rates), or increase in alarm rates due to the displacement of traffic around the offshore wind farm areas. Spirit Energy's Morecambe platforms are predicted to experience an increase of alarm rates where rerouted shipping routes alter the direction and heading of the routes making them more likely to trigger TCPA alarms. For platforms predicted to experience an increase in alarm rates, the daily rate of change relative to the approximate base rate is shown in Table 10.20.

MONA OFFSHORE WIND PROJECT
Table 10.20: Estimated change in yearly alarm rates against the base case for platforms where an increase in alarms was observed in the cumulative scenario for Mona Offshore Wind Project alongside Morgan Generation Assets

Platform	Increase in yearly alarm rates (amber alarms)	Increase in yearly alarm rates (red alarms)	Approximate base case for yearly alarm rates
Hamilton North	0.63 per day	-	Over 200 total
Osi	0.98 per day	-	200 total
Calder	0.66 per day	-	10 total
S Morecambe Dp3	1.35 per day	0.32 per day	0 total
S Morecambe Complex	1.13 per day	-	900 total
S Morecambe Dp6	1.44 per day	0.39 per day	0 total
S Morecambe Dp8	1.35 per day	0.18 per day	20 total

- 10.11.3.5 As some routes are rerouted closer to some platforms, the increased density of traffic along with the closer proximity will result in an increase in both CPA and TCPA alarms. The number of alarms and the risk of allision can become a more significant issue during adverse weather conditions. The findings of Volume 6, Annex 7.1: Navigational Risk Assessment of the Environmental Statement suggests that during adverse weather conditions, there is an increased risk of allision. Although the REWS is expected to continue to detect, track and issue alarms in a timely manner, the pressure on the REWS operators in such conditions will be elevated due to the increased risk of allisions. Hence, during adverse weather conditions, TCPA and CPA alarms need to be attended to more carefully. Therefore, the potential cumulative impact on REWS under adverse weather conditions is considered to be elevated beyond those for regular conditions and may require additional operational management.
- 10.11.3.6 When drawing conclusions from the results of the models there are two aspects that need to be considered; the number of alarms the REWS operator have to deal with, and the system's ability to respond to potential risks of allision. The results show that some REWS operators may experience higher alarm rates due to the rerouted traffic. While in some cases this may need manual intervention and this may add to the workload of the REWS operator, overall, this is considered to be largely acceptable. It is expected that most alarms will be generated by vessels that frequently use the same routes and are known by the REWS operator and are easily contactable. Upon identification and radio contact, the REWS operator may resolve the warning and temporarily switch off the alarm for that particular vessel.
- 10.11.3.7 It is noted that the total effect (the collective change for all platforms) is positive, with fewer alarm rates over the year. The pressure on the REWS operators, particularly in adverse weather will be elevated at seven platforms. However, the REWS in place are expected to continue to detect, track and issue alarms in a timely manner.
- 10.11.3.8 As described in section 10.5.3.3 and paragraph 10.9.6.10, the Millom West platform is planned to be decommissioned by approximately 2030 and the South Morecambe platforms are planned to be decommissioned by 2031. The potential cumulative impact may therefore occur over an approximately one to two year period for these platform operators. The duration of the potential cumulative impact on REWS alarm rates will

MONA OFFSHORE WIND PROJECT

therefore depend on the duration of overlap between the operation of the REWS and the Mona Offshore Wind Farm operations and maintenance phase.

- 10.11.3.9 The impact is predicted to be of local spatial extent, long term duration/short term duration for the operators of those platforms to be decommissioned, intermittent and low reversibility over the operations and maintenance phase. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **low**.

Sensitivity of the receptor

- 10.11.3.10 The sensitivity of the receptor has been assessed in paragraph 10.9.7.11. The CPA and TCPA alarms form an important part of the REWS that provide asset and personnel management to oil and gas platforms in the region.
- 10.11.3.11 The receptor is deemed to be of medium vulnerability, medium recoverability and high value. The sensitivity of the receptor is therefore, considered to be **medium**.

Significance of effect

- 10.11.3.12 Overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

10.12 Transboundary effects

- 10.12.1.1 A screening of transboundary impacts has been carried out and has identified that there was no potential for significant transboundary effects with regard to other sea users from the Mona Offshore Wind Project upon the interests of other states.

10.13 Inter-related effects

- 10.13.1.1 Inter-relationships are considered to be the impacts and associated effects of different aspects of the proposal on the same receptor. These are considered to be:
- Project lifetime effects: Assessment of the scope for effects that occur throughout more than one phase of the Mona Offshore Wind Project (construction, operations and maintenance, and decommissioning), to interact to potentially create a more significant effect on a receptor than if just assessed in isolation in these three phases (e.g. underwater sound effects from piling, operational wind turbines, vessels and decommissioning)
 - Receptor led effects: Assessment of the scope for all effects to interact, spatially and temporally, to create inter-related effects on a receptor. As an example, all effects on other sea users, such as sediment plumes, may interact to produce a different, or greater effect on this receptor than when the effects are considered in isolation. Receptor-led effects may be short term, temporary or transient effects, or incorporate longer term effects.
- 10.13.1.2 A description of the likely interactive effects arising from the Mona Offshore Wind Project on other sea users is provided in Volume 2, Chapter 11: Inter-related effects (offshore) of the Environmental Statement.

10.14 Summary of impacts, mitigation measures and monitoring

10.14.1.1 Information on other sea users within the local and regional other sea users study areas was collected through consultation and desktop reviews of available datasets.

- Table 10.21 presents a summary of the potential impacts, measures adopted as part of the project and residual effects in respect to other sea users. Overall it is concluded that there will be no significant effects arising from the Mona Offshore Wind Project during the construction, operations and maintenance, or decommissioning phases
- Table 10.22 presents a summary of the potential cumulative impacts, mitigation measures and residual effects. Overall it is concluded that there will be no significant cumulative effects from the Mona Offshore Wind Project alongside other projects/plans
- No potential transboundary impacts have been identified in regard to effects of the Mona Offshore Wind Project.

MONA OFFSHORE WIND PROJECT

Table 10.21: Summary of potential environmental effects, mitigation and monitoring.

^a C=construction, O=operations and maintenance, D=decommissioning

Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
Displacement of recreational activities	✓	✓	✓	Promulgation of information advising on the nature, timing and location of activities, including through Notices to Mariners, safety zones.	C: Low O: Medium D: Low	C: Low O: Low D: Low	C: Minor O: Minor D: Minor	N/A	N/A	N/A
Increased SSCs and associated deposition affecting recreational diving and bathing sites	✓	✓	✓	Promulgation of information advising on the nature, timing and location of activities, including through Notices to Mariners, safety zones.	C: Low O: Negligible D: Low	C: Low O: Low D: Low	C: Minor O: Negligible D: Minor	N/A	N/A	N/A
Impacts to existing cables or restriction of access to cables or pipelines	✓	✓	✓	Safety zones, cable and pipeline crossing/proximity agreements, consultation with oil and gas operators.	C: Low O: Low D: Low	C: Medium O: Medium D: Medium	C: Minor O: Minor D: Minor	N/A	N/A	N/A
Reduction or restriction of other offshore energy activities	✓	✓	✓	Safety zones, consultation with oil and gas operators.	C: Medium O: Medium D: Medium	C: Negligible O: Negligible D: Negligible	C: Minor O: Minor D: Minor	N/A	N/A	N/A
Interference with the performance of REWS located on oil and gas platforms	✗	✓	✗	None.	O: Low	O: Medium	O: Minor	N/A	N/A	N/A
Effect of rerouted traffic on REWS alarm rates	✗	✓	✗	None.	O: Low	O: Medium	O: Minor	N/A	N/A	N/A

MONA OFFSHORE WIND PROJECT

Table 10.22: Summary of potential cumulative environmental effects, mitigation and monitoring.

^a C=construction, O=operations and maintenance, D=decommissioning

Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
Tier 1 and Tier 2										
Displacement of recreational activities	x	✓	x	Promulgation of information advising on the nature, timing and location of activities, including through Notices to Mariners, safety zones.	O: Medium	O: Low	O: Minor	N/A	N/A	N/A
Interference with the performance of REWS located on oil and gas platforms	x	✓	x	None.	O: Low	O: Medium	O: Minor	N/A	N/A	N/A
Effect of rerouted traffic on REWS alarm rates	x	✓	x	None.	O: Low	O: Medium	O: Minor	N/A	N/A	N/A

10.15 References

Blue Mink Boat Charters. Available: <https://blueminkboatcharters.co.uk>. Accessed July 2022.

Department for Business, Energy and Industrial Strategy (2022) Establishing the offshore decommissioning regime for CO2 transport and storage networks. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1046825/decommissioning-and-reuse-consultation-government-response.pdf. Accessed September 2023.

Department for Energy Security & Net Zero (2024a) Overarching National Policy Statement for Energy (NPS EN-1). Available: <https://assets.publishing.service.gov.uk/media/65a7864e96a5ec0013731a93/overarching-nps-for-energy-en1.pdf>. Accessed February 2024.

Department for Energy Security & Net Zero (2024b) National Policy Statement for Renewable Energy Infrastructure (NPS EN-3). Available: <https://assets.publishing.service.gov.uk/media/65a7889996a5ec000d731aba/nps-renewable-energy-infrastructure-en3.pdf>. Accessed February 2024.

Department for Energy Security & Net Zero (2024c) National Policy Statements for Electricity Networks Infrastructure (NPS EN-5). Available: <https://assets.publishing.service.gov.uk/media/65a78a5496a5ec000d731abb/nps-electricity-networks-infrastructure-en5.pdf>. Accessed February 2024.

European Subsea Cables UK Association (ESCA) (2016) Guideline No. 6, the proximity of offshore renewable energy installations and submarine cable infrastructure in UK waters. Available: <https://www.escae.org/download/?Id=123&source=guidelines>. Accessed September 2023.

Frazer-Nash Consultancy Limited (2023) Offshore Wind Leasing Programme, Array Layout Yield Study, 5 October 2023, Prepared for The Crown Estate. Available: <https://www.marinedataexchange.co.uk/details/TCE-3917/2023-frazer-nash-consultancy-floating-offshore-wind-farms-array-layout-yield-study/summary>. Accessed January 2024.

IEMA (2016) Environmental Impact Assessment. Guide to Delivering Quality Development. Available: <https://www.iema.net/download-document/7014>. Accessed September 2023.

International Cable Protection Committee (ICPC) (2015) Recommendation No.2-11B: Cable routing and reporting criteria. Available: <https://www.iscpc.org/publications/recommendations/>. Accessed September 2023.

International Cable Protection Committee (ICPC) (2014) Recommendation No. 3-10C: Telecommunications Cable and Oil Pipeline/Power Cables Crossing Criteria. Available: <https://www.iscpc.org/publications/recommendations/>. Accessed September 2023.

International Cable Protection Committee (ICPC) (2013) Recommendation No.13-2C: The proximity of offshore renewable wind energy installations and submarine cable infrastructure in national waters. Available: <https://www.iscpc.org/publications/recommendations/>. Accessed September 2023.

Manx Sea Fishing. Available: www.manxseafishing.com. Accessed September 2023.

Marine Management Organisation (MMO) (2021) North West Inshore and North West Offshore Marine Plan, June 2021.

Morecambe Offshore Windfarm Ltd. (2023) Morecambe Offshore Windfarm Generation Assets Preliminary Environmental Information Report. Available: <https://morecambeandmorgan.com/morecambe/en/consultationhub/#peir>. Accessed November 2023.

MONA OFFSHORE WIND PROJECT

Morgan Offshore Wind Ltd. (2023) Morgan Offshore Wind Project Generation Assets Preliminary Environmental Information Report. Available:

<https://morecambeandmorgan.com/morgan/consultationhub/>. Accessed November 2023.

Morgan Offshore Wind Limited and Morecambe Offshore Windfarm Limited (2023) Morgan and Morecambe Offshore Wind Farms: Transmission Assets, Preliminary Environmental Information Report, October 2023. Available: <https://morecambeandmorgan.com/transmission/our-consultation/consultationhub/>. Accessed January 2024.

Oil and Gas UK (2021) Pipeline crossing agreement and proximity agreement pack. Available: <https://oeuk.org.uk/product/pipeline-crossing-agreement-proximity-agreement-pack/>. Accessed September 2023.

Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) (2023) guidance on the decommissioning of offshore oil and gas installations and pipelines. Available: <https://www.gov.uk/guidance/oil-and-gas-decommissioning-of-offshore-installations-and-pipelines>. Accessed September 2023.

Royal Yachting Association (RYA) (2019) The RYA's position on offshore renewable energy developments: Paper 1 (of 4) – Wind Energy. Available: <https://cupdf.com/document/the-ryaas-position-on-wind-energy-executive-summary-this-paper-sets-out-the-royal.html?page=1>.

Accessed September 2023.

Sea Fishing Trips in North Wales. Available: <https://sea-fishing-trips.co.uk/>. Accessed September 2023.

Sefton Council executive report (2007) Aggregate Production Licence Application Area 457, Westminster Gravels Ltd. Available: [https://modgov.sefton.gov.uk/Data/Cabinet%20Member%20-%20Environmental%20\(meeting\)/20070704/Agenda/Item%2005.pdf](https://modgov.sefton.gov.uk/Data/Cabinet%20Member%20-%20Environmental%20(meeting)/20070704/Agenda/Item%2005.pdf). Accessed September 2023.

The Crown Estate (TCE) (2012) Submarine cables and offshore renewable energy installations proximity study. Available: <https://www.thecrownestate.co.uk/media/1784/submarine-cables-and-offshore-renewable-energy-installations-proximity-study.pdf>. Accessed September 2023.

UK Diving. Available: <http://ukdiving.co.uk/>. Accessed September 2023.

Welsh Government (2019) Welsh National Marine Plan. Available: https://www.gov.wales/sites/default/files/publications/2019-11/welsh-national-marine-plan-document_0.pdf. Accessed September 2023.