Inch Cape
OFFSHORE LIMITED

Inch Cape Offshore Wind Farm

Safety Zone Application

December 2024

Inch Cape Acceptance

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Table of Contents

Table of Figures

Table of Tables

Acronyms & Abbreviations

Acronym	Term
AIS	Automatic Identification System
ALARP	As Low As Reasonably Practicable
CBRA	Cable Burial Risk Assessment
CLV	Cable Lay Vessel
COLREGs	International Regulations for Preventing Collisions at Sea
CPS	Cable Protection System
CSV	Construction Support Vessel
CTV	Crew Transfer Vessel
EIAR	Environmental Impact Assessment Report
ES	Environmental Statement
Fl	Flashing
FLO	Fisheries Liaison Officer
GS	Generating Station
HLV	Heavy Lift Vessel
HSE	Health and Safety Executive
HV	High Voltage
HVAC	High Voltage Alternating Current
IAC	Inter-Array Cable

Acronyms & Abbreviations

Acronym	Term
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
ICOL	Inch Cape Offshore Limited
IMO	International Maritime Organization
km	Kilometre
KP	Kilometre Point
kt	Knot
LAT	Lowest Astronomical Tide
LMP	Lighting and Marking Plan
m	Metre
MCA	Maritime and Coastguard Agency
MLWS	Mean Low Water Springs
NLB	Northern Lighthouse Board
nm	Nautical Mile
NnG	Neart na Gaoithe
NtM	Notice to Mariners
OfTI	Offshore Transmission Infrastructure
OREI	Offshore Renewable Energy Installation
OSP	Offshore Substation Platform

Acronyms & Abbreviations

Acronym	Term
OWF	Offshore Wind Farm
PLGR	Pre-Lay Grapnel Run
PPT	Pin-Piling Template
RAM	Restricted in Ability to Manoeuvre
RoPax	Roll-on/Roll-off Passenger
RoRo	Roll-on/Roll-off Cargo
ROV	Remotely Operated Vehicle
s	Second
SAR	Search and Rescue
SSCV	Semi-submersible Crane Vessel
SOV	Service Operations Vessel
SPS	Significant Peripheral Structure
TP	Transition Piece
UKHO	United Kingdom Hydrographic Office
UXO	Unexploded Ordnance
VHF	Very High Frequency
VMNSP	Vessel Management and Navigation Safety Plan
WTG	Wind Turbine Generator

Acronyms & Abbreviations

Acronym	Term
Y	Yellow

Glossary

Defined Term	Meaning
Development	The Inch Cape Offshore Wind Farm (OWF) (the Wind Farm) and Offshore Transmission Infrastructure (OfTI) being developed by ICOL.
Development Area	The area for the Wind Farm, within which all Wind Turbine Generators (WTG), Inter-Array Cables (IAC), interconnector cables, Offshore Substation Platform (OSP) and the initial part of the Offshore Export Cable and any other associated works must be sited. As stipulated in the Crown Estate agreement for lease.
Inch Cape Offshore Transmission Infrastructure (OfTI)	Components of the Development comprising the Offshore Export Cable and OSP which are permitted by the OfTI Marine Licence (MS-00010593).
Inch Cape Offshore Wind Farm (OWF)/the Wind Farm	A component of the Development, comprising wind turbines and their foundations and substructures, and IACs.
Offshore Export Cables	The subsea, buried or protected electricity cables running from the offshore wind farm (OWF) OSP to the landfall and transmitting the electricity generated to the onshore cables for transmission onwards to the onshore substation and the electrical grid connection.

Glossary

Offshore Export Cable Corridor	The area within which the Offshore Export Cables will be laid from the OSP and up to Mean High Water Springs (MHWS).

1 Introduction

1.1 Background

The Inch Cape Offshore Wind Farm (OWF) (the Wind Farm) and Offshore Transmission Infrastructure (OfTI), hereafter referred to as the Development, is being developed by Inch Cape Offshore Limited (ICOL).

ICOL originally applied for consent for the Development in 2013, and this was updated, and a revised application submitted in 2018. In 2013 an Environmental Statement (ES) was produced to accompany the initial application based on the original design of the Wind Farm. This was also subsequently updated in 2018 with the production of an Environmental Impact Assessment Report (EIAR) to enable the use of progressions in technology following the original consent. This was through a reduction in turbine numbers (fewer turbines with larger generating capacity), and reduction in associated cabling (inter-array and export cables) in order to maximise efficiencies whilst minimising environmental impacts. The EIAR updated the 2013 ES, and where impacts were predicted to be less than those already assessed, a new assessment was not undertaken as the conclusions drawn in the original 2013 ES remained valid.

The Section 36 Consent, Generating Station (GS) Marine Licence, and OfTI Marine Licence for the revised design were granted by Scottish Ministers on 17th June 2019. The Section 36 Consent was subsequently varied on 16th July 2020, 22nd July 2021, and 14th June 2023, the GS Marine Licence was varied on 14th June 2023 (Licence No. MS-00010140); and the OfTI Marine Licence varied on 23rd August and amended on 9th November 2023 (Licence No. MS-00010593).

A separate Marine Licence (MS-00010672 dated 15th January 2024) has also been granted for Additional Landfall Works to facilitate the construction of the Offshore Export Cables through the seawall.

1.2 Scope Of Application

This document represents the primary supporting document for ICOL's application for safety zones to be implemented for the Development.

The proposed safety zones are intended for the purposes of making clear to passing traffic the areas where the Development construction and maintenance activities are taking place and therefore which areas should be avoided, with a view to minimising the risk of an incident which may threaten life or the environment.

Safety zones are applied for around the Wind Turbine Generators (WTG) and Offshore Substation Platform (OSP) under the circumstances detailed in the following sections.

1.3 Plan Objectives

As per Section 95 and Schedule 16 of the Energy Act 2004 and the Electricity (Offshore Generating Stations) (Safety Zones) (Application Procedures and Control of Access) Regulations 2007 (Electricity Regulations, 2007) respectively a Safety Zone Application can be made to the Marine Directorate requesting the formal implementation of safety zones around OWF structures associated with an Offshore Renewable Energy Installation (OREI).

On this basis, this document presents the Development's safety case for the implementation of safety zones around the WTGs and OSP to be installed within the Development Area and represents the primary supporting document of the application made to the Marine Directorate.

It is emphasised that the use of safety zones is to support the protection of human life, in addition to the other marine safety and navigation risk mitigation measures that will be implemented. On this basis the proposed safety zones are designed to manage potential interactions between third party vessels and the construction and maintenance activities undertaken as part of the Development, with a view to securing the safety of vessels and crews (both those associated with the Development and those deemed as third party), and to protect the Development structures themselves.

1.3.1 Construction Phase

Within this application, the safety zones listed below are applied for during the construction phase, noting that additional relevant information is provided in Section 8.

- Mandatory "rolling" (i.e., active only where construction is ongoing) 500 metre (m) safety zones established around each structure and/or their foundations whilst construction works are in progress, as indicated by the presence of a construction vessel. The safety zones will be triggered whenever a vessel is on station at a structure and undertaking construction activities. For the purposes of the application Service Operation Vessels (SOV) are not classed as construction vessels i.e., they will not trigger 500 m safety zones regardless of activity. Up to ten of these safety zones could be concurrently active.
- Mandatory pre-commissioning 50 m safety zones established around each structure and/or their foundations when construction works have been completed but prior to OWF commissioning or where construction works have only been partially completed. These safety zones will be active at any structure during the construction phase where a construction vessel is not present at a WTG. Up to 73 of these safety zones could be concurrently active (72 WTGs plus one OSP).

1.3.2 Operation and Maintenance Phase

The following are applied for during the operations and maintenance phase, noting that additional relevant information is provided in Section 8:

- Mandatory 500 m safety zones around any WTG where “major maintenance” work is being undertaken, where major maintenance is as per the definition given in the Electricity Regulations 2007. The safety zones will be active whenever a “major maintenance” vessel is at the structure during the operational phase. For the purposes of the application SOVs are not classed as major maintenance vessels i.e., they will not trigger 500 m safety zones regardless of activity. Up to five of these safety zones could be concurrently active.
- No permanent operational safety zones are being applied for around any structure.

1.3.3 Decommissioning Phase

Safety zones for the decommissioning phase of the Development shall be applied for within a separate application, which will be submitted at a future date but prior to any decommissioning operations taking place.

1.4 Legislation

Schedule 16 of the Energy Act 2004 requires certain specific information to be included within any application for safety zones submitted under Section 95. Table 1.1 summarises the requirements and provides reference to where each is addressed within this document.

Table 1.2 then summarises where the relevant requirements from the Electricity Regulations 2007 have been addressed within this document.

It is noted that the Marine Directorate has responsibility for all applications received after 1st April 2017 (powers transferred from the Department for Business, Energy & Industrial Strategy now the Department for Energy Security and Net Zero under Section 62 of the Scotland Act 2016).

Table 1.1: Energy Act 2004 Schedule 16 Applications and Proposals for Notices Under Section 95

Item	Requirement	Where Addressed
3(1) An application for a safety zone notice must describe, by way of a map –	(a) The place where the relevant renewable energy installation is to be, or is being, constructed, extended, operated or decommissioned.	See Section 2.
	(b) The waters in relation to which any declaration applied for will establish a safety zone.	See Section 2.
3(2) The	(a) Describe the other provisions the application	The safety zones applied for

Item	Requirement	Where Addressed
application must also –	asks to be included in the notice applied for; and	are presented in Section 1.2, with additional details of relevance given in Section 8.
	(b) Include such other information as may be prescribed by regulations made by the appropriate minister.	This application contains all information required.
3(3)	An application is not allowed to be made orally.	This document constitutes a written application to the Marine Directorate.

Table 1.2: Compliance with the Electricity Regulations 2007

Item	Requirement	Where Addressed
3. An application for the declaration under section 95(2) of a safety zone must include the following information (in addition to that required by paragraph 3(1) and 3(2)(a) of Schedule 16)— (a) In relation to any proposed or existing relevant renewable energy installation –	(i) A description of the installation and its proposed or existing location and dimensions (including an explanation of how much of it is (or is expected to be) visible above the water line and how much below it), supported by drawings.	The Development description is presented in Section 3, which includes schematics relative to the waterline.
	(ii) A description of how the installation operates (or is to operate).	An overview of the construction phase is provided in Section 4. An overview of the operational phase is then given in Section 5.
	(iii) A description of the location (or proposed location) of—	Subsea cables are presented in Section 3.2.
	(aa) Any electric line used (or	

Item	Requirement	Where Addressed
	proposed to be used) for the conveyance of electricity to or from the installation; and (bb) Any connection to such an electric line.	
	(iv) A description of the location (or proposed location) of any offshore sub-station housing connection equipment.	The locations of the WTGs and OSP are provided in Section 2.
	(v) Where the zone is sought in respect of more than one relevant renewable energy installation, the proposed or existing distances between such installations.	Section 2 presents the locations of the WTGs relative to the site and includes a description of minimum spacing.
	vi) Details of any navigational marking that has been specified for use with an installation of the description in question by a general lighthouse authority.	A summary of lighting and marking is provided in Section 6.
3(c) In relation to the proposed safety zone –	(i) Whether the zone relates to the construction, extension, operation or decommissioning of the relevant renewable energy installation.	As per Section 1.2, this application covers the construction and operational phases of the Development.
	(ii) Whether the applicant seeks the declaration of a standard safety zone, or if not, what dimensions are sought for that	The safety zones applied for including details of dimensions are given in Section 1.2. All are considered standard.

Item	Requirement	Where Addressed
	zone.	
	(iii) a description of those works or operations in respect of which the zone is being applied for and their estimated date and duration.	Dates and durations of the 500 m construction and major maintenance safety zones will vary depending on the associated activity, and as such the relevant details will be promulgated as required. An indicative construction schedule is provided in Section 4. The works requiring a safety zone are described in Section 1.2, with additional details of relevance given in Section 8.
	(iv) Whether the applicant proposes that the area of the zone will vary and any factors or determinations by reference to which the applicant proposes that such variation may take place.	Not applicable to the Development. The safety zones applied for are presented in Section 1.2, with additional details of relevance given in Section 8.
	(v) Whether the zone relates to major maintenance works in respect of a relevant renewable energy installation which has become operational.	The safety zones to be applied for include those for major maintenance activities as stated in Section 1.2. Further details of relevance are provided in Section 8.
	vi) A statement setting out what steps, if any, the applicant proposes to take to monitor vessels and activities within the	Monitoring and policing procedures are set out in Section 11.

Item	Requirement	Where Addressed
	zone.	
	(vii) Except where the Secretary of State has notified the applicant that it is not required, an up to date shipping traffic survey for the waters comprising the zone.	Recent vessel traffic data has been assessed as per Section 7.
3(d)	An assessment of the extent to which navigation might be possible or should be restricted, and whether restrictions would cause navigational problems, within or near waters where the relevant renewable energy installation is to be, or is being, constructed, extended, operated or decommissioned, as the case may be.	The potential impact of the safety zones is assessed within Section 10.
(1) The applicant shall publish notice of an application—	(a) In two successive weeks in one or more local newspapers which are likely to come to the attention of those likely to be affected by the safety zone.	Notice of the application will be provided in a list of publications agreed with the Marine Directorate and will comply with the requirements of Regulation 4(1).
	(b) In Lloyd's List and in one or more national newspapers.	Notice of the application will be provided in a list of publications agreed with the Marine Directorate and will comply with the requirements of Regulation 4(1).
	(c) If there are in circulation one	Notice of the application will be

Item	Requirement	Where Addressed
	or more appropriate fishing trade journals which are published at intervals not exceeding one month, in at least one such trade journal.	provided in a list of publications agreed with the Marine Directorate and will comply with the requirements of Regulation 4(1).
	(e)[1] In the case of an application relating to a safety zone proposed or located wholly or partly in an area of Scottish waters or an area of waters in the Scottish part of the Renewable Energy Zone, the Edinburgh Gazette.	Notice of the application will be provided in a list of publications agreed with the Marine Directorate and will comply with the requirements of Regulation 4(1).
4(2) The applicant shall, at the same time as publishing the notice under paragraph (1)(a), send a copy of the notice to—	(a) The harbour masters of ports whose users are in the opinion of the applicant likely to be affected by the application.	Notice of the application will be sent to local ports, which have been agreed with the Marine Directorate.
—requesting that the notice be displayed for a period of not less than 14 days at an address accessible during normal office hours to members of the public likely to be affected by the application.	(b) The sector office of the Maritime and Coastguard Agency (MCA) which is responsible for operations in the waters in which the safety zone is proposed or located.	Notice of the application will be sent to the MCA.

[1] Points (d) and (f) relate to safety zones located in non-Scottish waters and therefore are not applicable to the Development.

2 Project Overview

The Development will be located approximately eight to 12 nautical miles (nm) off the Angus coastline, to the east of the Firth of Tay. The Development Area is approximately 43.7 nm^2 in area and will contain 72 WTGs, one OSP, Inter-Array Cables (IAC) and the initial section of the Offshore Export Cables between the Development Area boundary and OSP.

The Offshore Export Cable Corridor will contain the Offshore Export Cables. This will consist of two Offshore Export Cables approximately 85 kilometres (km) long, between the landfall point at Cockenzie in East Lothian and the boundary of the Development Area, and 1.4 km across at the widest point, reducing to approximately 250 m at the landfall.

The location and extent of the Development Area is shown in Figure 2.1, with the indicative Offshore Export Cable locations also presented within the Offshore Export Cable Corridor. The Offshore Export Cable positions presented are indicative at this stage and are therefore subject to micrositing.

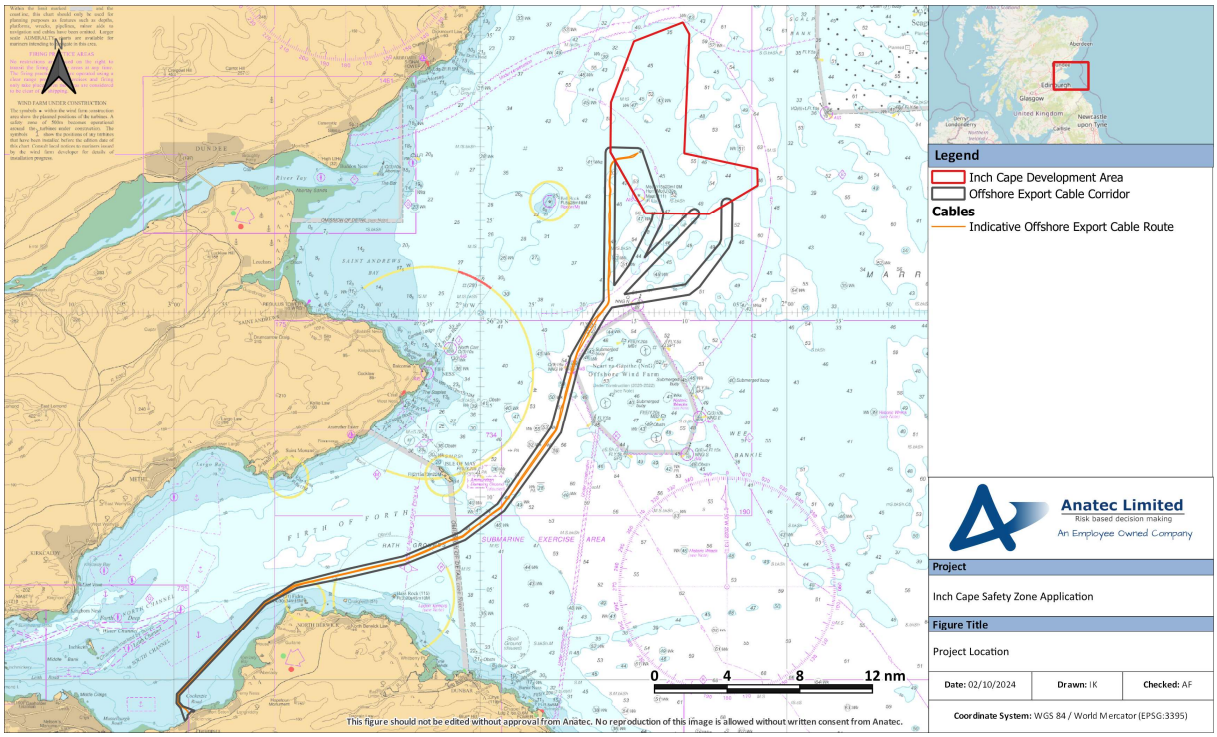

Figure 2.1: Project Location

2.1 Development Layout

The indicative layout of WTGs and OSP across the Development Area comprises 72 WTG preferred positions and one OSP, as presented in Figure 2.2.

The WTGs have grid based spacing within the OWF site. The internal grid WTGs will be spaced 1,236 m apart while the dense border WTGs will have a minimum spacing of 1,025 m, prior to any micro-siting This minimum spacing, a consent limit set in the S36 Consent, has changed since the Section 36 A declaration granted in 2019 and has been approved as part of the variations to the S36 Consent. The Consents do not specify a micro-siting distance. However, the Section 36 Consent stipulates an average nominal WTG spacing of 1,278 m. Micro-siting will be approached on a location-by-location basis during installation. The WTGs will be arranged in a pattern that permits navigation between rows of WTGs in any direction, based on a dense border layout.

It is noted that a total of nine spare positions are also under consideration, however regardless of whether these spare positions are used, final structure numbers will not exceed 72 WTGs and one OSP. Spares are included within Figure 2.2 for reference.

Safety zones are applied for the structure locations (including spares) shown in Figure 2.2 noting these are subject to micrositing.

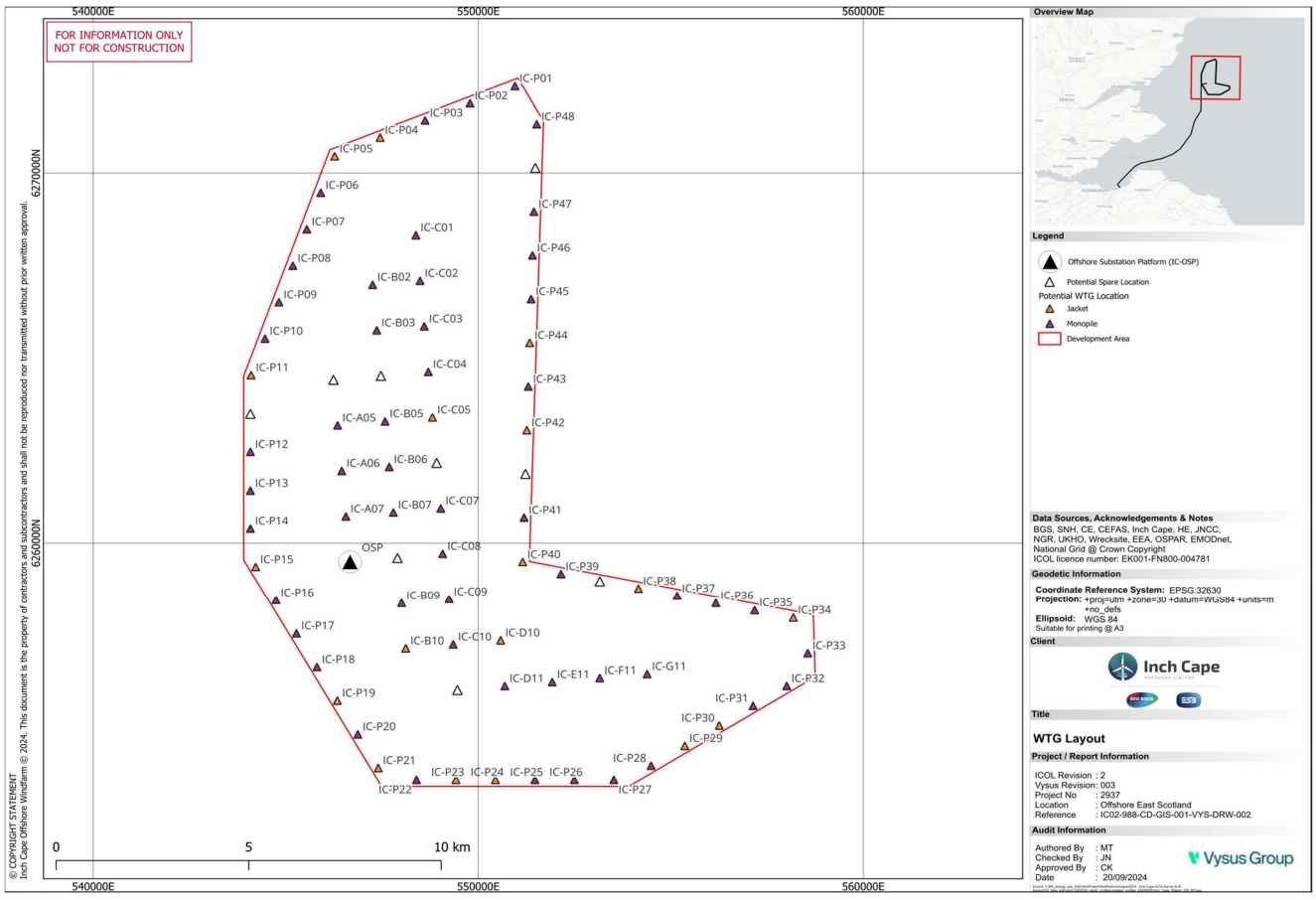

Figure 2.2: Development Layout

2.2 Project Schedule

Offshore construction activities are scheduled to commence in Q2 of 2025 with completion expected by Q3 of 2027. An indicative construction schedule for the OfTI elements of the Development is presented in Table 2.1, with a construction schedule for the OWF elements summarised in Table 2.2. It should be noted however that the actual schedule given will depend on various factors (e.g., weather, supply, etc.) and therefore the stated dates are subject to change.

Table 2.1: Indicative OfTI Construction Works Schedule

Schedule	Milestone
Q2 2025	Commencement of offshore construction under the OFTI Licence and the Additional Landfall Works Marine Licence
Q2 2025	Stage 1: Pre-install landfall cable protection system up to MHWS
Q2/Q3 2025	Stage 2: Subtidal preparation
Q3 2025	Stage 3: OSP jacket foundation substructure assembly and installation
Q3 2025	Stage 4: OSP topside installation
Q3/Q4 2025 and Q2/Q3 2026	Stage 5: Offshore export cable installation
Q1/Q2 2026	Stage 6: Commissioning and testing

Table 2.2: Indicative OWF Construction Works Schedule

Schedule	Milestone
Q3 2025	Commencement of construction under S36 Consent
Q1/Q2 2025	Stage 1: Seabed clearance and preparation
Q1/Q2/Q3/Q4 2026	Stage 2: Monopile foundation installation and Transition Piece (TP) assembly

Schedule	Milestone
Q2/Q3 2026	Stage 3: Jacket foundation installation
Q2/Q3/Q4 2026	Stage 4: IAC installation
Q3 2026 to Q3 2027	Stage 5: WTG installation
Q4 2026 to Q3 2027	Stage 6: Wind farm electrical connection and commissioning

3 Project Components

3.1 Structures

Key specifications of the WTGs and OSP are provided in Table 3.1. Following this, indicative schematics of the WTG foundation substructure and OSP are shown below – these include for WTGs with monopile foundations in Figure 3.1, WTGs with jacket foundations in Figure 3.2, and the OSP in Figure 3.3.

Table 3.1: Structure Final Design Parameters

Parameter	Design
WTGs	
Max number of WTGs	72
Max Rotor Diameter	236 m
Minimum Blade Tip Height (above Lowest Astronomical Tide (LAT))	41.9 m (jacket foundation) / 37.6m (monopile foundation)
OSP	
Maximum number of OSPs	1
Maximum length and width of OSP Topside	46.50 m x 38.12 m

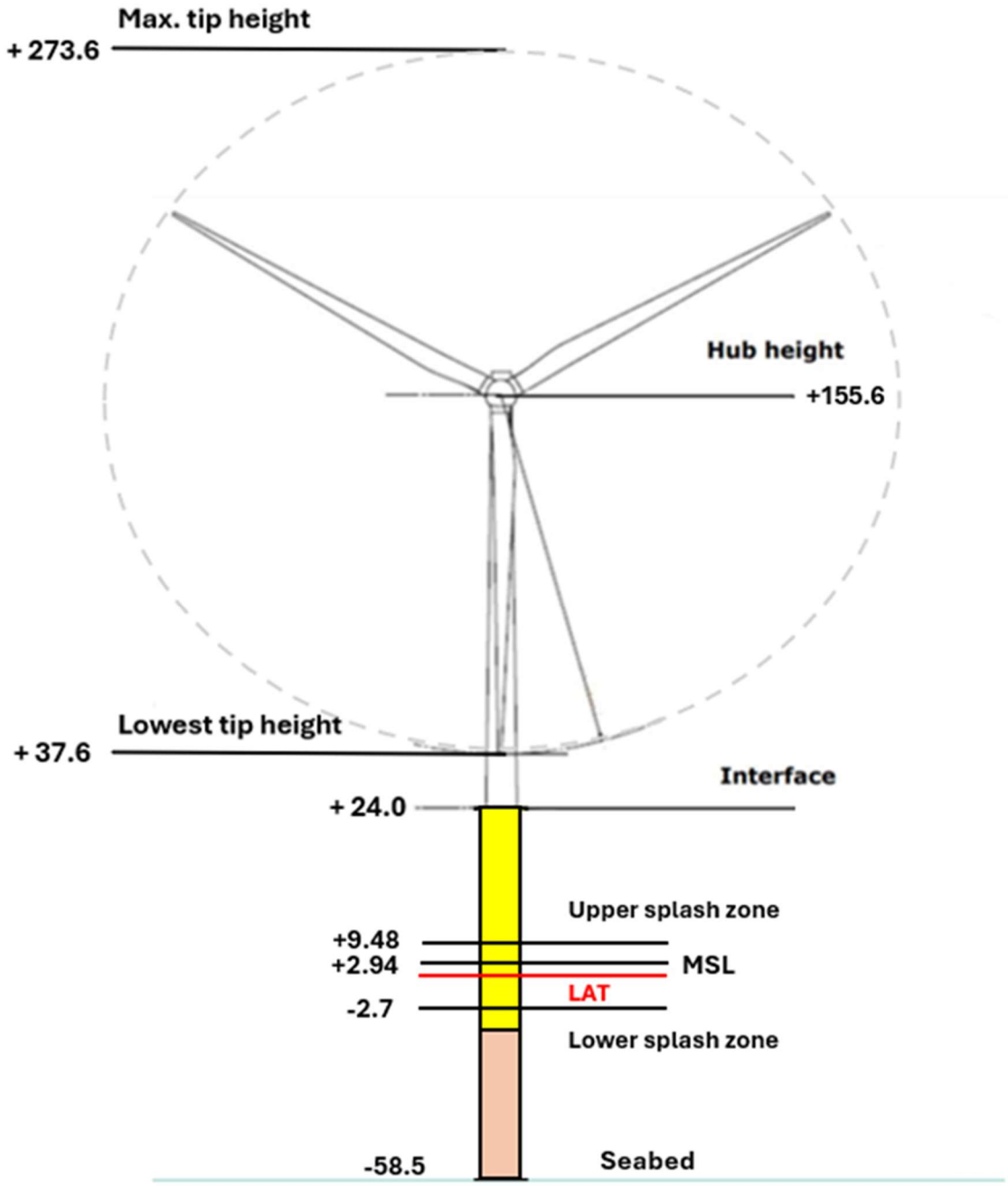

Figure 3.1: WTG with Monopile Foundation - Indicative Schematic

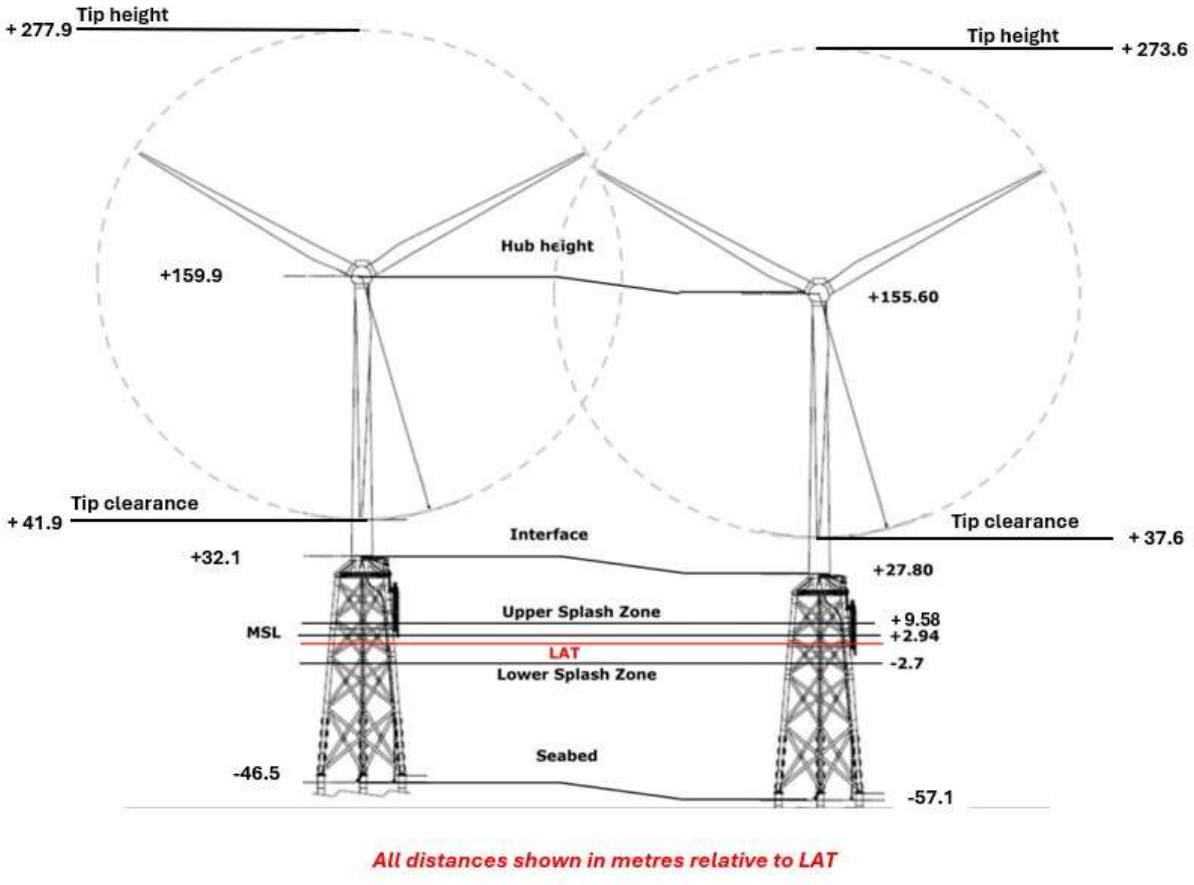

Figure 3.2: WTG with Jacket Foundation - Indicative Schematic

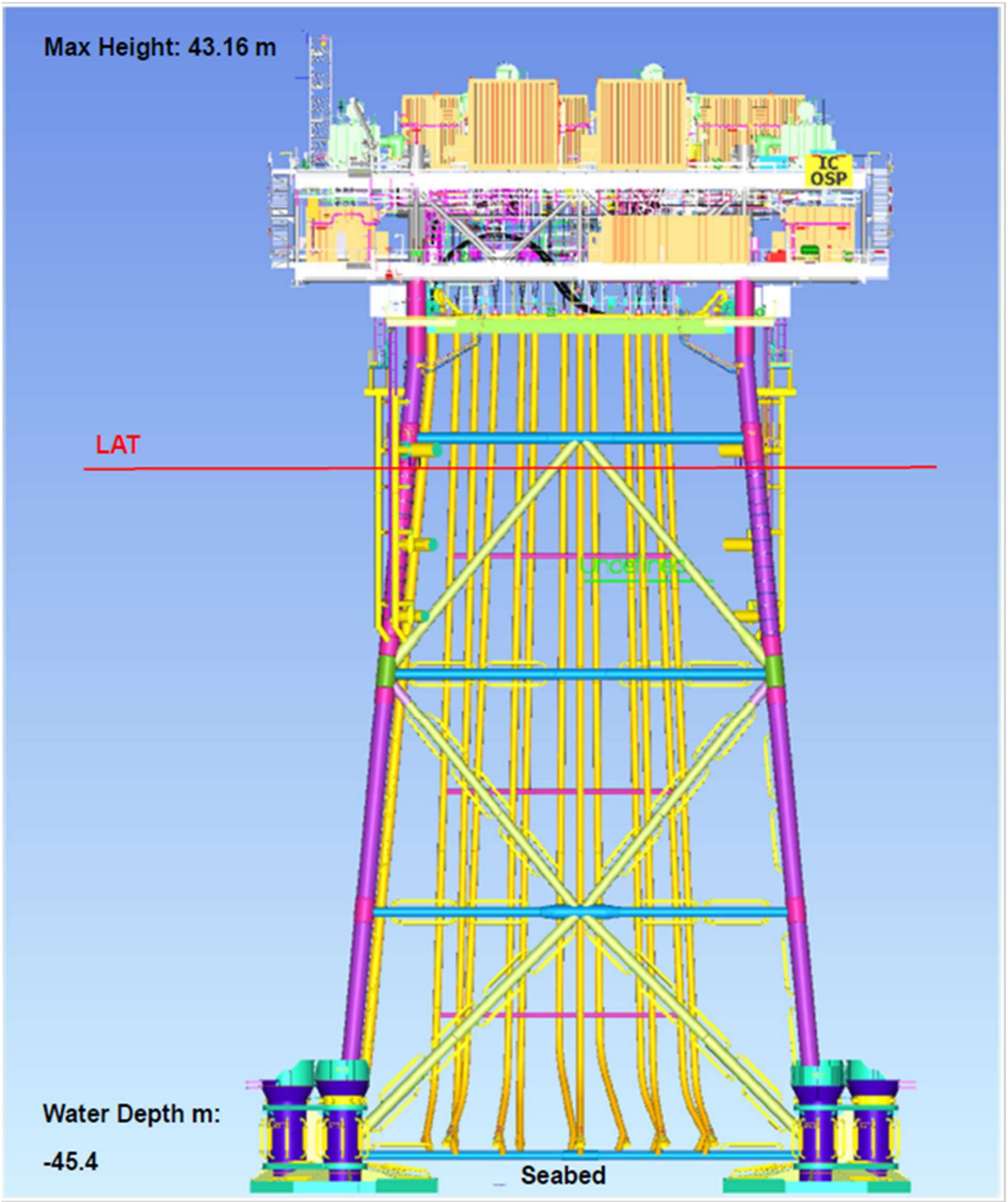

Figure 3.3: OSP – Indicative Schematic

3.2 Cables

The Offshore Export Cables and IAC are shown in Figure 3.4, noting that these locations are indicative only and as such are subject to micrositing. The Offshore Export Cable Corridor is also included, ending at the landfall location close to Cockenzie in East Lothian. Key indicative specifications of the cables as included within the Final Design (subject to micrositing) are provided in Table 3.2.

Table 3.2: Final Design Parameters

Parameter	Design
Inter-Array Cables	
Maximum length of IAC	80.858 nm (149.749 km)
Number of IAC strings	12 (6 WTGs per string)
Minimum string length	4.015 nm (7.436 km)
Maximum string length	8.382 nm (15.524 km)
Offshore Export Cables	
Maximum length of Offshore Export Cables	88.764 nm (164.391 km)
Maximum number of Offshore Export Cables	2
Maximum width of Offshore Export Cable Corridor	0.76 nm (1.4 km)
Transmission Type	High Voltage Alternating Current (HVAC)

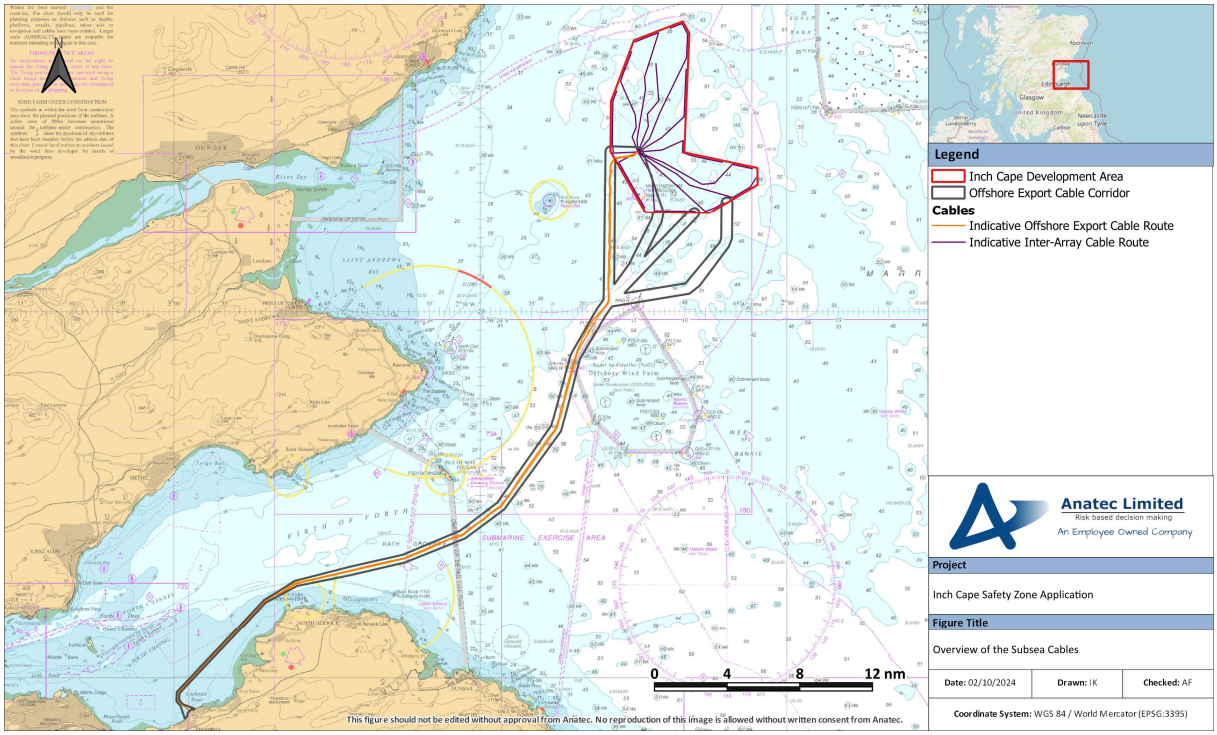

Figure 3.4: Overview of the Subsea Cables

4 Construction Overview

This section summarises the activities to be undertaken during the construction phase which are deemed of relevance to this application. The construction timeframe of both the OfTI assets and marine licence generation assets is also presented. Further details are provided in the Inch Cape Construction Method Statement (ICO2-INT-EC-OFC-004-INC-PLA-001).

Overall, vessel types that may be involved in the construction phase include (but are not necessarily limited to):

- Semi-submersible Crane Vessels (SSCV)
- Cable Lay Vessels (CLV);
- Construction Support Vessels (CSV);
- Jack-ups;
- Multi-purpose vessels;
- Survey vessels;
- Seabed works vessels;
- Crew Transfer Vessels (CTV);
- SOVs;
- Guard vessels;
- Floating barges; and
- Heavy Lift Vessels (HLV).

4.1 OfTI Construction Works

4.1.1 Stage 1: Pre-install Landfall Cable Protection System up to MHWS

Pre- Offshore Export Cable installation activities at landfall will be undertaken using the open cut method. Open cut trenching through the rock revetment and seawall will be conducted to allow the installation and pulling of the Offshore Export Cables into the OSP at Cockenzie. The sequence of events and indicative durations for the intertidal Offshore Export Cable installation process is presented in Table 4.1.

Table 4.1: Intertidal Offshore Export Cable Installation Activities

ACTIVITY	INDICATIVE DURATION
STEP 1: Seawall and rock revetment removal	12 weeks
STEP 2: Excavation of intertidal cable trenches and Cable Protection System (CPS) installation	4.5 weeks
STEP 3: Reinstatement of cable trenches	4 weeks
STEP 4: Replacement and reinstatement of rock armour and seawall	5 weeks
STEP 5: Cable pull-in	2 days
STEP 6: Post installation surveys	4 days

4.1.2 Stage 2: Seabed Preparation

Seabed preparation activities are required in advance of OSP foundation installation activities and subtidal cable installation activities, to identify and remove any boulders from the cable corridor and to identify and manage any unexploded ordnance (UXO) identified during the dedicated surveys. These activities are covered under additional licences (Boulder clearance and UXO identification; and UXO clearance marine licences) and will be conducted in advance of main offshore construction works. The table below describes the activities to be conducted if required due to boulders still being present on the cable route and OSP location at the time of installation.

Table 4.2: Seabed Preparation Activities

ACTIVITY	INDICATIVE DURATION
STEP 1: Seabed ROV survey	<3 weeks
STEP 2: Removal of remaining boulders with Orange Peel Grab	<2 weeks

4.1.3 Stage 3: OSP Jacket Foundation Substructure Assembly and Installation

An OSP jacket substructure will be fixed to the seabed by piled foundations, with the jacket having up to eight post-installed piles. Delivery of the main components (jacket and piles) will be directly to the OSP installation site by sea transport (heavy lift vessel and towed barge) from the site of fabrication. The sequence of events and indicative durations for the OSP jacket foundation substructure assembly and installation process is presented in Table 4.3.

Table 4.3: OSP Jacket Foundation Substructure Assembly and Installation Activities

ACTIVITY	INDICATIVE DURATION
STEP 1: Set up of vessel	1 week
STEP 2: Jacket lift and installation	1 week
STEP 3: Pile installation and driving	9 days
STEP 4: Grouting	2 days
STEP 5: Completion and move out of vessel	1 day

4.1.4 Stage 4: OSP Topside Installation

The topside will be transported to the Development Area on the same barge as the jacket. The sequence of events and indicative durations for the OSP topside installation process is presented in Table 4.4.

Table 4.4: OSP Topside Installation Activities

ACTIVITY	INDICATIVE DURATION
STEP 1: Set up of vessel	1 day
STEP 2: Topside lift and installation	5 days
STEP 3: Post installation surveys	2 days
STEP 4: Completion and demob from site	1 day
STEP 5: OSP commissioning	90 days

4.1.5 Stage 5: Offshore Export Cable Installation

Prior to subtidal export cable installation, a Pre-Lay Grapnel Run (PLGR) will clear the seabed surface of obstacles within the first half-metre depth of the seabed along each cable alignment. The PLGR will commence as close to Mean Low Water Springs (MLWS) as possible.

Each one of the two subsea export cables will be installed in three sections: Section 1 extending from the landfall up to approximately Kilometre Point (KP) 28; Section 2 extending from KP 28 up to KP 56; and Section 3 extending from KP 56 to the OSP. The KPs are indicative estimates, as these are subject to the final micro sitting. The exact location of the joints between the sections will be known after installation.

Following cable lay, the export cables will be trenched or buried into the seabed to target depth varying from 0.35 m to 3.78 m, in line with the Cable Burial Risk Assessment (CBRA). The sequence of events and indicative durations for the Offshore Export Cable installation process is presented in Table 4.5.

Table 4.5: Export Cable Installation Activities

ACTIVITY	INDICATIVE DURATION
STEP 1: PLGR	6 weeks
STEP 2: Cable installation	8 weeks per circuit
STEP 3: Cable jointing	2 days
STEP 4: Cable burial and protection	12 weeks per circuit
STEP 5: Post installation surveys	2 weeks per circuit

4.1.6 Stage 6: Commissioning and Testing

Following the construction of the OfTI elements, they will undergo commissioning and testing. These steps complete the commissioning phase of the Development which is the handover of the project from the construction phase to the operational phase.

4.2 OWF Construction Works

4.2.1 Stage 1: Seabed Clearance and Preparation

Seabed preparation activities are required in advance of foundation installation activities and inter array cable installation to both identify and remove any boulders from the cable corridors (+/- 50 m IAC) and WTG foundations locations (200 m radius around the asset) as well as to identify and manage any UXO identified during the dedicated surveys. These activities are covered under additional licences (boulder clearance and UXO identification; and UXO clearance marine licences) and will be conducted in advance of main offshore construction works on the Development Area**.** The table below describes the activities to be conducted if required due to boulders still being present on the array cable routes and the WTG foundation locations at the time of installation.

Table 4.6: Seabed Clearance and Preparation Activities

ACTIVITY	INDICATIVE DURATION
STEP 1: Seabed ROV survey	<12 hours
STEP 2: Removal of boulders	<12 hours

4.2.2 Stage 2: Monopile Foundation and TP Installation

The Inch Cape project includes 54 monopiled WTG foundations. The monopiles and the transition pieces will be transported offshore to the Development Area by the installation vessels. Full details on the installation vessels are included in the Vessel Management and Navigation Safety Plan (VMNSP).

Where scour protection is required, this will be achieved by rock placement around the foundation

after installation. Rock placement will infill any scour pit which may have developed post-installation and will create a rock berm above seabed level. This will be designed to remain stable for the lifetime of the structure under all forms of predicted environmental loading. The rock placement will be achieved using a fall pipe vessel. Another option that it is being considered is the use of Frond mats (synthetic material) instead of rock, however the use of this material needs to be consented, and it is not at the time of submission of this document.

The sequence of events and indicative durations for monopile foundation and TP installation is presented in Table 4.7.

Table 4.7: Monopile Foundation and TP Installation Activities

ACTIVITY	INDICATIVE DURATION
STEP 1: Set up of vessel	<12 hours
STEP 2: Monopile lift and upending	<12 hours
STEP 3: Monopile lowering onto the seabed	<4 hours
STEP 4: Monopile drive and installation	<36 hours
STEP 5: Preparation for TP installation	<18 hours
STEP 6: TP Installation	<48 hours
STEP 7: Scour Protection Installation	<12 hours
STEP 8: Survey	<12 hours

4.2.3 Stage 3: Jacket Foundation Installation

The jackets and piles will be delivered to the Port of Leith for storage. A Heavy Lift Vessel (HLV) will load-out the jackets and piles at the Port of Leith and transport and install these offshore. The jackets will transit to field one by one on the HLV. The sequence of events and indicative durations for jacket foundation installation is presented in Table 4.8.

Table 4.8: Jacket Foundation Installation Activities

ACTIVITY	INDICATIVE DURATION
STEP 1: Set up of vessel and Pin-Piling Template (PPT) deployment	<24 hours
STEP 2: Pin pile installation	<24 hours
STEP 3: Jacket installation preparatory work	<12 hours
STEP 4: Jacket lift and installation	7 days

ACTIVITY	INDICATIVE DURATION
STEP 5: Grouting	<12 hours per pile
STEP 6: Completion and move out of HLV to the next location	<12 hours

4.2.4 Stage 4: IAC Installation

IACs connect the WTGs in a series of arrays or 'strings' and also provide the connection from the WTGs to the OSP. IACs will be trenched and buried in the seabed, to a target depth of at least 0.6 m to provide protection to the cables. This will be carried out by either a subsea jet trenching tool or an engineered rock placement solution where trenching to required depth has not been possible. The sequence of events and indicative durations for IAC installation is presented in Table 4.9.

Table 4.9: IAC Installation Activities

ACTIVITY	INDICATIVE DURATION
STEP 1: PLGR	<2 weeks
STEP 2: Pre-lay survey	<2 weeks
STEP 3: Cable installation (between WTG and WTG and OSP foundation)	24 hours
STEP 4: Cable burial / jet trenching and cable protection	24 hours
STEP 5: Post–lay survey	<2 weeks

4.2.5 Stage 5: WTG Installation

Major WTG components include the tower, which is installed on top of the jacket foundation, the nacelle, which supports the rotor, and the three individual blades which form the rotor. All components will be loaded onto the installation vessel and transported by sea to the Development Area. It is envisaged that a maximum of four WTGs (and associated tools) can be transported at any one time – however, there is a possibility that this may increase. The sequence of events and indicative durations for WTG installation is presented in Table 4.10.

Table 4.10: Wind Turbine Generator Installation Activities

ACTIVITY	INDICATIVE DURATION
STEP 1: Quayside delivery of main components	24 hours
STEP 2: Loading of installation vessels	52 hours per 4 WTGs

ACTIVITY	INDICATIVE DURATION
STEP 3: Transport to the Development and jack up of installation vessel	11 hours
STEP 4: Installation of tower onto transition piece	26 hours
STEP 5: Installation of nacelle onto tower	
STEP 6: Installation of blades on to nacelle hub	
STEP 7: Completion of erection	
STEP 8: Secure crane, jack down, relocation & jack up, release of crane	9 hours

4.2.6 Stage 6: Wind Farm Electrical Connection and Commissioning

Following construction of the Development, it will undergo energisation, reliability testing and take-over certification. Commissioning will be complete following:

- Mechanical commissioning;
- High Voltage (HV) terminations;
- Electrical commissioning; and
- Commissioning completion.

These steps will complete the commissioning of the Development which signifies the transition to the operational phase.

5 Operations and Maintenance Overview

The definition of 'major maintenance' given within the Electricity Regulations 2007 (which details regulations associated with application procedures and control of access related to safety zones) is as follows:

"*Works relating to any renewable energy installation which has become operational, requiring the attachment to, or anchoring next to, such an installation of a self-elevating platform, jack-up barge, crane barge or other maintenance vessel*."

Under this definition, only vessels that "anchor next to" or require "attachment to" the operational structures can trigger a 500 m major maintenance safety zone during the operation and maintenance phase. On this basis, vessel types that could trigger a major maintenance safety zone include (but are not necessarily limited to):

- SOVs;
- CTVs; and
- Jack-ups.

Full details of major maintenance activities that will occur as part of the operation of the Development are unable to be confirmed at the time of writing based on the information available given this will include unexpected / unplanned operations. However, it is likely that the removal / replacement of components will be required and as such certain activities will be similar to those undertaken in the construction phase (see Section 4).

Additional details as to specific activities that could trigger a safety zone are provided in Section 8. However, throughout any periods of major maintenance, details of the work being carried out shall be promulgated through Notices to Mariners (NtM), radio warnings as designated by the United Kingdom Hydrographic Office (UKHO), the Kingfisher Bulletin, and liaison with the fishing industry via the Fisheries Liaison Officer (FLO).

6 Lighting and Marking

This section summarises the marine lighting and marking of the Development which has been agreed in consultation with Northern Lighthouse Board (NLB) and the MCA via the Lighting and Marking Plan (LMP). Aviation lighting (including Search and Rescue (SAR) lighting) is not considered pertinent to this safety zone application and has therefore not been included. Details of all lighting and marking are available in the LMP (ICOL-INT-EC-OFC-013-INC-PLA-001).

6.1 Construction Phase

6.1.1 Lighting

During construction all fixed structures, including partially constructed such as WTG foundations, will be mounted and marked with a Flashing (Fl) Yellow (Y) 2.5 second (s) light (Fl Y 2.5s) visible through 360° with a 2 nm range.

6.1.2 Buoyage

All required construction phase buoyage will be established at least four weeks prior to the commencement of construction works and will remain in place until the operational marking requirements have been inspected and passed by NLB. The Development Area will be marked with 11 buoys during the construction phase, noting that the positions have been agreed with NLB:

- 1 x north cardinal;
- 1 x east cardinal;
- 2 x south cardinal;
- 1 x west cardinal; and
- 6 x special marks.

Details of the construction buoyage in full are presented within the LMP (ICOL-INT-EC-OFC-013-INC-PLA-001). In particular, the locations of the buoys are shown in Figure 5.1 of the LMP, with the coordinates of these provided in Table 5.2 of the same document.

6.2 Operation and Maintenance Phase

6.2.1 Lighting

During the operation and maintenance phase, in line with requirements under IALA Guidance G1162 (IALA, 2022), certain peripheral structures will be marked as Significant Peripheral Structures (SPS). Each SPS will be fitted with marine lights, with the following criteria:

- Minimum 5 nm light Fl Y 5s, 360° visibility, Fl in synchronicity, meet International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) Category 1 (>99.8%

availability).

6.2.2 Sound Signals

Each SPS will be fitted with sound signals, which will activate whenever visibility is less than 2 nm. They will meet IALA Category 3 availability requirements (>97.0%).

6.2.3 Automatic Identification System

Select periphery structure locations will be fitted with Automatic Identification System (AIS) aids to navigation. These will meet IALA Category 3 requirements (>97.0%).

6.2.4 ID Marker Boards

All WTGs will possess ID marker boards, which will be lit from low-level baffled lighting. These will consist of black letters on a yellow background, with the structures identified from the Development letters (IC) and individual three-digit sequence.

6.2.5 Paint

All WTGs will be painted in 'traffic yellow' (RAL 1023) from HAT to between 18 and 24 m above HAT, with 'light grey' (RAL 7035) paint used upwards of this. The OSP will be painted in traffic yellow from HAT to between 15 and 20 m above HAT, with the topside (excluding structures such as work cabins) painted either light grey, or coated in other non-reflective grey materials.

7 Vessel Traffic Survey Data

7.1 Introduction

Vessel traffic assessment has primarily been based on 28 days of AIS data collected from 1st – 14th of January 2024, and 1st – 14th of July 2024.

A 10 nm buffer around the Development Area has been defined (hereby referred to as the 'study area') to capture vessel traffic relevant to the Development.

Any traffic deemed to be temporary has been removed from further analysis (e.g., survey vessels and vessels associated with OWF construction). Traffic associated with the Neart na Gaoithe (NnG) and Seagreen OWFs has therefore been identified as temporary and removed from further analysis noting an understanding that the construction buoyage at both was still present at the time of the AIS data periods. This traffic is discussed in further detail in Section 7.6 (which has been included as it is likely to provide some representation of operational activity).

As the dataset covers AIS data only, the assessment may be unrepresentative of certain vessel types not required to transmit via AIS (i.e., fishing vessels less than 15 m length and recreational vessels).

7.2 AIS Assessment

The vessel tracks recorded within the study area during the winter survey period are colour-coded by vessel type and presented in Figure 7.1. Following this, the vessel tracks recorded within the study area during the summer survey period are colour-coded by vessel type and presented in Figure 7.2.

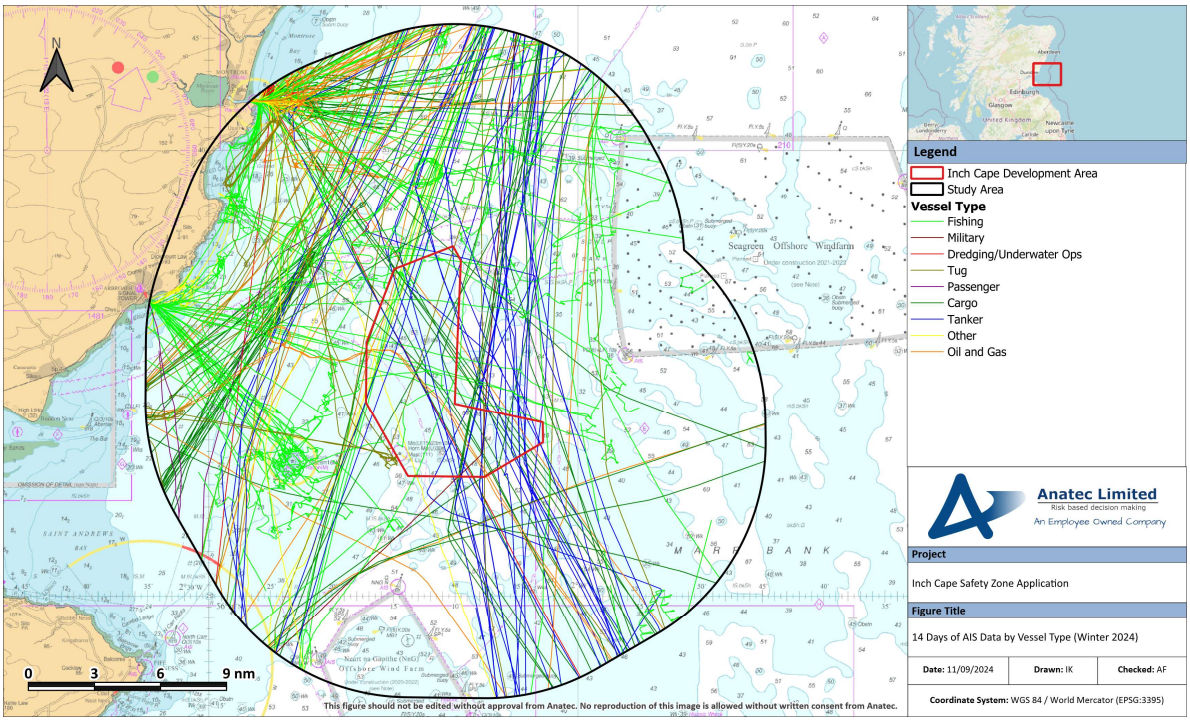

Figure 7.1: 14 Days of AIS Data by Vessel Type (Winter 2024)

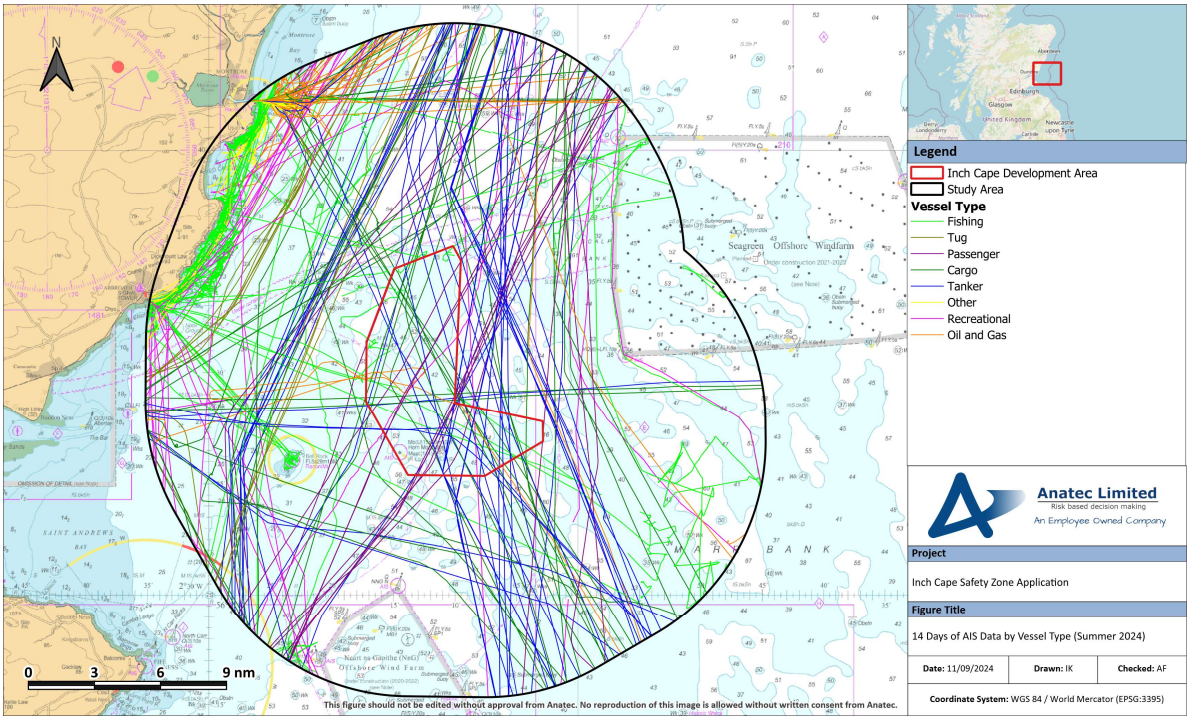

Figure 7.2: 14 Days of AIS Data by Vessel Type (Summer 2024)

7.3 Vessel Count

During the 14-day winter survey period, there was an average of 18 unique vessels recorded per day within the study area. In terms of vessels intersecting the Development Area itself, there was an average of four to five vessels per day recorded. The vessel counts per day within the study area and Development Area are presented in Figure 7.3.

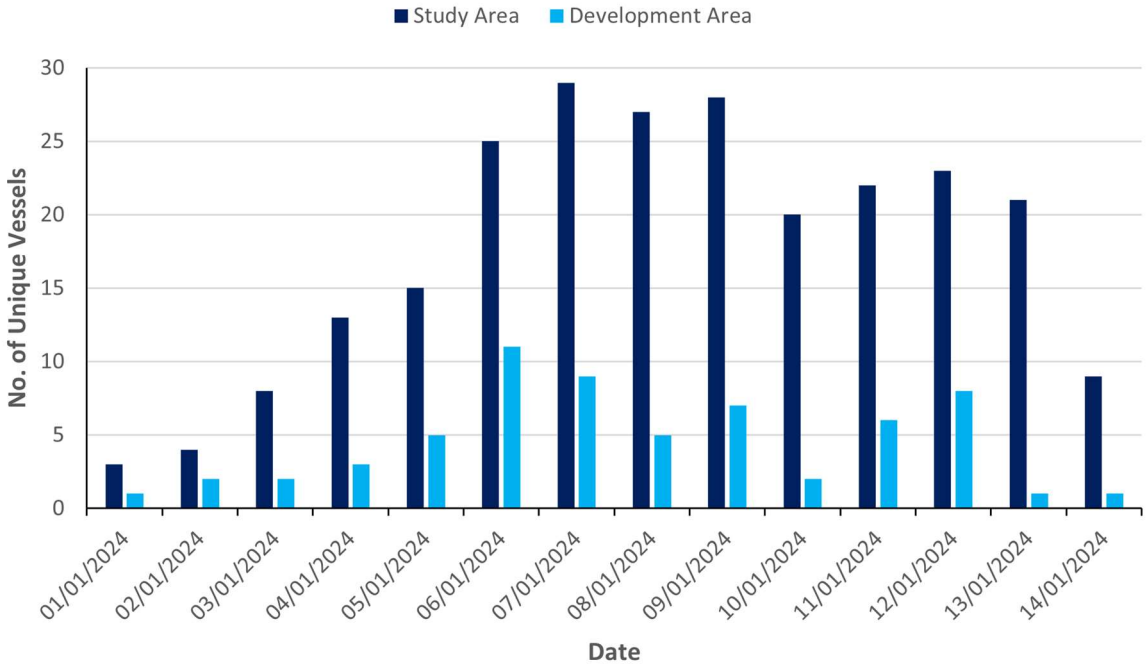

Figure 7.3: Unique Vessel Count per Day (Winter 2024)

Throughout the winter survey period, approximately 26% of unique vessel tracks recorded within the study area intersected the Development Area.

The busiest day recorded within the study area throughout the winter survey period was 7th of January 2024, during which 29 unique vessels were recorded. The busiest day within the Development Area was 6th of January 2024, on which 11 unique vessels were recorded.

The quietest day recorded within the study area throughout the winter survey period was 1st of January 2024, during which three unique vessels were recorded. The quietest days recorded within the Development Area throughout the winter survey period were 1st, 13th, and 14th of January 2024, during which a single vessel transit was recorded each.

During the 14-day summer survey period, there was an average of 21 unique vessels recorded per day within the study area. In terms of vessels intersecting the Development Area itself, there was an average of three to four vessels per day recorded. The vessel counts per day within the study area and Development Area are presented in Figure 7.4.

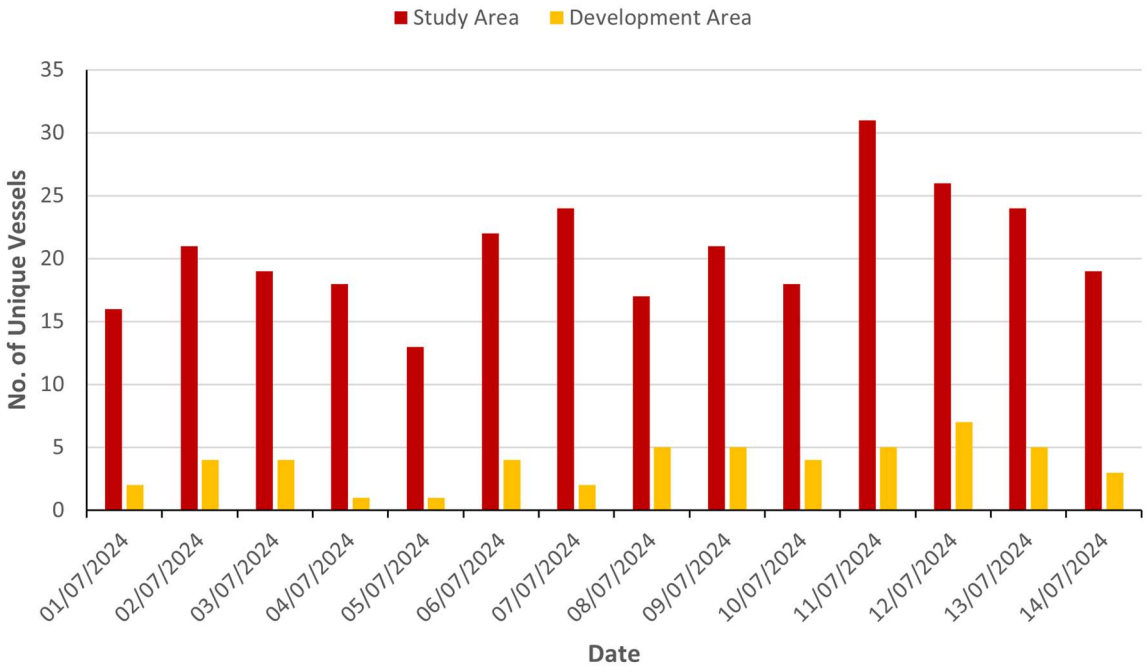

Figure 7.4: Unique Vessel Count per Day (Summer 2024)

Throughout the summer survey period, approximately 18% of unique vessel tracks recorded within the study area intersected the Development Area.

The busiest day recorded within the study area throughout the summer survey period was 11th of July 2024, during which 31 unique vessels were recorded. The busiest day within the Development Area was 12th of July 2024, on which seven unique vessels were recorded.

The quietest day recorded within the study area throughout the summer survey period was 5th of July 2024, during which 13 unique vessels were recorded. The quietest days recorded within the Development Area throughout the summer survey period were 4th and 5th of July 2024, during which a single vessel transit was recorded each.

7.4 Vessel Type

The percentage distribution of the main vessel types recorded passing within the study area during the winter and summer survey periods is presented in Figure 7.5.

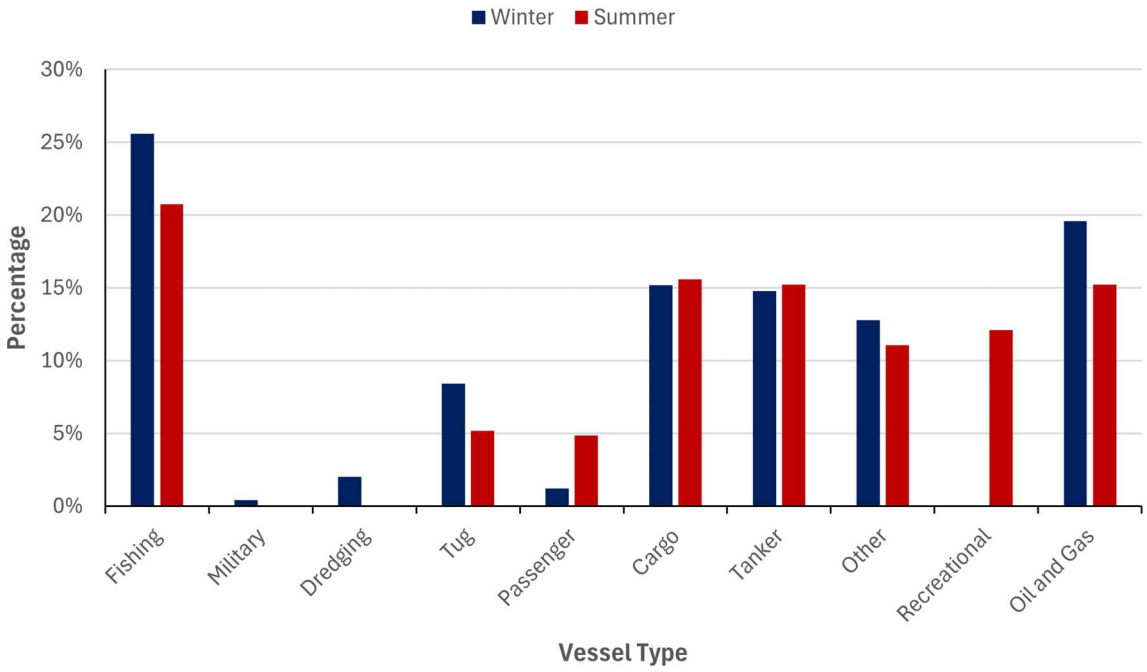

Figure 7.5: Distribution of Vessel Types

Throughout the winter survey period, the most common vessel types recorded within the study area were fishing vessels (26%), oil and gas vessels (20%), and cargo vessels (15%). There were similar trends within the summer survey period, with the most common vessel types recorded within the study area being fishing vessels (21%), cargo vessels (16%), tankers (15%), and oil and gas vessels (15%).

The following subsections detail each of the main vessel types individually.

7.4.1 Fishing Vessels

The tracks of the fishing vessels recorded within the study area during both survey periods are presented in Figure 7.6. Speed analysis was carried out on the vessel tracks to highlight periods of time where vessels were transiting at less than 3 knots (kt), and between 3 and 6kt (noting lower speeds may indicate active fishing i.e., gear deployed). These ranges have been indicated via colour coding in Figure 7.6.

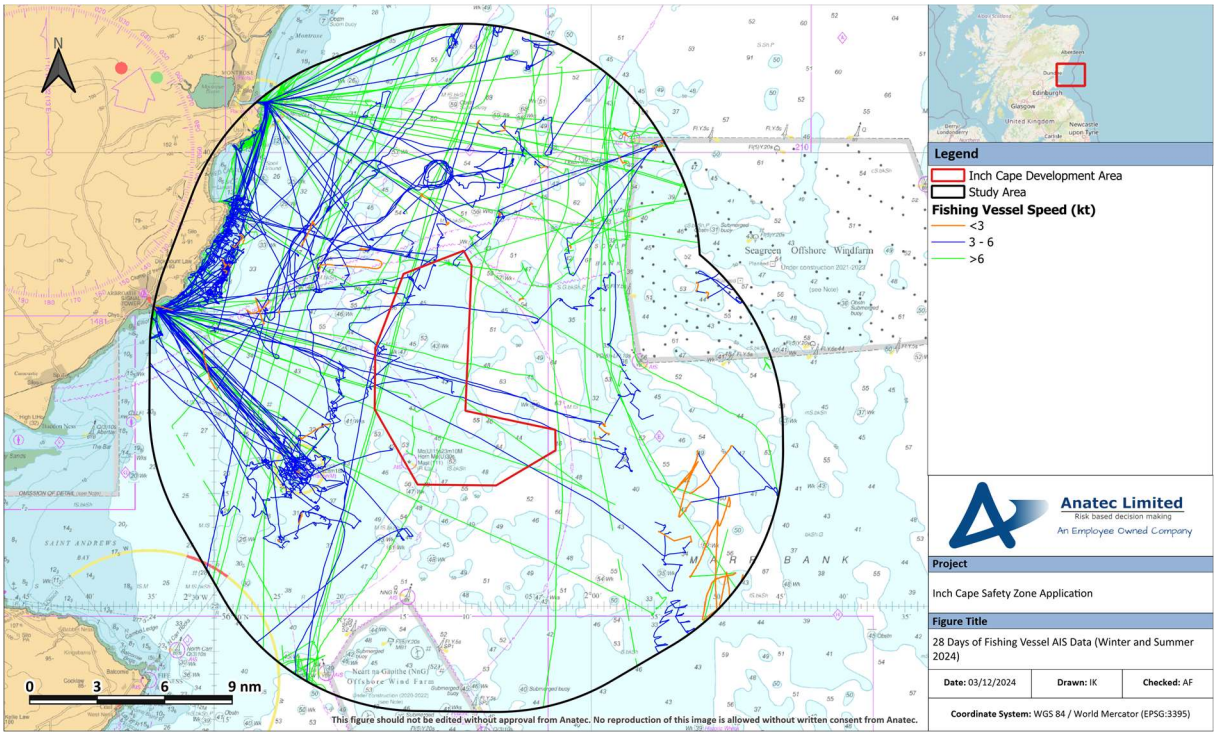

Figure 7.6: 28 Days of Fishing Vessel AIS Data (Winter and Summer 2024)

Approximately four to five fishing vessels per day were recorded within the study area during both survey periods. In terms of vessels intersecting the Development Area itself, there was approximately one fishing vessel every two days recorded across both survey periods.

As referenced in Section 7.1, as the dataset considers vessels broadcasting over AIS only, fishing vessels under 15 m in length may therefore be underrepresented; of the fishing vessels where length is known, approximately 77% were under 12m in length. This aligns with input from the FLO that the majority of fishing vessels operating within the area are under 12m in length. However, based on input from FLO, other than the occasional scallop dredger in the east of the Development Area (which are typically over 15m using AIS), the only active fishing in proximity is potting.

7.4.2 Oil and Gas Vessels

The tracks of the oil and gas vessels recorded within the study area during both survey periods are presented in Figure 7.7.

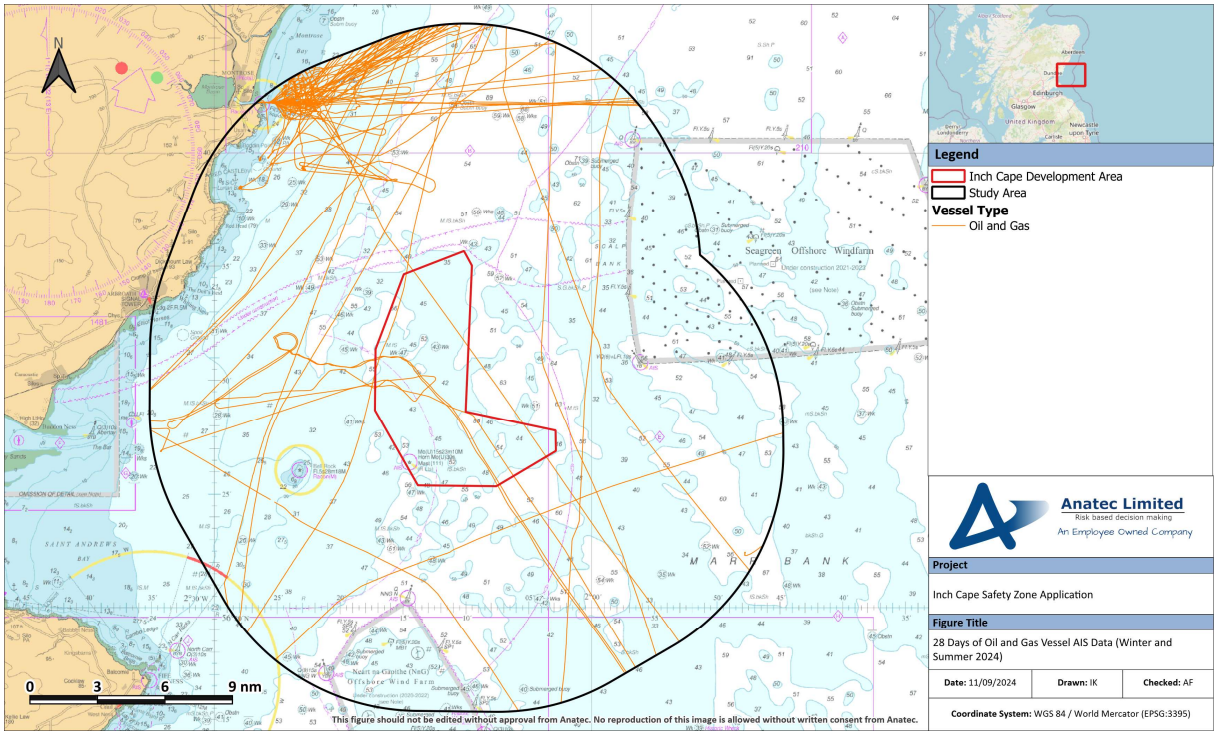

Figure 7.7: 28 Days of Oil and Gas Vessel AIS Data (Winter and Summer 2024)

Approximately three to four oil and gas vessels per day were recorded within the study area during the winter survey period, and three oil and gas vessels per day were recorded during the summer survey period. In terms of vessels intersecting the Development Area itself, there was approximately one oil and gas vessel every three to four days recorded during the winter survey period, and one oil and gas vessel recorded in total during the summer survey period.

The majority of oil and gas vessels were recorded transiting on routes between Montrose and fields such as Catcher and Elgin, with these vessels passing to the north of the Development Area. The vessels that were recorded transiting through the Development Area were routeing towards Dundee and Aberdeen, from the Ravenspurn field.

7.4.3 Cargo Vessels

The tracks of the cargo vessels recorded within the study area during both survey periods are presented in Figure 7.8.

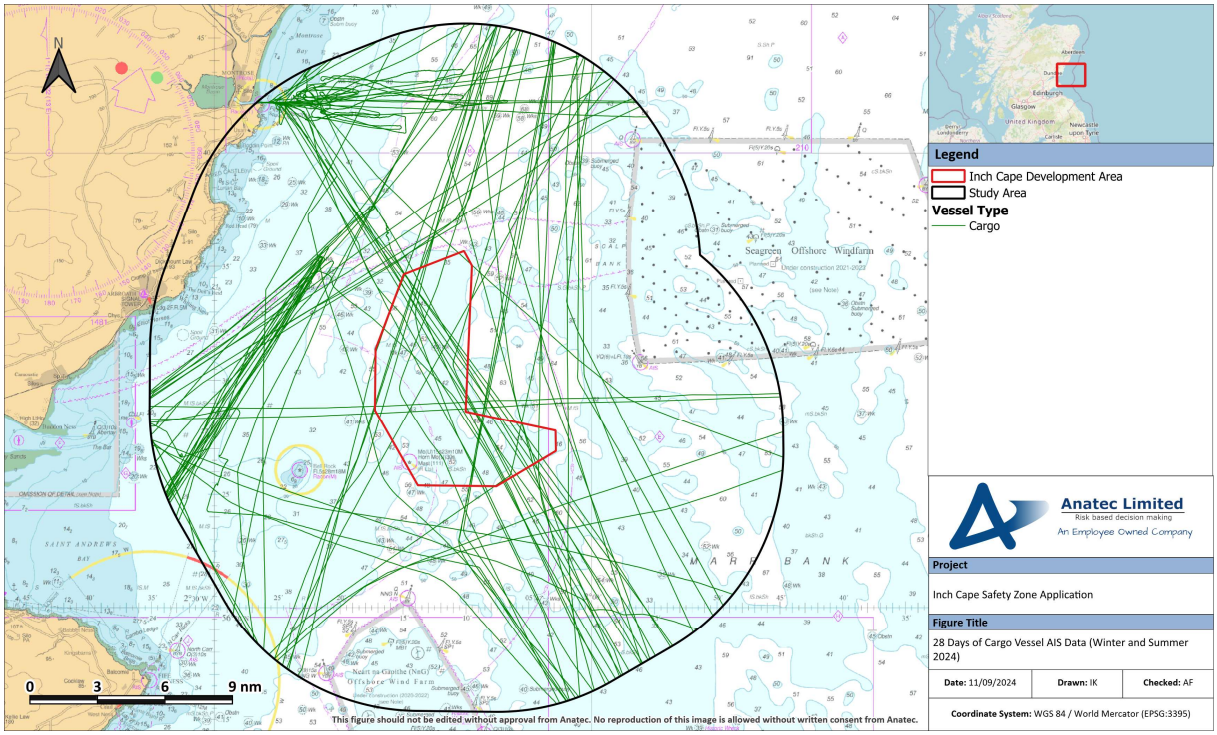

Figure 7.8: 28 Days of Cargo Vessel AIS Data (Winter and Summer 2024)

Approximately two to three cargo vessels per day were recorded within the study area during the winter survey period, and three cargo vessels per day were recorded during the summer survey period. In terms of vessels intersecting the Development Area itself, there was approximately one cargo vessel per day recorded across both survey periods.

Cargo vessel traffic through the Development Area was noted as largely on routes on a north-south orientation between Iceland and Dutch/Belgian ports, with vessels routeing to/from Aberdeen, Dundee, and Montrose also recorded. These vessels were noted deviating past Seagreen OWF to the west, and routeing east of NnG OWF. Vessels routeing to/from the Firth of Forth were also recorded, and largely passed clear of the Development Area to the west.

A cargo vessel was noted as making multiple looped transits to the west of the Development Area – based on information broadcast over AIS, this vessel was awaiting orders.

No regular Roll-on/Roll-off cargo (RoRo) vessel routeing was recorded within the study area during either survey period.

7.4.4 Tankers

The tracks of the tankers recorded within the study area during both survey periods are presented in Figure 7.9.

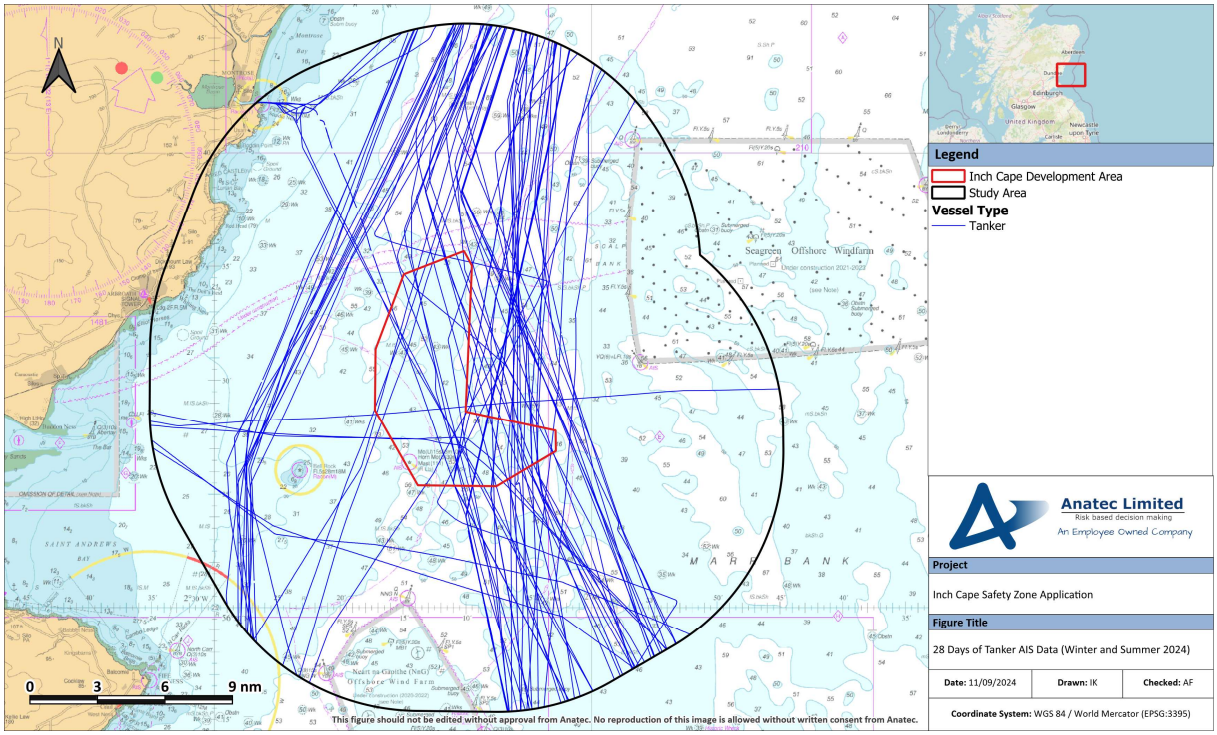

Figure 7.9: 28 Days of Tanker AIS Data (Winter and Summer 2024)

Approximately two to three tankers per day were recorded within the study area during the winter survey period, and three tankers per day were recorded during the summer survey period. In terms of vessels intersecting the Development Area itself, there was approximately two tankers per day recorded during the winter survey period, and one to two tankers per day recorded during the summer survey period.

As with the cargo vessels recorded, the majority of tankers were recorded on north-south transits along the coast, passing through the Development Area and avoiding the Seagreen and NnG OWFs.

7.4.5 Recreational Vessels

The tracks of the recreational vessels recorded within the study area during both survey periods are presented in Figure 7.10.

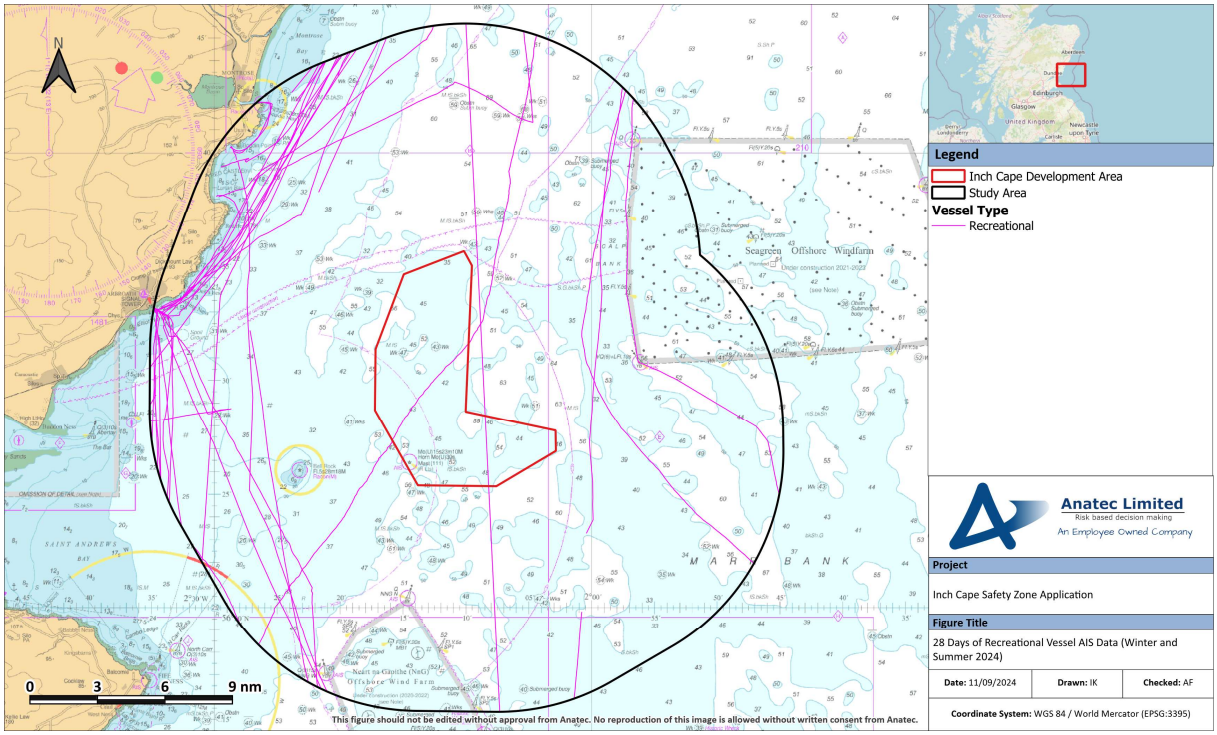

Figure 7.10: 28 Days of Recreational Vessel AIS Data (Winter and Summer 2024)

As referenced in Section 7.1, as the dataset considers vessels broadcasting over AIS only, recreational vessels may therefore be underrepresented.

Approximately two to three recreational vessels per day were recorded within the study area during the summer survey period, with no recreational vessel activity recorded during the winter survey period. In terms of vessels intersecting the Development Area itself, there were two recreational vessels recorded in total during the summer survey period.

Recreational vessels typically were recorded close to the coast, with few transits noted further offshore. There was one instance of a recreational vessel transiting through the Development Area.

7.4.6 Passenger Vessels

The tracks of the passenger vessels recorded within the study area during both survey periods are presented in Figure 7.11.

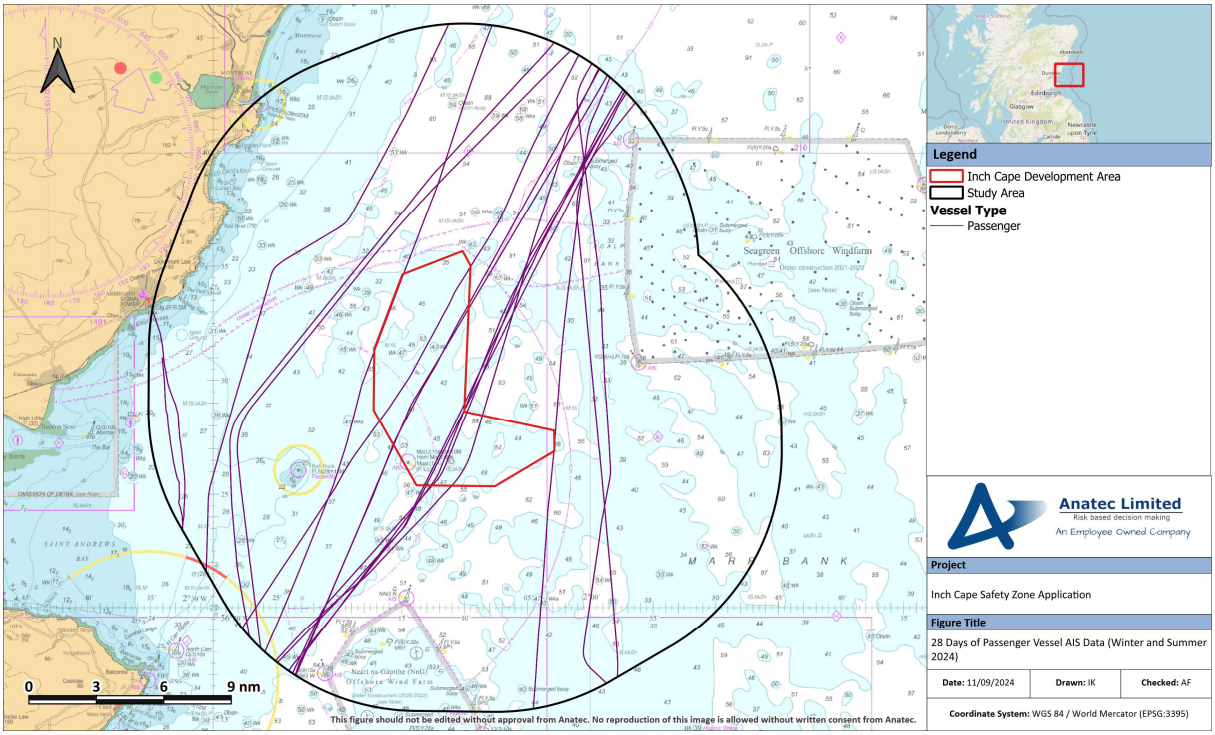

Figure 7.11: 28 Days of Passenger Vessel AIS Data (Winter and Summer 2024)

Approximately one passenger vessels every five days was recorded within the study area during the winter survey period, and one passenger vessel per day was recorded during the summer survey period. In terms of vessels intersecting the Development Area itself, there was approximately one passenger vessel per day recorded during the winter survey period, and one passenger vessel every one to two days recorded during the summer survey period.

Passenger vessel traffic through the Development Area was noted as largely primarily on northeast-southwest bearings to/from the Firth of Forth, with the majority of passenger vessel transits from cruise liners. Minor levels of traffic from coastal tour vessels was also recorded.

No regular Roll-on/Roll-off passenger (RoPax) vessel or ferry routeing was recorded within the study area during either survey period.

7.5 Anchored Vessels

Anchored vessels can be identified based upon the AIS navigational status which is programmed on the AIS transmitter on board a vessel. However, information is manually entered into the AIS, and therefore it is common for vessels not to update their navigational status if only at anchor for a short period of time.

For this reason, vessels recorded within the study area during the survey periods which travelled at a

speed of less than 1 kt for more than 30 minutes had their corresponding vessel tracks individually checked for patterns characteristic of anchoring activity. After applying these criteria, the vessels identified as likely to be anchoring are colour-coded by vessel type and presented in Figure 7.12.

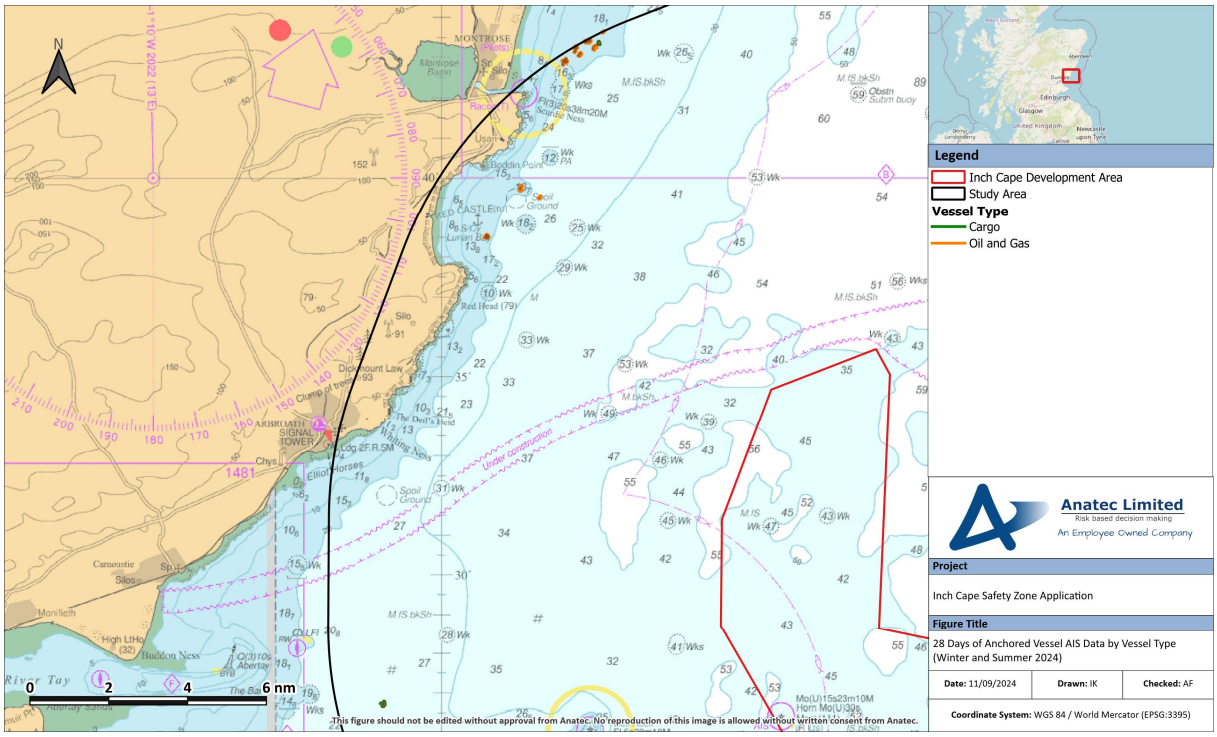

Figure 7.12: 28 Days of Anchored Vessel AIS Data by Vessel Type (Winter and Summer 2024)

Approximately one vessel per day was identified as likely to be at anchor within the study area during the survey periods. The majority of vessels likely to be anchoring were oil and gas vessels (93%), with all other anchoring vessels being cargo vessels.

Anchoring activity was prevalent off the coast in the approaches to Montrose, with one instance of anchoring in the approaches to the River Tay. There was no anchoring activity recorded within the Development Area, with the closest anchoring activity associated with oil and gas vessels approximately 7.3 nm northwest.

7.6 Wind Farm Vessels

As discussed in Section 7.1, it is understood that the construction buoyage for the Seagreen OWF and NnG were in place during the survey periods. Therefore, tracks associated with Seagreen and NnG have been omitted from previous analysis. However, the vessels may provide broad representation of operational traffic patterns, and are therefore shown in this section.

Tracks of wind farm vessels associated with the developments in the area are presented in Figure

7.13, colour-coded by associated OWF. It is noted that this includes vessels recorded visiting the Inch Cape Met Mast.

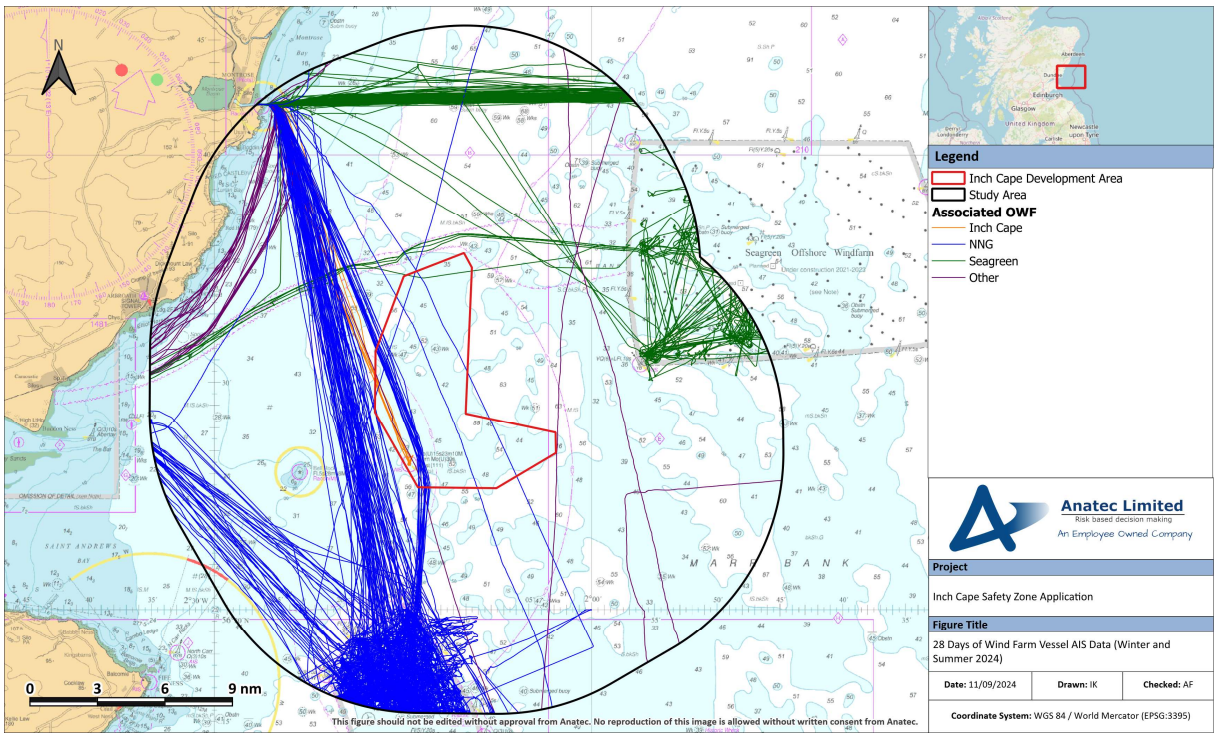

Figure 7.13: 28 Days of Wind Farm Vessel AIS Data (Winter and Summer 2024)

Approximately two wind farm vessels per day were recorded transiting to/from Seagreen OWF within the study area during the winter survey period, and five to six wind farm vessels per day were recorded during the summer survey period. For NnG OWF, these values were eight vessels per day for the winter survey period, and six vessels per day during summer.

The majority of Seagreen-associated vessels passed approximately 6.6 nm north of the Development Area routeing from Montrose, with several vessel tracks noted following the export cable route for the Seagreen OWF approximately 0.8 nm north. Wind farm vessels routeing to/from NnG OWF were noted to pass west of the Development Area from Montrose in the majority, with some traffic transiting through the site east of the Development Met Mast.

7.7 Data Validation

As the initial Navigational Risk Assessment (NRA) was carried out in 2012, a validation analysis was conducted as part of the revised application (see Section 1.1) in order to assess vessel numbers and corroborate vessel traffic analysis (Anatec, 2017). Similarly to the NRA dataset, this covered seasonal 14-day periods of data. The time periods of this validation survey, as well as the NRA survey, are

presented in Table 7.1.

Table 7.1: Summary of Survey Data

Survey		Period
NRA	Winter	26th of February – 6th of March 2012
	Summer	23rd of July – 11th of August 2012
Validation	Summer	6th of June – 19th of June 2016
	Winter	5th of December – 18th of December 2016

The validation analysis found that, other than slight decreases in fishing vessel traffic during winter since 2012, there were no notable changes in vessel type numbers. Overall, the validation study did not consider material changes in vessel traffic to have occurred between 2012 and 2016.

A comparison of the data presented within this Safety Zone Application and the validation dataset is presented in Table 7.2.

Table 7.2: Comparison of Vessel Traffic Data

Vessel Type	Average Unique Vessel Count per Day			
	Validation Survey		Safety Zone Application	
	Winter	Summer	Winter	Summer
Fishing	3-4	6	4-5	4-5
Military	0	1	0-1	0
Dredging	0-1	0-1	0-1	0
Tug	0	0-1	1-2	1
Passenger	0	1	0-1	1

Vessel Type	Average Unique Vessel Count per Day			
	Validation Survey		Safety Zone Application	
	Winter	Summer	Winter	Summer
Cargo	3-4	3	2-3	3
Tanker	2-3	2-3	2-3	3
Other / oil and gas[2]	3	3-4	6	5-6
Recreational	0	1-2	0	2-3

Overall, the average number of each vessel type per day remained broadly consistent across the survey periods analysed, with prevalence and consistency of fishing vessels, cargo vessels, and tankers noted.

As a result of construction for the NnG and Seagreen OWFs, vessel routeing in proximity to the Development has altered. However, as established within a comparison of relevant datasets, this has not resulted in notable changes to traffic numbers with similar values recorded both between the 2012 and 2016 datasets, and between the 2016 datasets and those presented within this document. Therefore, the data presented is considered a satisfactory representation of the baseline.

[2] Oil and gas and wind farm vessels were included under the vessel type 'Other' in the NRA and validation datasets, and as such have been included within the 'Other' category for the 2024 dataset also (for the purposes of this table only).

8 Safety Zone Overview

8.1 Construction Phase

Due to the size of the Development and the proposed construction programme, there are expected to be various construction activities underway at different locations across the site at any one time. There may therefore be a need to declare a number of 500 m construction safety zones simultaneously and on occasions, determined by the requirements of construction logistics, these may be at adjacent locations. Minimum spacing of the peripheral WTGs subject to micrositing is 1,025m which means that dependent on foundation type (jacket or monopile), there may be instances where adjacent peripheral 500m safety zones overlap, in effect forming a larger safety zone. However, cases of more than two adjacent safety zones being active concurrently and overlapping is considered very unlikely noting that peripheral spacing varies and the majority of WTGs are monopiles rather than jackets (i.e., smaller surface areas), and this would require concurrent activities occurring at more than two adjacent locations.

Spacing of the inner WTGs is 1,236m and as such safety zones are not expected to overlap within the internal grid.

8.1.1 Safety Zone Triggers

A 500 m construction safety zone will be active around any WTG or OSP where a construction vessel is on station. For the purposes of this application, this is defined as an instance of a construction vessel being anchored next to a WTG/OSP, alongside a WTG/OSP via Dynamic Positioning (DP), attached to a WTG/OSP, or displaying Restricted in Ability to Manoeuvre (RAM) whilst alongside a WTG/OSP.

However, it is noted that this application does not include 500m safety zones triggered by SOVs. Under this application SOVs will not trigger 500m safety zones regardless of activity.

The WTGs and OSP will have a 50 m pre-commissioning safety zone up until the point of commissioning of the Development whenever a 500 m safety zone is not active.

8.1.2 Number of Safety Zones

During the construction phase, it is estimated that based on the intended timelines, up to seven concurrent activities could occur that may trigger a 500m safety zone. These are as follows:

- Monopile installation;
- TP installation;
- Jacket installation;
- Grout installation;

- Scour installation;
- IAC trenching/preconstruction preparatory works (boulder/UXO clearance) within 500 m of asset;
- IAC installation within 500 m of asset;
- WTG installation; and
- Export cable pull in at OSP.

Given that there is the potential for construction timelines to shift (for example due to adverse weather) which could result in a change to concurrent installation activities and potential duplication of installation activities, ICOL are applying for ten concurrent 500 m safety zones to ensure a worst-case is covered. It is emphasised that this is a worst case, and it is anticipated that only seven concurrent safety zones will be required based on the intended schedule. The number applied for is considered appropriate based on the large scale for the Development, which will comprise up to 73 structures in total and cover an area of approximately 43.7 nm^2. Ten concurrent safety zones would represent approximately 6% of this total area.

There could be 73 active 50 m pre-commissioning safety zones around the structures in total.

8.2 Operational Phase

8.2.1 Safety Zone Triggers

As per Section 1.3.2, during the operational phase, safety zones are being applied for only around the WTGs and OSP where 'major maintenance' is underway. The definition of 'major maintenance' given within the Electricity Regulations 2007 is as follows:

"*works relating to any renewable energy installation which has become operational, requiring the attachment to, or anchoring next to, such an installation of a self-elevating platform, jack-up barge, crane barge or other maintenance vessel.*"

On this basis, major maintenance activities that will occur as part of the operation of the Development will vary, and will depend on various factors (e.g., need for component repair//replacement).

In terms of vessel types to be used, it is likely that the majority of maintenance activities will be SOV-led. However, there may be a need for separate vessel types in the event that any significant major maintenance is required. The necessary vessel types will be dependent on needs arising, and as such cannot be confirmed at this stage. Large vessels including HLVs or jack-ups may be required.

Therefore, under this application a 500 m safety zone will only be triggered during the operational phase when a vessel is 'anchoring next to' or 'in attachment to' a WTG or OSP, as per the Electricity Regulations 2007 definition. However, as for the construction phase (see Section 8.1.1), SOVs will

not trigger a 500 m safety zone under this application.

Where necessary during major maintenance, details of works being carried out, the associated vessels engaged in the works, and the safety zones in place shall be promulgated via the usual means including local NtM. Full details of the approach to promulgation of information for the Development are provided in the VMNSP.

8.2.2 Number of Safety Zones

Noting the uncertainty around major maintenance needs during the operational phase, ICOL are applying for up to five concurrent 500 m safety zones to ensure a worst case is covered. This would encompass approximately 3% of the total Development Area.

This number is based on the anticipated failure rate of components leading to replacement, and potential upgrade works to improve performance. This number is considered appropriate based on the large scale of the Development, which will comprise up to 73 structures in total and cover an area of approximately 43.7 nm^2.

9 Justifications for Safety Zones

Safety zones are recognised as a standard mitigation measure within both the renewables and oil and gas industries and are primarily implemented to minimise the risk to human life. Safety zones within UK waters were first implemented for oil and gas platforms on this basis, and in this regard are considered an important mitigation measure by the Health and Safety Executive (HSE), who state the following regarding safety zones within their relevant safety zone guidance note (HSE, 2008):

"*All installations are at risk from collision or damage by seagoing vessels. […] All installations should be regarded as vulnerable and need the protection which strict observance of the safety zone affords. Vessels can cause considerable damage and danger to life if they collide with an installation*."

While written in relation to oil and gas platforms, this guidance is considered as being applicable to renewables installations during the construction phase, or during major maintenance when there will be installation vessel(s) and their crew working inside the safety zone, in that the potential risks and consequences of an incident are similar.

On this basis, this section considers the potential risks to shipping and navigation identified for the construction, and operation and maintenance phases of the Development for which safety zones are considered to be a relevant mitigation. This section forms the safety case-based element of the application that provides the justification for the safety zones being applied for.

9.1 Reduction in Collision Risk

Throughout the construction of the Development, various vessels will be present within the buoyed construction area to carry out the construction of the foundations, WTGs, and cables. Given the scale of the largest components of these structures and the sensitive nature of the associated works, the vessels on site will include those that are RAM with the potential for multiple such vessels to be on site simultaneously.

Project vessel numbers during operation are anticipated to be significantly less than during construction. However, during periods of major maintenance there may be a requirement for RAM vessels undertaking similar sensitive operations to those during the construction phase.

The vessel traffic data assessed indicates commercial vessels do pass in proximity to the Development Area. Based on experience of under-construction OWFs, it is likely that once the site is marked as a buoyed construction area, commercial vessels will deviate around the site, noting that details of the Development including in relation to the buoyage will be promulgated in advance of construction to assist in vessel passage planning. During the early stages of construction, although unlikely, limited numbers of commercial vessels may still choose to transit through areas of the site where a structure is under construction, and the 500 m safety zones would make it clear to such vessels which areas should be avoided to reduce collision risk to within As Low As Reasonably

Practicable (ALARP) parameters.

Fishing vessels are present in the study area based on the vessel traffic data assessed and may also choose to avoid the buoyed construction area. However, given the typical size of such vessels, they may be more likely to enter into the site than larger commercial vessels, and may therefore also be more comfortable passing closer to sensitive operations. Recreational activity is anticipated to be limited, but again, any such vessels present in the area may choose to transit through. The 500 m rolling construction safety zones would make it clear to these smaller vessels the areas where such operations are being undertaken (i.e., those involving a RAM vessel), and as such which areas should be avoided to reduce collision risk to ALARP.

During maintenance, as commercial vessels deviations are well established, associated traffic will likely avoid the structures. However, smaller vessels can still choose to enter the Development Area and may be more likely to do so than during the construction phase given lower project vessel volumes. The implementation of 500 m safety zones to protect any major maintenance activities will ensure collision risk to the associated RAM vessels is ALARP.

9.2 Reduction in Allision Risk

As discussed in Section 9.1, it is likely that the majority of commercial vessels will avoid the site once it is marked as a buoyed construction area and instead deviate around the construction works and structures. However, it should be considered that such vessels may still choose to transit through, particularly during the early stages of construction through areas where structures have not yet been constructed (noting that this would depend on water depth). Smaller vessels (e.g., fishing and recreation) may choose to avoid the site during construction, however given their size and manoeuvrability would be more comfortable navigating through than commercial vessels.

The implementation of 50 m safety zones around constructed structures (partial or complete) would make it clear to passing vessels the areas which should be avoided to minimise allision risk. In this regard details of the safety zones would be promulgated in advance to ensure vessels were able to passage plan to account for the presence of the structures and associated safety zones. This promulgation would also increase awareness of the Development in general, further reducing allision risk.

As per Section 11, any safety zones would be monitored and policed to ensure they are an effective mitigation, noting that the formal approval of the safety zones provides the legislative framework to warn passing third party vessels that entry into active safety zones is prohibited.

9.3 Protecting Project Personnel

During the construction phase or during periods of major maintenance there will be a notable increase in the number of crew and personnel on site. This includes personnel on RAM vessels which are at

particular risk of collision as per Section 9.1 and also any personnel stationed on the structures themselves, which are at risk of allision as per Section 9.2.

Therefore, there is a need to ensure the safety of the crew working on-board construction/maintenance vessels throughout the construction and maintenance phases and any other on-site personnel. The implementation of mandatory 500 m safety zones provides an alert to vessels transiting within the area that a sensitive operation is underway and allows them to passage plan to maintain a safe passing distance for any activity and thus ensures the safety of the crew and personnel (to within ALARP parameters). Similarly, during the construction phase in situations where personnel were stationed on a structure but with no construction vessel alongside, the 50 m safety zones will reduce allision risk (see Section 9.2) and hence reduce risk to the personnel.

9.4 Reduction in Fishing Gear Snagging

Based on the vessel traffic data studied (see Section 7.4.1), fishing vessels do currently transit near the site. Based on speed and behaviour of the recorded vessels, this activity included active fishing.

The partially completed structures and IAC in proximity to structures both pose a snagging risk to deployed fishing gear. In addition, utilisation of anchor spread by construction/maintenance vessels will also pose a snagging risk. The implementation of 500 m safety zones around structures where construction or major maintenance works are ongoing and 50 m safety zones around completed structures (prior to commissioning of the wind farm) will therefore reduce the likelihood of an associated snagging incident. It is noted that, as referenced in Section 11, where present guard vessels will alert third party vessels of ongoing works.

9.5 Reduction in Interaction with Anchor Spread

The construction of the WTGs may include use of a construction vessel utilising an anchor spread. There may also be a need for similar activity during certain periods of major maintenance. These subsea anchors and lines/chains create an interaction risk with vessels, anchors and fishing gear. This could lead to severe consequences for the passing vessel and/or the Project vessel, with the potential for injury or loss of life as a worst case.

The implementation of mandatory 500 m safety zones provides a buffer from passing traffic and thus reduces the likelihood of an anchor spread interaction.

As per Section 11, any safety zones would be monitored and policed to ensure they are an effective mitigation, noting that the formal approval of the safety zones provides the legislative framework to warn passing third party vessels that entry into active safety zones is prohibited.

9.6 Accounting for Inexperienced Mariners

As discussed in Section 7, recreational traffic is limited in and near the site. However, it should be

considered that there may be transits from recreational vessels that carry a lower standard of navigational equipment than commercial vessels, and/or with crews that may not be as experienced or have few formal qualifications.

Implementation of mandatory safety zones in conjunction with other embedded mitigation measures (e.g., guard vessel used where identified as necessary, construction site marking and charting, monitoring and policing of safety zones) is therefore necessary to mitigate risks to any recreational users.

As previously detailed, if a vessel were to infringe a safety zone, and therefore become at risk of an allision and/or collision, the monitoring and policing procedures would be actioned as detailed in Section 11. Any infringements to these safety zones shall be noted by the onsite vessel(s) and efforts made to contact the vessel using standard marine procedures, alerting it to the safety zone infringement. Furthermore, the on-site vessels shall be contactable (via Very High Frequency (VHF)) and be able to provide information to recreational vessels navigating in or in proximity to the site should they require.

Therefore, the implementation of safety zones in tandem with a suite of other mitigation measures shall bring the risk to within ALARP parameters.

9.7 Accounting for Unforeseen Risk

During the construction phase and any periods of major maintenance, there is potential for a number of events to occur which may result in previously unforeseen risk. Such events could include:

- Fire/explosion on board construction/maintenance vessel;
- Machinery failure (including steering) on board construction/maintenance vessel;
- Cargo (e.g., structure components) shifting on board construction/maintenance vessel;
- Structural failure of OWF component;
- Dropped object;
- Accidental interaction with UXO/wreck; or
- Accident associated with adverse weather.

If any of these incidents were to occur throughout the construction/during periods of major maintenance of the Development, there is potential for loss of life and/or serious environmental damage. While safety zones would not necessarily directly mitigate any of these events in of themselves, they would decrease the likelihood of a third party vessel being exposed to a hazard by sterilising the immediate working areas of existing vessel traffic. The presence of these safety zones

allows third party traffic to passage plan and pass at a safe distance, and therefore reduces the risk of a third-party vessel becoming involved in any of the aforementioned unforeseen risk scenarios. This greatly reduces the overall severity of consequence to third party users of any potential incident.

The safety zones will be implemented in tandem with a suite of other mitigation measures (e.g., onsite vessel(s), construction site marking, lighting and marking, charting, monitoring and policing of safety zones) thus bringing the risk to within ALARP parameters.

10 Impact of Safety Zones

10.1 Commercial Vessel Routeing

Currently, commercial vessel routeing in the majority passes through the Development Area, predominately on a north-south orientation. These vessels are primarily cargo vessels and tankers, with oil and gas vessels typically passing to the north.

Some displacement of these vessels is therefore anticipated to occur.

It is noted that early on in the construction phase, some commercial vessels may still enter into the buoyed construction area. However, this would likely be into areas where construction works were not yet commenced and hence avoiding active safety zones. From traffic patterns noted in relation to the nearby under-construction NnG and Seagreen OWFs, commercial vessels have been recorded diverting around the respective areas of construction buoyage. Due to this, vessel masters will also have become more accustom to navigating past construction buoyage in this area of the North Sea.

In addition, promulgation of information will be undertaken including details of active safety zones which will facilitate passage planning of commercial vessels.

On this basis, the safety zones are not considered as having any additional impact on commercial vessels over that of the structures themselves.

10.2 Fishing Vessels

As per Section 7.4.1, based on the available vessel traffic data, fishing vessels currently transit and actively fish (i.e., deploy gear) in proximity to the Development Area, noting that the analysis is likely to underrepresent smaller fishing vessels (less than 15m). It is therefore possible that fishing vessels may seek to transit and/or fish within the Development Area during the construction and operation and maintenance phases.

Assuming the potential maximum of ten active 500 m safety zones, at most approximately 6% of the area of the entire Development Area would be covered by 500 m safety zones during the construction phase. Therefore, the worst case scenario would still mean the significant majority of the Development Area was unrestricted by 500 m safety zones. Regardless, the scenario of ten concurrent 500m safety

zones is considered an unlikely worst case.

The 50 m pre-commissioning safety zones are considered unlikely to have any notable impact given the minimum spacing of approximately 1,000 m.

During the operation and maintenance phase, safety zones would only be active during periods of major maintenance and as such will both only be present for limited periods of time and, be lower in terms of frequency than during the construction phase.

It should also be considered that promulgation of information will be undertaken in advance of any construction and major maintenance activities including in relation to associated safety zones. This will include via the Kingfisher Bulletin and the FLO.

Therefore, any impact from safety zones on fishing vessels is anticipated to be minimal.

10.3 Recreational Vessels

As per Section 7.4.5, the available data indicates that recreational activity within the Development Area is low in volume. However, transits may still occur noting these are likely to be from experienced recreational users. The decision as to whether to transit through would be at the discretion of each individual vessel.

Regardless, as with fishing vessels (see Section 10.2), as the construction safety zones will be temporary (with a maximum of 6% of the total Development Area covered at any one time), there is considered to be sufficient space to facilitate recreational vessel transits. This, in addition to low expected numbers of recreational vessels indicates that any impact from safety zones on recreational users is likely to be minimal.

10.4 Anchored Vessels

From the survey data investigated, no vessels were identified at anchor within the Development Area with the closest being 7.3 nm to the northwest (see Section 7.5). Regardless, it is considered unlikely that a vessel would deliberately choose to anchor within the Development Area once construction was underway or operational (except in an emergency).

On this basis any impact from safety zones on anchoring activity is likely to be minimal.

11 Monitoring and Policing

11.1 Monitoring

All vessels associated with the Development will be supplied with safety zone procedures as summarised in this application.

Whenever active 500 m safety zones are in place, at least one on-site vessel will be assigned

monitoring duties, including the responsibility to monitor the safety zones (and the surrounding area) via Radar, AIS, VHF communications and visual observations. Where available, this will be via a dedicated guard vessel. Where no guard vessel is available, construction vessels triggering a 500m safety zone will also have responsibility for monitoring their own safety zones. Other on-site vessels will also be keeping a watch as required under Rule 5 of Convention on the International Regulations for Preventing Collisions at Sea (COLREGs) ((International Maritime Organization (IMO), 1972).

Where no vessel is available on site (e.g., in adverse weather conditions, or certain periods where there are only 50 m pre-commissioning safety zones in place), site monitoring would still be undertaken as far as is practicable by the Marine Coordinator. Vessel traffic will be monitored 24/7 from the Marine Coordination Centre via AIS.

Where a third party vessel is observed to be approaching the Development Area, early contact will be made by the designated on-site vessel or Marine Coordinator to advise the passing vessel of the construction /maintenance work underway, and alert them to the presence of any active, or soon to be active safety zones. Where a third party vessel is observed to enter or come in close proximity to an active safety zone, the designated on-site vessel will make contact using standard marine procedures to inform the vessel it has, or is close to, infringing the safety zone. The vessel will be warned to increase their passing distance and instructed against entering in the future.

Direct navigational advice will not be given to any third party vessel, with COLREGS (IMO, 1972) remaining the navigational priority for all vessels.

11.2 Policing

Where feasible, details and actions of any vessels which consistently ignore the warnings issued by the Development or are considered to be causing a potential danger to vessels, personnel or assets within the safety zone areas will be monitored and action (including steps taken) recorded. The safety zones supplement more general regulations that are applicable to all sea users including The Merchant Shipping (Distress Signals and Prevention of Collisions) Regulations 2020 which implement COLREGS (IMO, 1972). These general regulations remain in force and require vessels to take appropriate action when encountering vessels that are RAM as well as the presence of safety zones. Any infringements of the safety zone or unsafe navigational acts (as required under the relevant regulations implementing international conventions) will be reported to the relevant authorities.

11.3 Existing Experience

It is noted that due to the development of other existing OWFs including large scale projects across the North Sea area (e.g., Seagreen, NnG), the majority of regular operators (including local recreational sailors) are likely to be familiar with the implementation and operation of construction/major maintenance safety zones, and the associated procedures around how they are monitored and policed.

12 Summary

This document represents the primary supporting document to the safety zone application submitted for the Development. Safety zones have been applied for during the construction and operational phases as follows:

- 'Rolling' (i.e., active only when construction is ongoing) 500 m safety zone established around each WTG/OSP, and/or their foundations, whilst construction work is being performed, as indicated by the presence of a construction vessel(s);
- Construction 50 m safety zones established around any WTG/OSP which is either partially completed or fully constructed where a construction vessel is not present prior to commissioning of the OWF; and
- 500 m safety zones around all 'major maintenance' being undertaken around a WTG/OSP, as denoted by the presence of a major maintenance vessel.

A safety case has been provided, which indicates the safety zones (in combination with other mitigation measures) are necessary to bring the following risks to within ALARP parameters:

- Collision risk;
- Allision risk;
- Interaction with the anchor spread of construction/maintenance vessels;
- Risks to persons involved in the construction/maintenance process; and
- Fishing gear snagging.

The safety zones will also facilitate advanced passage planning by third party vessels and reduce consequences in the event of an unforeseen emergency incident by decreasing the likelihood that a third party vessel will be in proximity. The findings of the vessel traffic data has indicated no significant impacts to third party vessels are expected from the safety zones, and thus they are considered a proportionate mitigation measure.

The 500 m safety zones shall be monitored for infringements by a nominated vessel where available/feasible. Construction/maintenance vessels may also monitor their own 500 m safety zones noting this would be risk assessed based on the activities the vessel will be undertaking and its available monitoring resources. General site monitoring will be undertaken from the Marine Coordination Centre including when no vessels are on-site (i.e., when only 50 m pre-commissioning safety zones are present). The primary response to potential infringement will be to warn passing traffic of the ongoing works and any active safety zones, and to alert any vessels where an infringement may occur or has already occurred.

13 References

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HSE (2008). Safety zones around oil and gas installations in waters around the UK. INDG18 (Rev 1).

IALA (2022). International Association of Marine Aids to Navigation and Lighthouse Authorities Guidance G1162: The Marking of Man-Made Offshore Structures, Edition 1.0. Saint Germain en Laye, France: IALA.

IMO (1972 as amended). Convention on the International Regulations for Preventing Collisions at Sea. London: IMO.

The Merchant Shipping (Safety of Navigation) Regulations 2020. https://www.legislation.gov.uk/uksi/2020/673/contents/made (accessed Aug 2024)

Appendix A – Structure Locations

ID	Latitude	Longitude
IC-A05	56° 30′ 38.77″ N	002° 14′ 48.84″ W
IC-A06	56° 29′ 58.96″ N	002° 14′ 43.33″ W
IC-A07	56° 29′ 19.10″ N	002° 14′ 37.82″ W
IC-B02	56° 32′ 41.32″ N	002° 13′ 53.15″ W
IC-B03	56° 32′ 01.50″ N	002° 13′ 47.68″ W
IC-B05	56° 30′ 41.83″ N	002° 13′ 36.70″ W
IC-B06	56° 30′ 01.98″ N	002° 13′ 31.19″ W
IC-B07	56° 29′ 22.16″ N	002° 13′ 25.72″ W
IC-B09	56° 28′ 02.50″ N	002° 13′ 14.77″ W
IC-B10	56° 27′ 22.64″ N	002° 13′ 09.30″ W
IC-C01	56° 33′ 24.19″ N	002° 12′ 46.44″ W
IC-C02	56° 32′ 44.38″ N	002° 12′ 40.97″ W
IC-C03	56° 32′ 04.52″ N	002° 12′ 35.46″ W
IC-C04	56° 31′ 24.71″ N	002° 12′ 30.02″ W
IC-C05	56° 30′ 44.86″ N	002° 12′ 24.55″ W
IC-C07	56° 29′ 25.19″ N	002° 12′ 13.61″ W

IC-C08	56° 28′ 45.59″ N	002° 12′ 11.52″ W
IC-C09	56° 28′ 05.52″ N	002° 12′ 02.70″ W
IC-C10	56° 27′ 25.67″ N	002° 11′ 57.26″ W
IC-D10	56° 27′ 28.69″ N	002° 10′ 45.19″ W
IC-D11	56° 26′ 48.88″ N	002° 10′ 39.76″ W
IC-E11	56° 26′ 51.86″ N	002° 09′ 27.76″ W
IC-F11	56° 26′ 54.85″ N	002° 08′ 15.72″ W
IC-G11	56° 26′ 57.84″ N	002° 07′ 03.68″ W
IC-P01	56° 35′ 33.61″ N	002° 10′ 12.94″ W
IC-P02	56° 35′ 19.03″ N	002° 11′ 21.66″ W
IC-P03	56° 35′ 04.45″ N	002° 12′ 30.38″ W
IC-P04	56° 34′ 49.84″ N	002° 13′ 39.07″ W
IC-P05	56° 34′ 33.96″ N	002° 14′ 48.62″ W
IC-P06	56° 34′ 02.21″ N	002° 15′ 10.44″ W
IC-P07	56° 33′ 30.46″ N	002° 15′ 32.26″ W
IC-P08	56° 32′ 58.70″ N	002° 15′ 54.07″ W
IC-P09	56° 32′ 26.95″ N	002° 16′ 15.85″ W
IC-P10	56° 31′ 55.20″ N	002° 16′ 37.63″ W

IC-P11	56° 31′ 23.45″ N	002° 16′ 59.38″ W
IC-P12	56° 30′ 16.45″ N	002° 17′ 01.68″ W
IC-P13	56° 29′ 42.50″ N	002° 17′ 02.33″ W
IC-P14	56° 29′ 09.35″ N	002° 17′ 02.94″ W
IC-P15	56° 28′ 35.72″ N	002° 16′ 55.70″ W
IC-P16	56° 28′ 06.24″ N	002° 16′ 25.25″ W
IC-P17	56° 27′ 36.76″ N	002° 15′ 54.83″ W
IC-P18	56° 27′ 07.27″ N	002° 15′ 24.37″ W
IC-P19	56° 26′ 37.79″ N	002° 14′ 53.99″ W
IC-P20	56° 26′ 08.27″ N	002° 14′ 23.57″ W
IC-P21	56° 25′ 38.78″ N	002° 13′ 53.18″ W
IC-P22	56° 25′ 28.16″ N	002° 12′ 55.44″ W
IC-P23	56° 25′ 27.77″ N	002° 11′ 55.61″ W
IC-P24	56° 25′ 27.37″ N	002° 10′ 55.81″ W
IC-P25	56° 25′ 26.98″ N	002° 09′ 55.98″ W
IC-P26	56° 25′ 26.58″ N	002° 08′ 56.18″ W
IC-P27	56° 25′ 26.18″ N	002° 07′ 56.35″ W
IC-P28	56° 25′ 38.03″ N	002° 06′ 59.54″ W

IC-P29	56° 25′ 54.91″ N	002° 06′ 08.06″ W
IC-P30	56° 26′ 12.19″ N	002° 05′ 15.29″ W
IC-P31	56° 26′ 29.04″ N	002° 04′ 23.74″ W
IC-P32	56° 26′ 45.89″ N	002° 03′ 32.22″ W
IC-P33	56° 27′ 14.26″ N	002° 02′ 59.64″ W
IC-P34	56° 27′ 45.54″ N	002° 03′ 20.81″ W
IC-P35	56° 27′ 52.42″ N	002° 04′ 19.38″ W
IC-P36	56° 27′ 59.26″ N	002° 05′ 17.99″ W
IC-P37	56° 28′ 06.10″ N	002° 06′ 16.56″ W
IC-P38	56° 28′ 12.94″ N	002° 07′ 15.17″ W
IC-P39	56° 28′ 26.58″ N	002° 09′ 12.38″ W
IC-P40	56° 28′ 37.60″ N	002° 10′ 10.34″ W
IC-P41	56° 29′ 16.37″ N	002° 10′ 07.39″ W
IC-P42	56° 30′ 32.72″ N	002° 10′ 01.45″ W
IC-P43	56° 31′ 10.88″ N	002° 09′ 58.46″ W
IC-P44	56° 31′ 49.08″ N	002° 09′ 55.48″ W
IC-P45	56° 32′ 27.28″ N	002° 09′ 52.52″ W
IC-P46	56° 33′ 05.44″ N	002° 09′ 49.54″ W

IC-P47	56° 33′ 43.63″ N	002° 09′ 46.55″ W
IC-P48	56° 34′ 59.99″ N	002° 09′ 40.57″ W
IC-OSP	56° 28′ 39.29″ N	002° 14′ 32.33″ W
Spare	56° 26′ 45.85″ N	002° 11′ 51.79″ W
Spare	56° 28′ 42.31″ N	002° 13′ 20.24″ W
Spare	56° 30′ 05.04″ N	002° 12′ 19.08″ W
Spare	56° 31′ 21.65″ N	002° 13′ 42.17″ W
Spare	56° 34′ 21.79″ N	002° 09′ 43.56″ W
Spare	56° 29′ 54.53″ N	002° 10′ 04.40″ W
Spare	56° 28′ 19.78″ N	002° 08′ 13.78″ W
Spare	56° 30′ 49.61″ N	002° 17′ 01.07″ W
Spare	56° 31′ 18.62″ N	002° 14′ 54.35″ W