MARINE LICENCE CML2365

CONDITION 3.27: VESSEL MANAGEMENT PLAN & CONDITION 3.29: NAVIGATION AND SAFETY PLAN

Liverpool Bay CCS Project

Marine and Coastal Access Act 2009

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1. INTRODUCTION, PURPOSE, AND SCOPE

1.1. INTRODUCTION

1.1.1. The preparation of a Vessel Management Plan (VMP), and a Navigation and Safety Plan (NSP) was identified as a control measure within the Liverpool Bay CCS Project Offshore Environmental Statement, which accompanied the application for Marine Licence CML2365. Marine Licence CML2365 includes conditions requiring the submission of a VMP and an NSP for approval, before the commencement of works.

1.1.2. This combined document has therefore been prepared to satisfy the requirements of Marine Licence CML2365: Condition 3.27 Vessel Management Plan (VMP), which states the following:

- *3.27.1 The Licence Holder must submit a VMP to the Licensing Authority for written approval at least 4 months prior to commencement of the Licensed Activities. No Licensed Activities may be undertaken prior to written approval from the Licensing Authority.*
- *3.27.2 The Licence Holder must ensure that any actions outlined in the documents detailed in condition 3.27.1 are implemented as approved in writing by the Licensing Authority. Any proposed changes to the actions outlined in the documents must be submitted to, and approved in writing by, the Licensing Authority prior to any changes being enacted.*

1.1.3. And Marine Licence CML2365: Condition 3.29 Navigation and Safety Plan (NSP), which states the following:

- *3.29.1 The Licence Holder must submit a NSP to the Licensing Authority for written approval at least 4 months prior to commencement of the Licensed Activities. No Licensed Activities may be undertaken prior to written approval from the Licensing Authority.*
- *3.29.2 The Licence Holder must ensure that any actions outlined in the documents detailed in condition 3.29.1 are implemented as approved in writing by the Licensing Authority. Any proposed changes to the actions outlined in the documents must be submitted to, and approved in writing by, the Licensing Authority prior to any changes being enacted.*

1.1.4. The VMP & NSP is applicable to all marine elements of the Liverpool Bay CCS Project, in both Welsh, and English waters. It provides the framework for safe, environmentally responsible, and coordinated vessel operations during the Liverpool Bay CCS Project. It provides the information to demonstrate how Liverpool Bay CCS Limited will fulfil the Marine Licence conditions, and align with best practice in offshore marine operations, during construction of the activities authorised by Marine Licence CML2365.

1.2. PURPOSE, SCOPE AND OBJECTIVES

1.2.1. There is no formal guidance on the development and content that should be included within a VMP & NSP. In the absence of formal guidance, this plan is based on International Convention for Safety of Life at Sea (SOLAS) chapter V (Annex 24

and Annex 25). This provides the legislative guidance for Passage Planning in the shipping sector. This guidance focuses on measures that improve safety of navigation and reduce the risk of accidents occurring at sea. Furthermore, Marine Guidance Note (MGN) 610 (M+F), which clarifies the application of SOLAS Chapter V in UK law has been utilised in the development of this VMP & NSP.

1.2.2. The purpose of the VMP & NSP is to secure the control measures identified within the Offshore Environmental Statement (ES), and the Navigation Risk Assessment.

1.2.3. The VMP & NSP provides information and requirements for vessels during both the construction, and operations and maintenance phases of the Liverpool Bay CCS Project. The objective of the plan is to support safe and efficient vessel movements.

1.2.4. The VMP & NSP covers the requirements presented in Table 1.1.

- the ports that will be used for construction and operations and maintenance activities;
- the management and coordination of vessel activities;
- requirements for vessels, including:
  - Passage planning;
  - Minimum passing distances for other vessels and infrastructure;
  - Reporting requirements;
  - Anchoring considerations; and
  - Requirements during periods of restricted visibility.

1.3. LOCATION OF PROJECT

1.3.1. Located in the Eastern Irish Sea, the Liverpool Bay CCS Project comprises a combination of new, and the reuse of existing infrastructure.

1.3.2. The following sections present details on these elements to provide an understanding of the Liverpool Bay CCS Project infrastructure, the timing and sequence of construction, and the vessels required to complete each activity.

1.4. CONSTRUCTION

1.4.1. The construction works for the Liverpool Bay CCS Project are divided, within Marine Licence CML2365, into five activities based on either the type of infrastructure being installed, or the nature of the activity, as follows:

- Activity 1 (Cable laying and protection) of four combined high voltage electrical and fibre-optic cables to provide an electrical supply to the Douglas CCS platform, and Hamilton Main, Hamilton North, and Lennox satellite platforms. The types, and numbers of vessels, and programme for Activity 1 are presented in Section 4.3.
- Activity 2 (Pipeline spool laying and protection) for new pipeline spools to connect the Douglas CCS platform to existing pipelines for CO_2 transportation. The types, and numbers of vessels, and programme for Activity 2 are presented in Section 4.4.

- **Activity 3 (Clearance of unexploded ordnance)** is **unlikely to be required**. This is because survey results indicate no UXO clearance is needed prior to installation of any of the activities covered by CML2365.
- **Activity 4 (Installation of the New Douglas CCS Platform and pipeline repurposing)** will be supported by CEMP #3, due in March 2026, six months before the scheduled September 2026 installation. The types, and numbers of vessels, and programme for **Activity 4** are presented in **Section 4.5**.
- **Activity 5 (Removal of dropped objects)** is not covered in this plan, as it will be managed in accordance with the **Liverpool Bay CCS Limited Dropped Objects Plan (DOP)**, which applies to all Marine Licenced activities throughout the 25-year project duration. The DOP has been included as an Appendix to each Construction Environmental Management Plan (CEMP) submitted in accordance with **Condition 3.25**.

1.4.2. **Table 1.1** identifies where in this combined **VMP** and **NSP** the information can be found describing the types, and numbers of vessels, and programmes for carrying out **Activities 1, 2, and 4** as required by **CML2365 Condition 3.27**, and **Condition 3.29**.

Table 1.1 Location of vessel and schedule information for the Marine Licensable activities

Licence Activity	Sub-activity	Installation Dates	Coverage in this VMP
Marine Licence Activity 1 – Cable laying and protection (Phase 1)	• HDD under Gronant Dunes and conduit pipe installation.	February and March 2026	No vessels required to carry out these construction activities.
	• HDD Exit pit cofferdam, conduit sump, and conduit pipe bonding/welding.		
Marine Licence Activity 1 – Cable laying and protection (Phase 2)	• Pre-lay grapnel run for all cables. • Pre-laying third-party crossing protection for PoA to New Douglas cable. • Pre-laying third-party crossing protection for New Douglas to satellites cables.	02-April-2026 to 25-April-2026	**Section 4.3**, and **Tables 4.1**, **4.2**, **4.3**, **4.4**, **4.5**, and **4.6**.
Marine Licence Activity 1 – Cable laying and protection (Phase 3)	• Re-opening of HDD Exit pit cofferdam, beach preparation, and cable shore pull.	June-July 2026	**Tables 4.7**, **4.8**, **4.9**, and **4.10**
	• PoA to New Douglas cable lay and post-lay protection.	July-September 2026	**Tables 4.7**, **4.8**, **4.9**, **4.10**, **4.11**, **4.12**, **4.13**, and **4.14**
	• New Douglas to satellites inter-platform cable lay, and • post-lay protection.	30 June 2027 to 08 July 2027, and 28 July 2027 to 11 August 2027	**Tables 4.8**, **4.13**, **4.14**, **4.15**, **4.16**, **4.17**, **4.18**. **4.19**, and **4.20**
Marine Licence Activity 2 – Pipeline spool laying and protection	• Installation of new sections of pipeline spools to connect the new Douglas CCS platform to the existing subsea natural gas pipelines. • Installation of concrete mattresses and external rock protection on sections of pipeline.	19th June to 28th July 2027	**Section 4.4**, and **Tables 4.21**, **4.22**, and **4.23**.

Licence Activity	Sub-activity	Installation Dates	Coverage in this VMP
Marine Licence Activity 3 – Clearance of Unexploded Ordnance (UXO)	• Clearance of a maximum of twelve UXOs within the Licensed Area. The UXO clearance will be undertaken during daylight hours only.	Survey results currently indicate that UXO clearance will not be required prior to installation of any LB CCS infrastructure.	This activity is unlikely to be required during the execution of the LBCCS Project.
Marine Licence Activity 4 - Installation of the New Douglas Carbon Capture and Storage (CCS) Platform and connecting to/repurposing existing pipelines	• Installation of a new Douglas CCS Platform to the northwest of the exiting Douglas complex platform. • The installation of the new Douglas CCS platform will include up to eight driven piles. • Repurposing of the existing subsea natural gas pipelines for their change of use from hydrocarbon to CO_2 service.	02 to 16 October 2026. (option for 05-Sep-26 to 19-Sep-26)	Section 4.5, and Table 4.24, 4.25, and 4.26.
Marine Licence Activity 5 - Removal of accidentally dropped objects pursuant to condition 3.7	• As approved by the Licensing Authority under condition 3.7	Across 25-year project life-time.	Incorporated within each CEMP – Activity addressed in Dropped Objects Plan (DOP) relevant to the activities within each of the three CEMPs.
Storage Permit Activity -.New topsides installation	• New Hamilton satellite platforms topsides.	18-20 March 2027	Section 4.5, and Table 4.25, 4.26, and 4.27.
	• Main, Hamilton North satellite platforms topsides.	24-29 March 2027	

1.5. OPERATION, MAINTENANCE, AND MONITORING

1.5.1. The Liverpool Bay CCS Project includes the following operation, maintenance, and monitoring phase elements:

- Operational life of 25 years.
- A total of around 21 operations and maintenance vessels on site at any one time (CTVs/workboats, jack-up vessels, cable repair vessels, service operation vessels, or similar).
- Around 850 operations and maintenance vessel movements (return trips) each year (including CTVs/workboats, jack-up vessels, cable repair vessels, service operation vessels or similar).

1.6. DECOMMISSIONING

1.6.1. The Liverpool Bay CCS Project includes the following decommissioning phase elements:

- The duration of the decommissioning programme is anticipated to be the same as for construction, and thus, up to four years.
- Lengths and dimensions of cables, cable protection and cable crossings as described for construction phase.
- During decommissioning the changes would gradually decrease from the operational phase as the need for project-related vessels is reduced and structures are removed and cut below the seabed.

1.7. INTERFACES AND ASSOCIATED DOCUMENTS

1.7.1. The considerations, mitigation and measures that are described in this CSIP are informed by relevant assessments and descriptions contained within the Offshore Environmental Statement (ES) that supported the Marine Licence (CML2365) application. The relevant ES chapters are as follows:

- ES Volume 2, Chapter 4: The Proposed Development;
- ES Volume 2, Chapter 7: Other marine users;
- ES Volume 2, Chapter 8: Fish and shellfish ecology;
- ES Volume 2, Chapter 9: Benthic, subtidal and Intertidal Ecology;
- ES Volume 2, Chapter 11: Marine mammals; and
- ES Volume 2, Chapter 13: Shipping and navigation.

1.7.2. The CSIP also interfaces with several other management plans, and method statements. It has been drafted to be consistent with the timings, approaches and controls set out in the preconstruction plans and documents submitted for approval under Marine Licence CML2365. Specifically, implementation of the CSIP will require interface with the following Management Plans, which are all Activity-specific Conditions of Marine Licence CML2365:

- Construction Environmental Management Plan (CEMP), as required in Condition 3.25;
- Unexploded Ordnance (UXO) Method Statement, as required in Condition 3.23;
- Written Scheme of Investigation (WSI), as required in Condition 3.24;
- Marine Mammal Management Plan (MMMP), as required in Condition 3.26;
- Vessel Management Plan (VMP), as required in Condition 3.27;
- Navigation and Safety Plan (NSP), as required in Condition 3.29;
- Lighting and Marking Plan (LMP), as required in Condition 3.30; and
- Cable crossing and working agreements, as required in Condition 3.31.

1.7.3. On completion of the cable laying activities LB CCS Limited will undertake the following;

- Compass Deviation Survey, as required in Condition 3.28;
- Installed Cable and Pipeline Report, as required in Condition 3.32; and
- Post Construction As-Built Report, as required in Condition 3.33.

2. REGULATORY CONTEXT AND COMMITTMENTS

2.1. REGULATORY REQUIREMENTS

2.1.1. All vessels engaged in the installation of offshore electrical cables, jackets, and topside platforms must comply with international, national, and local regulatory requirements, as well as project-specific licence conditions. Compliance is mandatory and a condition of mobilisation for any vessel involved in project works.

2.1.2. Appendix A contains a Vessel Assurance Checklist that will be completed prior to mobilisation of each vessel engaged in offshore activities (e.g. cable installation, jacket or topside installation).

2.1.3. Completed checklists will be retained by the Liverpool Bay CCS Limited and made available to the Regulator on request. The checklist is structured as a tick-box compliance tool to help demonstrate that the statutory, environmental, safety, and project-specific requirements and obligations summarised in Table 2-1 are applied.

2.1.4. Appendix B contains a Vessel Assurance Matrix that provides a condensed, tabular overview of which compliance checks and certificates apply to different vessel types used in offshore cable, jacket, and topside installation projects. The matrix will be useful for project teams managing multiple vessels at once. It allows for a quick comparison across vessel classes while the full Vessel Assurance Checklist (Appendix A) is retained for detailed verification.

Table 2-1 – Summary of regulatory obligations

Regulatory obligation	Requirements
International Maritime Organization (IMO) Requirements	• All vessels shall be **registered with a flag state** and operate in accordance with applicable IMO conventions. • Vessels must comply with: – **International Convention for the Safety of Life at Sea (SOLAS)** – requirements on vessel construction, life-saving appliances, fire protection, and navigational safety. – **International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW)** – ensuring that crew are trained and certified appropriately. – **International Regulations for Preventing Collisions at Sea (COLREGs)** – full adherence to navigational "rules of the road." – **International Convention on Load Lines (ICLL)** – compliance with freeboard and stability requirements. – **International Ship and Port Facility Security (ISPS) Code** – where applicable.
MARPOL (International Convention for the Prevention of Pollution from Ships)	• All vessels must operate in full compliance with **MARPOL Annexes I–VI**, including: – **Annex I – Oil:** Prevention of oil pollution; oil filtering equipment and spill prevention measures. – **Annex II – Noxious Liquids**: Carriage and discharge controls where applicable. – **Annex III – Harmful Substances in Packaged Form:** Safe handling, stowage, and documentation. – **Annex IV – Sewage**: Approved sewage treatment and discharge controls. – **Annex V – Garbage**: No discharge of plastics; all garbage managed in line with Garbage Management Plans. – **Annex VI – Air Pollution:** Use of low sulphur fuels and compliance with NOx emission standards.

Regulatory obligation	Requirements
	• Each vessel shall carry a valid **International Oil Pollution Prevention Certificate (IOPP)** and other MARPOL-required certification.
COLREGs (Collision Regulations)	• All vessels must comply with **International Regulations for Preventing Collisions at Sea (1972, as amended)**. • This includes: – Displaying correct **lights, shapes, and signals** when engaged in cable laying, heavy lifts, or restricted manoeuvrability operations. – Maintaining safe navigational practices and appropriate lookouts. – Compliance with right-of-way rules in interactions with other sea users.
UK Maritime and Coastguard Agency (MCA) Guidance	• For operations in UK waters, compliance is required with MCA regulations and guidance, including: – **Marine Guidance Notes (MGNs), Marine Information Notes (MINs), and Merchant Shipping Notices (MSNs)** relevant to offshore construction. – Adherence to MCA guidance on **safe manning, vessel certification, dynamic positioning (DP) operations, and guard vessel deployment**. – Emergency arrangements in line with **MCA Offshore Renewable Energy Installations (OREI) guidance**, including coordination with HM Coastguard.
Local and National Fisheries Regulations	• Vessel operations must respect **local fisheries legislation and byelaws**, including seasonal closures, gear restrictions, and designated fishing grounds. • The project will implement a **Fisheries Liaison Protocol**, with a Fisheries Liaison Officer (FLO) responsible for communication and incident management. • Any interaction with fishing gear (e.g. snagging or displacement) will be managed in line with the project's **Fishing Gear Interaction Procedure**, ensuring timely reporting and fair resolution.
Project-Specific Licence and Consent Conditions	• Vessels must comply with all **Marine Licence and consent conditions** applicable to offshore works. • This includes: – Advance notification of vessel activities via **Notice to Mariners** and **Kingfisher Bulletins**. – Adherence to defined **safety and exclusion zones** around offshore construction areas. – Pollution prevention measures, as specified in the **Construction Environmental Management Plan (CEMP)** and **Oil Pollution Emergency Plan (OPEP)**.
Verification and Monitoring	• No vessel will be mobilised until **compliance with regulatory obligations has been verified** through certification checks. • A **Vessel Assurance Process** will be in place to ensure: – Valid statutory certificates are held and inspected prior to mobilisation. – Vessel-specific risk assessments (including anchor patterns, DP trials, and lifting operations) are completed. – Environmental and safety management systems are in place and auditable. • Ongoing compliance will be monitored by the **Marine Coordinator (MC)/Marine Coordinator (MC)**, supported by internal audits and inspections.

2.2. ENVIRONMENTAL PROTECTION MEASURES

2.2.1. All vessels engaged in offshore works, including cable laying vessels (CLVs), heavy lift vessels (HLVs), and jack-up installation vessels (JUVs), will operate under strict environmental controls to prevent pollution and minimise impacts to the marine environment.

2.2.2. The measures set out in **Table 2-2** will be implemented as standard.

Table 2-2 – Summary of environmental protection measures

Topic	Measures
Fuel Management	• **Low Sulphur Fuels:** All project vessels will operate on fuel compliant with MARPOL Annex VI and applicable **Emission Control Area (ECA)** limits. Where practicable, ultra-low sulphur fuels or alternative cleaner fuels will be used. • **Fuel Transfer Procedures:** Transfers will be undertaken in accordance with vessel-specific bunkering procedures, with spill trays, absorbents, and trained personnel deployed. • **Fuel Storage:** Tanks will be regularly inspected, with overfill alarms and secondary containment used to reduce spill risk. • **Monitoring:** Daily fuel logs will be maintained, with reporting to the Marine Coordinator.
Ballast Water Management	• All vessels fitted with ballast systems will comply with the **IMO Ballast Water Management Convention** and relevant flag state requirements. • Ballast water exchange will only occur in approved offshore areas, away from sensitive habitats, to minimise the risk of **non-native invasive species introduction**. • Vessels equipped with approved **ballast water treatment systems** will ensure these are operational and maintained in accordance with certification. • Records of ballast water operations will be kept in the **Ballast Water Record Book** and made available for inspection.
Waste Management (MARPOL compliance)	• All waste generated onboard will be managed in accordance with M**ARPOL Annexes I–V** and the vessel's Garbage Management Plan. • **Waste segregation** will be implemented (plastics, food waste, oils, hazardous materials, general waste). • No discharge of plastics, synthetic materials, or other prohibited substances will be permitted. • Food and organic waste disposal at sea will only occur where permitted and in accordance with MARPOL Annex V requirements. • Waste reception facilities will be used at port, with transfer notes retained as evidence of proper disposal.
Noise Reduction	• Vessels will minimise underwater noise emissions where practicable, in line with Marine Licence conditions and **CEMP**. • **Cable lay vessels** will use operational settings that reduce thruster use where possible without compromising safety. • **Heavy lift vessels** and jack-ups will minimise unnecessary engine idling and use dynamic positioning (DP) judiciously to reduce continuous noise output. • Where required by the Regulator, **noise monitoring programmes** will be undertaken during installation campaigns to verify compliance with licence conditions.

Marine Mammals	• Prior to commencement of hammer start-up, during piling of the new Douglas CCS jacket, it will be confirmed that no marine mammals are in the vicinity of the piling location. Next to the Marine Mammal Observer (MMO) on board, a Passive Acoustic Monitoring (PAM) system will be deployed from the installation vessel with a coverage extending 500 m from the installation site
	• An Acoustic Deterrence Device (ADD), like the Lofitech AS Seal Scarer will be mobilised and will be utilized before the start of piledriving as well.
	• The pile driving will commence with a "soft start"; pile driving will start at minimum energy level and in short single blows. Continuous hammering with increased energy will commence when sufficient resistance has been observed and a minimum duration has passed.
	• The VMP will be issued to all vessel operators, requiring them to:
	  ○ not deliberately approach marine mammals, marine turtles, and basking sharks;
	  ○ keep vessel speed to a minimum; and
	  ○ avoid abrupt changes in course or speed should marine mammals approach the vessel to bow ride

Pollution Prevention and Oil Spill Contingency	• All vessels will carry an approved **Shipboard Oil Pollution Emergency Plan (SOPEP)** and relevant spill response equipment appropriate to their class. • Crew will be trained in spill response procedures, with regular drills conducted.

Topic	Measures
	• Sorbent materials, oil booms, and skimmers (as applicable) will be stored onboard for immediate deployment. • Any spills, however small, will be reported to the Marine Coordinator and, where required, to **HM Coastguard** and the Regulator. • The project's **Oil Pollution Emergency Plan (OPEP)** will be implemented, ensuring coordinated response across the fleet and alignment with statutory response frameworks.
Vessel Register	• Comprehensive **register of all project vessels**, including IMO number, certification, MARPOL compliance. Updated prior to mobilisation and shared on request.
Navigation & Safety	• **Vessel transit planning**, coordination of all vessels and vessel activity, commercial fisheries relations, and management of commercial fisheries interactions. • Compliance with **COLREGs, MCA guidance**, and statutory safety. AIS fitted to all vessels. Guard vessels and exclusion zones deployed as required. Appropriate marking and lighting of the Proposed Development. • the adoption of **advisory safety zones.**
Environmental Protection	• **MARPOL** compliance (waste, fuel, ballast). **OPEP** in place. Pollution prevention and spill response equipment onboard. • The measures to be adopted for the management of marine Invasive Non-Native Species (INNS)
Fisheries Liaison	• **Fisheries Liaison Officer (FLO)** appointed. Early notification to fishing communities. Gear interaction protocol in place.
Communication & Reporting	• **Marine Coordinator** oversees vessel traffic. Daily reporting of positions. Regulators and stakeholders informed through established channels.
Emergency Response	• Oil spill response and **SAR** coordination in line with **OPEP**. Contact lists and escalation procedures included in VMP & NSP. • Incident reporting - Spill or pollution events. • Dropped Objects – recording and reporting.
Monitoring & Review	• Internal audits, inspections, and corrective actions. Annual review and updates, or as directed by Regulator.

2.2.3. By implementing these measures, the Liverpool Bay CCS Project ensures that cable laying, heavy lift, and jack-up vessels operate to the highest environmental standards. **Appendix C** presents a "crew briefing sheet" version of the measures set out in **Table 2-2** so vessel crews can quickly understand their environmental obligations during toolbox talks

2.2.4. This approach not only guarantees compliance with MARPOL, IMO conventions, and Marine Licence conditions, but also demonstrates commitment to minimising environmental impacts throughout offshore construction activities.

3. ROLES AND RESPONSIBILITIES

3.1. LIVERPOOL BAY CCS LIMITED

3.1.1. Liverpool Bay CCS Limited as the Marine Licence holder (Developer) sits at the top of the accountability chain. They are legally responsible for ensuring all offshore works, including vessel operations, comply with the terms of the Marine Licence, as well as other statutory obligations. Table 3-1 presents a structured overview of the roles and responsibilities of Liverpool Bay CCS Limited in vessel management.

Table 3-1 – Roles and responsibilities of the Liverpool Bay CCS Limited in vessel management and navigation safety

Activity	Description
Overall legal accountability	• Hold ultimate responsibility for ensuring **all vessel activities comply with the Marine Licence** and other consents. • Ensure contractors, subcontractors, and vessel operators meet **legal, environmental, and safety obligations**. • Act as the single point of accountability to the **Regulator** for vessel-related compliance.
Governance and oversight	• Approve and maintain the **Vessel Management Plan (VMP)** and ensure it is implemented across all project phases. • Appoint a competent **Marine Coordinator (MC)** to manage day-to-day vessel operations, while retaining overall accountability. • Establish systems for **audit, inspection, and reporting** to verify that vessel management arrangements are effective.
Regulatory compliance	• Ensure vessels comply with: – **Marine Licence conditions** (e.g. notifications, safety zones, pollution prevention). – **IMO conventions** (MARPOL, SOLAS, COLREGs, STCW). – **National requirements** (e.g. MCA guidance, fisheries regulations). • Submit reports, notifications, and evidence of compliance to the Regulator as required.
Environmental protection and risk management	• Ensure all vessel operations are conducted in line with: – The project's **Environmental Management Plan (EMP).** – The **Oil Pollution Emergency Plan (OPEP).** – MARPOL requirements for waste, fuel, ballast, and emissions. • Provide oversight of environmental risk mitigation measures, including spill prevention and noise reduction. • Ensure monitoring programmes (e.g. noise, marine mammal observers, fisheries liaison) are in place where required by licence.
Stakeholder and fisheries engagement	• Ensure effective stakeholder engagement is carried out, including: – **Fisheries Liaison Officer (FLO)** appointment and oversight. – Regular consultation with fisheries organisations, ports, and maritime authorities. – Transparent communication with stakeholders before, during, and after offshore operations. • Support fair and timely resolution of **fishing gear interaction** incidents.
Marine coordination and notifications	• Ensure a **Marine Coordinator(MC)** is in place to manage vessel movements. • Confirm that **Notices to Mariners, Kingfisher Bulletins, and regulator notifications** are issued in line with licence requirements. • Ensure regulators are informed of vessel mobilisation/demobilisation and incidents in a timely manner.
Incident and emergency oversight	• Ensure all vessel-related incidents (safety, environmental, or navigational) are reported to the Regulator. • Oversee the **implementation of emergency response plans**, including OPEP and SAR coordination.

Activity	Description
	• Require contractors to investigate incidents, report findings, and implement corrective actions.
Compliance monitoring, and continuous improvement	• Conduct or commission **independent audits** of vessel management arrangements. • Review reports from the MC, and FLO to ensure issues are addressed. • Review and update the VMP & NSP periodically, in consultation with regulators and stakeholders. • Drive continuous improvement by capturing and applying **lessons learned** across project phases.

3.2. MARINE COORDINATOR

3.2.1. The Marine Coordinator (MC) is the operational "nerve centre" for vessel management during offshore projects. While Liverpool Bay CCS Limited holds legal accountability and the Contractors manage overall execution, the MC provides real-time control, monitoring, and communication for vessels on site. Table 3-2 presents a structured overview of the roles and responsibilities of MC in vessel management.

Table 3-2 – Roles and responsibilities of the Marine Coordinator in vessel management and navigation safety

Activity	Description
Vessel traffic monitoring and control	• Act as the **central point of control** for all project vessel movements within the offshore works area. • Maintain a **live vessel activity log** including positions, status, and tasks. • Track vessel positions using **Automatic Identification System (AIS)** and other marine tracking tools. • Coordinate simultaneous operations (SIMOPS), ensuring safe separation between vessels and activities.
Communication hub	• Serve as the **primary contact point** for all project vessels, contractors, and stakeholders during offshore operations. • Maintain continuous communication with: – Project vessels and offshore platforms/jack-ups. – HM Coastguard and emergency services. – The Developer, Principal Contractor, and Fisheries Liaison Officer (FLO). • Relay safety broadcasts, warnings, and updates to vessels and external stakeholders.
Navigation safety	• Enforce compliance with navigational safety measures, including: – **Exclusion zones** and **safety zones** around offshore construction areas. – **Guard vessel deployment** and coordination. – COLREGs compliance (lights, shapes, restricted manoeuvrability signals). • Maintain direct oversight of any vessel entering/exiting the project area.
Notifications and reporting	• Support issuance of **Notices to Mariners**, Kingfisher Bulletins, and other stakeholder notifications. • Provide daily, weekly, or real-time updates on vessel activity to the Developer and Regulator (as required). • Maintain records of vessel activity, incidents, and near-misses.
Incident and emergency coordination	• Act as the **first response coordination point** for vessel-related emergencies (e.g. collision, fire, man overboard, oil spill). • Initiate emergency communication with HM Coastguard and follow the escalation pathway defined in the **Oil Pollution Emergency Plan (OPEP)** and Emergency Response Plan. • Support the Principal Contractor and Vessel Masters in implementing emergency response procedures. • Document incidents and assist with post-incident reporting.

Activity	Description
Environmental and regulatory compliance support	• Ensure vessels are briefed on **environmental requirements** (fuel, ballast, waste, spill prevention) before entering the project area. • Monitor compliance with licence conditions relating to vessel operations (e.g. exclusion zones, operational windows, fisheries liaison). • Provide information to the Developer and Principal Contractor to demonstrate compliance to regulators.
Interface with Fisheries Liaison	• Coordinate with the **Fisheries Liaison Officer (FLO)** to manage vessel interactions with fishing activity. • Relay information on fishing vessel presence or fishing gear in the vicinity. • Support incident management in the event of gear interaction.
Record keeping and data management	• Maintain a central database of: – Vessel movement logs. – Incident reports. – Daily activity reports. – Certification and assurance records (as provided by the Principal Contractor). • Ensure these records are available for audit by the Developer or Regulator.

3.3. VESSEL OWNERS AND OPERATORS

3.3.1. The Vessel Owners and Operators play a critical role in offshore projects. They are responsible for ensuring that each vessel is safe, compliant, crewed, maintained, and operated in line with international law, national regulations, and project-specific requirements. Table 3-3 presents a structured overview of the roles and responsibilities of vessel owners/operators in vessel management.

Table 3-3 – Roles and responsibilities of owners/operators in vessel management and navigation safety

Activity	Description
Vessel Certification and Compliance	• Maintain all vessels in **class** with a recognised classification society/organisation. • Ensure statutory certification is valid, including: – Safety Construction, Safety Equipment, and Safety Radio Certificates (SOLAS). – International Oil Pollution Prevention Certificate (IOPP). – Ballast Water Management and Garbage Management Plans (MARPOL). – Load Line, Tonnage, and Document of Compliance / Safety Management Certificate (ISM). • Ensure compliance with **IMO conventions (MARPOL, SOLAS, COLREGs, STCW)**, flag state, and port state requirements.
Crew Competence and Welfare	• Employ suitably qualified crew with valid **STCW certification**. • Ensure safe manning levels in line with **MCA and flag state requirements**. • Provide induction, training, and **project-specific briefings** (e.g. Marine Licence conditions, environmental measures, gear interaction protocols). • Promote crew welfare, fatigue management, and safe working practices.
Vessel Operations and Safety	• Operate vessels in accordance with **COLREGs** and safe navigation standards. • Implement vessel-specific **Safety Management Systems (SMS)** under the ISM Code. • Maintain **safe operating procedures** for cable laying, heavy lifts, jack-up operations, and simultaneous operations (SIMOPS). • Ensure vessels are equipped with functioning **AIS**, navigation, and communication systems. • Conduct **risk assessments and toolbox talks** before high-risk activities.
Environmental Protection	• Implement measures for: – **Fuel management** (low sulphur fuels, spill prevention during bunkering). – **Ballast water management** (exchange/treatment to prevent invasive species).

Activity	Description
	– **Waste management** in line with MARPOL Annexes I–VI and Garbage Management Plans. – **Noise reduction** measures where required by licence. • Carry spill response equipment and maintain an approved **Shipboard Oil Pollution Emergency Plan (SOPEP).** • Report and respond to all environmental incidents in line with project OPEP.
Coordination and reporting	• Provide vessel details for inclusion in the **project Vessel Register**. • Submit certification and assurance documentation to the **Principal Contractor** prior to mobilisation. • Report daily position, activity, and status updates to the **Marine Coordinator (MC)**. • Notify the MC and Principal Contractor of incidents, near-misses, or non-conformances.
Maintenance and assurance	• Maintain vessels in a **seaworthy condition**, carrying out routine inspections, surveys, and planned maintenance. • Ensure lifting appliances, DP systems, and anchoring arrangements are **tested and certified**. • Cooperate fully with **project audits and inspections** of vessels and documentation.
Emergency preparedness	• Train crew in emergency response procedures (fire, collision, man overboard, oil spill). • Participate in **spill response and SAR drills** as required by the project. • Ensure emergency contact details are available, and escalation pathways are understood.

3.4. FISHERIES LIAISON OFFICER

3.4.1. A Fisheries Liaison Officer (FLO) plays a critical role in Liverpool Bay CCS Project by managing the relationship between the project developer/contractor and the fishing industry. Liverpool Bay CCS Limited has appointed ERM to fulfil the role of FLO for the Liverpool Bay CCS Project. Their responsibilities are set out in Table 3-4 and include both practical (day-to-day communication) and strategic (building trust and mitigating conflict).

3.4.2. The FLO will be the bridge between Liverpool Bay CCS Limited and the fishing industry. Their job will be to ensure mutual awareness, minimise disruption, resolve issues quickly, and maintain good relations throughout the project lifecycle.

Table 3-4 – Roles and responsibilities of the FLO in vessel management and navigation safety

Responsibility	Description
Primary point of contact	• Act as the main interface between the project and the fishing community. • Provide clear, timely information to fishers about project activities (e.g. vessel movements, exclusion zones, cable laying). • Relay concerns, queries, or requests from fishers back to the project team.
Communication and notifications	• Ensure Notices to Mariners, Kingfisher Bulletins, and project updates are shared with relevant fishing organisations, associations, and individual operators. • Maintain a contact list of local fishing representatives and update it regularly. • Facilitate two-way communication — not just broadcast updates but also listen to fishers' concerns.
Mitigating conflicts at sea	• Support the avoidance of conflicts between project vessels and fishing vessels. • Provide advice on scheduling to minimise disruption during sensitive fishing seasons. • Work with the Marine Coordinator and Guard Vessels to ensure that fishing activity is respected where possible.

Responsibility	Description
Fishing gear interaction protocol	• Manage the agreed fishing gear interaction protocol (the process for handling incidents where fishing gear may be damaged, displaced, or lost). • Facilitate fair and timely resolution of claims, liaising with both the fishing community and project developers. • Keep records of incidents and outcomes.
Stakeholder engagement	• Attend meetings with fisheries representatives, local ports, and regulators as required. • Build and maintain positive working relationships with fisheries stakeholders throughout the lifecycle of the project. • Provide input into Environmental Management Plans or VMP & NSP reviews to ensure fishing considerations are fully addressed.
Environmental and socio-economic considerations	• Advise the project team on potential socio-economic impacts of offshore activities on fishing operations. • Identify opportunities for co-existence, e.g. coordinating access routes, timings, or exclusion zone minimisation. • Support monitoring of impacts on fisheries (where required by licence or EIA commitments).
Reporting and record keeping	• Maintain logs of all communications with fishing stakeholders. • Report regularly to the project team and, where required, to the Regulator. • Document any issues, disputes, or lessons learned for continuous improvement.
Training and awareness	• Brief offshore project staff and vessel crews on local fishing practices, sensitivities, and stakeholder concerns. • Promote awareness of the importance of good relationships with fisheries among all project personnel.

3.4.3. Appendix D presents a RACI matrix (Responsible, Accountable, Consulted, Informed) that maps the key responsibilities in vessel management across the Principal Contractor, Developer, Vessel Operators, MC, and FLO.

3.5. PORT OF MOSTYN

OVERVIEW

3.5.1. The Port of Mostyn is a key port in North Wales located on the Dee Estuary and provides important facilities for the operation and maintenance of offshore wind farms; it is also the Statutory Harbour Authority and the Dee Pilotage Authority which includes jurisdiction of the Welsh Channel.

3.5.2. Both Liverpool Bay CCS Limited, and Port of Mostyn, recognise the importance of collaboration to ensure the safe and efficient laying of the offshore electrical cable, while minimising disruptions to the regular vessel movements within the Port of Mostyn and ensuring that maintenance dredging operations can continue without interference.

3.5.3. A key aspect of constructing the Liverpool Bay CCS Project is the definition of a mutually agreed approach for the laying of the cable across the Welsh Channel using a cable-laying vessel. The construction approach will need to minimise disruption to the Port of Mostyn's daily vessel movements, while ensuring that the cable burial depth complies with MMO Guidance. This guidance recommends that any reduction in channel depth should be no more than 5% of the charted depth to ensure the ongoing and future maintenance dredging of the Port's approach channels is not prejudiced.

MEMORANDUM OF UNDERSTANDING

3.5.4. A Memorandum of Understanding (MoU) has been drawn up between Liverpool Bay CCS Limited, and Port of Mostyn that sets out how the parties will work together to ensure the following:

- Vessel Operations: The cable-laying vessel will be positioned in such a way as to allow safe and unobstructed passage for daily vessel movements, at agreed timings, into and out of the Port of Mostyn. The positioning of the cable-laying vessel will be determined to allow a clear route around either the bow or the stern of the vessel, with adequate space for safe manoeuvring.
- Scheduling: The parties will coordinate the cable-laying operations with the daily schedule of incoming and outgoing vessels from the Port of Mostyn. This will include advance planning to avoid any major conflict between operational periods.
- Communication: The parties agree to maintain continuous communication between Liverpool Bay CCS Limited's cable-laying team and the Port of Mostyn's vessel traffic control to monitor real-time movements and adjust the cable-laying schedule as necessary. During execution of the Cable Lay Operation around the Welsh Channel, Liverpool Bay CCS will issue daily reports to Port of Mostyn, highlighting schedule progress and current activities/restrictions.
- Cable Lay Procedure: The cable lay procedure developed and shared with the Port of Mostyn (and which accompanies this memorandum) forms the basis on which the operation will be conducted. Once the cable laying contractor has been appointed, a more detailed procedure will be developed in consultation with the Port of Mostyn.
- Marine Licence, and Town and Country Planning Act applications: Liverpool Bay CCS Limited has amended its Marine Licence application, and made a Town and Country Planning Act application, to enable the installation of the electrical cable in a direct line across the Welsh Channel minimising disruption vessel movements and port operations.

3.5.5. The cable burial will be undertaken to a depth that ensures the safety and integrity of the cable, while not impeding the Port of Mostyn's ongoing maintenance dredging operations. Specifically:

- Cable Burial Depth: The burial depth of the cable will be agreed upon by both parties based on technical assessments and ensuring sufficient clearance for dredging activities.
- Maintenance Dredging: The parties will jointly review the Port's maintenance dredging requirements to ensure that the cable burial depth will not interfere with or prevent the necessary dredging of the approach channels to the Port of Mostyn.
- Consultation: Both parties will agree on a protocol for monitoring the cable's positioning and depth post-installation to ensure compliance with the agreed specifications and the ongoing dredging requirements.
- Data provision: following completion of the cable laying operation, Liverpool Bay CCS Ltd will provide the Port of Mostyn with information pertaining to the actual

depth of burial of the cable. The data will be provided in a format to be agreed by both parties.

3.5.6. To minimise potential risks to both operations, the parties will:

- Safety Protocols: Develop and implement joint safety protocols for cable-laying activities to avoid hazards to incoming and outgoing vessels. This is expected to include the use of Port of Mostyn assigned Pilot(s) during the operation and engagement of all parties within operation planning and risk assessment exercises.
- Incident Management Plan: Establish an incident management plan that details procedures to follow in the event of an emergency or unexpected event during cable-laying operations.

ENGAGEMENT

3.5.7. The most recent face-to-face meeting took place with the operations team at the Port of Mostyn on Tuesday, 22 October 2025, in the port office. The aim was to introduce Boskalis Subsea Cable BV, the contractor for cable laying on behalf of Liverpool Bay CCS Limited, to the Port of Mostyn management.

3.5.8. The agenda for the meeting was as follows:

- Project Overview.
- Project Schedule for the Cable Lay, including other major offshore operations.
- Cable Routing through the Welsh Channel.
- Cable Lay Operation through the Welsh Channel.
- Logistics, including using the port facilities.

3.5.9. This session built on earlier meetings between Liverpool Bay CCS Limited and the Port of Mostyn in June 2022, and June 2024. A key goal was to present the method for installing the submarine cable through the Welsh Channel, emphasising strategies to minimise channel closure time.

3.5.10. Liverpool Bay CCS Limited and Boskalis Subsea Cables BV assured the Port of Mostyn that the team that they will continue to receive updates throughout the project's engineering phase.

3.6. PEEL PORTS / MERSEY DOCKS AND HARBOUR COMPANY AND LIVERPOOL BAY TRAFFIC SEPARATION SCHEME

3.6.1. Peel Ports / Mersey Docks and Harbour Company (MDHC) serves as the Statutory Harbour Authority for the Port of Liverpool and its approaches. In accordance with their 2025 port dues schedule, all port users are required to obtain explicit permission from the Company prior to any exploitation of natural resources, including the installation of cables, pipelines, or other infrastructure; a "Land Exploitation Levy" may also be imposed.

3.6.2. The planned installation of a subsea electrical cable from PoA to the Douglas CCS Platform will necessitate vessel operations within areas governed by MDHC / Peel Ports. This includes traversing the Traffic Separation Scheme (TSS) and potentially

entering port approach waters. The cable route will cross the eastern separation zone of the Liverpool Bay TSS and the Area To Be Avoided (ATBA) adjacent to the existing Douglas complex.

3.6.3. The TSS has been established to ensure navigation aligns with International Collision Regulations (ColRegs), requiring updated passage plans. It is designed to maintain order in busy waterways by creating designated lanes with vessels travelling in the same direction, thereby managing maritime traffic and minimising collision risks.

3.6.4. During the TSS crossing and final approach to the Douglas CCS platform, the Cable Laying Vessel (CLV) will operate under Restricted Ability to Manoeuvre (RAM) status. For completion of the cable pull-in and termination, the CLV will need to enter the 500-meter safety zone surrounding the Douglas CCS platform.

3.6.5. Liverpool Bay CCS Limited will coordinate a scoping meeting with the Mersey Marine Team at Peel Ports to address matters regarding jurisdiction, licensing requirements, necessary documentation, the specifics of the TSS crossing, operational expectations, and timelines.

4. VESSEL REGISTER AND CERTIFICATION

4.1. STANDARDS AND REQUIREMENTS

4.1.1. All vessels involved in the construction of the Liverpool Bay CCS Project will be marked in accordance with the International Regulations for Preventing Collisions at Sea, 1972. Offshore platforms, and jack up vessels when jacked up, will be marked in accordance with the UK Standard Marking Schedule for Offshore Installations (Department of Energy & Climate Change (DECC), 2011). All construction vessels will be equipped with AIS receivers and transmitters.

4.1.2. Liverpool Bay CCS Limited requires that all construction vessels comply with the procedures and requirements set out in this VMP & NSP as well as other relevant project plans such as, but not limited to, the Offshore CEMP.

4.1.3. Vessel crews are required to meet recognised standards and comply with the international maritime rules (as adopted by the relevant flag state) and regulations for their class and area of operation. Liverpool Bay CCS Limited will conduct independent vessel audits on construction vessels, as necessary, to check that they meet these standards and are appropriate for the purpose of their desired role(s).

4.1.4. Vessel crews are required to meet the requirements for the size, type, and area of operation in line with Standard for Training, Certification and Watchkeeping as set out by the IMO, and any site-specific requirements implemented by Liverpool Bay CCS Limited above the minimum standards outlined above.

4.2. NUMBERS, TYPES, AND SPECIFICATIONS OF VESSELS

4.2.1. This section provides details of the vessels that will be used during construction. The confirmed individual vessel details will be notified to NRW in writing no later than 24 hours prior to the commencement of the development (Condition 3.2), and thereafter, any changes to the details supplied will be notified, as soon as practicable, prior to any such change being implemented in the construction or operation of the Liverpool Bay CCS Project.

4.2.2. Liverpool Bay CCS Limited will ensure that for any vessel appointed to engage in the works, the following details are available (where applicable) in the Vessel Report at least 10 days prior to its engagement in the construction phase of the Development, which will be made available on the Liverpool Bay CCS Project webpage:

- Vessel name;
- Vessel function;
- Vessel type;
- IMO Number; and
- Vessel owner or operating company.

4.3. ACTIVITY 1 – CABLE LAYING AND PROTECTION

SURVEY AND SEABED PREPARATION

4.3.1. The proposed programme for the pre-lay mattresses installation, survey and seabed preparation works along routes for the Point of Ayr (PoA) to Douglas CCS, and Douglas CCS to satellites cables, planned for 2026, is presented in Table 4-1. The specifications of the vessels that will be used for these works before cable installation are presented in Table 4-2, Table 4-3, Table 4-4, and Table 4-5.

Table 4-1 – Survey and seabed preparation 2026 programme

Activity	Key dates
MPSV transit to site	7-8 April 2026
MPSV Boulder removal	9-19 April 2026
MPSV Mattress pre-lay at crossings PoA to Douglas CCS	19 April 2026
MPSV Mattress pre-lay at crossings Douglas CCS Hamilton Main	19-20 April 2026
MPSV Mattress pre-lay at crossings Douglas CCS to Hamilton North	20 April 2026
MPSV Mattress installation at crossings Douglas CCS Lennox	20 April 2026
MPSV transit to port and demobilisation	20-25 April 2026
PLGR transit to site	9-16 April 2026
PLGR PoA to Douglas	17-20 April 2026
PLGR transit to port	20-24 April 2026
PLGR offload debris	24-25 April 2026
PLGR demobilisation	25-27 April 2026
PLS transit to site	21-22 April 2026
PLS pre-lay survey from PoA to Douglas	22 April-8 June 2026
PLS transit to port	8-9 June 2026
PLS demobilisation	9-10 June 2026

4.3.2. The relocation of boulders and pre-lay of mattresses prior to cable laying is likely to be performed by the Glomar Worker, as shown in Table 4-2.

Table 4-2 – Vessel for boulder relocation and pre-lay mattress installation

Vessel characteristics	Details
Vessel name	Glomar Worker
Vessel function	Boulder relocating and Mattress installation
Vessel type	MPSV
IMO number Callsign MMSI	9344227 3EKK8 352110000
Vessel owner/operating company	Glomar
Vessel key characteristics	Multipurpose vessel Length: 60m Breadth: 15,6m Draught: 3.5m/5.0m
Propulsion Mooring/station keeping	DP2

4.3.3. The survey of the cable routes prior to cable laying is likely to be performed by the Titan Discovery, operated by Gardline, as shown in Table 4-3.

Table 4-3 – Pre-lay survey vessel

Vessel characteristics	Details
Vessel name	Titan Discovery
Vessel function	Survey vessel
Vessel type	Alicat South Boat Catamaran
IMO number Call Sign MMSI	- 2HCR3 235102534
Vessel owner	Gardline
Vessel key characteristics	Shallow catamaran Length: 13m Breadth: 5m Draught: 1.5m
Propulsion	2x 570 EVO (530hp) IVECO FPT
Mooring/station keeping	-

4.3.4. The pre-lay grapnel run along the cable routes prior to cable laying is likely to be performed by the Voe Vanguard, as shown in Table 4-4.

Table 4-4 – Vessel for pre-lay grapnel run

Vessel characteristics	Details
Vessel name	Voe Vanguard
Vessel function	Pre Lay Grapnel Run Vessel
Vessel type	Damen Renewables Service Vessel 3315
IMO number Call Sign MMSI	9809693 MBEN9 232008636
Vessel owner	Jiff Mar
Vessel key characteristics	Shallow drafted DP Vessel Length: 33m Breadth: 14m Draught: 2.6m/4.95m
Propulsion	39t Bollard Pull
Mooring/station keeping	DP 2 – thrusters and Azimuths

4.3.5. The pre-lay surveys identified that it is necessary to dredge the channel to the east of the West Hoyle Spit to enable to passage of the Ndurance cable lay vessel (CLV). A hopper dredger like the Causeway shown in Table 4-5 will be used to deepen the channel for the CLV.

Table 4-5 – Vessel for dredging cable channel to east of West Hoyle Spit

Vessel characteristics	Details
Vessel name	Causeway
Vessel function	Trailing suction hopper dredge
Vessel type	Hopper dredger
IMO number Call Sign MMSI	9653197 5BVB3 210523000
Vessel owner	Boskalis
Vessel key characteristics	Length: 92m; Breadth: 19m; Draught: 7.2m
Propulsion	2x 1,491 kW
Mooring/station keeping	Highly manoeuvrable using rudder propellers.

4.3.6. The proposed programme for the survey and seabed preparation works along the Douglas CCS to satellite platforms cables planned for 2027 is presented in Table 4-6. The same vessels as presented in Table 4-2, Table 4-3, and Table 4-4 will be used for these works.

Table 4-6 – Survey and seabed preparation 2027 programme

Activity	Key dates
PLGR transit to site	9-13 May 2027
PLGR Douglas CCS to Hamilton Main	13-15 May 2027
PLGR Douglas CCS to Hamilton North	15-16 May 2027
PLGR Douglas CCS to Lennox	16-20 May 2027
PLGR transit to port	20-24 May 2027
PLGR offload debris	24-25 May 2027
PLGR demobilisation	25-27 May 2027
PLS transit to site	20-22 May 2027
PLS Douglas CCS to Hamilton Main	22-23 May 2027
PLS Douglas CCS to Hamilton North	23-24 May 2027
PLS Douglas CCS to Lennox	24-28 May 2027
PLS transit to port	28-29 May 2027
PLS demobilisation	29-30 May 2027

CABLE LAYING AND BURIAL

4.3.7. The proposed programme during 2026 for the cable lay vessel (CLV) to be used for the cable simultaneous laying and burial works is presented in Table 4-7. The specifications of the vessels that will be used for the cable simultaneous laying and burial are presented in Table 4-8, Error! Reference source not found., Table 4-9, and Table 4-10.

Table 4-7 – Cable simultaneous laying and burial programme

Activity	Key dates
CLV transit to Blythe for cable load out	29 June-1July 2026
CLV loading cable in Blythe	1-8 July 2026
CLV transit from Blythe to Liverpool Bay	8-14 July 2026
CLV waiting on weather window	15-22 July 2026
CLV shore pull in PoA	22-25 July 2026
CLV simultaneous lay and burial from PoA to Douglas CCS	26 July-3 August 2026
CLV freelay from PoA to Douglas CCS	3-12 August 2026
CLV wet store cable at Douglas CCS	12-13 August 2026
CLV transit to port	13 August 2026
CLV rearrange deck and load HD3	13-14 Auust 2026
CLV transit to site	14-15 August 2026
CLV pull-in cable at Douglas CCS	15-16 August 2026
CLV transit to port	16-17 August 2026
CLV rearrange deck and load HD3	17-18 August 2026
CLV transit back to Rotterdam	18-22 August 2026

Table 4-8 – Vessel for cable simultaneous laying and burial

Vessel characteristics	Details
Vessel name	Ndurance
Vessel function	Cable Lay Vessel (CLV)
Vessel type	Cable Layer
IMO number Call sign MMSI	9632466 5BVH3 209851000
Vessel owner	Boskalis
Vessel key characteristics	Cable layer, beaching capabilities. Length: 99m, Breadth: 30m, Draught: 4.8m/7.0m
Propulsion Mooring/station keeping	DP2 and 7 point mooring system

4.3.8. During the works, the metocean conditions, and areas of shallow water mean the Ndurance will be on anchors to maintain stability, and to move on the spread. A multicat, like the Odin, will be used as an anchor handler.

Table 4-9 – Vessels for anchor moves during cable simultaneous laying and burial

Vessel characteristics	Details
Vessel name	Odin
Vessel function	Anchor handling
Vessel type	Multicat
IMO number Call sign MMSI	9572824 PCCQ 245307000
Vessel owner	Herman Senior
Vessel key characteristics	Shallow draft anchor handler Length: 29.9m Breadth: 13.5m Draught: 2.6/2.8m
Propulsion Mooring/station keeping	3x Promarin fixed propellers in Optima nozzles

4.3.9. The CRC Gladiator will be used for crew transfer.

Table 4-10 – Vessels for crew transfer during cable simultaneous laying and burial

Vessel characteristics	Details
Vessel name	CRC Gladiator
Vessel function	Crew Transfer vessel
Vessel type	Crew transfer vessel
IMO number Call sign MMSI	9572824 2IUR3 235112943
Vessel owner	Commercial Rib Charter
Vessel key characteristics	CTV – 12 pax Length: 13m; Breadth: 5.4m; Draught: 0.8m
Propulsion Mooring/station keeping	2 x Iveco FPT Cursor C90 620 2 x MJP Ultrajet 377 waterjets

4.3.10. The proposed programme for the burial of the free-laid sections of cable by the trench support vessel (TSV) is presented in Table 4-11. The specifications of the vessels that will be used for the cable simultaneous laying and burial are presented in Table 4-12, and Table 4-13.

Table 4-11 – Cable burial of free-laid sections programme

Activity	Key dates
TSV transit to site	12-19 August 2026
TSV Execution – Launch/Recovery tool	20 August 2026
TSV Execution – burial PoA to Douglas CCS	20 August-2 September 2026
TSV Execution – crossing existing infrastructure	23-30 August 2026
TSV Execution – Launch/Recovery tool	2 September 2026
TSV transit back to Rotterdam	2-7 September 2026

4.3.11. The use of the Ndeavor cable burial vessel (CBV) is planned for the burial of the cable free laid by the Ndurance CLV.

Table 4-12 – Vessel for burial of free-laid cable

Vessel characteristics	Details
Vessel name	Ndeavor
Vessel function	Cable burial Vessel
Vessel type	Cable burial
IMO number Call sign MMSI	9650212 5BVG3 209852000
Vessel owner	Boskalis
Vessel key characteristics	Cable layer, beaching possibilities Length: 99m; Breadth: 30m; Draught: 4.8m/7.0m
Propulsion Mooring/station keeping	DP2 2x 1,250kW + 2x 1,000kW Azimuth Thrusters & 1x 550kW Bow Thruster

4.3.12. During operation of the Ndurance, the vessel will be less manoeuvrable due to working on an anchor spread. As well, when the cable is free-laid on the seabed the cable needs to be checked and guarded. GV Haulbowline is a potential guard vessel for the project.

Table 4-13 – Guard vessels for cable laying and burial

Vessel characteristics	Details
Vessel name	GV Haulbowline
Vessel function	Guard vessel
Vessel type	Guard vessel
IMO number Call Sign MMSI	8847179 MEZW9 232021354
Vessel owner	Boskalis
Vessel key characteristics	Length: 23m Breadth: 7m Draught: 3.6m

4.3.13. The proposed programme during 2027 for the CLV to be used for the free-lay of the cables from Douglas CCS to the three satellite platforms is presented in Table 4-14.

Table 4-14 – Cable free-lay for Douglas CCS to satellite platforms 2027 programme

Activity	Key dates
CLV transit to Blythe for cable load out	14-16 June 2027
CLV loading cable in Blythe	16-26 June 2027
CLV transit from Blythe to Liverpool Bay	26-30 June 2027
CLV – cable pull-in Douglas CCS	1 July 2027
CLV free-lay Douglas CCS to Hamilton Main	1-3 July 2027
CLV – cable pull-in Hamilton Main	3-4 July 2027
CLV in-field transit	4 July 2027
CLV – cable pull-in Douglas CCS	4-5 July 2027
CLV free-lay Douglas CCS to Hamilton North	5-6 July 2027
CLV cable pull-in Hamilton North	6-8 July 2027
CLV – in-field transit	8 July 2027
CLV tidal delay at Lennox	8 July 2027
CLV weather downtime at Lennox	8-9 July 2027
CLV – cable pull-in Douglas CCS	9-10 July 2027
CLV free-lay Douglas CCS to Lennox	10-14 July 2027
CLV – cable pull-in Lennox	14-15 July 2027
CLV transit to Rotterdam	15-18 July 2027

4.3.14. The proposed programme during 2027 for the burial of the free-laid sections of cable from Douglas CCS to the satellite platforms by the TSV is presented in Table 4-15.

Table 4-15 – Programme for cable burial from Douglas CCS to satellite platforms

Activity	Key dates
TSV transit to site from Rotterdam	14-22 July 2027
TSV Execution – Launch/Recovery tool	22 July 2027
TSV Execution – burial Douglas CCS to Hamilton North	22-29 July 2027
TSV Execution – crossing existing infrastructure	22-29 July 2027
TSV Execution – burial Douglas CCS to Hamilton Main	29 July-03 August 2027
TSV Execution – crossing existing infrastructure	29 July-03 August 2027
TSV Execution – burial Douglas CCS to Lennox	03-18 August 2027
TSV Execution – crossing existing infrastructure	03-18 August 2027
TSV Execution – Launch/Recovery tool	18 August 2027
TSV transit back to Rotterdam	18-23 August 2027

INSTALLATION AND MANEUVERING OF CLV ANCHORS BY AHT

Overall Approach

4.3.15. The AHTs play a central role in deploying, positioning, recovering, and relocating anchors for the CLV, using a combination of mechanical handling, survey guidance, and real-time monitoring. The detailed Anchor Handling Procedure is presented in Appendix E. The Anchor Handling Procedure includes a series of 'Storyboards' as Appendix C that illustrate the deployment, relocation, and recovery of the anchors and mid-line buoys while the CLV is operating on anchors.

4.3.16. The detailed Anchor Handling Procedure explains that safety, communication, and adaptability to site conditions are emphasised throughout the process. Special care is taken when crossing or working near third-party subsea assets, with enhanced

accuracy and protective measures. Agreements have been secured with all owners of the third-party crossings that define the agreed crossing methods and protocols.

4.3.17. **Preparation and Planning:** Before operations, communication lines are established among all parties, equipment is checked, and anchor plans are reviewed based on site conditions and updated charts. Safety drills and toolbox talks are conducted to ensure readiness.

4.3.18. **Anchor Deployment:** The CLV prepares anchors, pennant wires, and buoys for deployment. The AHT moves alongside the CLV to receive these components.

4.3.19. The CLV passes the anchor, pennant wire, and buoy to the AHT, which connects the pennant wire to its winch and spools it. The AHT then moves to the designated anchor deployment position, guided by the Tug Management System (TMS) and survey data.

4.3.20. At the planned location, the anchor is lowered to the seabed with minimum tension. The CLV slowly increases tension to test anchor holding; if the anchor does not hold, it is recovered and redeployed.

4.3.21. **Anchor Positioning and Monitoring:** Anchor patterns are adjusted by the CLV Master according to prevailing site conditions (currents, weather, etc.). The TMS ensures anchors are deployed as close as possible to planned locations within anchor corridors. Anchor positions, wire tension, and wire length are continuously monitored and logged. Anchors are made visible with buoys and lights for safety.

4.3.22. **Midline Buoy Installation:** When anchor wires cross existing subsea assets, midline buoys are installed to maintain required clearance. The AHT spools anchor wire, sails to the midline buoy location, installs the buoy, and then deploys the anchor.

4.3.23. **Anchor Recovery and Relocation:** For recovery or relocation, the AHT uses a grapple hook to retrieve the pennant buoy and wire, secures them on deck, and then hauls in the anchor. If relocation is needed, the anchor is moved to the new position as instructed by the CLV Master and survey team.

4.3.24. **Special Procedures Near Third-Party Assets:** When anchoring near or over third-party assets, accuracy is increased, midline buoys are used, and anchors may be recovered to AHT decks when traversing subsurface assets. Anchor wire tension is managed to minimise seabed dragging, and **exclusion zones** are enforced in the TMS.

4.3.25. **Transition to Dynamic Positioning (DP):** During simultaneous cable lay and burial, the CLV transitions from anchor spread to DP system as water depth allows. Anchors are recovered as per procedure, except for the plough towing anchor.

Nearshore Area and Welsh Channel

4.3.26. An important consideration when deploying the anchors for the CLV at Talacre Beach, ready for the electrical cable shore-pull, is the relative proximity of the Gronant Dunes Little Tern colony. The colony is located approximately 2 km to the west of where the CLV will anchor, with the port, and starboard side stern anchors deployed on Talacre Beach.

4.3.27. Figure 1 illustrates the spatial relationship between how the CLV and its anchors are positioned relative to the Little Tern colony and foraging grounds at Gronant Dunes, North Wales. It highlights the importance of maintaining safe distances and minimising disturbance to sensitive wildlife during the marine cable installation operations.

4.3.28. Cable Lay Vessel (CLV) and Anchor Spread: The central yellow marker represents the CLV, which is positioned in the Welsh Channel at KP 1.56. The orange lines radiating from the CLV show the locations of its anchors, which are deployed in various directions to secure the vessel during cable installation. Two Anchor Handling Tugs (AHT) are also depicted, manoeuvring port and starboard anchors.

4.3.29. Distances from Little Tern Colony: Blue lines indicate measured distances from the Little Tern colony to key construction points:

- The distance from the colony to the CLV is 2.04 km.
- The distance from the colony to the southwest anchor is 1.77 km.
- The distance from the colony to the HDD (Horizontal Directional Drilling) Exit Pit is 2.17 km.

4.3.30. Little Tern Nesting Site and Foraging Area: The green boxes highlight the Gronant Dunes Little Tern nesting site and viewing platform. It is noted that over 90% of Little Tern foraging occurs within 1.5 km of the colony, emphasising the ecological sensitivity of the area.

4.3.31. Cable Alignment and Beach Anchors: The orange line represents the alignment of the cable as it comes ashore. Southwest and southeast anchors are placed on the beach by excavator, with their positions marked for reference.

4.3.32. Additional Context: The map background is a satellite image showing Gronant Beach, Gronant Sands Peak, and surrounding areas. Measurement tools from Google Earth are used to provide accurate spatial data.

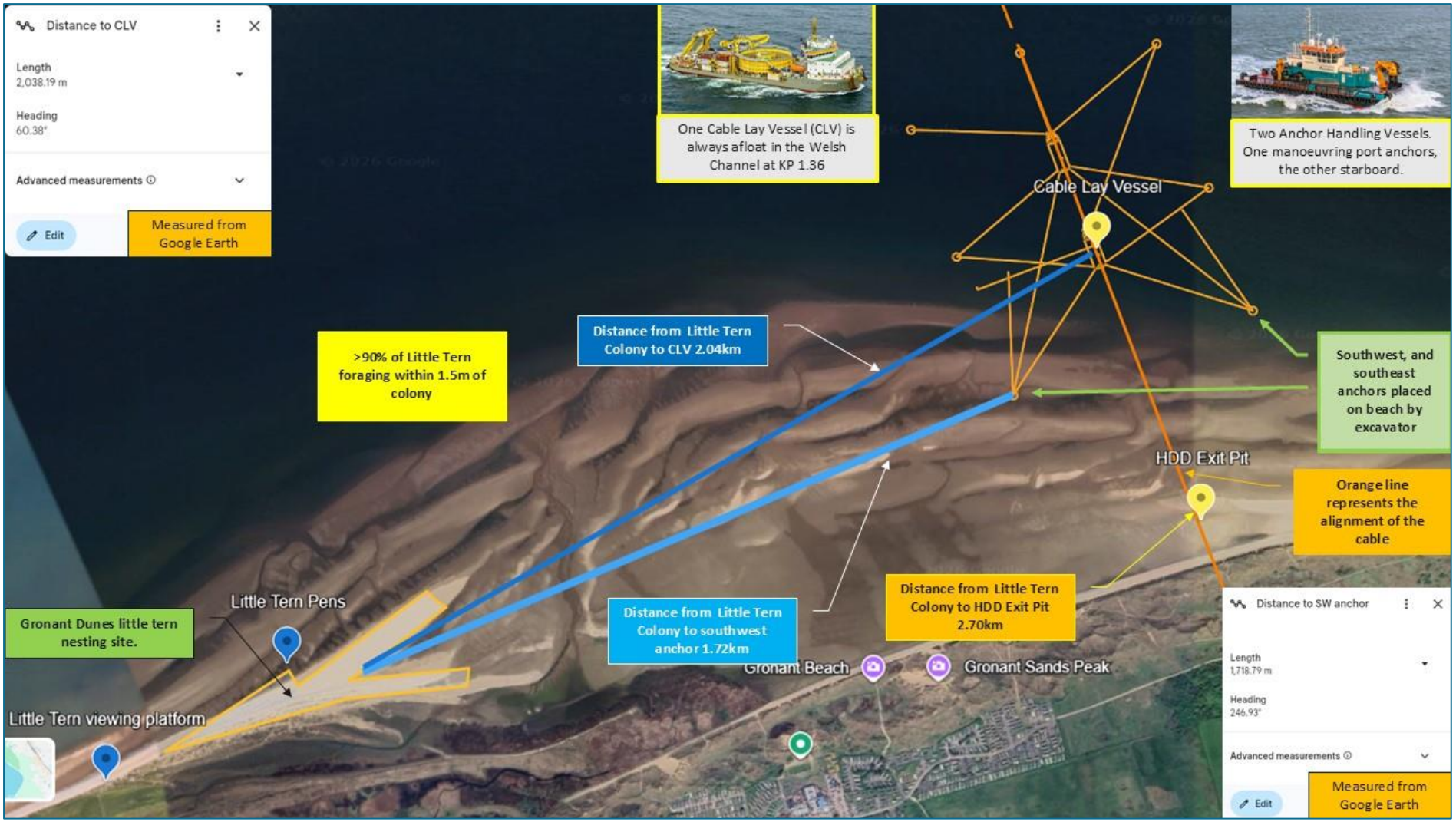

Figure 1: Position of CLV ready for electrical cable shore pull

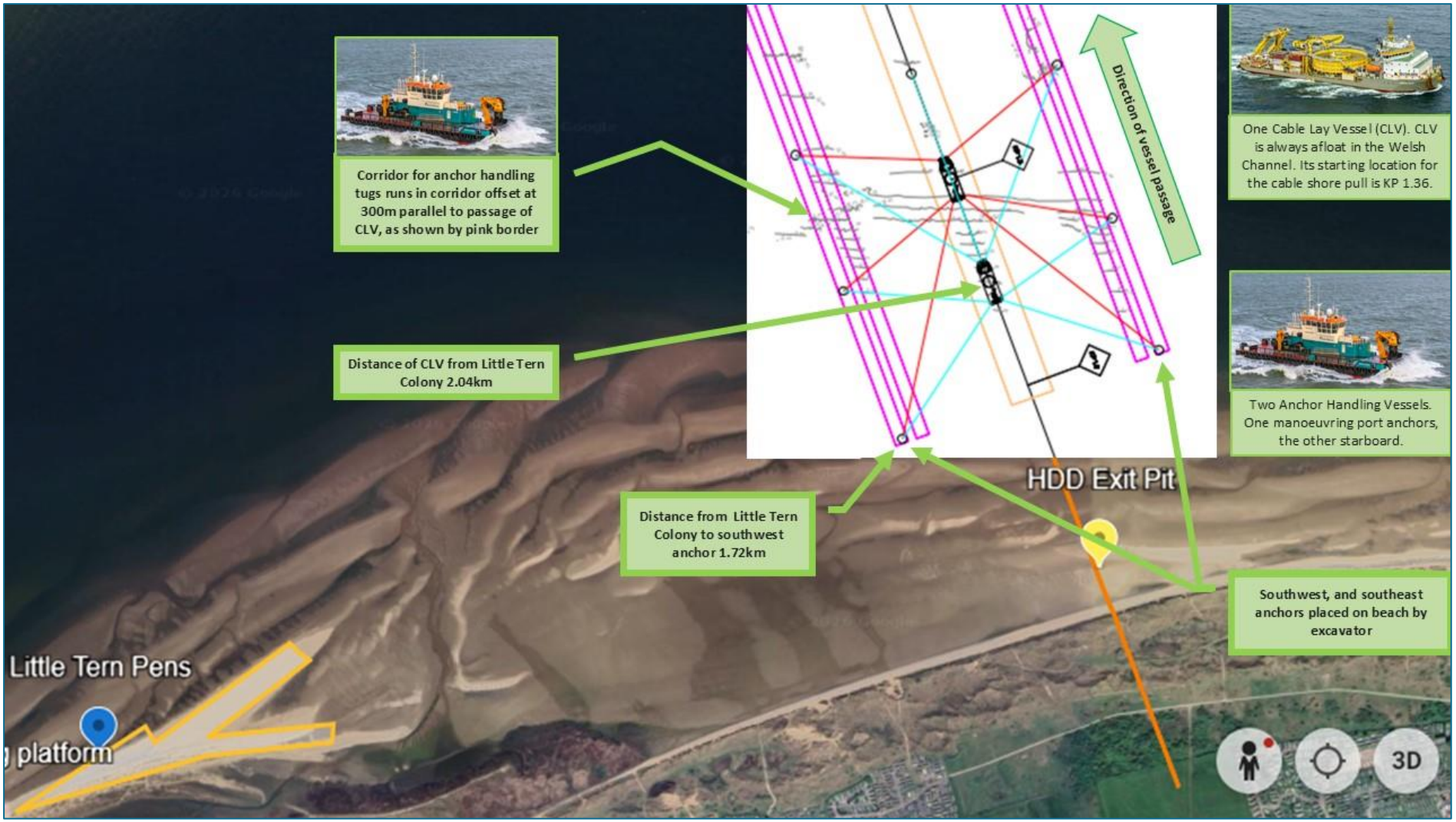

Figure 2: Position of CLV ready for electrical cable shore pull also showing corridor for AHTs parallel to passage of vessel (pink polygons)

POST-LAY MATTRESS AND ROCK PROTECTION AT CROSSINGS

4.3.33. This section describes a possible vessel for when the cable is laid and buried and to finalise the crossings over 3rd party assets and near the Douglas Platform and for the installation of the rock berms planned.

4.3.34. The programme for installing post-lay mattresses and rock protection at 3rd party crossing by the offshore support vessels (OSV) and Fall Pipe Vessel (FPV) is presented in Table 4-16, and Table 4-17 respectively. The specifications of the vessels that will be used for the cable protection works are presented in Table 4-18, and Table 4-19 .

Table 4-16 – Programme for post-lay crossing protection PoA to Douglas CCS cable

Activity	Key dates
OSV transit to port	26-31 August 2026
OSV load mattresses (approx. 95 pieces)	1-2 September 2026
OSV lay mattresses PoA to Douglas CCS cable (approx. 95 pieces)	2-4 September 2026
OSV transit to home port (Netherlands)	4-7 September 2026
FPV mobilisation to site	4-8 September 2026
FPV install rock protection	8-18 September 2026
FPV waiting on weather	18-19 September 2026
FPV to home port (Netherlands)	19-22 September 2026

Table 4-17 – Programme for post-lay mattresses and rock protection at crossings for Douglas CCS to satellites cables including in-field transit

Activity	Key dates
OSV transit to port	02-06 August 2027
OSV load mattresses (approx. 106 pieces)	06-08 August 2027
OSV lay mattresses Douglas CCS to Hamilton Main	08-11 August 2027
OSV load mattresses (approx. 60 pieces)	11-13 August 2027
OSV lay mattresses Douglas CCS to Hamilton North	13-16 August 2027
OSV load mattresses (approx. 60 pieces)	16-17 August 2027
OSV lay mattresses Douglas CCS to Lennox	17-19 August 2027
OSV transit to home port (Netherlands)	19-22 August 2027
FPV mobilisation to site	19-23 August 2027
FPV install rock protection	23 August-02 September 2027
FPV waiting on weather	02-03 September 2027
FPV to home port (Netherlands)	03-06 September 2027

Table 4-18 – Vessels for post-lay mattress installation at cable crossings

Vessel characteristics	Details
Vessel name	Geoquip Elena
Vessel function	Post lay mattress lay
Vessel type	OSV
IMO number: Callsign: MMSI:	9249439 YJVL7 576431000
Vessel owner	Benemare Shipping
Vessel key characteristics	DP vessel Length: 91m; Breadth: 20m; Draught: 5m
Propulsion Mooring/station keeping	2 x 2200 kW Aquamaster Contaz15 CRP Dynamic Positioning (DP)

Table 4-19 – Vessel for post-lay rock protection at cable crossings

Vessel characteristics	Details
Vessel name	Rockpiper
Vessel function	Subsea rock Installation vessel
Vessel type	Fallpipe vessel (FPV)
IMO number Callsign MMSI	9583861 5BML3 209449000
Vessel owner	Boskalis
Vessel key characteristics	DP vessel Length: 158,6m; Breadth: 36m; Draught: 9,4m
Propulsion	DP-2 - 2x 4,500 kW (2 x azimuth thrusters)
Mooring/station keeping	Dynamic Positioning (DP)

4.4. ACTIVITY 2 – PIPELINE SPOOL LAYING AND PROTECTION

4.4.1. This section describes the vessels likely to be used for the delivery and laying of the pipeline spools, and the diving support vessels required to facilitate the pipeline connections. There are five pipeline spools that will provide connections from existing pipelines to the new Douglas CCS platform. These pipelines are as follows:

- PL1030, existing 20" gas export to Point of Ayr;
- PL1035, existing 20" gas export from Hamilton Man;
- PL1036A, existing 20" gas export from Hamilton North;
- PL1039, existing 20" gas export from Lennox; and
- PL1041, existing 20" gas injection to Lennox.

4.4.2. The delivery and installation of these new pipeline spools will require three vessels. The Boka Northern Ocean construction support vessel (CSV) for delivery, and the Boca Da Vinci, and Boka Atlantis as the diving support vessels (DSV) for the connections.

4.4.3. The proposed programme for the spool delivery and installation is presented in Table 4-20. The specifications of the vessels that will be used for the cable protection works are presented in Table 4-21, and Table 4-22.

Table 4-20 – Programme for pipeline spool delivery and installation

Activity	Key dates
CSV Boka Northern Ocean transit to site from Peterhead	02-05 January 2027
CSV Boka Northern Ocean offload and wet store spools	05-08 January 2027
CSV Boka Northern Ocean from site to Peterhead	08-10 January 2027
DSV Boka Atlantis transit to site from Peterhead	06-08 January 2027
PL1039 DSV Boka Atlantis spool tie in operations	09-11 January 2027
PL1039 DSV Boka Atlantis spool metrology operations	12-13 January 2027
DSV Boka Atlantis transit from site to Peterhead	14-16 January 2027
DSV Boka Da Vinci transit to site from Peterhead	14-16 January 2027
PL1030 DSV Boka Da Vinci spool tie in operations	17-25 January 2027
PL1030 DSV Boka Da Vinci spool metrology operations	25-26 January 2027
DSV Boka Da Vinci transit from site to Peterhead	26 January-02 February 2027

Activity	Key dates
DSV Boka Constructor transit to site from Peterhead	27 February-02 March 2027
PL1035 & 1036A DSV Boka Constructor spool delivery	22-24 March 2027
PL1035 & 1036A DSV Boka Constructor spool tie in operations	24 March-11 April 2027
PL1035 & 1036A DSV Boka Constructor spool metrology	24 March-11 April 2027
DSV Boka Constructor from site to Peterhead	12-15 April 2027
CSV Boka Northern Ocean transit to site from Peterhead	20-23 May 2027
CSV Boka Northern Ocean offload and wet store spools PL1035, 1036A, and 1041.	23-25 May 2027
CSV Boka Northern Ocean from site to Peterhead	25-28 May 2027
DSV Boka Atlantis transit to site from Peterhead	25-28 May 2027
PL1041 DSV Boka Atlantis spool tie in operations	28-30 May 2027
PL1041 DSV Boka Atlantis spool metrology operations	30-31 May 2027
DSV Boka Atlantis transit from site to Peterhead	01-04 June 2027
DSV Boka Atlantis transit to site from Peterhead	11-14 June 2027
PL1035 & 1036A DSV Boka Atlantis spool tie in operations	15-20 June 2027
PL1035 & 1036A DSV Boka Atlantis spool metrology operations	20-21 June 2027
PL1041 DSV Boka Atlantis spool metrology operations	21-23 June 2027
PL1035 & 1036A DSV Boka Atlantis Douglas spool metrology	24 June-03 July 2027
DSV Boka Atlantis transit from site to Peterhead	03-06 July 2027

Table 4-21 – Vessels for delivery and installation of pipeline spools

Vessel characteristics	Details
Vessel name	Boka Northern Ocean
Vessel function	Pipeline spool delivery and installation
Vessel type	Construction Support Vessel (CSV)
IMO number	9433183
Vessel owner/operating company	Boskalis
Vessel key characteristics	DP vessel Length: 120,4m; Breadth: 30m; Draught: 6.85m
Propulsion	DP2 - Kongsberg Maritime K-Pos 21
Mooring/station keeping	Dynamic Positioning (DP)

Table 4-22 – Diving Support Vessel for pipeline spool laying and installation

Vessel characteristics	Details
Vessel name	Boka Da Vinci
Vessel function	Diving support
Vessel type	Diving Support Vessel (DSV) DP2 MT6022XL
IMO number	9441233
Vessel owner/operating company	Boskalis
Vessel key characteristics	DP vessel Length: 115.4m Breadth: 22.2m Draught: 7.04m
Propulsion	GE Converteam ADP-21, dual redundant dynamic positioning system (AUTR/DPII)
Mooring/station keeping	Dynamic Positioning (DP)

Vessel characteristics	Details
Vessel name	Boka Atlantis
Vessel function	Diving support
Vessel type	Diving Support Vessel (DSV) DP2 MT6022XL
IMO number	9441221
Vessel owner/operating company	Boskalis
Vessel key characteristics	DP vessel Length: 115.4m Breadth: 22.2m Draught: 7.04m
Propulsion	GE Converteam ADP-21, dual redundant dynamic positioning system (AUTR/DPII)
Mooring/station keeping	Dynamic Positioning (DP)

4.5. ACTIVITY 4 – INSTALLATION OF DOUGLAS CCS

4.5.1. This section describes the vessel for the installation of the Douglas CCS Platform jacket, and topsides (Activity 4). Also described is the vessel for the exchange of topsides at the satellite platforms.

4.5.2. The proposed programme for installation of the Douglas CCS Platform jacket, and topsides by the Balder construction and installation vessel, and the Thialf heavy lift vessel (HLV) is presented in Table 4-23, and programme for Hamilton Main, and Hamilton North topsides in Table 4-24. The specifications of the vessels that will be used for the installation works are presented in Table 4-25, and Table 4-26.

Table 4-23 – Programme for Douglas CCS jacket and topsides installation

Activity	Key dates
Balder and Thialf transit to site from Netherlands	24-30 August 2026
Balder and Thialf move in to platform location	1 September 2026
Jacket installation	1-2 September 2026
Skirt piles installation	2-6 September 2026
Topsides installation	5-6 September 2026
Welding topsides	6-7 September 2026
Completions	7 September 2026
Balder and Thialf to home port (Netherlands)	8-12 September 2026

Table 4-24 – Programme for Hamilton Main, and Hamilton North topsides installation

Activity	Key dates
Balder and Thialf transit to site from Netherlands	8-16 March 2027
Balder and Thialf move in to Hamilton Main	16 March 2027
Hamilton Main topsides installation	16-19 March 2027
Welding topsides	19-20 March 2027
Completions	20 March 2027
Balder and Thialf move in to Hamilton North	20-21 March 2027
Hamilton North topsides installation	21-24 March 2027
Welding topsides	25-26 March 2027
Completions	26 March 2027
Balder and Thialf to home port (Netherlands)	27 March-5 April 2027

Table 4-25 – Installation of new Douglas Platform. Preparations, hook down and construction activities on Hamilton Main and Hamilton North platforms

Vessel characteristics	Details
Vessel name	Balder
Vessel function	Construction & Installation vessel
Master's name	Marcelis van Ravenstijn, Bart Lablans
Vessel type	Semi-submersible Heavy lift Crane vessel
IMO number	7710226
Vessel owner/operating company	Heerema Marine Contractors Nederland SE
Vessel key characteristics	Semi-Submersible Crane vessel, self-propelled & DP AAA Tandem lift of 6,300 tonnes
Propulsion	Main propulsion 4416 kW (2 pc)
Mooring/station keeping	DP Class 3, Thrusters Lips FS 3500-571/NU : 3500 kW (6 pc)

Table 4-26 – Exchange of topside on Hamilton Main and Hamilton North Platforms, including installation of future riser and J-tube

Vessel characteristics	Details
Vessel name	SSCV Thialf
Vessel function	Heavy Lift Vessel (HLV)
Master's name	Jeroen Klein, Arjan Udo
Vessel type	Semi Submersible Construction Vessel
IMO number	8757740
Vessel owner/operating company	THIALF SHIPPING B.V.
Vessel key characteristics	2 x 7100mT revolving cranes. Tandem lift of 14,200 tonnes
Propulsion	Wärtsilä thrusters, 6 x 5,500 kW - 360 degrees azimuth, total thrust 420 t
Mooring/station keeping	NMD Class III Dynamic Positioning / mooring 12 Delta Flipper anchors of 22.5 t each, on 3 1/8 inch wire ropes of 2,400 m (7,874 ft) long.

4.6. NAVIGATIONAL SAFETY AND MARINE OPERATIONS DURING DOUGALS CCS PLATFORM AND EXPORT CABLE INSTALLATION

4.6.1. The installation of the Douglas CCS platform will be undertaken by the Heavy Lift Vessel SSCV Balder, operating in Dynamic Positioning (DP) mode. As the vessel will operate on DP during platform installation, no anchor mooring spread will extend beyond the existing 500 m Safety Zone surrounding the Douglas installation.

4.6.2. The Douglas CCS platform lies within the Area to Be Avoided (ATBA) established within the Liverpool Bay Traffic Separation Scheme (TSS) as shown in Figure 3 and

Figure 4. The ATBA is intended to provide safe operational access to the Douglas installation and restrict general vessel traffic from transiting in proximity.

4.6.3. As installation activities will occur within this existing restricted area and the heavy lift vessel will operate on DP, navigable sea room for vessels transiting the Liverpool Bay TSS will not be restricted.

4.6.4. The Douglas CCS installation is located between the eastbound and westbound traffic lanes of the Liverpool Bay Traffic Separation Scheme, within the existing ATBA associated with the Douglas field.

4.6.5. The traffic lanes pass approximately 750 m from the Douglas installation, ensuring separation between offshore installation activities and transiting commercial shipping.

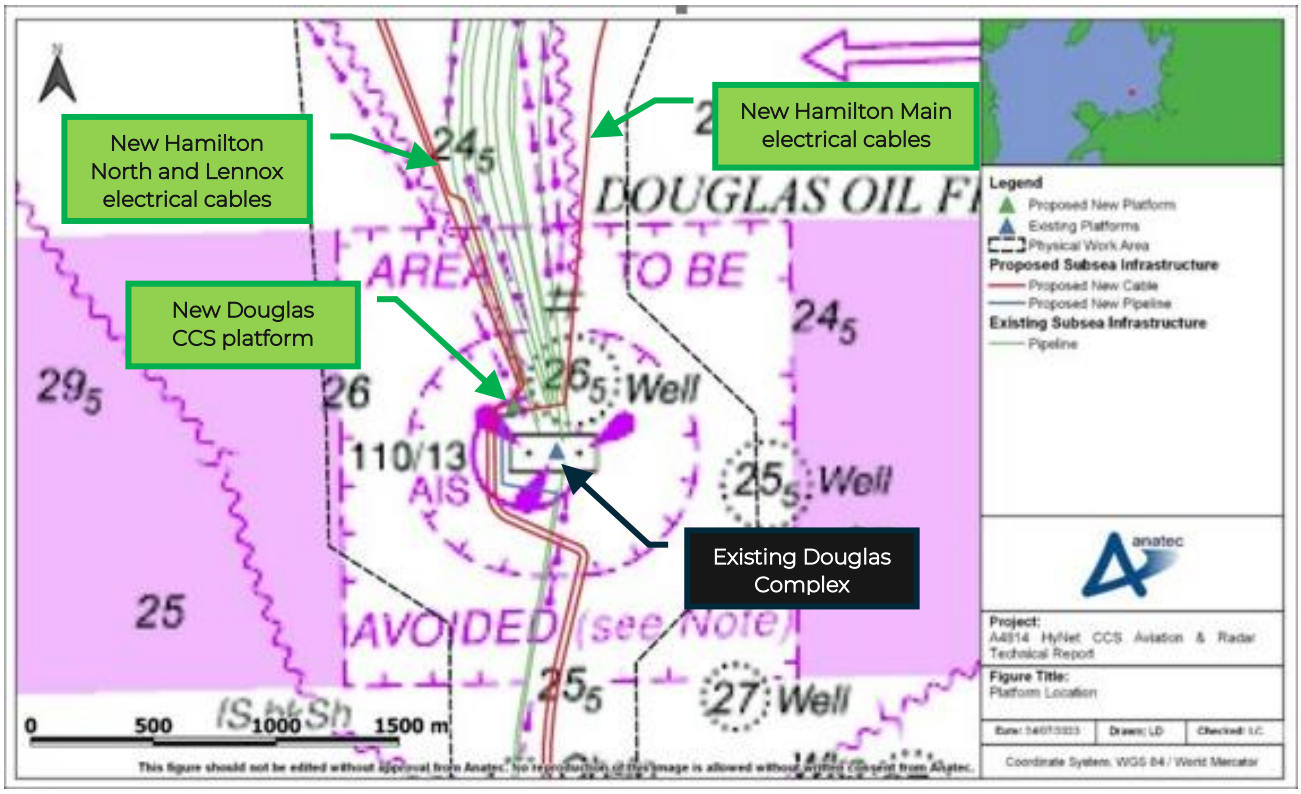

Figure 3: Area to be Avoided (ABTA) at Douglas CCS

4.6.6. Offshore installation activities have been designed to minimise interaction with the Liverpool Bay Traffic Separation Scheme. The Douglas CCS platform is located within the Area to Be Avoided (ATBA) established within the TSS, where general vessel traffic is already restricted. Platform installation will be undertaken by SSCV Balder (Section 4.5, and Figure 4) operating in Dynamic Positioning (DP) mode, ensuring no anchor mooring spread extends beyond the existing 500 m safety zone. Cable installation activities will be coordinated by the Marine Coordinator with guard vessels monitoring vessel traffic where required.

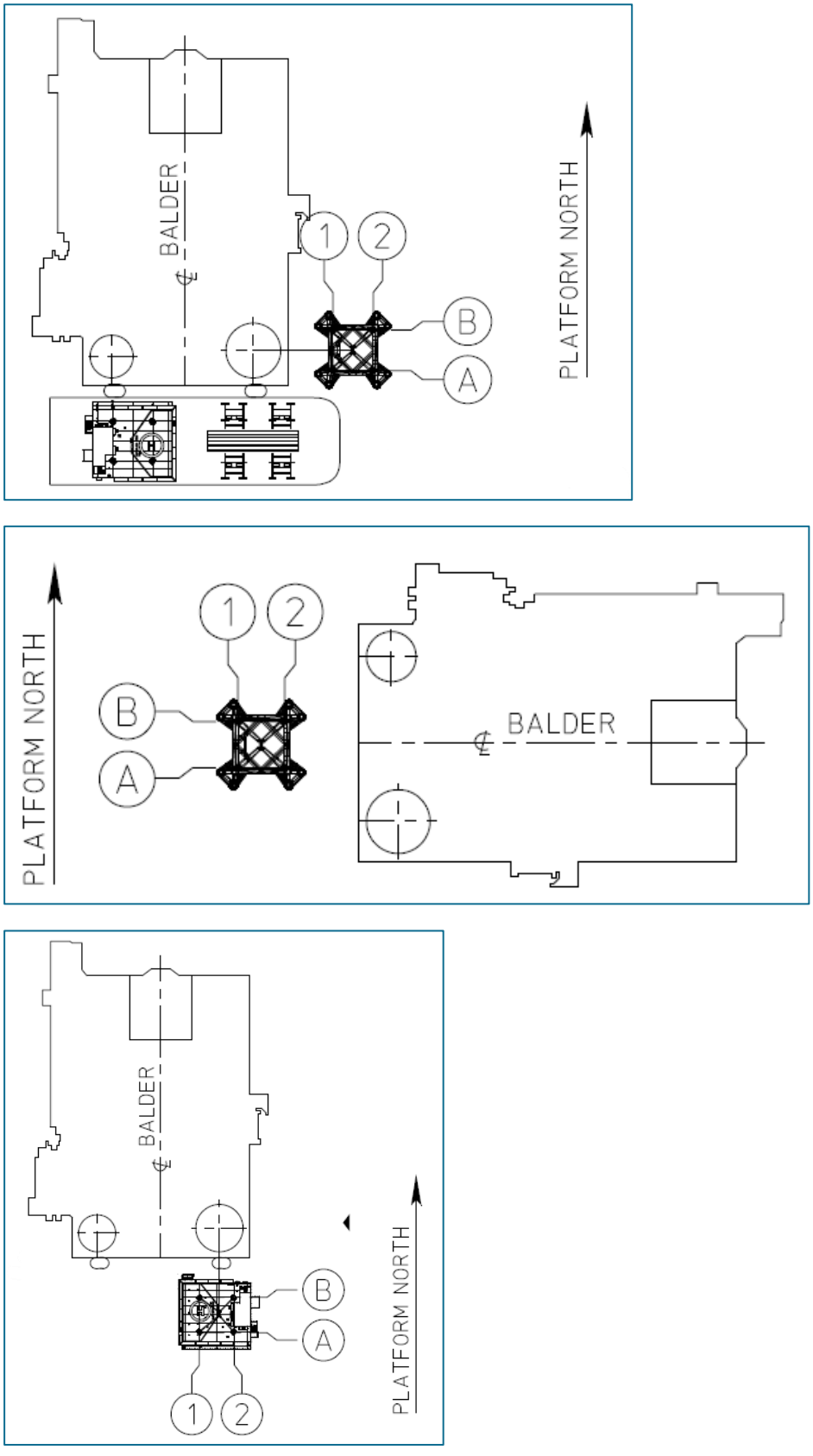

Figure 4: Position of Balder HLV operating on dynamic positioning during installation of Douglas CCS

4.6.7. A temporary period will occur during which both the existing Douglas installation and the new Douglas CCS platform will be present within the Douglas field area. The existing installation is currently non-operational and subject to a separate decommissioning programme managed under OPRED regulatory approval. As both structures remain within the ATBA and existing safety zone, this temporary overlap does not introduce additional navigational restrictions. It is expected in next 5 years that existing Douglas Complex is removed.

4.6.8. The Douglas CCS platform will be installed within the existing Douglas field ATBA and safety zone arrangements. Safety zone provisions therefore remain consistent with the current navigational restrictions associated with the Douglas installation. During construction activities navigational warnings and guard vessels will provide additional operational control where required. Once Douglas CCS is commissioned, a new 500m safety zone shall be established around platform.

4.6.9. Satellite platform works within the wider Liverpool Bay field occur at separate locations remote from the Douglas installation. For these satellite installation activities, the SSCV Balder may operate using an anchor mooring spread due to shallow water depths limiting DP capability. However, these activities take place significantly distant from the Liverpool Bay TSS, and therefore the anchor spread associated with satellite installations will not affect navigable sea room within the TSS or in the vicinity of the Douglas platform.

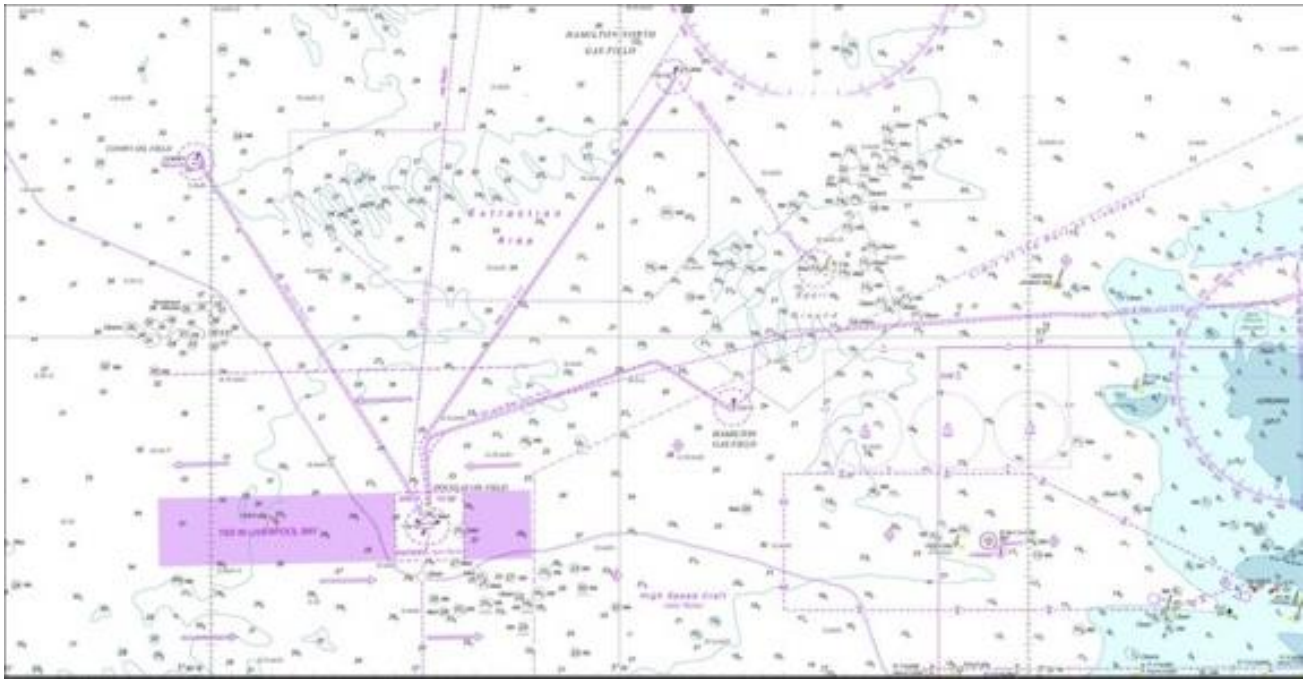

Figure 5: Area to be Avoided (ABTA) at Douglas CCS

4.6.10. The export cable route crosses the Welsh Channel between approximately KP 1.5 and KP 2.0, which provides navigational access to the Port of Mostyn. Cable installation in this area will be undertaken using a cable lay vessel supported by Anchor Handling Tugs (AHTs). The anchor patterns have been designed such that a navigable corridor through the Welsh Channel remains available for transiting vessels during operations. Cable installation activities will be coordinated by the Marine Coordinator with guard vessels monitoring vessel traffic where required

4.6.11. Operations in this area will be undertaken in coordination with the Port of Mostyn Harbour Authority, in accordance with the agreed Memorandum of Understanding between Liverpool Bay CCS Ltd and the Port of Mostyn, which provides for coordination of cable laying activities with port vessel traffic and ensures safe vessel passage around the cable lay vessel where required.

4.6.12. During cable installation activities within the Welsh Channel, assisting Anchor Handling Tugs will act as guard vessels when not engaged in anchor handling operations to monitor vessel traffic and facilitate safe passage through the channel. Installation activities within this section will be temporary and of limited duration, after which the cable will be buried below seabed level and will not present any obstruction to navigation.

4.6.13. This area lies outside the Liverpool Bay Traffic Separation Scheme but is used by vessels transiting to and from the Port of Mostyn.

4.6.14. Submarine cable installation between Point of Ayr and Douglas CCS will be undertaken using a Cable Lay Vessel (CLV) operating along the approved cable route.

4.6.15. Cable installation activities will be coordinated by the Marine Coordinator with guard vessels monitoring vessel traffic where required.

4.6.16. The installation methodology includes:

- limited anchoring during nearshore installation up to approximately KP11.
- cable burial using a plough system supported by a single bow anchor beyond KP11.

4.6.17. This approach significantly limits the spatial footprint of installation activities. Cable laying vessels will operate in accordance with Rule 10 of the International Regulations for Preventing Collisions at Sea (COLREGs) governing conduct within Traffic Separation Schemes.

4.6.18. AIS monitoring will be used to coordinate vessel movements where necessary and to ensure safe passage for transiting vessels.

4.6.19. Cable installation activities have been planned to avoid unnecessary encroachment into the TSS. The cable lay vessel will operate at controlled lay speeds and will be supported by AHT vessels. Installation operations are of limited duration, with marine coordination ensuring safe vessel passage where required. Notices to Mariners and navigational warnings will be issued prior to operations.

4.6.20. Vessel traffic will be managed through the project Marine Coordinator, supported by guard vessels when required during cable installation activities. Vessel movements and anchor positions will be monitored through the vessel navigation and Tug Management System. Standard offshore procedures regarding operational limits, including reduced visibility conditions, will apply.

5. NAVIGATIONAL RISK ASSESSMENT SUMMARY

5.1. OVERVIEW

5.1.1. The Navigational Risk Assessment (NRA), prepared by Anatec Ltd for Liverpool Bay CCS Ltd, supported the Environmental Statement for the HyNet Carbon Dioxide Transportation and Storage Project (Offshore) (Liverpool Bay CCS Ltd – Environmental Statement, Volume 3, Appendix L: Navigational Risk Assessment Technical Report, February 2024). The study assesses navigational safety risks associated with the construction, operation, and decommissioning of offshore CCS infrastructure within Liverpool Bay, including a new Douglas CCS Platform, subsea power and fibre-optic cables, and the repurposing of existing gas platforms and pipelines at the Hamilton, Hamilton North, and Lennox fields.

5.1.2. The NRA followed the Formal Safety Assessment (FSA) methodology and complies with Maritime and Coastguard Agency (MCA) guidance (MGN 654), adapted for CCS applications.

5.2. BASELINE MARINE TRAFFIC DENSITY AND AIS DATA

5.2.1. Liverpool is a major UK port, handling 31 million tonnes of cargo annually (DECC, 2016). In 2016, the port grew by 7% and opened a new container terminal to boost capacity (Maritime and Shipping Statistics, 2017). Shipping activity in Liverpool Bay is high (Figure 6), partly due to supply vessels serving oil and gas fields in the Eastern Irish Sea (DECC, 2016).

5.2.2. Shipping density ranges from low to high, with most areas classified as moderate (1,000–5,000 vessels per year) or up to 500 vessels per week (MMO, 2014)(Figure 7). The busiest routes connect Liverpool-Douglas, Cairnryan-Larne, and Cairnryan/Stranraer-Belfast, carrying around 3 million passengers in 2014 (DECC, 2016).

5.2.3. In 2022, the project area averaged 54 unique vessels daily, peaking at 64 in July and dipping to 45 in February due to seasonal increases in passenger (Figure 8), recreational, and wind farm support traffic. Within the project area, the daily average was 31 vessels, ranging from 27 in December to 36 in May.

5.2.4. Wind farm support vessels (Figure 9) mainly operated between local ports and nearby wind farms, while oil and gas support vessels worked near Liverpool Bay fields and further north to Morecambe and Calder fields, with Liverpool as a central hub. Vessel movements were recorded throughout the work area, especially along the Liverpool Bay TSS and nearshore, including oil, gas, and fishing vessels close to cable routes.

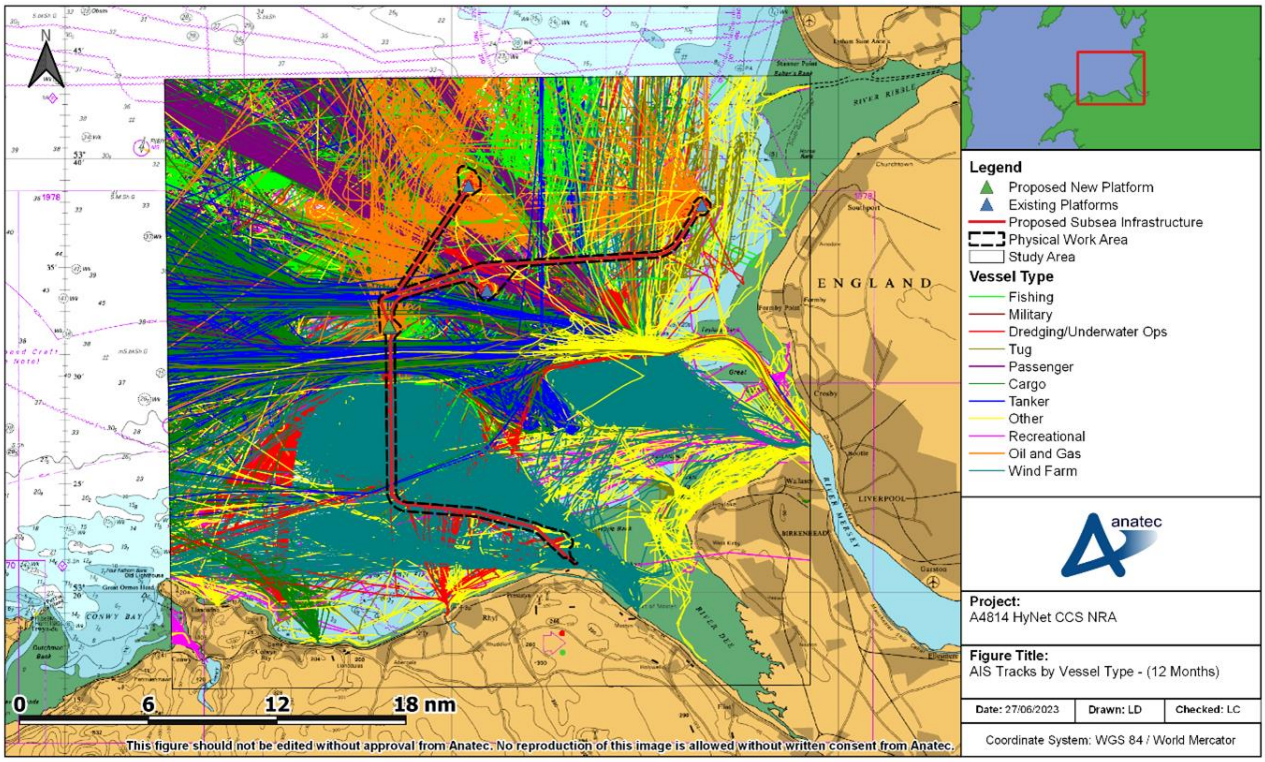

Figure 6: AIS tracks by vessel type in Liverpool Bay

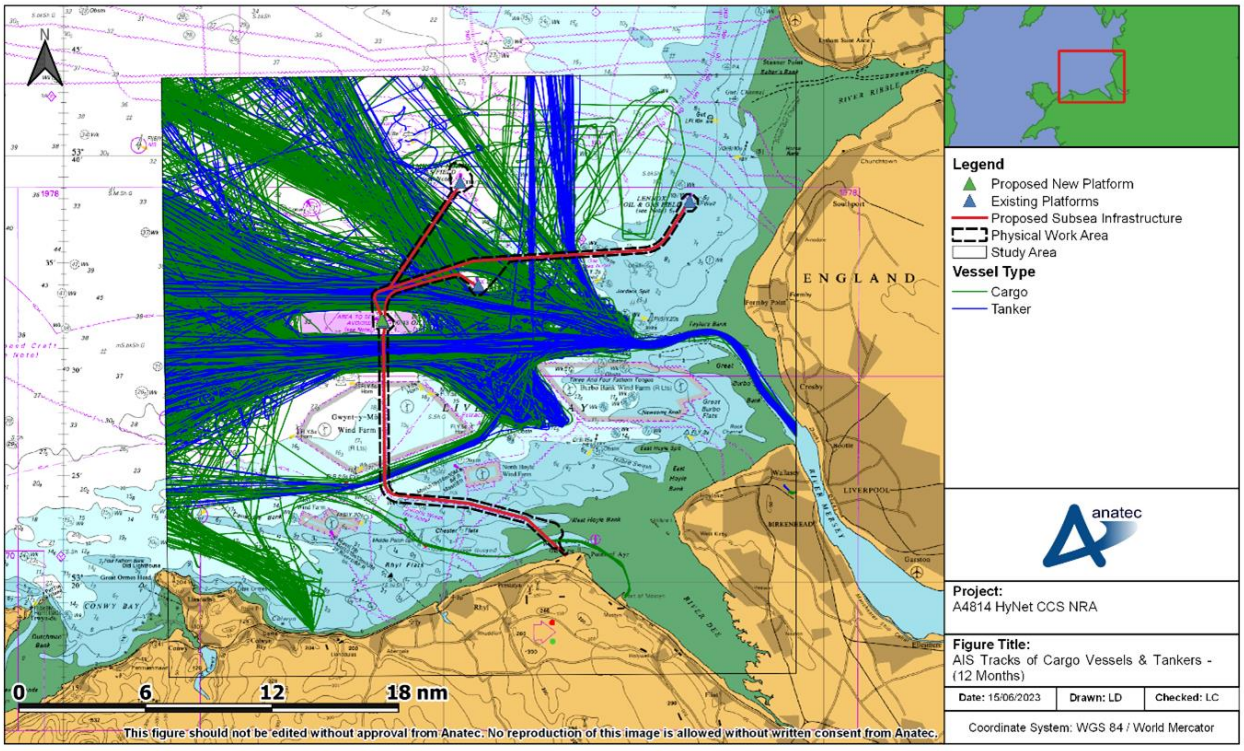

Figure 7: AIS tracks of cargo vessels and tankers in Liverpool Bay

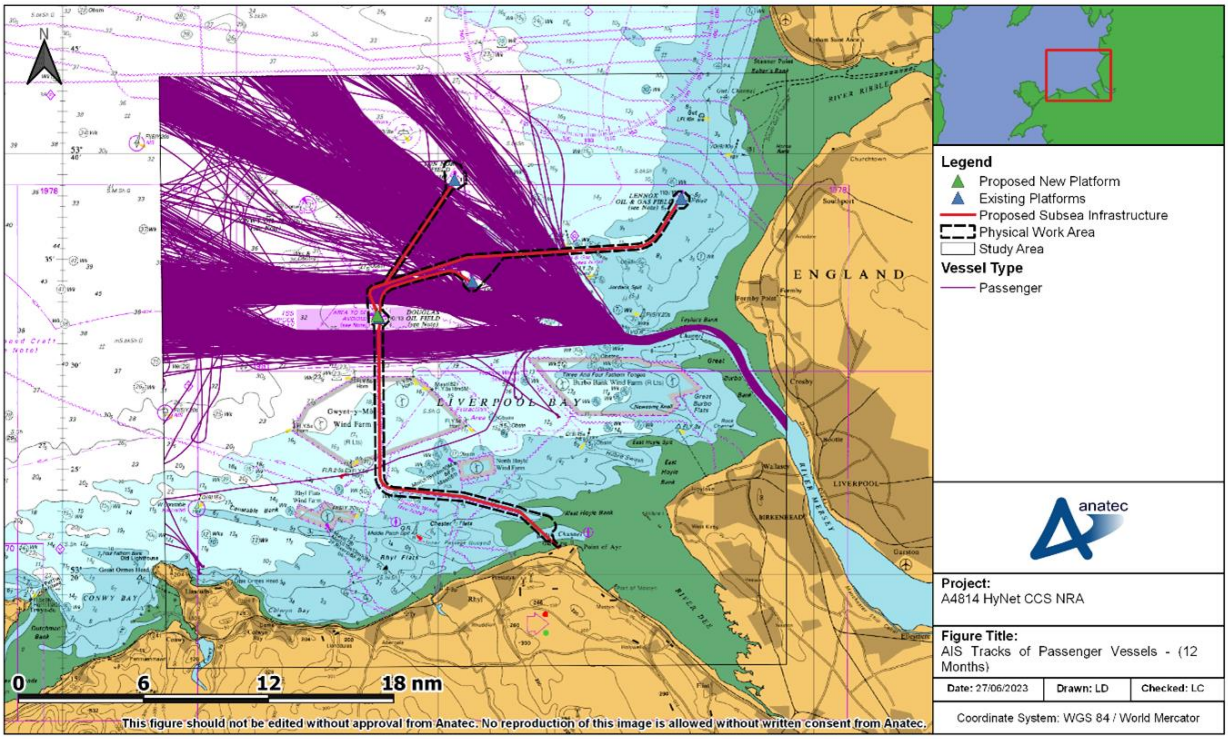

Figure 8: AIS tracks of passenger vessels in Liverpool Bay

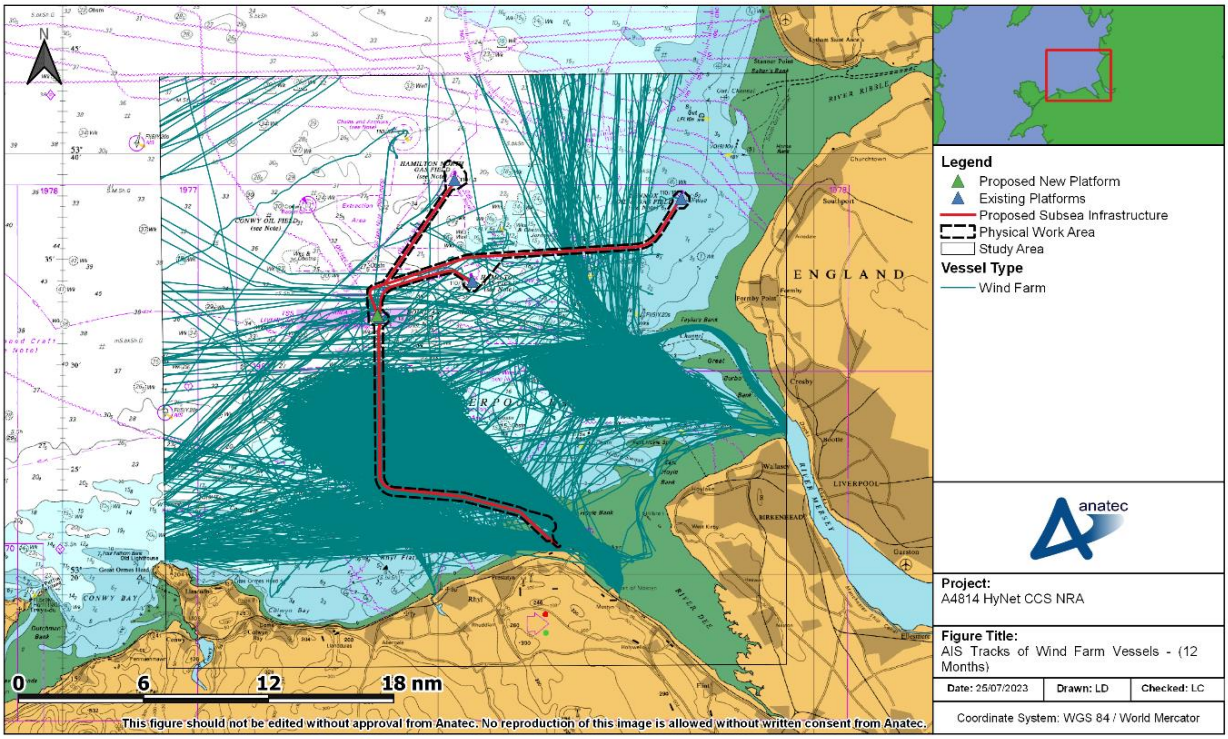

Figure 9: AIS tracks of wind farm support vessels in Liverpool Bay

5.3. COLLISION RISK MODELLING OUTCOMES

5.3.1. The main potential navigational impacts assessed were:

1. Vessel Displacement and Collision Risk:
    - Temporary increases in vessel density during installation works may marginally elevate collision risk.
    - Risk considered Tolerable with Mitigation (ALARP).
2. Collision Between Project and Third-Party Vessels:
    - Managed through 500 m exclusion/advisory zones, vessel coordination, and maritime notifications.
3. Allision (vessel-platform contact):
    - Low likelihood due to established safety zones and platform marking; Broadly Acceptable.
4. Anchor and Fishing Gear Interaction with Cables:
    - Mitigated by 2–3 m burial depth, external rock/concrete protection at crossings, and adherence to Cable Burial Risk Assessment (CBRA) recommendations.
5. Under Keel Clearance (UKC) and Grounding:
    - Negligible, given burial design and depth management (<5% depth reduction from chart datum).
6. Interference with Navigation/Compasses:
    - Considered insignificant; cables buried and shielded.
7. Emergency Response Capacity:
    - No significant effect expected on SAR (Search and Rescue) operations; RNLI and HM Coastguard resources remain sufficient.

5.4. MITIGATION MEASURES

5.4.1. All key consultees supported the methodology and mitigations proposed. The MCA and Trinity House confirmed compliance with navigational safety requirements. RYA found negligible impact on recreational boating, while the Ports of Liverpool and Mostyn noted effective alignment with existing infrastructure and vessel traffic patterns.

5.4.2. All identified hazards were assessed to be broadly acceptable or tolerable with mitigation, with no unacceptable risks identified.

5.4.3. Residual risk levels comply with UK maritime safety policy, and overall navigational risk from the HyNet Offshore CCS Project is deemed ALARP.

5.4.4. The HyNet Offshore CCS development poses no significant or unacceptable navigational risk to commercial, fishing, or recreational marine traffic in Liverpool Bay. With the proposed embedded and additional mitigation measures in place,

navigational safety during all project phases is acceptable and manageable under UK maritime regulatory standards.

5.4.5. The following embedded and additional mitigation measures were proposed from the NRA:

- Notices to Mariners, Kingfisher Bulletins, and Local Navigational Warnings.
- Marking and lighting of platforms in accordance with Trinity House requirements.
- Liaison with local ports, pilots, and vessel operators.
- Cable burial and protection per CBRA outcomes.
- Vessel Management Plan (VMP) to coordinate marine traffic and emergency protocols.

6. SAFETY AND MITIGATION MEASURES

6.1. EXCLUSION AND ADVISORY ZONES

CORE PRINCIPLES

6.1.1. When carrying out the offshore construction activities, Liverpool Bay CCS Limited, and its contractors, will establish a series of exclusion and advisory zones to ensure the safety of personnel, protection of equipment, and the integrity of existing seabed infrastructure. These zones also support the orderly coordination of multiple vessels working in proximity. The nature, size, and enforcement of these zones may vary depending on the activity, but their purpose remains the same; to provide a controlled and predictable operating environment that reduces the risk of collision, entanglement, or interference.

CONSTRUCTION EXCLUSION ZONES

6.1.2. Construction Exclusion Zones (CEZ) are defined areas surrounding the primary offshore worksite; such as a platform installation, foundation piling operation, or heavy lift activity. Withing a CEZ, unauthorised vessels are prohibited to protect them from hazards associated with construction operations, including crane lifts, equipment lowering, dynamic positioning (DP) movements, and seabed interfacing.

6.1.3. The CEZ is typically communicated via Notices to Mariners, project charts, and guard vessels. Entry is limited to construction vessels, support vessels, and pre-approved third parties. The size of the CEZ often reflects the vessels' station-keeping requirements, potential swing or drift paths, and the maximum working radius of lifting equipment.

DIVER EXCLUSION ZONES

6.1.4. When commercial diving operations are underway, a dedicated Diver Exclusion Zone (DEZ) is established to maintain a strictly controlled environment around divers and their umbilical.

6.1.5. The DEZ encompasses the operating radius of the divers, their umbilical reach, and any equipment deployed from the support vessel. Only vessels directly involved in the diving activity may enter this zone. Vessel movements, thruster wash, and mooring line tensions are tightly monitored to prevent entanglement or collapse of subsea work areas.

6.1.6. Additionally, a wider "advisory zone" is often established beyond the immediate DEZ, warning other marine traffic to maintain a safe distance and minimise noise, wash, or seabed disturbance.

CABLE-LAYING CORRIDOR

6.1.7. During subsea cable installation a cable-laying corridor will be defined around the planned route. This corridor accounts for:

- the lay vessel's track and offset,
- the controlled catenary of the cable,

- touch-down point movements, and
- any deviations required due to seabed conditions.

6.1.8. The cable-laying corridor is a **restricted zone** where third-party vessels must not enter due to the risk of fouling the cable, obstructing the lay path, or interfering with survey and burial tools such as ploughs, ROVs, jetters, or tow sleds.

6.1.9. The corridor often extends several hundred metres either side of the planned route, depending on the equipment spread and water depth.

PIPELINE-LAYING CORRIDOR

6.1.10. Pipeline installation activities similarly require a **pipeline-laying corridor**, which includes the vessel's stinger or ramp reach, pipe catenary, and the touch-down zone on the seabed. The corridor must allow for vessel heading changes, weather-related drift, and the manoeuvring of support vessels carrying pipe joints, welding crews, or inspection assets.

6.1.11. Because steel pipelines can be extremely sensitive to mechanical damage during laying, this corridor is treated as a strict **no-go area** for other vessels. Anchor handling, fishing activities, trawling gear, and any towing operations present unacceptable risk within this zone.

ANCHOR SPREAD AREAS

6.1.12. For operations where construction vessels are moored using anchors—particularly for heavy-lift barges or lay barges—an anchor spread area is defined around the worksite. This zone represents the full deployment footprint of the anchors, anchor wires, and potential wire sweep on the seabed.

6.1.13. Anchor spread areas must remain completely free of:

- third-party vessel traffic,
- seabed infrastructure such as existing cables and pipelines,
- fishing gear, or
- towed equipment.

6.1.14. Charts and planning tools are used to ensure anchor lines do not cross or contact existing subsea assets. A combination of guard vessels, seabed verification surveys, and real-time monitoring helps ensure that no unauthorised activity encounters the mooring system.

SUMMARY

6.1.15. Collectively, the **exclusion and advisory zones**., set out in **Table 6-1**, form a structured risk-mitigation framework essential to the safe delivery of offshore construction projects in UK waters. They protect both workers and the marine environment, ensure regulatory compliance, and prevent damage to critical seabed infrastructure. Clear communication, charting, guarding, and oversight are fundamental to maintaining the integrity of these zones throughout construction operations.

Table 6-1 – Exclusion and advisory zones

Zone Type	Radius/Area	Status	Notes
Construction exclusion zone	• 500 m around platforms]	• Mandatory	• Enforced by guard vessels
Diver exclusion zone	• 500 m around activity]	• Mandatory	• Enforced by guard vessels
Cable corridor	• 500 m width]	• Advisory	• Active during laying
Pipeline corridor	• 500 m width	• Advisory	• Active during laying
Anchor spread areas	• As required	• Temporary	• Defined in NtMs

6.2. GUARD VESSEL ARRANGEMENTS

6.2.1. Guard vessels are an essential marine safety measure during offshore oil and gas construction, installation, and decommissioning activities in UK waters. Their primary function is to **protect critical field infrastructure** and to maintain **safe separation between project operations and third-party marine traffic**.

6.2.2. During activities such as platform installation or removal, pipelaying, diving, well intervention, and subsea construction, guard vessels patrol the boundaries of designated **CEZ, pipeline or cable-lay corridors**, and **anchor spread areas**. They ensure that no unauthorised vessels enter these zones, where risks include collision with large installation vessels, fouling of anchors or moorings, and damage to exposed or newly installed pipelines, umbilicals, and subsea assets.

6.2.3. Using AIS monitoring, radar watch, and VHF communications (VHF Ch 16, Ch 06, Ch 72), guard vessels provide early warning to approaching ships and fishing vessels, advising them of restricted areas, operational hazards, and safe passing distances. This is particularly critical in UKCS regions with high levels of commercial shipping, fishing activity, and supply-chain vessel movements.

6.2.4. Guard vessels work under the direction of the Marine Coordinator or Offshore Installation Manager (OIM), maintaining 24/7 situational awareness and providing regular reports on vessel activity, weather, and any potential incursions. They also support emergency response arrangements by relaying information, guiding vessels, or assisting in initial on-scene coordination if an incident occurs.

6.2.5. By enforcing marine safety barriers in real time, guard vessels play a vital role in **protecting personnel, maintaining asset integrity**, and **ensuring uninterrupted operations** across the UK offshore oil and gas sector.

6.3. LIGHTING AND MARKING

6.3.1. All temporary and permanent structures will be marked and lit in accordance with the approved **Lighting and Marking Plan (LMP)** submitted under **CML2365 Condition 3.30**.

6.4. COMMUNICATION PROTOCOL

OVERVIEW

6.4.1. Effective communication is central to ensuring safe, coordinated, and compliant construction activities in the UK offshore marine environment. Because operations often involve multiple vessels, complex marine spreads, divers, ROVs, subsea infrastructure, and potentially congested shipping or fishing areas, a robust communication protocol is required to manage risk and maintain situational awareness.

6.4.2. This protocol defines how information flows between all offshore parties. This includes construction vessels, support vessels, guard vessels, marine coordination centres, and third-party mariners. The following sections establish the communication methods, reporting structure, and escalation procedures necessary to maintain safe operations.

PRE-OPERATION COMMUNICATION FRAMEWORK

6.4.3. Before offshore works begin, the communication protocol is established and circulated through:

- Notices to Mariners (NtMs): Issued to alert the maritime community to upcoming activities, exclusion zones, and navigational hazards.
- Project Induction and Toolbox Talks: All vessel crews and contractors are briefed on communication requirements, channels to monitor, reporting frequencies, and emergency signals.
- Coordination with Regulatory and Stakeholder Groups: Including the UK Hydrographic Office, Coastguard, fisheries organisations, and nearby asset operators.

6.4.4. This pre-operation framework ensures all relevant parties are aware of the scope, risks, and boundaries associated with the construction activity.

STANDARD COMMUNICATION CHANNELS

6.4.5. During operations, a consistent set of communication channels is maintained:

- Marine VHF Radio: Channel 16 for distress and initial contact, and Dedicated working channels assigned by the Marine Coordinator.
- Automatic Identification System (AIS): Used for continuous vessel tracking and identification.
- Daily and Shift Reports: Construction vessels, guard vessels, and support units submit operational updates to the Marine Coordination Centre.
- Direct Communication Lines: Phone, satellite link, or digital messaging for coordination between the OIM, Marine Coordinator, and vessel masters.

6.4.6. These channels are always kept active to support real-time decision-making.

COMMUNICATIONS FOR SAFETY AND MITIGATION MEASURES

6.4.7. Clear, timely communication supports the implementation of safety controls and mitigation measures, including:

- Monitoring of Exclusion Zones: Guard vessels and construction units report vessel movements, potential incursions, and boundary breaches immediately to the Marine Coordinator.
- Dynamic Positioning (DP) Alerts: Any loss of redundancy, DP event, or instability is reported instantaneously to all vessels within the operational area.
- Diving and ROV Operations: Dedicated communication lines remain open between the Dive Supervisor/ROV Supervisor and support vessels, with clear protocols for halting vessel movements or thruster use when divers are in the water.
- Weather and Environmental Updates: Forecast changes, rising sea states, or visibility reductions are communicated to all vessels to trigger standby conditions or cease operations if necessary.
- Anchor Spread and Tow Operations: Vessel repositioning, anchor handling movements, and line tension changes are communicated in advance to avoid entanglement or collision risks.

6.4.8. These measures allow the project team to prevent incidents before they develop.

REPORTING STRUCTURE AND FREQUENCY

6.4.9. To maintain situational oversight, specific communication routines are enforced:

- Hourly vessel position reporting where required.
- Regular guard vessel perimeter reports noting traffic and potential risks.
- Daily coordination calls led by the Marine Coordinator or Offshore Construction Manager.
- Shift-change briefings to ensure continuity of information.

6.4.10. All communication is logged to document the operational status and safety conditions throughout the activity.

ESCALATION AND EMERGENCY COMMUNICATION

6.4.11. The communication protocol includes a clearly defined escalation pathway:

- Immediate notification to all vessels in the vicinity in the event of a safety incident, near miss, or equipment failure.
- Marine Coordinator or OIM assumes control, issuing instructions for vessel movement, work suspension, muster, or resource allocation.
- External authorities, such as HM Coastguard, are contacted as required using established emergency procedures.
- Post-incident reporting and debriefing ensures lessons learned are documented and shared.

6.4.12. Fast, structured communication is critical during emergencies to safeguard personnel and assets.

COMMUNICATION RESPONSIBILITIES

6.4.13. Key communication roles include:

- Marine Coordinator: central communication hub, manages zone control and vessel traffic.
- OIM / Offshore Construction Manager: oversees safety decisions and operational authorisation.
- Vessel Masters: maintain listening watch, report status changes, and enforce onboard communication procedures.
- Guard Vessels: provide external communication with third-party mariners and relay information back to the project.

6.4.14. Each party is accountable for timely and accurate communication within their area of responsibility.

SUMMARY

6.4.15. A disciplined communication protocol ensures that all marine construction activities in UK offshore waters are executed safely and efficiently. By maintaining clear information flow, real-time monitoring, and structured escalation, the protocol supports the successful implementation of safety barriers, protects personnel and equipment, and minimises risk to the wider maritime community.

7. MANAGEMENT AND COORDINATION OF VESSELS

7.1. OVERARCHING PRINCIPLES

7.1.1. During the construction phase, the following measures of relevance to management and coordination of vessels will be in place:

- The Marine Coordinator will be responsible for manging construction activities.
- Permission for construction vessels to enter the construction area and safety zones will be managed by the MC, for example using a Permit to Work system.
- The MC will liaise with vessels with regards to agreed routeing destinations/berth/anchorage (where applicable).
- The MC will constantly monitor vessels and personnel via communication with vessels and AIS for any potential vessel access conflicts. The MC will also detect and monitor unauthorised vessels.
- The MC will define safety zones, no-go locations, etc.
- The MC will obtain and provide localised weather information for vessels working on the Liverpool Bay CCS Project to plan the work being undertaken.
- The MC will be the central contact point for contractors in case of an emergency. They will maintain a copy of the Liverpool Bay CCS Emergency Response Plan.
- The MC will issue Notices to Mariners received from contractors after being reviewed and approved by Liverpool Bay CCS Limited.

7.2. NAVIGATION AND SAFETY MANAGEMENT

7.2.1. Navigational safety will be assured through AIS monitoring, strict COLREGs compliance, guard vessel deployment, controlled exclusion zones, and robust communication with authorities. These measures will protect both project vessels and other sea users while meeting international and national maritime safety obligations.

Table 7-1 – Navigational Safety and Maritime Compliance

Activity	Details
Use of Automatic Identification Systems (AIS)	• All project vessels, regardless of size or function, will always operate a fully functional AIS transponder when at sea. • AIS information will be monitored by the Marine Coordinator (MC) to maintain situational awareness of vessel positions and activities. • AIS tracks will be retained as part of the project's vessel activity log for audit and reporting purposes.
Bridge Watchkeeping and COLREGs Compliance	• Vessels will maintain continuous bridge watchkeeping in accordance with the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW). • All navigation will comply with the International Regulations for Preventing Collisions at Sea (COLREGs), including: – Display of correct lights, shapes, and sound signals when engaged in restricted manoeuvrability operations (e.g. cable laying, heavy lifts, jack-up positioning). – Maintaining safe lookouts and appropriate navigational watch systems. – Giving way, stand-on, and overtaking rules as prescribed by COLREGs. • The Principal Contractor will verify that vessel masters and bridge teams are fully briefed on project-specific navigation requirements.

Activity	Details
Guard Vessel Deployment	• Guard vessels will be deployed where required by the Marine Licence or risk assessment, to: – Protect construction and installation areas from unauthorised vessel entry. – Monitor and communicate with passing vessels to prevent close-quarter situations. – Provide early warning to the MC of potential navigation hazards. • Guard vessels will be clearly marked, fitted with AIS, and maintain open VHF communication channels with both the MC and nearby vessels.
Safety and Exclusion Zones	• Safety or exclusion zones will be established around offshore works in line with Marine Licence conditions and risk assessments. • Zones will be enforced through: – Guard vessel patrols. – Notices to Mariners and Kingfisher bulletins. – Direct communication with nearby shipping where required. • Project vessels will maintain safe distances when operating in close proximity, especially during simultaneous operations (SIMOPS).
Communication Protocols with Authorities	• The MC will maintain open communication with HM Coastguard and relevant national maritime authorities for the duration of offshore works. • Any incident, near miss, or emergency will be reported immediately to HM Coastguard through VHF (Channel 16 / DSC), GMDSS, or agreed reporting lines. • Project vessels will comply with MCA guidance and UK Hydrographic Office (UKHO) notification requirements, ensuring updates to navigational warnings and charting. • Where operations overlap with shipping lanes or fishing grounds, liaison with harbour authorities and fisheries organisations will be maintained.

7.3. VESSELS RESTRICTED IN ABILITY TO MANOEUVRE

7.3.1. This section provides the context for vessels Restricted in their Ability to Manoeuvre (RAM) and specific project measures.

7.3.2. Vessels will be RAM during cable installation works and heavy lift operations. Vessels are classed as RAM because of the nature of the work they are undertaking and are restricted in taking action to avoid other vessels. All RAM vessels involved in construction activities will comply with the Convention on International Regulations for Preventing Collisions at Sea (COLREGs).

7.3.3. RAM vessels will display lights and shapes to indicate their restrictions. They will transmit safety warnings on Very High Frequency (VHF) to inform other vessels of their actions using the 'Securité' message if the messages contain important information relating to navigation.

7.3.4. Communications between RAM vessels and the MC will be ongoing throughout the operations. RAM vessels will always show current navigational status to ensure other vessels equipped with an Automatic Identification System (AIS) can identify that they are RAM.

7.3.5. RAM activities will also be promulgated through the notification procedure and, following internal risk assessment, guard vessels may be employed.

7.4. PASSAGE PLANNING

7.4.1. Passage planning will be required on routes for construction and installation vessels. Section 8 provides details on the location of the ports and transit routes that will be utilised during construction.

7.4.2. Passage planning will be undertaken as per SOLAS, FMO-732 Voyage Planning, FMO 734-2 ECDIS and ECS. The Master of the vessels is responsible for maintaining the passage plan and updating as necessary. Information which may require an update to the passage plan includes:

- Prevailing weather, tidal, or sea state conditions.
- New navigational hazards notified through NtM or other such sources.
- Instructions from the MC or other responsible persons in charge of coordinating and managing project vessel traffic.
- Any other reason the Master of a vessel may deem relevant for the purpose of ensuring the safety of theirs or another vessel.

7.5. ANCHORING

7.5.1. Anchoring is at the discretion of the vessel Master but can be in conjunction with the information provided by the MC. When determining the appropriate location to anchor consideration is given to:

- Available water depth.
- Seabed type and charted hazards including cables/pipelines.
- Weather and tidal information including current and predicted weather.
- Avoidance of prohibited anchorage areas.
- Consideration of other anchored vessels.
- Avoidance of known areas of other marine activity such as oil and gas support, fishing or recreational boating.
- Avoidance of main commercial routes.
- Pilot boarding area or other navigational features, such as spoil grounds or subsea cables.

7.5.2. Construction vessels requiring anchorage within the project construction area will require permission to do so from the MC, and as per FMO 731 Watch keeping (includes anchoring).

7.6. VESSEL MOVEMENT PLANNING AND NOTIFICATION

7.6.1. All vessels will follow FMSO, and company procedures in relation to vessel movement, planning, and notification as per FMO 732 Voyage Planning. This will include, but not limited to the following:

- When vessels depart from main ports, notification is provided to all stakeholders with arrival ETA entered.
- Daily position reporting and activity logs will be completed, as required.
- Compliance with Notice to Mariners and Kingfisher Bulletins.

- Coordination with fisheries liaison officers and local navigation stakeholders.

7.7. NOTIFICATIONS AND PROMULGATION OF INFORMATION

7.7.1. This section provides information on the proposed approach to distributing and issuing Notices to Mariners (NtM) and other appropriate notifications to the relevant stakeholders and other marine users. [See Notification Requirements in Marine Licence CML2365]

LOCAL NOTICES TO MARINERS

7.7.2. Local Notices to Mariners (LNtMs) will be issued to a list of relevant local and national stakeholders in advance of any activity which may impact upon navigational safety. Under Marine Licence CML2365: Condition 3.1 there are obligations to notify mariners in certain circumstances and at certain times, for example at least 14 days prior to commencement of the authorised project and regularly through construction.

7.7.3. The list of stakeholders will be regularly updated to ensure contact details remain up to date, and that all relevant parties are included. The organisations to which LNtMs will be issued includes the United Kingdom Hydrographic Office (UKHO) which will decide whether to include any of the information in their Weekly Admiralty NtMs.

LNTM ISSUED PRIOR TO COMMENCEMENT OF THE PROJECT

7.7.4. Prior to the commencement of any construction activity, local mariners, fishermen's organisations and His Majesty's Coast Guard (HMCG) will be made fully aware of the Licensable Marine Activity through LNtMs (or other appropriate means). [See Notification Requirements in Marine Licence CML2365]

LNTM ISSUED DURING CONSTRUCTION

7.7.5. The MC will notify the UKHO and the standard list of stakeholders as to the progress of the construction of the Project. Notifiable activities include anything to pose a risk to navigational safety, including any fault to navigational aids.

LNTM UPON COMMISSIONING AND DURING OPERATION

7.7.6. On completion of the construction works and the commissioning, local mariners, fishermen's organisations and HMCG will be notified via LNtMs. In addition, LNtMs will be issued for any planned and unplanned maintenance activities that are outside the day-to-day maintenance activities associated with the Liverpool Bay CCS Project.

7.7.7. Under Marine Licence CML2365: Condition 3.6.3, the undertaker must notify UKHO of completion (within 10 days) of the authorised project or any part thereof in order that all necessary amendments to nautical charts are made. Copies of all notices must be provided to NRW and MCA within five days.

KINGFISHER BULLETINS AND KIS-ORCA

7.7.8. The Kingfisher Information Service – Offshore Renewable & Cable Awareness (KIS-ORCA) project is a joint initiative between Subsea Cables UK and Renewable UK and is being managed by the Kingfisher information Service of Seafish.

7.7.9. Under a condition of the deemed marine licence there are obligations to notify the Kingfisher Information Service in certain circumstances for example at least 14 days prior to commencement of the authorised project with details of the vessel routes, timings and locations relating to the construction.

7.7.10. The MC will ensure that the progress of the construction is promulgated in the Kingfisher fortnightly bulletin to inform Seafish of the vessel routes, timings and location of the construction activities. The bulletins will include contact details, offshore activity schedule, navigational safety procedures, advisory safety zones and any relevant drawings or other information specific to the activity.

7.7.11. On completion of the construction works and the commissioning, a Kingfisher bulletin will be issued online to inform the commercial fishing industry. During the operations and maintenance phase, a Kingfisher bulletin will be issued online detailing any planned or unplanned maintenance activities that are outside day to day maintenance.

7.8. ENVIRONMENTAL LIMITS

7.8.1. During detailed engineering the Vessel Operation Limits will be reevaluated against final cable parameters, environmental details and final vessels specifications. Indicative operational limits will be engineered according to Marine Operations and Marine warranty – DNV-ST-N001. During operations the Captain and/or Master of the vessel will have a final decision in operation limits during the operations. The following environmental conditions will be taken into consideration: wave height/period/direction, current speed, wind speed and visibility.

7.9. CHARTING PROCEDURES

CORE REQUIREMENTS

7.9.1. Upon completion of offshore construction works associated with a CO_2 transportation and storage development—such as the installation of a new offshore platform, subsea pipeline spools, and an electrical power/communication cable—formal charting procedures must be undertaken to ensure that all new structures, as-built seabed infrastructure, and any residual restrictions are accurately recorded and promulgated to the wider maritime community. These procedures are essential to maintaining navigational safety, regulatory compliance, and long-term asset integrity within the UK offshore marine environment.

PURPOSE OF POST-CONSTRUCTION CHARTING

7.9.2. The charting process ensures that:

- All new offshore infrastructure is correctly represented on official UK nautical charts.

- Mariners are aware of fixed structures, seabed obstructions, and safety zones surrounding CO_2 injection facilities.
- Subsea pipelines, tie-ins, and power cables are accurately located and clearly identifiable.
- Any hazards to navigation, anchoring, or fishing activity are communicated through official channels.

7.9.3. This information supports avoidance of accidental interference with the CO_2 transport pipeline system, platform foundation zone, or electrical cable corridor, thereby reducing risks to both mariners and the newly commissioned assets.

COLLECTION OF AS-BUILT SURVEY DATA

7.9.4. Following construction, detailed as-built survey data is collected and verified prior to submission for chart updates. This includes:

- Platform location and footprint, including jacket or monopile coordinates, installation datum, and any associated exclusion or safety zones.
- Pipeline spool piece final positions, tie-in locations, touchdown points, route deviations, burial depth measurements, and evidence of protective measures (e.g., rock placement or mattressing).
- Electrical cable route, including trenching depth, cable landfall position, crossing points, burial status, and any sections requiring ongoing monitoring.
- Seabed features such as temporary works, scour protection, or infrastructure installed during the CO_2 storage readiness campaign.

7.9.5. All data must be acquired using recognised offshore survey standards (e.g., UKHO, IMCA, IHO S-44) and validated by the project survey authority.

PREPARATION OF HYDROGRAPHIC NOTES AND CHARTING SUBMISSIONS

7.9.6. Charting procedures require the preparation and submission of Hydrographic Notes (H282 submissions) or equivalent datasets for the UK Hydrographic Office (UKHO). The submission package generally includes:

- Final as-built charts showing the platform, pipeline spools, and electrical cable routes.
- Precise WGS84 coordinates of installed structures and any relevant seabed protection.
- Description of infrastructure including type, purpose (e.g., CO_2 injection pipeline), and operational status.
- Details of any safety zones, including the statutory 500 m zone around the new platform and any additional advisory areas.
- Supporting survey reports, GIS shapefiles, and metadata describing acquisition methods and accuracy.

7.9.7. This ensures the UKHO can update Admiralty Charts, Sailing Directions, and Notices to Mariners in a timely and accurate manner.

NOTIFICATIONS TO STAKEHOLDERS

7.9.8. Parallel to UKHO submissions, the project team must notify multiple offshore and regulatory stakeholders, including:

- North Sea Transition Authority (NSTA) and relevant CO_2 transport and storage regulatory bodies.
- HM Coastguard, including updates to offshore asset databases.
- Fishing industry communication channels, such as Kingfisher bulletins.
- Adjacent field operators, informing them of the proximity of new pipelines or cables.
- Renewable energy or marine infrastructure stakeholders.

7.9.9. These notifications ensure that all marine users, not just chart distributors, have up-to-date information regarding newly installed offshore assets.

PROMULGATION OF NOTICES TO MARINERS

7.9.10. Until the UKHO completes permanent chart updates, interim communication is managed through Notices to Mariners (NtMs) issued by:

- The project's Marine Coordination Centre,
- The UKHO (weekly Admiralty NtMs), and
- Local port authorities, if applicable.

7.9.11. NtMs are used to alert mariners to the presence of new offshore structures, uncharted subsea assets, or temporary restrictions such as post-lay monitoring areas around the pipeline or cable route.

VERIFICATION AND CLOSE-OUT

7.9.12. Once the UKHO has published chart updates and all stakeholder notices have been issued, the project performs a formal Charting Close-Out Review, confirming:

- All installed infrastructure is accurately represented.
- The statutory safety zone around the new platform is charted.
- The CO_2 pipeline and cable corridors are clearly delineated.
- No temporary works or hazards remain unreported.

7.9.13. This verification is typically documented in the final Marine Close-Out Report or Construction Completion Report.

SUMMARY

7.9.14. Accurate and comprehensive charting following offshore construction is essential for safe navigation and for the long-term protection of CO_2 transportation and storage infrastructure. Through the systematic collection of as-built data, submission to the UKHO, issuance of NtMs, and communication with key regulators and stakeholders, the project ensures that all new offshore assets (platform, pipeline, and electrical cable) are fully integrated into the UK's navigational information framework.

8. LOCATION OF PORTS AND TRANSIT ROUTES

8.1. CONSTRUCTION PORTS

ACTIVITY 1: CABLE LAYING AND PROTECTION

8.1.1. There are several accessible ports for use in the LBA area, there will not be one dedicated port for BSS vessels to utilise. The considered ports for the Douglas CCS project are:

- Liverpool (Peel Ports) - Mersey Docs and Harbour Company
- Liverpool Cruise Terminal - Mersey Docs and Harbour Company
- Holyhead - Holyhead Port Authority

8.1.2. Marine traffic in each of these locations will be managed by the respective port authority.

8.1.3. Indicative transit corridors in line with the relevant conditions of the offshore consents are presented in Figure 10.

8.1.4. Details of each port and their role in the offshore Project including the delivery/transport/storage of construction parts to be added here]. Port of Mostyn will be the operational port for the smaller vessels (draft < 5m) such as PLGR Vessel and the Boulder relocating and Pre lay mattress vessel. For the CTV and Survey vessel it will be the operational port and a dedicated pontoon will be available.

8.1.5. Port of Rotterdam will be used for Mobilisation of the Dutch oriented vessels.

8.1.6. The cable lay vessel Ndurance will be mobilised in the port of Rotterdam and transit to Port of Blyth for the loading of the project and shown in Figure 11.

8.1.7. For the larger vessels (cable lay vessel, cable burial vessel, rock installation vessel) no port calls during the operations are planned. Should unseen circumstances present the need to go to port, ports with clearance for drafts >5m are available around Liverpool Bay and the Irish Sea.

8.1.8. Indicative transit corridors in line with the relevant conditions of the offshore consents are presented in Figure 10. Requirements for offshore Project vessels to comply with COLREGS (IMO, 1972) is always the key navigational priority.

8.1.9. The indicative transit routes presented are not prescriptive and are unlikely to be followed precisely by every vessel, however they do provide an indication to other sea users utilising the area within which they may expect to encounter additional vessels associated with the offshore Project.

8.1.10. All vessels shall passage plan as per the International Regulations for the Safety of Life at Sea (SOLAS) (IMO, 1974). There may be a variety of reasons for deviation at the discretion of the vessel Master (e.g. prevailing weather, tidal or sea state, compliance with COLREGs or navigational hazards).

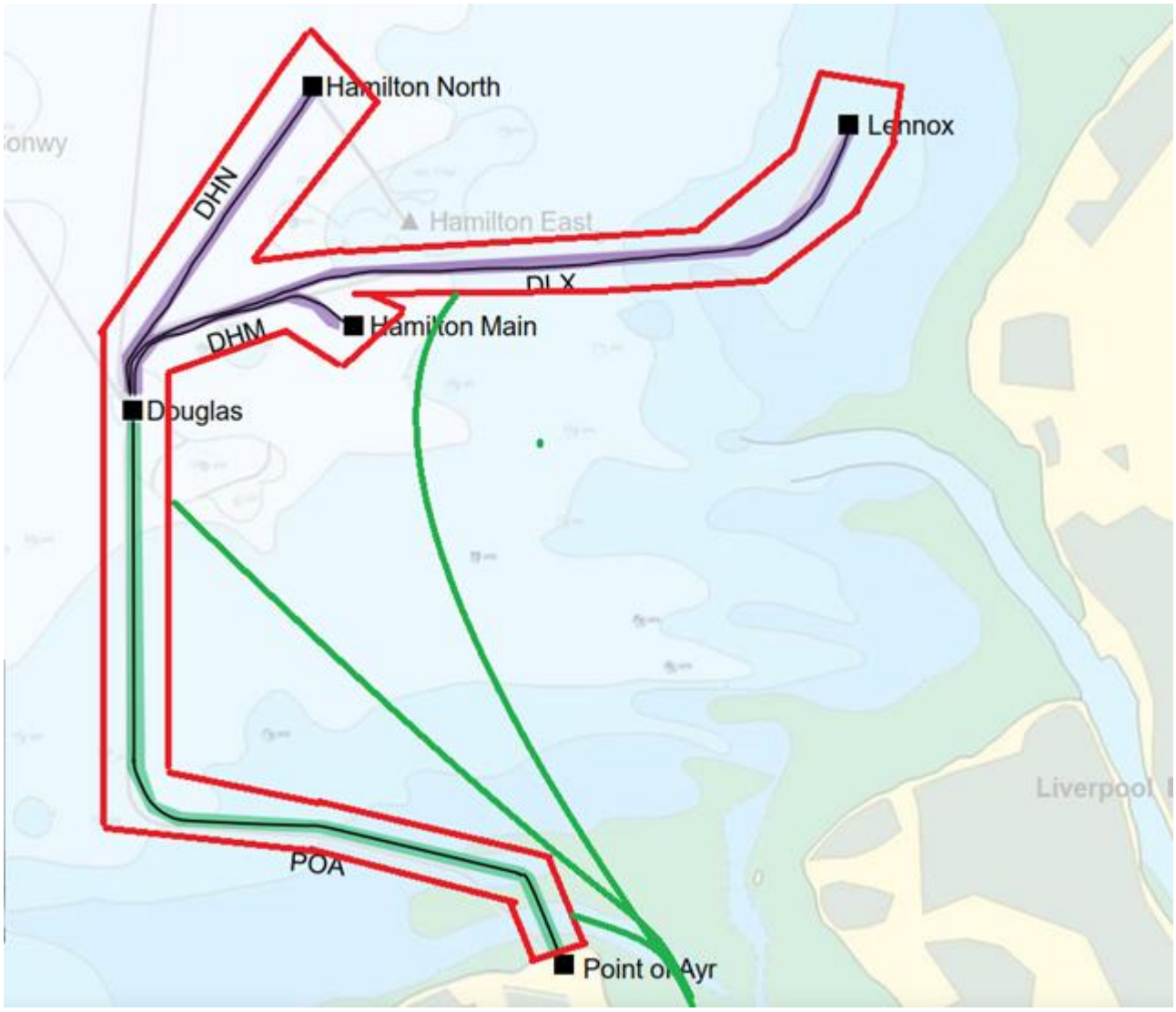

Figure 10: Transit routes from Port of Mostyn and within works areas

ACTIVITY 2: NEW PIPELINE SPOOLS AND PROTECTION

8.1.11. The delivery and installation of the new pipeline spools will require three main vessels. The Boka Northern Ocean construction support vessel (CSV) for delivery, and the Boca Da Vinci, and Boka Atlantis as the diving support vessels (DSV) for the connections. The home port for the three vessels is Peterhead, Scotland, and they will transit directly to and from the LBCCS Project site from the north west, with no proposal to utilise ports in Liverpool Bay.

ACTIVITY 4: NEW DOUGLAS JACKET AND PLATFORM TOPSIDES

8.1.12. The delivery and installation of the new Douglas CCS platform jacket, and topsides will require two main vessels. The Balder construction and installation vessel, and the Thialf heavy lift vessel (HLV). The home port for the vessels is in the Netherlands, and they will transit directly to and from the LBCCS Project site from the west, with no proposal to utilise ports in Liverpool Bay.

Figure 11: Mobilisation from Port of Rotterdam and Blyth for onward transit to Liverpool Bay

9. COMMUNICATION AND REPORTING

9.1. OVERVIEW

9.1.1. Effective communication is critical to the safe, compliant, and coordinated management of project vessels. The following framework establishes the arrangements for vessel communications, reporting, and notifications during offshore operations.

9.1.2. The communication framework ensures that vessel operations are supported by a centralised MC, consistent reporting, clear incident protocols, and reliable communication pathways to regulators, consultees, and emergency responders. This system guarantees transparency, accountability, and rapid response to any issue that may arise during offshore works.

9.2. MARINE COORDINATOR ARRANGEMENTS.

9.2.1. A dedicated Marine Coordinator (MC) will operate for the duration of offshore campaigns.

9.2.2. The Marine Coordinator will act as the single point of contact for all project vessels, ensuring safe vessel traffic management and compliance with project requirements.

9.2.3. The MC will:

- Maintain continuous VHF and satellite communications with all vessels.
- Track vessel positions in real time using Automatic Identification System (AIS) and other tracking tools.
- Issue and enforce instructions relating to safety zones, guard vessel operations, and simultaneous operations (SIMOPS).
- Act as the hub for emergency communications and escalation (e.g. to HM Coastguard).

9.3. STANDARD REPORTING TEMPLATES FOR DAILY, WEEKLY, AND MONTHLY UPDATES.

9.3.1. To ensure consistent reporting, the following templates will be used:

- Daily Vessel Reports: Each vessel to submit a daily log to the MC covering position, activities, fuel status, environmental checks, and any incidents.
- Weekly Progress Reports: The Principal Contractor will compile weekly summaries of vessel activities, submitted to the Developer and shared with the Regulator if required.
- Monthly Compliance Reports: High-level compliance and performance reports will be prepared for submission to the Developer and Regulator, highlighting any issues, non-conformances, and corrective actions.

9.3.2. All reports will be archived by the MC to provide a clear audit trail of vessel operations.

9.4. INCIDENT AND NEAR-MISS REPORTING PROTOCOLS.

9.4.1. All incidents, near-misses, and unsafe acts must be reported immediately to the MC.

9.4.2. Reports will include:

- Time, location, and description of the event.
- Immediate actions taken and current status.
- Any injuries, spills, or damage.

9.4.3. The MC will escalate notifications as follows:

- Principal Contractor HSE team.
- Developer (Licence Holder).
- Regulator and authorities (e.g. MMO, MCA, HSE) where required by licence conditions or law.

9.4.4. A Corrective Action Register will be maintained to track the resolution of all incidents and non-conformances.

9.5. LINES OF COMMUNICATION WITH REGULATORS, STATUTORY CONSULTEES, AND EMERGENCY SERVICES.

9.5.1. The MC and Principal Contractor will ensure that communication channels with external authorities remain open and effective.

9.5.2. Regulators: Regular updates and notifications will be provided in line with Marine Licence conditions. The Developer retains overall responsibility for regulatory communications.

9.5.3. Statutory Consultees (e.g. fisheries organisations, harbour authorities, MCA): Engagement will be coordinated through the Fisheries Liaison Officer (FLO) and Principal Contractor, supported by the MC.

9.5.4. Emergency Services (HM Coastguard, SAR, Oil Spill Response): The MC will act as the immediate contact point during emergencies and will follow agreed escalation procedures as set out in the project's Emergency Response Plan and OPEP.

10. EMERGENCY RESPONSE AND CONTINGENCY PLANNING

10.1. EMERGENCY RESPONSE

10.1.1. All vessels engaged in project works will maintain emergency preparedness measures to respond effectively to marine incidents. The following arrangements apply to all cable lay vessels, heavy lift vessels, jack-up units, support craft, and guard vessels engaged in the project.

10.2. OIL SPILL RESPONSE PLANS

10.2.1. Each vessel will maintain an approved Shipboard Oil Pollution Emergency Plan (SOPEP) and be equipped with spill kits, sorbents, and containment booms proportionate to its class and activities.

10.2.2. The project will operate under a unified Offshore Pollution Emergency Plan (OPEP), approved by the Regulator, which sets out:

- Spill reporting pathways to HM Coastguard, the Regulator, and relevant stakeholders.
- Responsibilities for first response by the vessel crew and escalation to specialist contractors.
- Mobilisation arrangements with national oil spill response organisations.

10.2.3. Vessel Masters will ensure crews are trained in oil spill response and participate in regular drills.

10.3. SEARCH AND RESCUE (SAR) COORDINATION

10.3.1. All vessels will maintain compliance with the International Convention on Maritime Search and Rescue and SOLAS requirements.

10.3.2. In the event of a person overboard or medical evacuation:

- Immediate action will be taken by the vessel crew using onboard recovery equipment.
- The Marine Coordinator (MC) will be notified immediately.
- HM Coastguard will be contacted via DSC VHF Channel 70, Channel 16, or GMDSS systems to initiate formal SAR response.

10.3.3. The project will maintain direct lines of communication with HM Coastguard and provide project details in advance of offshore campaigns.

10.4. FIRE, COLLISION, OR GROUNDING RESPONSE

10.4.1. Vessels will follow their approved emergency response procedures as required under SOLAS and ISM Code, including:

- Fire detection, alarm, and suppression systems.
- Collision avoidance and collision damage control procedures.

- Grounding response, including stability checks, ballast management, and damage assessments.

10.4.2. In the event of a major incident:

- The Master is responsible for the immediate safety of life onboard.
- The MC will be notified without delay and will initiate escalation procedures.
- Support vessels and guard vessels will assist with evacuation or towage as directed by the Master and MC.

10.5. ESCALATION AND NOTIFICATION REQUIREMENTS

10.5.1. Immediate notification of all emergencies shall be made to the MC and the Principal Contractor's emergency contact.

10.5.2. The MC will escalate to:

- The Developer (Licence Holder).
- The Regulator (in accordance with Marine Licence conditions).
- HM Coastguard and other relevant emergency authorities.

10.5.3. Incident reports will be submitted within agreed timeframes, including details of cause, response, and corrective actions.

10.5.4. Significant environmental or safety incidents will be reported to the Regulator within 24 hours, or sooner if required by law.

10.6. TRAINING AND DRILLS

10.6.1. Vessel crews will conduct regular emergency drills covering oil spill, fire, collision, grounding, and man-overboard scenarios.

10.6.2. Joint exercises involving multiple vessels and the MC will be undertaken during major campaigns to test communication and coordination.

10.6.3. Lessons learned from drills and live incidents will be captured, reviewed, and used to update emergency procedures.

10.6.4. In summary, emergency response arrangements combine vessel-specific plans (SOPEP, ISM) with the project-wide OPEP and emergency response framework. They ensure that incidents such as oil spills, fires, collisions, or SAR events are managed swiftly, safely, and in full compliance with statutory and licence requirements.

11. COMPLIANCE MONITORING AND AUDITING

11.1. OVERVIEW

11.1.1. Compliance with this VMP & NSP is essential to ensure safe, environmentally responsible, and legally compliant vessel operations. The Developer, Principal Contractor, and Vessel Operators will jointly implement a framework for **monitoring, recording, and verifying compliance** as set out in the following sections.

11.1.2. Compliance with the VMP & NSP will be assured through a structured programme of internal checks, regulator engagement, corrective action management, and continuous review. This ensures vessel operations remain aligned with best practice, Marine Licence conditions, and regulatory expectations.

11.2. INTERNAL AUDITS AND INSPECTIONS.

11.2.1. The **Principal Contractor** will conduct regular **internal audits and inspections** of vessels, marine coordination processes, and environmental controls.

11.2.2. Audits will verify compliance with:

- Marine Licence conditions.
- International and national maritime regulations (e.g. IMO, MCA, MARPOL, COLREGs).
- Project-specific procedures (e.g. OPEP, Environmental Management Plan).

11.2.3. Audit frequency will be risk-based but will include:

- **Pre-mobilisation assurance inspections** of vessels.
- **Routine site audits** during operations.
- **Post-campaign audits** to capture lessons learned.

11.2.4. Audit findings will be documented and reported to the **Developer**, with agreed corrective actions tracked to closure.

11.3. REGULATOR INSPECTION FACILITATION.

11.3.1. The Licence Holder (Developer) will facilitate **inspections by the Regulator or other competent authorities** (e.g. MCA, HSE) at any reasonable time.

11.3.2. Vessel operators and the Marine Coordinator will provide **full cooperation and access** to documentation, logs, and personnel as required.

11.3.3. A nominated point of contact (e.g. Marine Coordinator or Environmental Manager) will accompany the Regulator during inspections and ensure all requests are responded to promptly.

11.4. CORRECTIVE ACTIONS IN RESPONSE TO NON-CONFORMANCES.

11.4.1. Any **non-conformance** identified through audits, inspections, or incident reports will be recorded in the project's **Corrective Action Register**.

11.4.2. Each non-conformance will have:

- A root cause analysis.
- Corrective and/or preventive measures.
- Assigned responsibility and deadlines for resolution.

11.4.3. Progress against corrective actions will be reviewed at regular project HSE/Marine Coordination meetings.

11.4.4. Significant non-conformances (e.g. breaches of Marine Licence conditions or environmental incidents) will be **reported immediately** to the Regulator and Developer, along with remedial actions taken.

11.5. REVIEW AND UPDATE PROCEDURES FOR THE VMP & NSP.

11.5.1. The VMP & NSP will be treated as a **live document**. It will be:

- **Formally reviewed annually**, or more frequently if required by the Regulator or following significant project changes.
- **Updated following lessons learned** from audits, incidents, or operational feedback.
- Revised in consultation with key stakeholders (e.g. Regulator, MCA, fisheries representatives) where relevant.

11.5.2. Document control will ensure that all vessels and contractors are issued with the **latest approved version** of the VMP & NSP, with obsolete versions withdrawn.

12. DOCUMENT CONTROL AND REVIEW

12.1. OVERVIEW

12.1.1. The VMP & NSP will be managed as a controlled, **live document**, ensuring it remains current, accurate, and aligned with project needs, regulatory requirements, and stakeholder expectations throughout the offshore works programme.

12.2. VERSION CONTROL SYSTEM

12.2.1. A formal **version control system** will be maintained to ensure that the most up-to-date VMP & NSP is available to all parties. Each revision will be assigned a **unique version number and date of issue**.

12.2.2. A **Document Control Table** will be maintained at the front of the VMP & NSP, recording:

- Version number.
- Date of issue.
- Summary of changes.
- Author and approver details.

12.2.3. Obsolete versions will be withdrawn from circulation to avoid the risk of outdated procedures being followed.

12.3. REVIEW FREQUENCY

12.3.1. The VMP & NSP will be **formally reviewed at least annually**. Additional reviews will be triggered by:

- **Significant project changes** (e.g. introduction of new vessel types, changes in scope of works, new marine licence conditions).
- **Regulatory updates** (e.g. amendments to IMO or MCA requirements).
- **Lessons learned** from incidents, audits, or stakeholder feedback.

12.3.2. Interim updates may be issued to address urgent changes, with formal reissue following approval by the Developer (Marine Licence Holder).

12.4. STAKEHOLDER CONSULTATION ON REVISIONS

12.4.1. Proposed revisions to the VMP & NSP will be **shared with relevant stakeholders** for review and comment, including:

- The Regulator (e.g. MMO, Marine Scotland, or equivalent authority).
- Statutory consultees (e.g. MCA, Natural England, fisheries organisations, harbour authorities).
- The Principal Contractor and key vessel operators.

12.4.2. Feedback will be incorporated into the revised draft before formal approval and reissue, and stakeholders will be provided with a **summary of changes** for clarity.

APPENDIX A

VESSEL ASSURANCE CHECKLIST

This checklist shall be completed prior to mobilisation of each vessel engaged in offshore activities (e.g. cable installation, jacket or topside installation).

Completed checklists should be retained by the Licence Holder and made available to the Regulator on request.

1. Vessel Details

- Vessel Name: _____
- IMO Number: _____
- MMSI / Call Sign: _____
- Flag State: _____
- Vessel Type / Function: _____
- Owner / Operator: _____

2. Certification and Statutory Compliance

- ☐ Flag state registration valid.
- ☐ International Tonnage Certificate.
- ☐ Load Line Certificate (ICLL).
- ☐ Safety Management Certificate (SMC).
- ☐ Document of Compliance (ISM).
- ☐ Safety Equipment Certificate.
- ☐ Safety Radio Certificate.
- ☐ Safety Construction Certificate.
- ☐ STCW certification for all crew.
- ☐ Classification society certificate valid.

3. IMO and MARPOL Compliance

- ☐ International Oil Pollution Prevention Certificate (IOPP).
- ☐ Sewage Pollution Prevention Certificate.
- ☐ Garbage Management Plan available and in use.
- ☐ Oil Record Book maintained.
- ☐ Garbage Record Book maintained.
- ☐ Ballast Water Management Plan approved.
- ☐ Fuel in compliance with MARPOL Annex VI (sulphur limits).

4. Navigation and Safety

- ☐ Automatic Identification System (AIS) fitted and operational.

- ☐ Radar, ECDIS, and navigation systems fully functional.
- ☐ COLREGs-compliant lights, shapes, and signals available.
- ☐ DP (Dynamic Positioning) system certification (if applicable).
- ☐ Anchor handling and mooring arrangements suitable for location.
- ☐ Safety zones and guard vessel arrangements confirmed.

5. Emergency Preparedness

- ☐ Oil Pollution Emergency Plan (OPEP) available and up-to-date.
- ☐ Spill response equipment onboard and crew trained.
- ☐ Firefighting equipment tested and certified.
- ☐ Life-saving appliances inspected and certified.
- ☐ Muster lists and drills records available.
- ☐ Emergency contact list (MCA, HM Coastguard, project FLO) onboard.

6. Environmental and Fisheries Liaison

- ☐ Ballast water exchange procedures documented.
- ☐ Waste management procedures in place (no overboard disposal).
- ☐ Fuel transfer procedures and spill prevention measures available.
- ☐ Fisheries Liaison Officer (FLO) contact details onboard.
- ☐ Fishing Gear Interaction Protocol briefed to crew.
- ☐ Notices to Mariners / Kingfisher updates circulated to crew.

7. Project-Specific Documentation

- ☐ Copy of Marine Licence and conditions onboard.
- ☐ Vessel Management Plan (VMP) onboard and briefed.
- ☐ Project Construction Environmental Management Plan (CEMP) onboard.
- ☐ Navigational Risk Assessment applicable to operations onboard.
- ☐ Method Statements / RAMS approved for operations.
- ☐ Communication protocols with Marine Coordinator briefed.

8. Verification and Sign-Off

Vessel Master Declaration:

I confirm that this vessel complies with applicable international, national, and project-specific regulatory obligations and is fit for mobilisation.

Signed: _____ (Master)

Date: _____

Project Representative Verification:

I confirm that the above information has been reviewed and verified.

Signed: _____ (Project Representative)

Date: _____

APPENDIX B

VESSEL ASSURANCE MATRIX

Category	Cable Lay Vessel (CLV)	Heavy Lift Vessel (HLV)	Crew Transfer Vessel (CTV)	Guard Vessel (GV)	Survey Vessel (SV)
Flag State Registration	✅	✅	✅	✅	✅
Classification Certificate	✅	✅	✅	⚠ (if >500 GT)	✅
ISM Compliance (DOC/SMC)	✅	✅	⚠ (if >500 GT)	⚠ (if >500 GT)	✅
STCW Certification (Crew)	✅	✅	✅	✅	✅
Load Line Certificate	✅	✅	⚠ (if >24m)	⚠ (if >24m)	✅
Safety Equipment Certificate	✅	✅	✅	✅	✅
Safety Radio Certificate	✅	✅	✅	✅	✅
Safety Construction Certificate	✅	✅	⚠ (if >500 GT)	⚠ (if >500 GT)	✅
MARPOL Annex I (IOPP Certificate)	✅	✅	⚠ (if oil tanker rules apply)	⚠ (if >400 GT)	✅
MARPOL Annex IV (Sewage)	✅	✅	✅	✅	✅
MARPOL Annex V (Garbage Management)	✅	✅	✅	✅	✅
MARPOL Annex VI (Air Pollution)	✅	✅	✅	✅	✅
Ballast Water Management	✅	✅	⚠ (if fitted with ballast tanks)	⚠ (if fitted with ballast tanks)	✅
DP Certification / Trials	✅ (CLV DP2/DP3)	✅ (HLV DP2/DP3 or anchoring)	❌	❌	✅ (if DP survey ops)
Anchor Handling Plan	✅ (if not DP)	✅	❌	❌	✅
Oil Pollution Emergency Plan (OPEP)	✅	✅	⚠ (may rely on project-level OPEP)	⚠	✅
Spill Response Equipment	✅	✅	⚠ (basic kits)	⚠ (basic kits)	✅
Guard Vessel Role	❌	❌	❌	✅ (primary role)	❌
Fishing Gear Interaction Protocol	✅	✅	✅ (if entering fishing grounds)	✅	✅
Project Docs Onboard (VMP, EMP, Marine Licence)	✅	✅	✅	✅	✅

Key:

- ✅ = Required in all cases
- ⚠ = Conditional requirement (depends on tonnage, vessel size, or specific operations)
- ❌ = Not applicable

Notes for Use

- This **matrix is a quick-reference tool** for Marine Coordinators and project managers.
- Each vessel must still complete the **full Vessel Assurance Checklist** (Appendix X) prior to mobilisation.
- Conditional requirements (⚠) should be verified case by case with the vessel owner/operator and classification society.

APPENDIX C

CREW BRIEFING SHEET

🔋 Fuel Management

- Use **low sulphur fuel** (MARPOL VI compliant).
- **Spill trays & absorbents** ready during bunkering.
- Inspect tanks → log daily fuel use.

🌊 Ballast Water

- Exchange ballast only in **approved offshore zones**.
- Use **treatment system** if fitted.
- Record all actions in the **Ballast Water Log**.

🗑️ Waste Management

- **Segregate waste** → plastics / food / oils / hazardous / general.
- **Never discharge plastics** at sea.
- Use **port reception facilities** – keep transfer notes.

📢 Noise Reduction

- Avoid unnecessary **engine idling**.
- Limit **thruster use** where safe.
- Support **noise monitoring** when required.

🛢️ Oil Spill & Pollution Response

- Know the vessel's **SOPEP** & project **OPEP**.
- Spill kits, sbooms → **know locations**.
- Take part in **drills** – be ready to act.
- **Report ALL spills immediately**.

🚨 REMEMBER 🚨

✓ Protect the sea → **Prevention is better than response**.
✓ Always follow **MARPOL, IMO & Marine Licence rules**.
✓ If in doubt → **Ask your Supervisor or FLO**.

APPENDIX D

RACI MATRIX

R = **Responsible** (does the work)
A = **Accountable** (ultimate ownership/decision-making)
C = **Consulted** (provides input/advice)
I = **Informed** (kept updated)

Task / Responsibility	Principal Contractor (PC)	Developer / Licence Holder	Vessel Owners / Operators	Marine Coordinator (MC)	Fisheries Liaison Officer (FLO)
Maintain vessel register	R/A	I	C	I	I
Vessel assurance (certificates, audits)	R/A	I	R	I	I
Approve vessel mobilisation	R/A	C	R	I	I
Compliance with Marine Licence	R/A	A	R	I	C
Issue Notices to Mariners / Kingfisher updates	R	I	I	R/A	C
Coordinate daily vessel movements	R	I	I	R/A	I
Navigation and safety zones	R/A	I	C	R	I
Fuel, ballast, waste, MARPOL compliance	C	I	R/A	I	I
Environmental protection (EMP, OPEP)	R/A	A	R	C	C
Fisheries liaison and gear interaction	C	I	I	I	R/A
Stakeholder engagement (fisheries, regulators)	R	A	I	I	R
Incident reporting & escalation	R	I	R	R	C
Emergency response (OPEP, SAR, collision)	R/A	C	R	R	C
Auditing & compliance monitoring	R	A	C	C	I
Review and update of VMP	R/A	A	C	C	C