

Licence Number: ORML1938



**Cyfoeth
Naturiol**
Cymru
**Natural
Resources**
Wales

Marine Licence with introductory note

The Marine and Coastal Access Act (2009)

Licence Number: ORML1938

Licence Holder: Menter Môn Morlais Limited

Company Number: 10747114

Neuadd y Dref

Buckley Square

Llangefni

Gwynedd

Ynys Môn

United Kingdom

LL77 7LR

**Morlais Tidal Stream Demonstration Project
located to the West of Anglesey**

Licence Number: **ORML1938**

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Morlais Tidal Demonstration Zone, for installation and commercial demonstration of multiple arrays of tidal energy devices up to an installed capacity of 240MW

Marine Licence number: ORML1938

Introductory note

This introductory note does not form a part of the marine licence

The main features of the marine licence are as follows.

The project comprises a tidal technology demonstration zone, specifically designed for the installation and commercial demonstration of multiple arrays of tidal energy devices up to an installed capacity of 240MW. The offshore development area where installation can take place covers an area of 35km² to the West of Anglesey. The project will include communal infrastructure for tidal technology developers which provides a shared route to a grid connection onshore.

The status log of the marine licence sets out the marine licence history, including any subsequent marine licence variation(s)

Status log of this marine licence

Description	Date	Comments
Application	Duly made 07/11/19	Application received and considered to be duly made
Date licence determined	14/12/21	Determination date

End of introductory note.

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MARINE LICENCE, NUMBER: ORML1938

1 LICENCE DETAILS

Marine Licence

This is a licence granted by the Licensing Authority in respect of an application numbered ORML1938 and duly made on 7 November 2019 and authorises the Licence Holder to carry on activities for which a licence is required under Part 4 of the Marine and Coastal Access Act 2009, (2009 Act). This licence should be interpreted in accordance with **Section 4**.

1.1 Licence Holder

The Licence Holder is the person or organisation set out below:

Person/Company/Organisation name: Menter Môn Morlais Limited

Company number: 10747114

Address: Neuadd y Dref, Buckley Square, Llangefni, Ynys Môn, LL77 7LR

1.2 Licence Validity

Licence Start Date	14 December 2021
Licence End Date	13 December 2060
Licence Issue Date	14 December 2021

1.3 Conditions

This licence is subject to the conditions set out in **Section 3**.

Signed: John Wheadon – Permitting Service Manager



For and on behalf of the Licensing Authority

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2 LICENSED ACTIVITIES

2.1 Project

This licence relates to the Morlais Tidal Demonstration Zone project for the installation and commercial demonstration of multiple arrays of tidal energy devices up to an installed capacity of 240MW.

The marine elements include construction and operation of the following:

- up to nine export cables;
- up to nine export cable tails (shared with onshore components);
- navigation and environmental monitoring equipment;
- mooring and foundation structures;
- offshore electrical infrastructure, including submerged, floating or surface emergent hubs; and
- up to 620 tidal devices, each comprising of:
 - foundation or anchors on or within the seabed;
 - a supporting substructure or mooring;
 - one or more Tidal Energy Convertors (TEC); and
 - cable connections.

The following Licensed Activities can be conducted within the Licence Period, within the Licensed Area and in accordance with the Approved Application and the Approved Supporting Documents.

Table 1 Licensed Activities

<p>Activity 1</p>	<p>Construction, operation, maintenance, and decommissioning of tidal devices</p>
<p>Type of Licensed Activity</p>	<p>Deposit/Removal/Construction</p>
<p>Description</p>	<p>Deployment, operation, maintenance and subsequent decommissioning of tidal devices in multiple arrays within the Marine Development Zone (defined in Table 2) to a maximum installed capacity of 240MW.</p> <p>The tidal devices must fall within the parameters set out within <i>Environmental Statement Chapter 4 Project Description (MOR/RHDHV/DOC/0004)</i> as detailed in Appendix 1. Each tidal device consists of the following key component:</p> <ul style="list-style-type: none"> • a foundation or anchor on or within the seabed, these may consist of; Gravity Based Structures, Drilled Pile Foundations, Monopile Foundations or Mooring Systems; • a supporting substructure or mooring; • Tidal Energy Convertors (TEC); and • cable connections. <p>A phased approach to deployment must take place in line with the Environmental Mitigation and Monitoring Plan (EMMP) detailed in condition 3.36.</p> <p>Repowering may take place in respect of up to 50% of the infrastructure installed; this is where a tidal device is replaced with a different tidal device in the same or different location and may include</p> <p>(a) removal of tidal devices, associated hubs, inter-array cables and monitoring equipment; and</p> <p>(b) the construction of new tidal devices, associated hubs, inter-array cables and monitoring equipment and other authorised works.</p> <p>Devices deployed during repowering must be within the parameters set out within <i>Environmental Statement Chapter 4</i></p>

	<i>Project Description (MOR/RHDHV/DOC/0004)</i> as detailed in Appendix 1.
Quantities/Dimensions	The tidal devices must fall within the parameters set out in Appendix 1
Activity 2 Deposit, maintenance and decommissioning of cabling	
Type of Licensed Activity	Deposit/Removal/Construction
Description	<p>Installation of up to 9 export cable and cable tails to connect the tidal devices/array to the Landfall Substation.</p> <p>Installation of inter-array cables.</p> <p>Deposit of rock bags, concrete mattresses, or split pipe at locations along the length of the cable.</p>
Quantities/Dimensions	All cabling must fall within the parameters set out in Appendix 2.
Activity 3 Deposit, maintenance and removal of Navigation Markers and Environmental monitoring equipment	
Type of Licensed Activity	Deposit/Removal
Description	<p>Deposit of:</p> <ul style="list-style-type: none"> • Navigational markers including navigational buoys and cardinal markers or special marker buoys. • Environmental monitoring equipment, including monitoring buoys and Acoustic Doppler Current Profilers (ADCP). • Environmental monitoring platforms.
Quantities/Dimensions	All navigation and monitoring equipment must fall within the parameters set out in Appendix 3.
Activity 4 Construction, operation, maintenance and decommissioning of offshore electrical infrastructure	

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Type of Licensed Activity	Deposit/Removal/Construction
Description	Deployment, operation, maintenance and subsequent decommissioning of offshore electrical infrastructure including submerged, floating or surface emergent hubs that will connect and aggregate power from a number of individual devices. Up to 120 offshore operational hubs comprising; (a) up to 120 seabed mounted, fully submerged, hubs fixed to the seabed by gravity base, monopile or multi-pile type foundation; (b) up to 93 floating surface emergent hubs being anchored to the seabed by gravity base, monopile type foundation; (c) up to 8 seabed mounted surface emergent offshore operational hubs being fixed to the seabed by gravity base, monopile type foundation or multi-pile type foundation.
Quantities/Dimensions	All hubs must fall within the parameters set out in Appendix 4.
Activity 5 Removal of accidentally dropped objects pursuant to condition 3.7	
Type of Licensed Activity	Removal
Description, material types and quantities/dimensions	As approved by the Licensing Authority under condition 3.7.

2.2 Licensed Area

The Licence Holder is authorised to conduct the activities described in Table 1 to the West of Holy Island, Anglesey as shown in Figure 4-5 of the Environmental Statement and attached in Appendix 5 bounded by the coordinates specified in Table below and subject to the restrictions set out below in relation to areas defined in Tables 3 to 6

Table 2 Array Deployment Area (Marine Development Zone)

Latitude	Longitude
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53.33372	-4.74674
53.2915	-4.76443
53.259	-4.76443
53.259004	-4.690923
53.265839	-4.683548
53.30647	-4.70888
53.33372	-4.68816

Restricted Areas

The Licence Holder is authorised to deploy only submerged tidal devices with a minimum 20 m under keel clearance (UKC) within the area bounded by the coordinates specified in Table 3.

Table 3 Area of submerged tidal devices with a minimum 20 m UKC only

Latitude	Longitude
53.33372	-4.68816
53.32447	-4.69519
53.32447	-4.70269
53.32447	-4.73375
53.31547	-4.74875
53.30366	-4.74875
53.28847	-4.74875
53.27047	-4.73375
53.27047	-4.69394
53.27047	-4.68644
53.26584	-4.68355
53.25900	-4.69092

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53.25900	-4.76443
53.29150	-4.76443
53.33372	-4.74674

The Licence Holder is authorised to deploy only submerged tidal devices with a minimum 8 m UKC within the area bounded by the coordinates specified in Table 4.

Table 4 Area of submerged tidal devices with a minimum 8 m UKC only

Latitude	Longitude
53.32447	-4.69519
53.32447	-4.70269
53.30647	-4.71638
53.27047	-4.69394
53.27047	-4.68644
53.30647	-4.70888

The Licence Holder is authorised to deploy only submerged tidal devices within the area bounded by the coordinates specified in Table 5. Within the area detailed in Table 5, tidal devices may include navigation lights, communication antennae and other ancillary elements which are surface emergent.

Table 5 Area of submerged tidal devices

Latitude	Longitude
53.32447	-4.70269
53.32447	-4.73375
53.31547	-4.74875
53.30366	-4.74875
53.30372	-4.72848

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53.30647	-4.71638
53.29555	-4.70957

The Licence Holder is authorised to deploy floating, surface emergent and submerged tidal devices within the area bounded the coordinates specified in Table 6.

Table 6 Area of floating, surface emergent and submerged tidal devices

Latitude	Longitude
53.30372	-4.72848
53.30366	-4.74875
53.28847	-4.74875
53.27047	-4.73375
53.27047	-4.69394

The Licence Holder is authorised to deposit and carry out works associated with the export cable within the area bounded by the coordinates specified in Table 7.

Table 7 Export Cable Corridor coordinates

	Latitude	Longitude
1	53.265839	-4.683548
2	53.30647	-4.70888
3	53.33372	-4.68816
4	53.32425456	-4.681530061
5	53.30653813	-4.702619801
6	53.30039003	-4.69089615
7	53.29971193	-4.68865334
And between the co-ordinates comprising point 7 above following the mean high water spring level to the coordinate comprising point 8 below.		

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8	53.29132163	-4.684062472
9	53.28783785	-4.690413178
10	53.2801819	-4.686168105

In the event of any discrepancy between the coordinates set out above and the plan shown in Appendix 5, the coordinates set out above shall take precedence.

Appendix 6 provides the coordinates in Latitude and Longitude, degrees, decimal minutes. In the event of any discrepancy between the coordinates set out above and those attached in Appendix 6, the coordinates set out above, in Decimal Degrees, shall take precedence.

2.3 Approved Supporting Documents

Title/Description of Document	Date	Version No.
Marine Licence Application Form	25/11/2019	3
Environmental Statement Chapter 4 Project Description (MOR/RHDHV/DOC/0004)	Oct 2019	F4.0
Restricted Area Plan – Figure 4-5 (drawing No: PB5034-ES-004-005) (Appendix 5)	26/11/21	4

3 CONDITIONS

3.1 Notification of Commencement

3.1.1 The Licence Holder must notify the Licensing Authority no less than **14 days** before the commencement of the Licensed Activities, or any of the individual phases of the Licensed Activities, is expected to commence.

3.1.2 The Licence Holder must notify Welsh Government Marine & Fisheries Division (Control & Enforcement Branch) no less than **14 days** before the commencement of the Licensed Activities, or any of the individual phases of the Licensed Activities, is expected to commence.

3.1.3 The Licence Holder must ensure that local mariners and fishermen's organisations, neighbouring port authorities, HM Coastguard, UKHO and other local stakeholders are made fully aware of the Licensed Activities through local

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notification to marine users **14 days** prior to the commencement of the Licensed Activities, or any of the individual phases of the Licensed Activity, is expected to commence. The notice should detail the start date of works and the expected vessel routes from the port to the relevant location.

3.1.4 The Licence Holder must ensure that local notification to marine users are updated and reissued at weekly intervals while construction activities are ongoing. This must be supplemented with VHF radio broadcasts agreed with the Maritime and Coastguard Agency.

3.1.5 The Licence Holder must notify The Kingfisher Information Service of Seafish no less than **14 days** prior to the commencement of the Licensed Activities, or an individual phase of the Licensed Activity, is expected to commence.

3.2 Notification of Vessels and/or Vehicles

The Licence Holder must ensure that the details of the vessels and/or vehicles utilised to undertake the Licensed Activities are submitted to the Licensing Authority and Welsh Government Marine & Fisheries Division (Control & Enforcement Branch) at least **24 hours** prior to the commencement of the Licensed Activities.

3.3 Notification of Agents/Contractors/Sub-contractors

The Licence Holder must ensure that details of any agent(s), contractor(s) or sub-contractor(s) utilised to undertake the Licensed Activities are submitted to the Licensing Authority at least **24 hours** prior to the commencement of Licensed Activities.

3.4 Notification of HM Coastguard

The Licence Holder must ensure that HM Coastguard is made aware of the Licensed Activities at least **24 hours** prior to commencement by contacting The National Maritime Operations Centre at **zone31@mcga.gov.uk**.

3.5 Inspection of Licensed Activities

The Licence Holder must allow officers of the Maritime and Coastguard Agency, Marine Enforcement Officer or any other person authorised by the Licensing Authority to inspect the Licensed Activities at any reasonable time.

3.6 Notification of Completion

3.6.1 The Licence Holder must notify the Licensing Authority within **10 days** of completion of the Licensed Activities or an individual phase of the Licensed Activity.

3.6.2 The Licence Holder must notify Welsh Government Marine & Fisheries Division (Control & Enforcement Branch) within **10 days** of completion of the Licensed Activities or an individual phase of the Licensed Activity.

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3.6.3 The Licence Holder must notify the UK Hydrographic Office of the Licensed Area and the Licensed Activities within **10 days** of the completion of the Licensed Activities or an individual phase of the Licensed Activity.

3.6.4 The Licence Holder must notify The Kingfisher Information Service of Seafish as soon as reasonably practicable and no later than **24 hours** after completion of the Licensed Activities or an individual phase of the Licensed Activity.

3.7 Accident or Emergency

3.7.1 If, by reason of force majeure any substances or articles are deposited other wise than as permitted as part of the Licensed Activities full details of the circumstances shall be notified to the Licensing Authority, Trinity House and the Maritime and Coastguard Agency within **48 hours** of the incident occurring.

3.7.2 Should it be necessary for the Licence Holder to recover or remove from the Licensed Area any equipment, plant or machinery accidentally dropped when undertaking the Licensed Activities, the Licence Holder is permitted to do so provided that the methodology for such recovery or removal has been approved by the Licensing Authority.

3.8 Distribution of Copies of this Licence

The Licence Holder is required to ensure that a copy of this licence, and any subsequent revisions or amendments thereto is given to:

- all agent(s), contractor(s) and sub-contractor(s) whose names have been provided to the Licensing Authority pursuant to condition 3.3; and
- the Masters of any vessels and transport managers responsible for the vehicles and/or vessels employed in the pursuance of this licence whose details have been submitted to the Licensing Authority pursuant to condition 3.2.

3.9 Inspection of Documents

Copies of this Licence shall be made available at the following locations:

- At the address of the Licence Holder specified in section 1.1.
- At any site office, located at or adjacent to the Licensed Area, used by the Licence Holder or its agent(s), contractor(s) or sub-contractor(s) responsible for the loading transportation or deposit of any substances or articles permitted as part of the Licensed Activities.
- On board each vessel, vehicle or at the office of any transport manager with responsibility for vehicles from which any deposits of materials authorised by this licence are to be made.

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The documents referred to in this condition shall be available at all times when the Licensed Activities are being undertaken for inspection by officers appropriately authorised by the Licensing Authority and authorised Marine Enforcement Officers at the locations stated in this paragraph.

Vessels, Plant and Equipment

3.10 Notified Contractors, Vessels and/or Vehicles only to Carry out Licensed Activities

Only those agent(s), contractor(s), sub-contractor(s) vessels and/or vehicles whose details have been notified to the Licensing Authority may operate under the terms of this licence. Any changes must be notified to and be approved by the Licensing Authority in writing prior to any such agent(s), contractor(s), sub-contractor(s) or vehicles carrying out any Licensed Activities pursuant to or otherwise operating under this licence.

Safety

3.11 Removal of Deposited Material

The Licence Holder must remove any deposited material within one month of notice being given by Licensing Authority or Marine Enforcement Officers if they consider this necessary or advisable for the safety of navigation, and shall not replace such material until the Licensing Authority or Marine Enforcement Officers have given their written approval.

Pollution control

3.12 Pollution Prevention

The Licence Holder must ensure that pollution prevention best practice is adhered to at all times. Any incidents must be reported to the Licensing Authority as soon as possible using the hotline number **0300 065 3000**.

3.13 Spillage of Pollutants

The Licence Holder must ensure bunding, storage facilities and spill kits are employed where appropriate to contain and prevent the release of fuel, oils and chemicals associated with the plant, refuelling and construction equipment into the marine environment. Secondary containment must be used with a capacity of **no less than 110%** of the container's storage capacity.

3.14 Coatings

The Licence Holder must ensure that any coatings/treatments used in carrying out the Licensed Activities are suitable for use in the marine environment and are used in accordance with best environmental practice.

3.15 Prevention of Disposal of Man-made Debris

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The Licence Holder must ensure that all reasonable precautions are taken to prevent the disposal of man-made debris to the marine area. Such material must be removed immediately and be disposed of appropriately. If it is not possible to prevent man-made debris from entering the marine environment during the Licensed Activities, the Licensed Activities must cease immediately.

3.16 Biosecurity

3.16.1 The Licence Holder must ensure all equipment, materials, machinery and personal protective equipment are washed with freshwater and/or thoroughly airdried before deployment and before moving between locations.

3.16.2 The Licence Holder must submit an Invasive Non-native Species Management Plan(s) which shall be in accordance with the outline Invasive Non-native Species Management Plan (document MOR/RHDHV/DOC/0075) to the Licensing Authority for written approval at least **4 months** prior to commencement of Licensed Activities. No Licensed Activities may be undertaken prior to written approval from the Licensing Authority.

3.16.3 The Licence Holder must ensure that any actions outlined in the Invasive Non-Native Species Management Plan detailed in condition 3.16.2 are implemented as approved in writing by the Licensing Authority. Any proposed changes to the actions outlined in the document must be submitted to, and approved in writing by the Licensing Authority prior to any changes being enacted.

3.17 Equipment, Structures and Access

The Licence Holder must ensure that all equipment, temporary structures, access tracks, waste, and/or debris associated with the Licensed Activities are removed on completion of any of the Licensed Activities.

Activity-specific Conditions

3.18 Project Parameters

3.18.1 The Licence Holder must ensure that all tidal devices constructed/deployed fall within the parameters set out within *Environmental Statement Chapter 4 Project Description* (MOR/RHDHV/DOC/0004), and as detailed in Appendix 1.

3.18.2 The Licence Holder must ensure that cabling construction/deployment must fall within the parameters set out within *Environmental Statement Chapter 4 Project Description* (MOR/RHDHV/DOC/0004), and as detailed in Appendix 2.

3.18.3 The Licence Holder must ensure that all navigation and monitoring equipment fall within the parameters set out within *Environmental Statement Chapter 4 Project Description* (MOR/RHDHV/DOC/0004), and as detailed in Appendix 3.

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3.18.4 The Licence Holder must ensure that all hubs fall within the parameters set out within *Environmental Statement Chapter 4 Project Description* (MOR/RHDHV/DOC/0004), and as detailed in Appendix 4.

3.19 Cable Installation Methodology

3.19.1 The Licence Holder must submit a Cable Installation Methodology report to the Licensing Authority for written approval at least **4 months** prior to commencement of any cable installation work. No cable installation may be undertaken prior to written approval from the Licensing Authority.

The Cable Installation Methodology report must:

- i. include a burial risk assessment to ascertain burial depth;
- ii. include a full method statement for cable installation;
- iii. specify locations, timings and duration of each subtidal and intertidal work activity;
- iv. If it is determined that it is not possible to conduct cable-lay through the intertidal area via horizontal directional drilling (HDD), the methodology must describe how the intertidal substratum will be reinstated and will describe how physical impacts will be kept to a minimum;
- v. mitigate potential impacts to sensitive habitat features including micro-siting away from where they are identified in Condition 3.40 and confirm that any cabling will bypass the large sand ridge north of South Stack; and
- vi. detail the type, sources, quantity and installation methods for cable protection where proposed to be used.

3.19.2 The Licence Holder must ensure that any actions outlined in the Cable Installation Methodology report detailed in condition 3.19.1 are implemented as approved in writing by the Licensing Authority. Any proposed changes to the actions outlined in the report must be submitted to, and approved in writing by the Licensing Authority prior to any changes being enacted.

3.20 Cable Management Plan

3.20.1 The Licence Holder must submit a Cable Management Plan, including cable landfall to the Licensing Authority for written approval at least **4 months** prior to commencement of any cable installation work. No cable installation works may be undertaken prior to written approval from the Licensing Authority.

The Plan must include;

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- i. detail of methodologies for operations and maintenance including the methods to be used for re-laying and re-burial of repaired cable and removal and reinstatement of any cable protection,
- ii. a timescale for the periodic review of the document.

3.20.2 The Licence Holder must ensure that any actions outlined in the Cable Management Plan detailed in condition 3.20.1 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.

3.21 Programme of Works

3.21.1 The Licence Holder must submit a Programme of Works for each individual phase of the Licensed Activity to the Licensing Authority for written approval at least **4 months** prior to commencement of construction and/or deployment of the following parts of the Licensed Activities;

- Export cable(s).
- Each tidal device or array and associated infrastructure.

The Programme of Works for each individual phase of the Licensed Activities must provide a full list of materials to be deposited and removed from the marine environment. It should also include:

- i. The planned timetable for each activity and all maintenance authorised by this licence;
- ii. A plan for notifying the Licensing Authority and Trinity House of the start (and end of activities) and phases of activities or of any changes to the programme of works, to include updates to the programme of works should the programme change.

No construction and/or deployment of the parts of the Licensed Activities above may be undertaken prior to written approval from the Licensing Authority.

3.21.2 The Licence Holder must ensure that any actions outlined in the Programme of Works detailed in condition 3.21.1 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.

3.22 Installed Cable Report

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3.22.1 The Licence Holder must within **4 weeks** of completion of any phase of cable installation works submit an 'as built' Installed Cable Report for the approval of the Licensing Authority. The report must include;

- i. confirmation of compliance with the Cable Installation Methodology ;
- ii. the final locations (grid locations in WGS84) of buried and surface-laid sections of the cables, and
- iii. the final locations, types, and quantities of cable protection deposited or installed

3.23 Device Deployment Protocol (DDP)

3.23.1 The Licence Holder must submit a DDP to the Licensing Authority for written approval at least **4 months** prior to deployment of tidal device(s) or hubs. No tidal device or hub may be constructed/deployed prior to written approval from the Licensing Authority.

The DDP must set out proposed details of the device(s) and operational hubs to be constructed and include the following;

- i. the number, dimensions, specification, and depth for each device and operational hub, including the type of foundation(s) or mooring(s) to be used, and demonstrate how it accords with the project parameters set out in *Environmental Statement Chapter 4 Project Description (MOR/RHDHV/DOC/0004)* and as detailed in in Appendix 1-4;
- ii. the grid co-ordinates of the centre point of the proposed location for each device and operational hub, subject to any micro-siting required due to any environmental constraints;
- iii. a full method statement for construction, deployment, operation, and repowering of the tidal device(s) or array and associated infrastructure;
- iv. any drilling and disposal methods and quantities generated;
- v. the monitoring equipment;
- vi. documented liaison with local fishing industry, the outcomes of the engagement and agreed mitigation measures employed including (but not limited to)., areas of deep-water storage for pots and micro-siting of infrastructure; and
- vii. an updated seascape, landscape and visual assessment (SLVIA) undertaken in accordance with the assessment methodology within the environmental statement or any subsequently published best

practice guidance in respect of any surface emergent tidal devices or operational hubs proposed for deployment or repowering. The SLVIA must set out how the mitigation measures set out in the Outline Landscape Management Plan (document MOR/RHDHV/DOC/0002) are secured in respect of the proposed deployment or repowering, and consider whether devices proposed for deployment or repowering in the restricted zone for submerged tidal devices (as defined in Table 5) are considered to have visually prominent elements. The assessment shall include an assessment of the cumulative impact of the proposed tidal devices and hubs operational and/or consented (pursuant to an approved device deployment protocol) at the time of its preparation.

- 3.23.2** The Licence Holder must ensure that any actions outlined in the DDP detailed in condition 3.23.1 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.

3.24 Operations and Maintenance Plan (OMP)

- 3.24.1** The Licence Holder must submit a OMP to the Licensing Authority for written approval at least **4 months** prior to commencement of construction and/or deployment of each tidal device or array and associated infrastructure. No construction and/or deployment may be undertaken prior to written approval from the Licensing Authority.

The OMP must include detail of the methodology for operation and maintenance of infrastructure, and must include a timescale for the periodic review of the document.

- 3.24.2** The Licence Holder must ensure that any actions outlined in the OMP detailed in condition 3.24.1 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.

3.25 Construction Environment Management Plan (CEMP)

- 3.25.1** The Licence Holder must submit a CEMP to the Licensing Authority for written approval at least **4 months** prior to commencement of the Licensed Activities. The CEMP must be in accordance with the outline Construction Environment Management Plan (reference MOR/RHDHV/DOC/0073 F2.0). No Licensed Activities may be undertaken prior to written approval from the Licensing Authority.

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3.25.2 The Licence Holder must ensure that any actions outlined in the CEMP detailed in condition 3.25.1 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.

3.26 Unexploded Ordnance (UXO) Survey

The Licence Holder must carry out a UXO survey prior to the commencement of any Licensed Activity. The findings of the UXO survey should be used to inform cable routes and device placement. This licence does not authorise the detonation of any UXO.

3.27 Marine Archaeology

3.27.1 The Licence Holder must submit a Protocol for Archaeological Discoveries (PAD) to the Licensing Authority for written approval prior to commencement of any Licensed Activity. 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 PAD 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.

3.27.3 The Licence Holder must submit a Written Scheme of Investigation (WSI) to the Licensing Authority for written approval at least **4 months** prior to commencement of any Licensed Activity. No Licensed Activities may be undertaken prior to written approval from the Licensing Authority. The WSI must detail the archaeological assessment and mitigation works offshore and within the inter-tidal area and must provide details of:

- i. the responsibilities of the Licence Holder and archaeological consultant;
- ii. details of contractors and curators (national and local);
- iii. requirements for a watching brief(s) within intertidal areas;
- iv. methodology for further site investigation including survey planning, specifications for geophysical, geotechnical and diver/ROV investigations;
- v. delivery of mitigation including the use of Archaeological Exclusion Zones (AEZ) during construction, operation, repowering and maintenance;

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- vi. monitoring during construction, operation, repowering and maintenance, and
- vii. conservation, publication and archiving duties for archaeological material.

3.27.4 The Licence Holder must ensure that any actions outlined in the WSI detailed in condition 3.27.3 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.

3.28 Pre-construction Marine Archaeology Survey

3.28.1 The Licence Holder must submit a proposal for the specification for the Archaeology Pre-construction Survey for written approval at least **2 months** prior to commencement of the survey.

The pre-construction survey specifications must:

- i. satisfy the requirement of the WSI detailed in condition 3.27.3;
- ii. be sufficient to determine any potential impact on the historic environment, and
- iii. encompass the area with the potential to be directly impacted by the activity.

3.28.2 The Licence Holder must ensure that any actions outlined in the specification of the Pre-construction Surveys detailed in condition 3.28.1 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.

3.28.3 The Licence Holder must submit a report on the results of the Pre-construction Marine Archaeology Survey to the Licensing Authority for written approval at least **2 months** prior to commencement of construction and/or deployment of the following parts of the Licensed Activities:

- Export cables(s).
- Any tidal device or array and associated infrastructure.

The pre-construction survey report must:

- i. be in accordance with the WSI detailed in condition 3.27.3; and

- ii. determine any potential impact on the historic environment
- iii. include the identification of archaeological exclusion zones if required.

No construction and/or deployment of the parts of the Licensed Activities above may be undertaken prior to written approval from the Licensing Authority.

3.28.4 The Licence Holder must ensure that any actions outlined in the report detailed in condition 3.28.3 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.

3.29 Navigation Monitoring

3.29.1 The Licence Holder must ensure that a Navigation Monitoring Specification for construction and post construction navigation monitoring survey is submitted to the Licensing Authority for written approval at least **4 months** prior to commencement of any Licensed Activity. No Licensed Activities may be undertaken prior to written approval from the Licensing Authority. The survey specification must include;

- i. Detailed periodic hydrographic surveys of the consented area, or subsections thereof, to the IHO Order 1a survey standard extending to an appropriate buffer around the site.
- ii. All proposed cable routes.
- iii. Vessel traffic monitoring by automatic identification system (AIS) for the duration of the construction period.
- iv. Detail of the programme/timetable of monitoring and reporting.
- v. Compliance with MGN 654 (*Safety of Navigation: Offshore Renewable Energy Installations (OREIs) - Guidance on UK Navigational Practice, Safety and Emergency Response*), (or any successor document) including the submission of full density data and reports to the MCA and the UKHO for the update of nautical charts and publications.

3.29.2 The Licence Holder must ensure that any actions outlined in the Navigation Monitoring Specifications 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.

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3.29.3 In line with condition 3.29.1 the Licence Holder must submit a report to the Licensing Authority for written approval in line with timetable agreed in the Navigation Monitoring Specification.

3.29.4 In accordance with condition 3.29.1 the Licence Holder must complete periodic hydrographic surveys of the Licensed Area, or subsections thereof, to the IHO Order 1a survey standard. On completion of these surveys the results and corresponding report of survey must be submitted to the UKHO, with notification to the MCA.

3.30 Fisheries Liaison

The Licence Holder must produce and implement a fisheries liaison and coexistence plan. which must be made available for inspection at all reasonable times by the Licensing Authority and/or Marine Enforcement Officer at the location detailed in paragraph 3.9.

3.31 Aids to Navigation

3.31.1 The Licence Holder must submit an Aids to Navigation Plan (AtNP) to the Licensing Authority for written approval at least **4 months** prior to commencement of construction and/or deployment of the following parts of the Licensed Activities:

- Export cables(s).
- Each tidal device or array and associated infrastructure.

The AtNP must consider all stages of the Licensed Activities and provide details on navigation lights and marking of project infrastructure in addition to additional aids to navigation (including but is not limited to cardinal buoys or special marks) needed to safely mark the site boundaries.

No construction and/or deployment of the parts of the Licensed Activities above may be undertaken prior to written approval from the Licensing Authority.

3.31.2 The Licence Holder must ensure that any actions outlined in the AtNP detailed in condition 3.31.1 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.

3.31.3 The Licence Holder must submit a report to the Licensing Authority on the availability of aids to navigation in accordance with the timetable approved within the AtNP.

3.31.4 The Licence Holder must ensure that the Licensed Activities exhibit such lights, marks, sounds, signals and other aids to navigation and to take such steps for the prevention of danger to navigation as directed by Trinity House.

3.32 Depth Reduction

The Licence Holder must ensure that any depth reductions resulting from cable protection activity do not compromise safe navigation and that there is no more than 5% reduction in surrounding depth referenced to Chart Datum at any location within the Licensed Area without prior written approval from the Licensing Authority.

3.33 Mooring verification

The Licence Holder must at all times ensure that the Licensed Activities are maintained in a safe condition that does not present a danger to the environment, or other marine users. Floating devices and any devices suspended in the water column must have a Third-Party verification of the mooring arrangements prior to construction to provide assurance against loss of station.

3.34 Navigational Safety

3.34.1 The Licence Holder must ensure a regular programme of monitoring of device condition. In case of damage, destruction or decay of any device or part of a device, the Licence Holder shall, as soon as possible and no later than **24 hours** after becoming aware of such damage, destruction or decay, notify Trinity House, Maritime and Coastguard Agency, Kingfisher Information Service of Seafish, UKHO and the Licensing Authority. The Licence Holder shall lay down such buoys, exhibit such lights and take such steps as directed by Trinity House.

3.34.2 In the event of cable exposure on or above the seabed, the Licence Holder must issue a notice to mariners and notify the Kingfisher Information Service of the location and extent of exposure no later than **3 days** following its identification. Copies of all said notices must be provided to the Licensing Authority, Trinity House, Maritime and Coastguard Agency.

3.35 Emergency Response Co-operation Plan (ERCoP)

3.35.1 The Licence Holder must submit an ERCoP to the Licensing Authority for written approval at least **4 months** prior to commencing of Licenced Activities. No Licenced Activities may be undertaken prior to written approval from the Licensing Authority.

3.35.2 The Licence Holder must ensure that any actions outlined in the ERCoP detailed in condition 3.35.1 are implemented as approved in writing by the Licensing Authority. Any proposed changes to the actions outlined in the documents must

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be submitted to, and approved in writing by the Licensing Authority prior to any changes being enacted.

3.36 Navigation Risk Assessment (NRA)

3.36.1 The Licence Holder must implement the Licensed Area NRA (document reference 18UK1479-RN-MM-NRA-20) and NRA addendum (MOR-MCO-DOC-001).

3.36.2 The Licence Holder must submit an updated Licensed Area NRA for written approval prior to the commencement of any Licensed Activities and **every 2 years thereafter**.

3.36.3 The Licence Holder must ensure that any actions outlined in the Licensed Area NRA and the NRA Addendum detailed in condition 3.36.1 and any updated Licensed Area NRA detailed in condition 3.26.2 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.

3.36.4 The Licence Holder must submit a tidal device/array specific NRA for written approval to the Licensing Authority at least **4 months** prior to deployment. The NRA must consider the in-combination effect with already deployed tidal devices or arrays. No deployment of tidal device may be undertaken prior to written approval from the Licensing Authority.

3.36.5 The Licence Holder must ensure that any actions outlined in the tidal device/array specific NRA detailed in condition 3.36.4 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.

3.37 Colouring of Infrastructure

The Licence Holder must colour all infrastructure in the Licenced Area as directed by Trinity House.

3.38 Detailed Environmental Management and Monitoring Plan (dEMMP)

3.38.1 The Licence Holder must submit a dEMMP to the Licensing Authority for written approval at least **6 months** prior to deployment of tidal device(s). The dEMMP must be in accordance with the outline Environmental Management and Monitoring Plan (oEMMP reference MOR/RHDHV/DOC/0072 (10)). No deployment may be undertaken prior to written approval from the Licensing Authority.

3.38.2 The Licence Holder must ensure that any actions outlined in the dEMMP detailed in condition 3.38.1 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.

3.39 Marine Mammal Mitigation Protocol (MMMP)

3.39.1 The Licence Holder must submit a MMMP to the Licensing Authority for written approval at least **4 months** prior to commencement of Licensed Activities. No construction and/or deployment may be undertaken prior to written approval from the Licensing Authority.

3.39.2 The Licence Holder must ensure that any actions outlined in the MMMP detailed in condition 3.39.1 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.

3.40 Pre-construction Monitoring Survey

3.40.1 The Licence Holder must submit a proposal for the specification of the Pre-construction Monitoring Survey that accords with the Outline Marine Biodiversity Enhancement Strategy (MOR-RHDHV-DOC-0164) to the Licensing Authority for written approval at least **2 months** prior to commencement of the survey.

The Pre-construction monitoring survey specifications must:

- i. allow for the determination of the location, identification and abundance of habitats of conservation importance (i.e.; Annex I habitat, OSPAR and Section 7 habitats); and
- ii. Encompass the area with the potential to be directly impacted by the Licensed Activity.

3.40.2 The Licence Holder must ensure that any actions outlined in the specification of the Pre-construction Monitoring Surveys detailed in condition 3.40.1 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.

3.40.3 The Licence Holder must submit a report on the results of the pre-construction monitoring survey to the Licensing Authority for written approval **at least 4 months** prior to commencement of construction and/or deployment of the following parts of the Licensed Activities;

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- Export cables(s).
- Any tidal device or array and associated infrastructure.

The pre-construction monitoring survey report must:

- i. Identify the location, sensitivity and abundance of habitats of conservation importance in the vicinity of the location proposed for deployment of any tidal device and export cable corridor;
- ii. Propose mitigation measures, to include details of the need to micro-site individual tidal device, inter-array cables and/or export cable(s) in order to minimise adverse effects to habitats of conservation importance;
- iii. Where it is not possible to avoid damage/loss of habitats of conservation importance, include a tidal device, array or cable specific "Detailed Marine Biodiversity Enhancement Strategy (DMBES)" in accordance with the "Outline BES" (Document MMC555 MOR-RHDHV-DOC-0164).

No construction and/or deployment of the parts of the Licensed Activities above may be undertaken prior to written approval from the Licensing Authority.

3.40.4 The Licence Holder must ensure that any actions outlined in the report on the results of the pre-construction monitoring detailed in condition 3.40.3 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.

3.41 Pollution Prevention and Management Plan (PPMP)

3.41.1 The Licence Holder must submit a PPMP to the Licensing Authority for written approval at least **6 weeks** prior to commencement of Licensed Activities. The PPMP must be in accordance with the outline PPMP (Document MOR/RHDHV/DOC/0077) and include a Marine Pollution Contingency Plan. No construction and/or deployment may be undertaken prior to written approval from the Licensing Authority.

3.41.2 The Licence Holder must ensure that any actions outlined in the PPMP detailed in condition 3.41.1 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.

3.42 Environmental Monitoring

3.42.1 The Licence Holder must submit a specification for construction and post-construction monitoring surveys to the Licensing Authority for written approval at least **4 months** prior to the commencement of Licensed Activities. The monitoring specification must include the following unless otherwise agreed with the Licensing Authority:

- i. Timetable for monitoring and reporting;
- ii. marine mammal monitoring;
- iii. scour monitoring;
- iv. export cable location and burial depths and a cable burial risk assessment to inform survey requirements during the operational phase of the project;
- v. bathymetric surveys of that part of the seabed within the Marine Development Zone within which tidal devices are to be deployed in a proposed phase, which includes a survey buffer based on the predicted near-field effects, and
- vi. Acoustic Doppler Current Profiler (ADCP) surveys in those parts of the Marine Development Zone (MDZ) within which construction, maintenance, repowering or decommissioning works are being undertaken.

3.42.2 The Licence Holder must ensure that any actions outlined in the specification for the construction and post-construction monitoring survey detailed in condition 3.42.1 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.

3.42.3 The Licence Holder must submit environmental monitoring reports for approval to the Licensing Authority no later than 8 months from the survey dates specified within the approved monitoring programme as detailed in condition 3.42.1.

3.43 Chemical Risk Assessment (CRA)

The Licence Holder must produce and implement a CRA report. The Licence Holder must ensure that the CRA report is available for inspection at all reasonable times at the location detailed in paragraph 3.9 by the Licensing Authority and/or Marine Enforcement Officers.

The CRA must include details of:

- (i) how and when the chemicals are used, stored and transported;

- (ii) best practice guidelines for the equipment/techniques used, and
- (iii) an assessment of the integrity of the equipment and the risk of spills.

3.44 Decommissioning

3.44.1 The Licence Holder must submit a Decommissioning Programme for the approval of the Licensing Authority at least **4 months** prior to commencement of construction and/or deployment of the following parts of the Licensed Activities;

- Export cables(s).
- Each tidal device or array and associated infrastructure.

The Decommissioning Programme must include a timetable and decommissioning method statement. No construction and/or deployment of the parts of the Licensed Activities above may be undertaken prior to written approval from the Licensing Authority.

3.44.2 The Licence Holder must review and submit an updated Decommissioning Programme for the approval of the Licensing Authority at least 4 months prior to any decommissioning work taking place. No decommissioning work can take place prior to written approval from the Licensing Authority.

3.44.3 The Licence Holder must ensure that any actions outlined in the Decommissioning Programme detailed in condition 3.44.1 and 3.44.2 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.

3.44.4 The Licence Holder must ensure that all tidal devices, cables and associated infrastructure are decommissioned prior to the Licence End Date.

3.45 Compliance Report

The Licence Holder must produce and submit a report on compliance with the conditions in this Marine Licence for the approval of the Licensing Authority at least **2 months** prior to commencement of construction and/or deployment of the following parts of the Licensed Activities:

- Export cables(s).
- Each tidal device or array and associated infrastructure.

The report must identify where the monitoring has been or is to be undertaken for each phase of construction/deployment and identify relevant plans and how conditions have been and are to be addressed. No construction and/or

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deployment of the parts of the Licensed Activities above may be undertaken prior to written approval from the Licensing Authority.

4 INTERPRETATION

In this Licence terms are as defined in section 115 of the Marine and Coastal Access Act unless otherwise stated.

- (a) “**2009 Act**” means the Marine and Coastal Access Act 2009;
- (b) “**Approved Application**” means the Marine Licence Application Form together with the Approved Supporting Documents;
- (c) “**Approved Supporting Documents**” means the documents supporting, or supplementary to, the Approved Application, submitted prior to the Licence Issue Date, listed in the Table at paragraph 2.3 above;
- (d) “**Array**” a group of tidal devices connected to each other and a common export cable;
- (e) “**Commencement**” means the first undertaking of any Licensed Activities;
- (f) “**Force Majeure**” may be deemed to apply when, due to stress of weather or any other cause, the master of a vessel determines that it is necessary to deposit the substances or articles because the safety of human life and/or of the vessel is threatened;
- (g) “**Hub**” infrastructure used to connect two or more tidal devices within an array, and must be within the parameters set out within Appendix 4;
- (h) “**Infrastructure**” All offshore infrastructure including tidal devices, foundations or anchors, inter array cables, hubs, export cables, export cable tails and cable protection as described within Table 1;
- (i) “**Licensed Activities**” means the activities authorised by this licence as specified in 2.1;
- (j) “**Licensed Area**” means the area within which Licensed Activities are authorised by this licence as specified in section 2.2;
- (k) “**Licence Holder**” means the person(s) or organisation(s) named in section 1.1 to whom this licence is granted;
- (l) “**Licence Period**” means the period beginning with the Licence Start Date and ending on the Licence End Date;
- (m) “**Licensing Authority**” means Natural Resources Wales acting on behalf of the Welsh Ministers;

- (n) **“Marine Development Zone”** means the area within which the tidal device(s)/arrays will be deployed along with associated infrastructure such as inter-array cables, export cables, marker buoys, site monitoring equipment and electrical connections to the export cables. The area is defined in Table 2;
- (o) **“Marine Enforcement Officers”** means the relevant officers appointed by Welsh Ministers under section 235 of the 2009 Act, contact details for whom are provided in section (w);
- (p) **“Marine Licence Application Form”** means the application form forming part of the application referred to in paragraph 0;
- (q) **“Repowering”** The removal of infrastructure at the end of a demonstration period and replacement with new infrastructure. Repowering must be within the parameters set out within *Environmental Statement Chapter 4 Project Description (MOR/RHDHV/DOC/0004)* and as detailed in Appendix 1;
- (r) **“Tidal Device”** means a discrete tidal energy generator comprising tidal energy converter(s), foundations and support structures. Tidal Devices must be within the parameters set out within *Environmental Statement Chapter 4 Project Description (MOR/RHDHV/DOC/0004)* as detailed in Appendix 1;
- (s) **“Third Party Verification”** means verification by a competent and independent person, someone not associated with the project
- (t) **“Works”** means any construction activities comprised in the Licensed Activities and, where the context permits, includes any plant, equipment or materials used to carry out those activities or operations but excludes monitoring, minor routine maintenance or other ongoing operational activities following completion of any construction activities;
- (u) all times shall be taken to be the time in Greenwich Mean Time (GMT) on any given day;
- (v) all co-ordinates shall be taken to be latitude and longitude decimal degrees
- (w) in the event of any discrepancy between the coordinates listed in paragraph 2.2 and the plan attached at Appendix 1, the coordinates shall take precedence.

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5 CONTACTS

Except where otherwise indicated, the primary point of contact with the Licensing Authority and the address for returns, correspondence and requests for variations of the licence is:

Marine Licensing Team
Natural Resources Wales
Permitting Service
29 Newport Road
Cambria House
Cardiff
CF24 0TP
Tel: 0300 065 3000
Email: marinelicensing@naturalresourceswales.gov.uk

Welsh Government Marine Enforcement Officers may be contacted at:

Welsh Government
Suite 3
Cedar Court
Haven's Head Business Park
Milford Haven Pembrokeshire
SA73 3LS

Tel: 03000253500

Email: wfmccmpc@gov.wales

Appendix 1 - Project Parameters for Activity 1 Tidal Device Deployment

Table 1: Maximum Number of tidal devices for each device Type

Tidal Device Type	Number of Devices
Floating/ Surface emergent	Up to 130*
Buoyant mid-water and/or seabed mounted fully submerged	Up to 490
Total	Up to 620**

*there will be no more than 130 floating or surface emergent devices deployed at one time

**There will be no more than 620 tidal devices deployed within the MDZ, comprised of no more than 130 floating / surface emergent devices, and no more than 490 buoyant mid-water and/or seabed mounted tidal devices.

Table 2: Tidal devices and TECs maximum parameters

Parameter	Maximum value
TEC output	4MW
TEC diameter	27m
TEC average speed	22 rpm
Height above sea level (for floating devices)	6.5m
Length	72m
Width	30m

Table 3: Parameter for tidal device spacings within arrays

Device Category	Spacing between tidal device centres		Maximum extent of surface movement	
	Perpendicular to flow	Parallel to flow	Perpendicular to flow	Parallel to flow
Fully submerged seabed mounted device	50 to 100 m	100 to 250 m	n/a	n/a
Surface emergent and buoyant mid water device	50 to 200 m	120 to 500 m	60 (±30 m)	80 (±40 m)

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Appendix 2 - Project Parameters for Activity 2 Deposit, maintenance and decommissioning of cabling

Table 1 – Parameters of the Export Cables

Parameter	Value
Number of export cables (including cable tails if required)	9
Export cable diameter	Up to 120mm
Cable diameter with split cable protection	Up to 170mm
Total length of export cables	40.5km
Maximum length of individual export cables	6 km
Minimum length of individual export cables	1.2km
Individual rock bags or concrete mattresses	Up to 270 (with a seabed footprint of up to 18 m ² each) total 4,860m ²
Footprint of export cables and split pipe protection	6,885 m ² (4,860 m ² cable + 2,205 m ² split-pipe protection)
Total seabed footprint (nine cable plus cable protection and rock bags/mattresses)	11,745m ²

Table 2 – Parameters of the Array Cables

Parameter	Value
Number of individual cables	Up to 740
Cable length	Up to 2.5km per cable
Total length of array cables	Up to 204.5km
Total seabed footprint (up to 204.5km of array cables plus protection, plus rock bags on max 100m intervals)	30,040m ²

Appendix 3 – Project Parameters for Activity 3 Navigation Markers and Environmental monitoring equipment

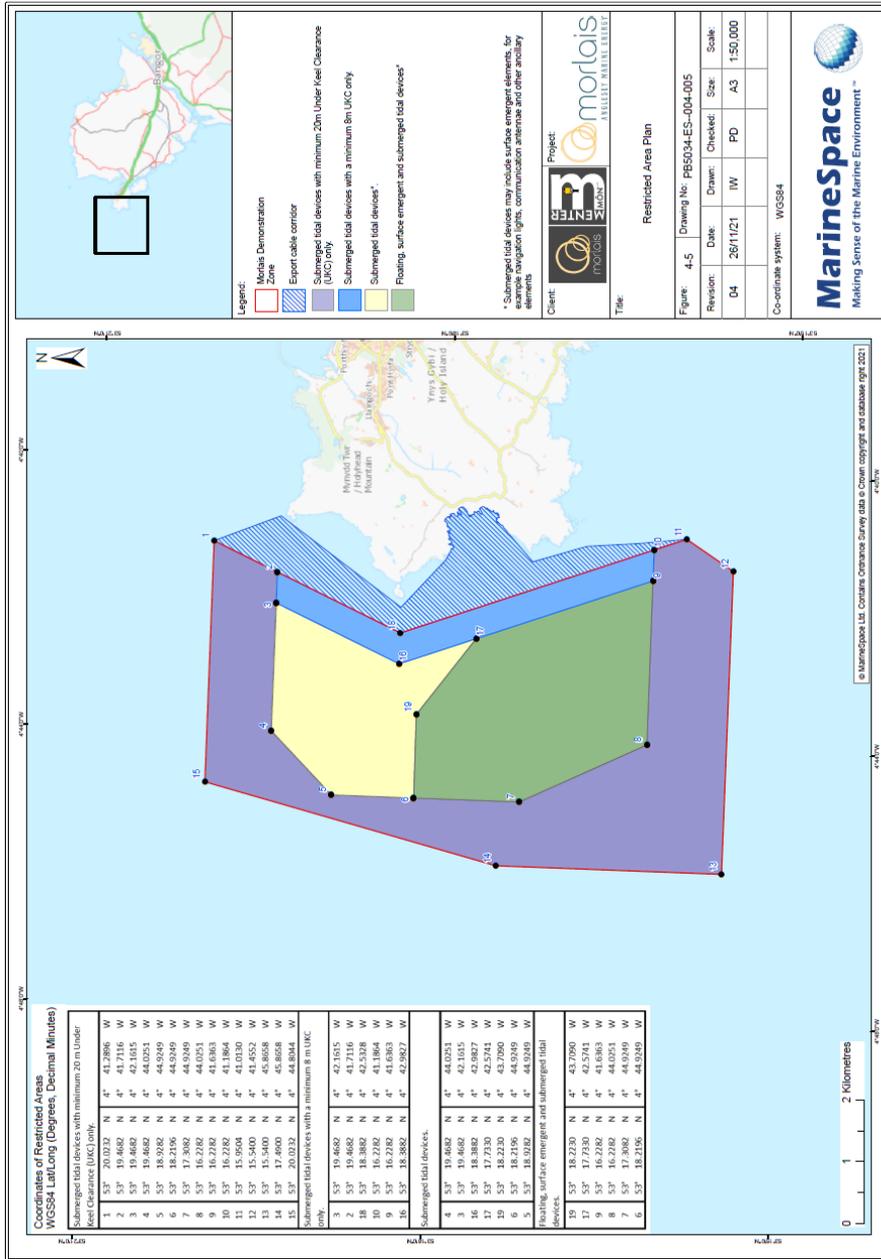
Parameter	Value
Number of IALA cardinal marks	Up to 4
Dimension of IALA cardinal marks	Up to 3m, with focal plane height (position of light) of 6m
Number of buoys (including Cardinal marks) and special marker buoys, marking location and extent of arrays, grouping of tidal devices within arrays and other equipment as required	Up to 60
Dimensions of navigation and other marker buoys	Up to 3m, with focal plane height (position of light) of 6m
Number of environmental monitoring buoys and platforms in addition to navigation and marker buoys	5
Dimensions of environmental monitoring platforms	Up to 3.6 m above sea level
Number of ADCPs	Up to 40
Diameter of ADCP	Approximately 1.5m
Footprint of individual ADCP (and total across the MDZ)	7m ² (378m ²)
Seabed footprint of anchors	Concrete weight up to 2 m in diameter, with a chain catenary in contact with the seabed of up to 30 m
Visibility of fully emergent / floating devices	Coloured and with navigation lights as agreed with Trinity House

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Appendix 4 – Project Parameters for Activity 4 electrical hubs

Parameter	Maximum Value
Number of hubs	120
Height of Hubs above LAT	18m

Appendix 5 – Location of works, including restricted zones.



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Appendix 6 – Licenced Area coordinates in degrees, decimal minutes.

In the event of any discrepancy between the coordinates set out below and those in section 2.2 of this licence, the coordinates in section 2.2, in Decimal Degrees, shall take precedence.

Table 2 - Array Deployment Area (Marine Development Zone)

Latitude	Longitude
53° 20.02320 N	4° 44.80440 W
53° 17.49000 N	4° 45.86580 W
53° 15.54000 N	4° 45.86580 W
53° 15.54000 N	4° 41.45520 W
53° 15.95040 N	4° 41.01300 W
53° 18.38820 N	4° 42.53280 W
53° 20.02320 N	4° 41.28960 W

Table 3 - Area of submerged tidal devices with a minimum 20 m UKC only

Latitude	Longitude
53° 20.02320 N	4° 41.28960 W
53° 19.46820 N	4° 41.71158 W
53° 19.46820 N	4° 42.16152 W
53° 19.46820 N	4° 44.02506 W
53° 18.92820 N	4° 44.92494 W
53° 18.21960 N	4° 44.92494 W
53° 17.30820 N	4° 44.92494 W
53° 16.22820 N	4° 44.02506 W
53° 16.22820 N	4° 41.63634 W
53° 16.22820 N	4° 41.18640 W
53° 15.95040 N	4° 41.01300 W

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53° 15.54000 N	4° 41.45520 W
53° 15.54000 N	4° 45.86580 W
53° 17.49000 N	4° 45.86580 W
53° 20.02320 N	4° 44.80440 W

Table 4 - Area of submerged tidal devices with a minimum 8 m UKC only

Latitude	Longitude
53° 19.46820 N	4° 41.71158 W
53° 19.46820 N	4° 42.16152 W
53° 18.38820 N	4° 42.98274 W
53° 16.22820 N	4° 41.63634 W
53° 16.22820 N	4° 41.18640 W
53° 18.38820 N	4° 42.53280 W

Table 5 - Area of submerged tidal devices

Latitude	Longitude
53° 19.46820 N	4° 42.16152 W
53° 19.46820 N	4° 44.02506 W
53° 18.92820 N	4° 44.92494 W
53° 18.21960 N	4° 44.92494 W
53° 18.22296 N	4° 43.70898 W
53° 18.38820 N	4° 42.98274 W
53° 17.73300 N	4° 42.57408 W

Table 6 - Area of floating, surface emergent and submerged tidal devices

Latitude	Longitude
53°15.95030 N	4° 41.01290 W
53° 18.38820 N	4° 42.53280 W
53° 20.02320 N	4° 41.28960 W
53° 20.02320 N	4° 40.89180 W
53° 18.39230 N	4° 42.15720 W
53° 18.02340 N	4° 41.45380 W
53° 17.98270 N	4° 41.31920 W
And between the co-ordinates comprising point 7 above following the mean high water spring level to the coordinate comprising point 8 below.	
53° 17.47930 N	4° 41.04370 W
53° 17.27030 N	4° 41.42480 W
53° 16.81090 N	4° 41.17010 W

Table 7 – Export Cable Corridor

Latitude	Longitude
53° 18.22296 N	4° 43.70898 W
53° 18.21960 N	4° 44.92494 W
53° 17.30820 N	4° 44.92494 W
53° 16.22820 N	4° 44.02506 W
53° 16.22820 N	4° 41.63634 W