

Agenda Item 15

Continued Revision to National Reporting
Format

Document Inf.15.j

**Annual National Report 2016
United Kingdom**

Action Requested

- Take note

Submitted by

United Kingdom



**NOTE:
DELEGATES ARE KINDLY REMINDED
TO BRING THEIR OWN COPIES OF DOCUMENTS TO THE MEETING**

Secretariat's Note

The Rules of Procedure adopted at the 19th Meeting of the ASCOBANS Advisory Committee remain in force until and unless an amendment is called for and adopted.

National Reporting Format for ASCOBANS

2016

As outlined in ASCOBANS Resolution 8.1 on National Reporting, the national reports covering the year 2016 will cover the following Sections of the Annex to the Resolution:

- Section I
- Section II B3, B4, C8 and D15
- Section VII

The reports submitted will inform discussions at the 23rd Meeting of the Advisory Committee (5-7 September 2017, Le Conquet, France) and will tailor its agenda to focus on the topics selected for this national report.

Section I: General Information

Party Information

Name of Party

United Kingdom

National Coordinator (Focal Point) for ASCOBANS

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Contributors to the report

JNCC, Cefas, MMO, Agri-Food and Biosciences Institute (AFBI) Northern Ireland, Scottish Government

Section II: Habitat Conservation and Management (threats and pressures on cetaceans)

B. Disturbance (including potential physical impacts)

3. Noise (impulsive and continuous/ambient)

3.1) To which noise registers/databases has your country contributed to date?

- [ICES Impulsive Noise Register](#) (for HELCOM and OSPAR Parties): Yes
- National registry, please specify (e.g. JNCC noise registry):

UK marine noise registry: The UK supplies impulsive noise information to the ICES Noise Registry and has a national registry called the UK Marine Noise Registry (<https://mnr.jncc.gov.uk/>). AFBI provide any applicable data to the JNCC impulsive noise registry. The UK Marine Noise Registry went live in August 2016 and is now collecting data on loud, low to mid frequency impulsive noise (between 10 Hz and 10 kHz) generated in UK seas to fulfil requirements under Descriptor 11 of the Marine Strategy Framework Directive.

- Other, please provide details:

3.2) *The perceived level of risk that underwater noise is posing to the favourable conservation status (FCS) of small cetaceans, i.e. is the pressure increasing, decreasing, staying the same or unknown:*

The perceived level of risk is believed to be increasing, however, the level of risk to the favourable conservation status of small cetaceans will be assessed in the next Article 17 reporting round for 2013-2017 that will be published in 2019. The level of threat for the previous reporting (2007-2012) round can be found in the Article 17 report, which are available here: <http://jncc.defra.gov.uk/page-6564>

3.3) *Any notable instances/issues in the reporting period including providing information on planned or completed significant developments/activities, including the details of EIAs and monitoring in place before, during and after the project:*

The status of UK offshore windfarms can be found at <http://www.4coffshore.com/offshorewind/>. There are eight windfarms currently under construction in the North Sea, Irish Sea and the English Channel. A further 33 are in the consenting process (have consent, pre-planning etc). To date, developers in the southern North Sea have contributed data and funds to the development of the DEPONS model as a condition of their consent.

Tidal array demonstration projects are underway at the Welsh Anglesey Skerries Tidal Array and Ramsey Sound. These projects will be scaled up in future. The European Marine Energy Centre (EMEC) based on the Orkney Islands, Scotland develops, tests and carries out research on wave and tidal devices.

3.4) *How is the pressure being managed, including a list of relevant regulations / guidelines and the year of implementation (current and planned):*

JNCC's 'guidelines for minimising the risk and injury to marine mammals from geophysical surveys' were updated in 2017 and are available here: http://jncc.defra.gov.uk/pdf/jncc_guidelines_seismicsurvey_apr2017.pdf.

The mitigation measures outlined in these guidelines have been adopted as part of the consenting regime for geophysical activities within the United Kingdom Continental Shelf (UKCS) to reduce the risk of deliberate injury to marine mammals. These guidelines were originally written with the oil and gas industry in mind, however since their conception, the use of geophysical technology by other industries in the marine environment has grown. Subsequently, any geophysical survey that has the potential to result in injury to marine mammals should apply the mitigation measures outlined in these guidelines (or an alternative as agreed with the relevant Regulator). Marine mammal mitigation protocols should be produced by the developer for any given project, mitigation may for example

include the use of Marine Mammal Observers (MMO), soft-start or passive acoustic monitoring (PAM).

The EU Habitats Directive (92/43/EEC), the Marine Strategy Framework Directive (2008/56/EC) and the Marine Act (Northern Ireland) 2013 form the means by which Northern Ireland can manage disturbance from noise. Within the territorial waters, the relevant competent authority (DAERA in Northern Ireland) is required to assess whether an activity will have a significant effect on a designated European site or species.

DAERA noise disturbance mitigation (during construction) follows the Marine Mammal Monitoring guidelines defined by the Joint Nature Conservation Committee.

3.5) *List relevant new research/work/collaboration:*

The Interim Population Consequences of Disturbance (iPCOD) model that will allow developers, scientists, and regulatory authorities to predict more accurately how offshore developments will affect five key species of mammals found in the UK. There are bottlenose dolphins, harbour porpoise, minke whale, harbour and grey seal (<https://www.st-andrews.ac.uk/news/archive/2014/title.248538.en.php>).

A comparison between the iPCOD and the Danish led Disturbance Effects of Noise on the Harbour Porpoise Population in the North Sea (DEPONS) is available here: <http://dce2.au.dk/pub/SR186.pdf>.

Offshore Renewables Joint Industry Programme (ORJIP) is a UK-wide collaborative programme of environmental research with the aim of reducing consenting risks for offshore wind and marine energy projects. More information is available from: <http://www.orjip.org.uk/>

The first assessment of UK noise levels was published November 2016 - "Underwater noise levels in UK waters" Nathan D. Merchant, Kate L. Brookes, Rebecca C. Faulkn, Anthony W. J. Bicknell, Brendan J. Godley & Matthew J. Witt; <http://www.nature.com/articles/srep36942>

Underwater noise modelling for environmental impact assessment. Environmental Impact Assessment Review, 57, 114-122. Farcas, A., Thompson, P. M., & Merchant, N. D. (2016).

The AFBI led Interreg VA COMPASS (Collaborative Oceanography and Monitoring for Protected Areas and SpecieS) project commenced in April 2017 and will run until December 2021. COMPASS aims to develop long-term monitoring strategies for highly mobile protected species such as marine mammals and salmonids, and provide essential infrastructure for baseline oceanographic and ambient noise monitoring.

A dedicated marine mammal work package as part of COMPASS will develop and implement a future-proof passive acoustic monitoring (PAM) program for marine mammals (cetaceans and pinnipeds) in relation to a cross-border (Scotland, Northern Ireland and the Republic Ireland) network of Marine Protected Areas (MPAs). In addition to species distribution, data collected via the COMPASS PAM network will be used to assess long-term changes in ambient noise levels within this cross-border region, in accordance with Marine Strategy Framework Directive (MSFD) Descriptor 11 (underwater noise) requirements. MSFD reporting across the proposed monitoring network will boost current efforts by CEFAS in setting up a UK wide long-term monitoring network for underwater noise as well as extend this into Irish waters.

3.6) *Report on noise management for cumulative impact, including assessment of associated or coincidental activities, regulations and guidelines, seismic shot point densities and level of impact that was assessed and deemed acceptable:*

In light of the recently submitted candidate Special Areas for Conservation (cSACs) for harbour porpoise, JNCC and SNCBs had discussions with regulators and stakeholders on noise management within the sites. Guidance on management for noise using spatial and temporal thresholds are being considered in line with the conservation objectives for the cSACs.

Please see attached spreadsheet. The information is based on the Ospar database on renewable energy developments (<https://www.ospar.org/documents?v=36066>), a Crown Estate data download (<https://www.thecrownestate.co.uk/energy-minerals-and-infrastructure/downloads/maps-and-gis-data/>), the harbour porpoise SAC impact assessment (<http://jncc.defra.gov.uk/Files/ABPmer%20IA%20Evidence%20Base.zip>) and expert knowledge.

4. Ocean Energy

Wind Energy

4.1) *Please enter one table per wind farm. See excel table*

All information on UK windfarms can be found at <http://www.4coffshore.com/offshorewind/>

<i>Name of wind farm</i>	
<i>First operational on (if in planning, then please enter foreseen grid connection date)</i>	
<i>Output in megawatts per turbine</i>	
<i>Number of turbines</i>	
<i>How were the individual wind turbines installed in the seabed?</i>	
<i>Was scour protection added?</i>	
<i>Noise mitigation during construction used (multiple ticks possible)</i>	<p><i>Single bubble curtains</i></p> <p><i>Double bubble curtains</i></p> <p><i>Acoustic Deterrent Devices</i></p> <p><i>Time/area closures</i></p> <p><i>Other, please specify:</i></p>
<i>If the wind farm is floating, how was it anchored?</i>	

<i>Additional information (optional):</i>	
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Wave Power

4.2) Please enter one table per wave power installation. [See excel table](#)

<i>Name of installation</i>	
<i>First operational on (if in planning, then please enter foreseen grid connection date)</i>	dd/mm/yy
<i>Location</i>	
<i>Output in megawatts per turbine</i>	
<i>Number of turbines</i>	
<i>How is the installation anchored?</i>	
<i>Was scour protection added?</i>	Yes/No/Not Applicable

[N.B. None in Scotland](#)

Tidal Energy

4.3) Please enter one table per tidal energy installation. [See excel table](#)

<i>Name of installation</i>	
<i>First operational on (if in planning, then please enter foreseen grid connection date)</i>	dd/mm/yy
<i>Location</i>	
<i>Output in megawatts per turbine</i>	
<i>Number of turbines</i>	
<i>Type</i>	<i>Floating/gravity/other, please specify:</i>
<i>Collision mitigation</i>	<i>No/ Yes, please specify:</i>

Tidal lagoon/barrage

4.4) Please enter one table per tidal lagoon/barrage.

<i>Name of installation</i>	
<i>First operational on (if in planning, then please enter foreseen grid connection date)</i>	dd/mm/yy
<i>Location</i>	
<i>Output in megawatts per turbine</i>	
<i>Number of turbines</i>	
<i>Collision mitigation</i>	<i>No/ Yes, please specify:</i>

N.B. None in Scotland

4.5) The perceived level of risk to favourable conservation status (FCS), i.e. is the pressure increasing, decreasing, staying the same or unknown:

Energy type	Status 2016 relative to previous years
<i>Wind energy</i>	N/A
<i>Wave power</i>	N/A
<i>Tidal energy</i>	Increasing
<i>Tidal lagoon/barrage</i>	N/A

4.6) Any notable instances/issues in the reporting period

Tidal lagoon/barrage has been set as 'unchanged' because no projects have currently been implemented. There is the world's first tidal lagoon project planned for Swansea Bay, Wales; the current plan is to start construction in 2018 and the project will take 4 years of construction with some power being generated from year 3. Therefore, the future risk is 'increased' due to planned projects for the future.

4.7) How the pressure is being managed, incl. relevant regulations / guidelines and the year of implementation (current and planned)

The marine licensing system is governed by the Marine and Coastal Access Act 2009, which has been in force since 2011. Under this Act, a marine licence is required for activities which involve a deposit or removal of a substance or object in the UK marine area, works or improvements at sea, or the use of explosives at sea. Installations >100 MW capacity are considered 'nationally significant infrastructure projects', and are subject to procedures outlined in the Planning Act 2008 which are intended to facilitate the approval of such

projects. Marine licensing is implemented independently by each of the devolved governments in the UK.

In the UK, the Habitat Regulations represent the transposition of the EU Birds Directive (Council Directive 2009/147/EC) and the EU Habitats Directive (Council Directive 92/43/EC) in to UK law via the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007, which are applicable in the area beyond territorial waters (12 nm to 200 nm). Within the territorial waters, the relevant competent authority (DAERA in Northern Ireland) is required to assess whether a project will have a significant effect on a designated European site or species (individually, and cumulatively with other projects).

4.8) *Relevant new research/work/collaboration*

Queen's University Belfast (QUB) have a number of research projects in relation to marine renewable energy:

- Coordinators of a H2020 grant entitled Powerkite, where QUB main role is assessing the environmental interactions of the Deep Green Technology developed by Minesto
- TTT3 project (Testing Tidal Turbines) funded by Invest Northern Ireland investigation the performance, optimum position for arrays and provide accurate data for validation of numerical models
- QUB are part of MaRINET (Marine Renewables Infrastructure Network) which offers companies free-of-charge access to R&D facilities and expertise
- QUB part of the H2020 funding for 6MW Demotide project which is aimed at demonstrating the technical and commercial viability of drilled foundation systems

C. Habitat Change and Degradation (incl. potential physical impacts)

8. Unexploded Ordnance

8.1) *To which registers/databases covering conventional and chemical munitions has your country contributed to date?*

OSPAR

Other, please state:

None.

Unknown.

8.2) *Please fill in table 8.2 (below) on unexploded ordnance, which except for the last four additional columns is the same as the OSPAR one. For explanation of terms see http://www.ascobans.org/sites/default/files/document/AC22_Inf_4.6.c_OSPAR_MunitionsRec2010.pdf*

The only projects we are certain has detonated in 2016 is Race Bank (about 30+), Rampion (1) and Thames Tideway Tunnel. Re TTT these detonations would have been very far inshore (one was by London Bridge).

8.3) *The perceived level of risk that unexploded ordnance and the management thereof is posing to the favourable conservation status (FCS) of small cetaceans, i.e. is the pressure increasing, decreasing, staying the same or unknown.*

Increasing due to UXO clearance that wind developers do.

8.4) Any notable instances/issues in the reporting period.

It is difficult to manage because the licenses often request a much higher number of that what will actually be detonated.

8.5) How is the pressure being managed, incl. relevant regulations/guidelines and the year of implementation (current and planned)

Through marine mammal mitigation protocols, and through limitation of numbers, frequencies and timings of explosions in some cases.

8.6) Relevant new research/work/collaboration

D. Management of Cumulative Impacts

15. Marine Spatial Planning

<p><i>Plan(s) in force</i></p>	<p>The MMO prepares marine plans for England on behalf of the Defra Secretary of State and, thereby, on behalf of HMG. The East Marine Plan was adopted in April 2014 and provides clarity to decision makers and developers regarding the suite of sectors and considerations set out in the Marine Policy Statement (MPS). These include those listed in the attached request.</p>
<p><i>Plan(s) in preparation</i></p>	<p>The Draft South Marine Plan is due to be submitted for adoption in summer 2017. The adoption of the south plan has been delayed due to the purdah period surrounding the general election.</p> <p>The remaining plans - north east, north west, south east and south west - are being prepared concurrently for adoption by 2021.</p>
<p><i>Further information, including links to online resources and maps where available</i></p>	<p>The Marine Information System (MIS) displays the appropriate marine policy documents for all of England's marine plan areas in an accessible online, quick reference format. http://mis.marinemanagement.org.uk</p> <p>In an area absent of an adopted marine plan, the MMO has a tool that allows you to view a range of spatial data that make up the marine planning evidence base which will be considered in the marine planning process.</p>

Section VII: Other Matters

A. Other information or comments important for the Agreement

N/A

B. Difficulties in implementing the Agreement

N/A

Table 3.3 on noise developments/activities

For instructions click on the individual cells.

Development/ activity	Status	Environmental Impact Assessment (EIA)	Strategic Environmental Assessment (SEA)	Monitoring	Additional information	Latitude WGS 84	Longitude WGS 84
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Table 4.1 on wind farms

Please enter one line per wind farm. For further instructions click on the individual cells.

Name of wind farm	First operational on	Output per turbine (MW)	Number of turbines	How were the individual turbines installed in the seabed?	Was scour protection added?	Noise mitigation used during construction	If the wind farm is floating, how was it anchored?	Additional information
Forthwind Offshore Wind Demonstration Project	12/1/2016	9	2	Pile-driving	No	Other, specify	N/A	Drilled piles; a noise restriction of 80db has been included as a condition of the licence; Additional information here: http://www.gov.scot/Topics/marine/Licensing/marine/scoping
Dudgeon		6	67	Pile-driving	Yes	Multiples of the above, specify	N/A	Noise mitigation: Acoustic deterrent devices, marine mammal observers, passive acoustic monitoring, soft start. Substation foundation jacketed with suction buckets.
Race Bank		6	91	Pile-driving	Yes	Multiples of the above, specify	N/A	Noise mitigation: Acoustic deterrent devices, marine mammal observers, passive acoustic monitoring, soft start. Offshore substations mounted on jacket foundations.
Galloper		6	56	Pile-driving	Yes	Multiples of the above, specify	N/A	Noise mitigation: Acoustic deterrent devices, marine mammal observers, passive acoustic monitoring, soft start. Offshore substations, piled.
Burbo Bank Extension	6/30/2017	8	32	Pile-driving	Yes	Multiples of the above, specify	N/A	Noise mitigation: Acoustic deterrent devices, marine mammal observers, passive acoustic monitoring, soft start.
Rampion		3.45	116	Pile-driving	Yes	Multiples of the above, specify	N/A	Noise mitigation: Marine mammal observers, passive acoustic monitoring, soft start.

Aberdeen Demo		NA	NA	Other, please specify	Unknown	Unknown	N/A	Authorised
Barrow		90	30	Other, please specify	Unknown	Unknown	N/A	Grounded: Monopile; operational
Beatrice		664	140	Other, please specify	Unknown	Unknown	N/A	Authorised - 2020
Beatrice Demonstrator Site		10	2	Other, please specify	Unknown	Unknown	N/A	Grounded: Jacket (piled); Decommissioned
Blyth		4	2	Other, please specify	Unknown	Unknown	N/A	Grounded: Monopile; Decommissioned
Blyth Demo		NA	NA	Other, please specify	Unknown	Unknown	N/A	Authorised
Burbo Bank		90	25	Other, please specify	Unknown	Unknown	N/A	Grounded: Monopile; operational
Burbo Bank Extension		254	32	Other, please specify	Unknown	Unknown	N/A	Grounded: Monopile; fully commissioned
Dudgeon		402	67	Other, please specify	Unknown	Unknown	N/A	Under construction - 2017
Firth of Forth		NA	NA	Other, please specify	Unknown	Unknown	N/A	application
Galloper		336	56	Other, please specify	Unknown	Unknown	N/A	under construction
Greater Gabbard		504	140	Other, please specify	Unknown	Unknown	N/A	Grounded: Monopile; operational

Gunfleet Sands Demo		NA	NA	Other, please specify	Unknown	Unknown	N/A	operational
Gunfleet Sands I			173	48 Other, please specify	Unknown	Unknown	N/A	Grounded: Monopile; operational
Gunfleet Sands II		NA	NA	Other, please specify	Unknown	Unknown	N/A	operational
Gwynt y Mor			576	160 Other, please specify	Unknown	Unknown	N/A	Grounded: Monopile; operational
Humber Gateway			219	73 Other, please specify	Unknown	Unknown	N/A	Grounded: Monopile; operational
Hywind 2 Demonstration			30	5 Other, please specify	Unknown	Unknown	N/A	authorised
Inch Cape		NA	NA	Other, please specify	Unknown	Unknown	N/A	authorised
Inner Dowsing			97	27 Other, please specify	Unknown	Unknown	N/A	Grounded: Monopile; operational
Kentish Flats 1			90	30 Other, please specify	Unknown	Unknown	N/A	Grounded: Monopile; operational
Kentish Flats 2		NA	NA	Other, please specify	Unknown	Unknown	N/A	operational
Lincs		NA	NA	Other, please specify	Unknown	Unknown	N/A	operational
London Array 1		NA	NA	Other, please specify	Unknown	Unknown	N/A	operational

Lynn		NA	NA	Other, please specify	Unknown	Unknown	N/A	operational
Methil (Samsung) Demo		NA	NA	Other, please specify	Unknown	Unknown	N/A	operational
Methil Demonstration Project - 2B Energy		NA	NA	Other, please specify	Unknown	Unknown	N/A	application
Moray Firth			372	62 Other, please specify	Unknown	Unknown	N/A	application
Navitus Bay Project 1		NA	NA	Other, please specify	Unknown	Unknown	N/A	application
Navitus Bay Project 2		NA	NA	Other, please specify	Unknown	Unknown	N/A	application
Neart na Gaoithe		NA	NA	Other, please specify	Unknown	Unknown	N/A	authorised
North Hoyle		NA	NA	Other, please specify	Unknown	Unknown	N/A	operational
Ormonde		NA	NA	Other, please specify	Unknown	Unknown	N/A	operational
Race Bank			580	91 Other, please specify	Unknown	Unknown	N/A	under construction
Rampion (Southern Array)		NA	NA	Other, please specify	Unknown	Unknown	N/A	application
Rampion Wind Farm		NA	NA	Other, please specify	Unknown	Unknown	N/A	under construction

Rhyl Flats		NA	NA	Other, please specify	Unknown	Unknown	N/A	operational
Robin Rigg East		NA	NA	Other, please specify	Unknown	Unknown	N/A	operational
Robin Rigg West		NA	NA	Other, please specify	Unknown	Unknown	N/A	operational
Scroby Sands		NA	NA	Other, please specify	Unknown	Unknown	N/A	operational
Sheringham Shoal		NA	NA	Other, please specify	Unknown	Unknown	N/A	operational
Teesside		NA	NA	Other, please specify	Unknown	Unknown	N/A	operational
Thanet		NA	NA	Other, please specify	Unknown	Unknown	N/A	operational
Triton Knoll			900	288 Other, please specify	Unknown	Unknown	N/A	authorised
Walney 1		NA	NA	Other, please specify	Unknown	Unknown	N/A	operational
Walney 2		NA	NA	Other, please specify	Unknown	Unknown	N/A	operational
Walney Extension			750	207 Other, please specify	Unknown	Unknown	N/A	authorised
West of Duddon Sands		NA	NA	Other, please specify	Unknown	Unknown	N/A	operational

Westermost Rough		NA	NA	Other, please specify	Unknown	Unknown	N/A	operational
Z1 MacColl		NA	NA	Other, please specify	Unknown	Unknown	N/A	authorised
Z1 Stevenson		NA	NA	Other, please specify	Unknown	Unknown	N/A	authorised
Z1 Telford		NA	NA	Other, please specify	Unknown	Unknown	N/A	authorised
Z2 SeaGreen Alpha		NA	NA	Other, please specify	Unknown	Unknown	N/A	authorised
Z2 SeaGreen Bravo		NA	NA	Other, please specify	Unknown	Unknown	N/A	authorised
Z3 Creyke Beck A		1200	200	Other, please specify	Unknown	Unknown	N/A	authorised
Z3 Creyke Beck B		1200	200	Other, please specify	Unknown	Unknown	N/A	authorised
Z3 Teesside (Lackenby) A		1200	200	Other, please specify	Unknown	Unknown	N/A	authorised
Z3 Teesside (Lackenby) B		1200	200	Other, please specify	Unknown	Unknown	N/A	authorised
Z4 Heron East		NA	NA	Other, please specify	Unknown	Unknown	N/A	authorised
Z4 Heron West		NA	NA	Other, please specify	Unknown	Unknown	N/A	authorised

Z4 Njord		NA	NA	Other, please specify	Unknown	Unknown	N/A	authorised
Z4 Project Four		NA	NA	Other, please specify	Unknown	Unknown	N/A	application
Z4 Project Three		NA	NA	Other, please specify	Unknown	Unknown	N/A	application
Z4 Project Two		NA	NA	Other, please specify	Unknown	Unknown	N/A	application
Z5 East Anglia North Tranche One East		NA	NA	Other, please specify	Unknown	Unknown	N/A	application
Z5 East Anglia North Tranche One West		NA	NA	Other, please specify	Unknown	Unknown	N/A	application
Z5 East Anglia North Tranche Two (Norfolk Boreas)		NA	NA	Other, please specify	Unknown	Unknown	N/A	application
Z5 East Anglia One			714	100 Other, please specify	Unknown	Unknown	N/A	authorised - 2020 connection
Z5 East Anglia One North		NA	NA	Other, please specify	Unknown	Unknown	N/A	application
Z5 East Anglia Three			1200	240 Other, please specify	Unknown	Unknown	N/A	application
Z5 East Anglia Two		NA	NA	Other, please specify	Unknown	Unknown	N/A	application
Hornsea Project Four		NA	NA	Other, please specify	Unknown	Unknown	N/A	Pre-planning Application

Hornsea Project One - Heron East		600	120	Other, please specify	Unknown	Unknown	N/A	Under Construction - 2022 connection
Hornsea Project One - Heron West		600	120	Other, please specify	Unknown	Unknown	N/A	Under Construction - 2022 connection
Hornsea Project One - Njord		600	120	Other, please specify	Unknown	Unknown	N/A	Under Construction - 2022 connection
Hornsea Project Three		NA	NA	Other, please specify	Unknown	Unknown	N/A	Pre-planning Application
Hornsea Project Two		900	180	Other, please specify	Unknown	Unknown	N/A	Consented
Walney Extension 3		NA	NA	Other, please specify	Unknown	Unknown	N/A	Under Construction
Walney Extension 4		NA	NA	Other, please specify	Unknown	Unknown	N/A	Under Construction

Table 4.2 on wave power

Please enter one line per wave power installation. For further instructions click on the individual cells.

Name of installation	First operational on	Output per turbine (MW)	Number of turbines	How is the installation anchored?	Was scour protection added?	Additional information
South Pembrokeshire Demonstration Zone						Pre-planning Application
Wave Hub		0	0		Yes	Active/In Operation - Cornwall
Wave Hub Navigational Marker Buoys		0	0		Yes	Active/In Operation - Cornwall
FabTest, Falmouth Bay			1		No	Active/In Operation - Cornwall

Table 4.3 on tidal energy

Please enter one line per tidal energy installation. For further instructions click on the individual cells.

Name of installation	First operational on	Latitude WGS 84	Longitude WGS 84	Output per turbine (MW)	Number of turbines	Type	Collision mitigation	Additional information
NOVA Innovation Tidal Turbine Array, Bluemull Sound	1/1/2016			0.1	5	Gravity	No	First operational in the first quarter of 2016; situated between the Shetland Islands of Yell and Unst; Bottom mounted, gravity anchored, non-yawing, horizontal axis tidal turbines; Additional information here: http://www.gov.scot/Topics/marine/Licensing/marine/scoping
MeyGen	11/1/2016			1.5	4	Gravity	Yes, please specify	Located on Pentland Firth; Collision mitigation - one instrumented turbine with PAM, AMM, cameras and seal telemetry to monitor potential marine mammal interactions with the turbine; Additional information here: http://www.gov.scot/Topics/marine/Licensing/marine/scoping
DP Marine Energy- Fair Head Tidal				1-3	44-110	Gravity	Yes, please specify	Operational on: 2018/2019 first phase (10MW), 2025 second stage (remaining 90MW). Located in Fair Head, Northern Ireland. Collision modelling as part of EIA, mitigation measures to be confirmed.

Tidal Ventures Limited- Torr Head	1/1/2020			1	100	Gravity	Yes, please specify	Located on Torr Head, Northern Ireland. Collision modelling as part of EIA, mitigation measures to be confirmed.
Minesto Power Kite	1/1/2016			0.12-0.85	1 (prototype)	Floating	Yes, please specify	Located in Strangford Lough, Northern Ireland. Collision mitigation: Testing installation with ongoing research into collision mitigation.
Fair Head								Pre-planning Application
Torr Head								Pre-planning Application
Holyhead Deep		Anglesey		10	20			In Planning
Perpetuus Tidal Energy Centre (PTEC)		Hampshire		30MW		Other, please specify		Consented; mixed
Portland Bill								Pre-planning Application
Ramsey Sound		Pembrokeshire		1	3			Active/In Operation
SeaGen Strangford Lough								Active/In Operation
Strangford Lough								Active/In Operation
Strangford Lough Array								Pre-planning Application
North Devon Demonstration Zone		Devon		30MW		Unknown		Pre-planning Application
West Anglesey Demonstration Zone		Anglesey						Pre-planning Application

Table 4.4 on tidal lagoon/barrage

Please enter one line per tidal lagoon/barage installation. For further instructions click on the individual cells.

Name of installation	First operational on	Latitude WGS 84	Longitude WGS 84	Output per turbine (MW)	Number of turbines	Collision mitigation	Additional information
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Table 8.2 on unexploded ordnance

For instructions click on the individual cells.

OSPAR Ref. No	Latitude WGS 84	Longitude WGS 84	Nature of Encounter	Date	Type of munition	Action taken	State of munition (corrosion)	Release, Destruction Latitude WGS 84	Release, Destruction Longitude WGS 84	Remarks	Depth of explosion	Depth of explosion	Estimated net weight of explosive material of demolished UXO	Demolition charge: net weight of explosive material added	Observations during explosion
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