



Dudgeon and Sheringham Shoal Offshore Wind Farm Extensions

Preliminary Environmental Information Report

Volume 3

Appendix 12.3 - Marine Mammal Cumulative Impact
Assessment (CIA) screening

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Glossary of Acronyms

BEIS	Business for Environment and Industrial Strategy
BND	Bottlenose Dolphin
CIA	Cumulative Impact Assessment
dB	Decibel
DEP	Dudgeon Extension Project
EMODnet	European Marine Observation and Data Network
ES	Environmental Statement
FCS	Favourable Conservation Status
GS	Grey Seal
HP	Harbour Porpoise
HRA	Habitats Regulation Assessment
HS	Harbour Seal
JNCC	Joint Nature and Conservation Committee
MMO	Marine Management Organisation
MU	Management Unit
MW	Minke Whale
N	No
NS	North Sea
PEIR	Preliminary Environmental Information Report
PTS	Permanent Threshold Shift
RMS	Root mean square
RoC	Review of Consents
SAC	Special Area of Conservation
SEP	Sheringham Extension Project
SNS	Southern North Sea
SPL	Sound Pressure Level
TTS	Temporary Threshold Shift
UK	United Kingdom
UXO	Unexploded Ordnance
WBD	White-Beaked Dolphin
Y	Yes

Glossary of Terms

Dudgeon Offshore Wind Farm Extension site	The Dudgeon Offshore Wind Farm Extension offshore wind farm boundary.
The Dudgeon Offshore Wind Farm Extension Project (DEP)	The Dudgeon Offshore Wind Farm Extension site as well as all onshore and offshore infrastructure.
Landfall	The point at the coastline at which the offshore export cables are brought onshore, connecting to the onshore cables at the transition joint bay above mean high water
Offshore scoping area	An area that encompasses all planned offshore infrastructure, including landfall options at both Weybourne and Bacton, and allows sufficient room for receptor identification and environmental surveys. This will be refined following further site selection and consultation.
Study area	Area where potential impacts from the project could occur, as defined for each individual EIA topic.
Sheringham Shoal Offshore Wind Farm Extension site	Sheringham Shoal Offshore Wind Farm Extension offshore wind farm boundary.
The Sheringham Offshore Wind Farm Extension Project (SEP)	The Sheringham Offshore Wind Farm Extension site as well as all onshore and offshore infrastructure.

12.3 MARINE MAMMAL CUMULATIVE IMPACT ASSESSMENT (CIA) SCREENING

12.3.1 Introduction

1. The Tables in this Appendix summarise the results of the Cumulative Impact Assessment (CIA) screening and outlines the plans and projects which have been screened into the marine mammals CIA. Parameters for inclusion of plans and projects were:
 - a) Projects and plans within the agreed reference population boundary for the given receptor (see **Section 12.3.2 of Chapter 12 Marine Mammal Ecology** for more information):
 - Harbour porpoise: North Sea (NS) Management Unit (MU);
 - Bottlenose dolphin: Greater North Sea and Coastal East Scotland MUs;
 - White-beaked dolphin: Celtic and Greater North Seas MU;
 - Minke whale: Celtic and Greater North Seas MU;
 - Grey seal: South-east England, North-east England and UK East Coast MUs, and the Wadden Sea region; and
 - Harbour seal: South-east England MU and the Wadden Sea region.
 - b) Projects and plans with the potential to cause the type of impact which could have a cumulative impact with DEP and SEP (**Chapter 12 Marine Mammal Ecology**).
 - c) Projects and plans from an assessment tier which was screened into the assessment.
2. For this assessment, the tiers used for assessment are based on guidance issued by the Joint Nature and Conservation Committee (JNCC) and Natural England in September 2013, and are as follows:
 - Tier 1: built and operational projects;
 - Tier 2: projects under construction;
 - Tier 3: projects that have been consented (but construction has not yet commenced);
 - Tier 4: projects that have an application submitted to the appropriate regulatory body that have not yet been determined;
 - Tier 5: projects that the regulatory body are expecting to be submitted for determination (e.g. projects listed under the Planning Inspectorate programme of projects); and
 - Tier 6: projects that have been identified in relevant strategic plans or programmes.
3. These tiers are used as they are more appropriate to use compared to the tiers in The Planning Inspectorate (2019) Advice Note 17 for the types of projects and plans considered in this assessment, in particular for the offshore windfarm stages.

4. The screening results are provided for each type of plan / project including other offshore wind farms, other renewable developments, aggregate extraction and dredging, licensed disposal sites, navigation and shipping, planned construction of subsea cables and pipelines and oil and gas installations (including surveying).
5. Any plans or projects that have the potential for a construction / commissioning cumulative impact that commenced construction / commissioning (Tier 1 or 2) between the end of the baseline and submission of the Environmental Statement (ES) will not be taken forward in the CIA for this type of cumulative impact. It is assumed that construction / commissioning will be completed before the start of construction of DEP and SEP.
6. The first stage of the screening is based on the widest possible range of construction dates for the DEP and SEP, of between 2024 and 2032, based on the earliest possible construction in 2024, and latest construction start date of 2028, with a maximum four year construction period. Therefore, the construction period for DEP and SEP may occur at any time between 2024 and 2032.
7. There will not be any concurrent piling during construction at DEP or SEP, however, there may be concurrent piling between the two sites if they are developed concurrently.

12.3.1.1 Data Sources

8. A wide range of data sources and information was used for the CIA and CIA screening, including, but not limited to:
 - DEP and SEP ESs (and Preliminary Environment Information Reports (PEIR));
 - Developer websites;
 - 4C Offshore Winds Database (<http://www.4coffshore.com/offshorewind/>);
 - Renewable UK website (<http://www.renewableuk.com>);
 - Crown Estate website;
 - Oil and gas UK licensing rounds website (<https://www.gov.uk/guidance/oil-and-gas-licensing-rounds#past-licensing-rounds>);
 - Cefas website (e.g. <http://data.cefas.co.uk/#/View/407>);
 - Planning Inspectorate National Infrastructure Planning website; and
 - European Marine Observation and Data Network (EMODnet) data.

12.3.2 Industries Screened out of CIA

9. The types of plans and projects taking place within the study area, and therefore initially considered, include:
 - Other offshore windfarms;
 - Other renewables developments;
 - Aggregate extraction and dredging;
 - Licenced disposal sites;
 - Shipping and navigation;

- Planned construction sub-sea cables and pipelines;
- Oil and gas installations;
- Oil and gas seismic surveys;
- Commercial fisheries; and
- Unexploded Ordnance (UXO) clearance.

10. However, some of these industries were screened out of further consideration; further information on which is included below. For those industries taken forward for screening, information on each relevant project is provided in the following sections.

12.3.2.1 Aggregate Extraction and Dredging

11. For aggregate extraction and dredging projects, all known projects are considered to be Tier 1 (being operational), and therefore are considered to be part of the baseline. In addition, as stated within the Review of Consents (RoC) Habitats Regulation Assessment (HRA) for the Southern North Sea (SNS) Special Area of Conservation (SAC), it is not possible to undertake an assessment of the potential impacts of aggregates and dredging as the required information is not available (Business for Environment and Industrial Strategy (BEIS), 2020). Therefore, aggregate extraction and dredging projects are not considered further.

12.3.2.2 Licenced Disposal Sites

12. For licenced disposal sites, all known projects are considered to be Tier 1 (being operational), and therefore are considered to be part of the baseline. Therefore, disposal sites are not considered further.

12.3.2.3 Shipping and Navigation

13. Shipping and navigation is considered to part of the baseline environment, and therefore are not considered further.

12.3.2.4 Planned Construction Sub-Sea Cables and Pipelines

14. The underwater noise that could be generated during the seabed preparation, ploughing / jetting / pre-trenching or cutting for installation of cables / pipelines, rock dumping for protection of the cable / pipelines, and installation vessels, would be restricted to the area of installation and temporary (as indicated in **Section 12.6.1.5 of Chapter 12 Marine Mammals**). In addition, the sound sources of trenching for cables and pipeline installation is less than 183.5dB re 1 μ Pa (RMS SPL), less than the noise level required for the onset of Permanent Threshold Shift (PTS) in all marine mammal species groups, with the exception of very high frequency cetaceans (harbour porpoise *Phocoena phocoena*). However, underwater noise modelling of the potential for impact from trenching on harbour porpoise has shown that there is no potential for PTS (MORL, 2012; Nedwell *et al.*, 2003, Nedwell *et al.*, 2012, NBDL, 2014). Based on this, the Southern North Sea SAC RoC HRA concluded that there would be no potential for significant effect on harbour porpoise (BEIS, 2020). Therefore, sub-sea cables and pipelines are not considered further within this CIA screening.

12.3.2.5 Oil and Gas Installations

15. Oil and gas installation projects have the potential for cumulative impacts; however, all currently known projects are considered to be fully commissioned (Tier 1) and therefore part of the baseline environment. In addition, the Southern North Sea SAC RoC HRA (BEIS, 2020) concluded that, due to the relatively low level of noise associated with oil and gas well installation (drilling), that the noise levels associated with rig installation are below the noise level that can cause the onset of PTS or Temporary Threshold Shift (TTS) in any marine mammal species (with a reported sound level of 148 re 1µPa (RMS); Bach et al., 2010), and that bottlenose dolphin have been recorded close to platforms (Sorensen et al., 1984), with no reduction in harbour porpoise activity near to a platform where drilling was being undertaken (Todd et al., 2007; Todd et al., 2009; Bach et al., 2010), there would be no potential for effect from oil and gas drilling activities alongside offshore wind farm construction (BEIS, 2020). Therefore, oil and gas installations are not considered further in this CIA screening.
16. Note that seismic surveys undertaken within the oil and gas industry are considered separately to the installation of offshore infrastructure and have been screened in for assessment. See **Section 12.7.3.2.2 of Chapter 12 Marine Mammals** for more information.

12.3.2.6 Commercial Fisheries

17. As set out within the Marine Mammal Method Statement, commercial fisheries will not be considered further within the CIA, as it is an ongoing activity that is considered to part of the baseline environment.
18. Commercial fisheries within the North Sea and underwater noise associated with fishing vessels, have the potential to cause a cumulative impact on marine mammals, through both the direct impact of by-catch and the indirect impact through the loss of marine mammal prey species (from commercial fisheries) and the disturbance from underwater noise (from vessel presence).
19. By-catch as a result of commercial fisheries is recognised as a historic and continuing cause of harbour porpoise mortality in the southern North Sea and will therefore be a factor in shaping the size of the current North Sea MU population. The available prey resource for harbour porpoise has also been influenced by historic and continuing commercial fishing. Noise from vessels are also considered to be part of the baseline conditions.
20. This approach is in accordance with the Planning Inspectorate (2019) Advice Note 17 Cumulative Effects Assessment, which states that:
- “Where other projects are expected to be completed before construction of the proposed NSIP and the effects of those projects are fully determined, effects arising from them should be considered as part of the baseline”.*
21. The potential for cumulative impacts associated with commercial fisheries within the SNS SAC site has been considered in the recent RoC HRA (BEIS, 2020). With regard to effects to habitats, the RoC HRA states:
- “18.120 There have been no quantified assessments undertaken on the extent impacts from commercial fishing may have within the SAC and therefore information to inform this assessment is not available.”*

18.122 Without knowing the extent of impact on the seabed arising from the fishing industry ...it is not possible to undertake an in-combination assessment that addresses all the potential impacts on the habitats within the SAC.”

22. With regard to direct effects on harbour porpoise, the RoC HRA (BEIS, 2020) also states that:

“18.203 Commercial fishing has occurred within the SAC for many years and has had, and will continue to have, direct and indirect impacts on harbour porpoise, their habitat and prey within the SAC. As the conservation status of harbour porpoise in UK waters and the SAC is considered favourable (JNCC, 2019; JNCC and Natural England, 2019) current and historical levels of fishing in the SAC are not considered to have affected the conservation status of the species.

18.210 There are no known plans to suggest that the level of fishing within the SAC will significantly increase over the period the consented wind farms are planned to be constructed, such that, it is predicted that the current level of impacts from fishing on harbour porpoise within the SAC will not increase.”

23. Natural England’s Deadline 4 Response to the Examining Authority’s Further Written Questions and Requests for information for Hornsea Project 3 (15th January 2019) (page 46, Q 2.2.73) was that:

“Where there is ongoing fishing activity in the site, it is important that the impacts of the activity are captured within the assessment in the context of the conservation objectives of the affected designated site(s). This assessment will likely take place as part of the baseline characterisation of the development area, however, as fishing activity is mobile, variable and subject to change, there may be instances whereby fishing impacts are not adequately captured in the baseline characterisation and therefore may need to be considered as part of the in-combination assessment. This could be due to a change in effort; change in management; or a change in legislation amongst other things, and fishery managers (i.e. Marine Management Organisation (MMO)) would be best placed to advise on this.

In relation to the assessment of impacts on the SNS SAC, Natural England..... are not currently aware of anything that would have significantly altered the levels of fishing activity within the site; any current plans for new fisheries, or changes to existing fisheries that have not been captured, but we would look to fisheries managers to advise more definitively on these points.”

24. This, along with the RoC HRA, suggests that by-catch has not affected a population considered to be in Favourable Conservation Status (FCS), whilst Natural England acknowledge that there is currently no evidence to suggest that the current levels of fishing would significantly alter in the future.

25. Therefore, the potential impacts from commercial fishing (including by-catch and loss of prey species) and from the underwater noise associated with vessels are considered to be a part of the environmental baseline for marine mammals of the North Sea, including for harbour porpoise, and are screened out of further assessment.

12.3.3 CIA Screening

12.3.3.1 Offshore Wind Farms

12.3.3.1.1 Operational Offshore Wind Farms

26. The noise levels associated with the operation of offshore wind farms is relatively low, with recorded levels of between 141 and 146dB re 1 μ Pa-m (RMS SPL) at four UK offshore wind farms (MMO, 2015; Cheesman *et al.*, 2016), and levels of 106 and 126dB re 1 μ Pa-m (RMS SPL) at three operational wind farms in Sweden and Denmark, which could not be audible for harbour porpoise at a distance of 70m from the wind turbine location (Tougaard *et al.*, 2009). It has also been predicted that within a few hundred metres of a wind turbine generator, noise would be comparable to background noise levels (MMO, 2014). Due to the low noise levels associated with the operation of offshore wind farms, the Southern North Sea SAC RoC HRA concluded that there would no potential for significant impact from the operation of offshore wind farms, alongside the construction of offshore wind farms (BEIS, 2020).
27. Therefore, the operation of offshore wind farms are not considered further within this CIA screening.

12.3.3.1.2 Construction of Other Offshore Wind Farms

28. Annex 1 lists all the United Kingdom (UK) and European offshore wind farm projects (within the relevant species' MUs) considered in the CIA screening, categorised as Tier 1-5.

UK offshore wind farms

29. UK based projects listed in Tiers 1-4 were considered for potential construction cumulative impacts, if those phases could overlap with the proposed construction, operation and maintenance, and decommissioning of DEP and SEP, and sufficient information and certainty in project programmes allowed for a meaningful assessment. In addition, Tier 5 projects for which the applications are currently in preparation have also been considered.
30. Where possible, known dates of offshore wind farm construction are used to assess whether there is the potential for construction periods to overlap with DEP and SEP. Where construction dates of other offshore wind farms are no known, as a precautionary approach and to allow for any delays and changes in schedule, the potential for overlap with the proposed construction of DEP and SEP is based on a seven year window in which construction could commence (although most projects have a five year consent window). For UK Tier 4 projects (application submitted) the possible construction windows were based on the best available information. This approach represents the worst-case scenario for the CIA.
31. As a more realistic approach, a second assessment (indicative scenario) included currently consented (Tier 3) UK offshore wind farm developments that could be piling at the same time as DEP and SEP, based on best available information on when the developments are likely to be constructing and piling. This indicative scenario could change as projects develop, but is the best available information at the time of writing, and more accurately reflects the limitations and constraints to project delivery (see **Section 12.7 of Chapter 12 Marine Mammal Ecology**).

32. This screening process resulted in a list of 57 and 52 UK offshore wind farms within the harbour porpoise and bottlenose dolphin *Tursiops truncatus* MUs respectively, with the potential for construction, operation and decommissioning phase overlaps. Of these, up to 20 and 19 are within the harbour porpoise and bottlenose dolphin MUs, respectively, and have the potential for construction to overlap with the proposed construction of DEP and SEP (this includes four projects with unknown construction windows). Operational wind farms were considered part of the baseline if they were operational at the time of the start of the DEP and SEP site specific surveys (May 2018), with 20 and 19 (for harbour porpoise and bottlenose dolphin respectively) Tier 1 projects being screened out on this basis. A total of 37 and 33 offshore wind farms currently classed as Tier 1-5 (for harbour porpoise and bottlenose dolphin respectively) have the potential for overlapping operational phases, however, as noted above, operational wind farms are not considered further within this CIA. All projects have the potential for decommissioning to overlap with the operation and maintenance or decommissioning of DEP and SEP, and therefore have the potential for cumulative impacts for harbour porpoise and bottlenose dolphin.
33. For white-beaked dolphin and minke whale, a total of 75 UK offshore wind farms are within the relevant MU, with the potential for construction, operation and decommissioning phase overlaps. Of these 75 projects, up to 25 have the potential for construction to overlap with the proposed construction of DEP and SEP (this includes seven projects with unknown construction windows). A total of 32 Tier 1 projects were screened out as they became operational prior to the commencement of the DEP and SEP baseline surveys. A total of 43 offshore wind farms currently classed as Tier 1-5 have the potential for overlapping operational phases, however, as noted above, operational wind farms are not considered further within this CIA. All 75 projects have the potential for decommissioning to overlap with the operation and maintenance or decommissioning of DEP and SEP, and therefore have the potential for cumulative impacts for both white-beaked dolphin and minke whale.
34. For grey seal and harbour seal, 37 and 35 projects respectively have been screened in, with the potential of construction cumulative impacts for 11 projects (two of which have an unknown construction window) screened in for both seal species; operation and maintenance cumulative impacts for 19 and 18 projects for grey seal and harbour seal respectively (taking into account the time projects became operational in relation to the DEP and SEP baseline surveys); and decommissioning cumulative impacts for all projects.
35. The results of this initial screening are presented in [Table 12-1](#).

Table 12-1: Results of the Initial CIA Screening for UK Offshore Windfarm Projects: UK Offshore Windfarms (Status at Time of Writing) Within the MUs with the Potential to Overlap with the DEP and SEP Construction, Operation or Decommissioning Phases [HP = harbour porpoise, BND = bottlenose dolphin, WBD = white-beaked dolphin, MW = minke whale, GS = grey seal, HS = harbour seal, Y = Yes, N = No]

Project	Tier	Country	Time of Consent	Phase of Project Considered in CIA				Spatial Area Screened in for				
				Construction phase	Potential for construction phase overlap?	Operation	Potential for operation phase overlap?	HP MU	BND MU	MW & WBD MU	GS MU	HS MU
Other offshore wind farms that are currently fully operational												
Barrow	1	UK	2003	2005-2006	N	2006	N ¹	N	N	Y	N	N
Beatrice	1	UK	2014	2017-2019	N	May-19	Y	Y	N	Y	N	N
Blyth Offshore Demonstrator Project - Array 2	1	UK	2013	2017-2018	N	Jun-18	Y	Y	Y	Y	Y	Y
Burbo Bank	1	UK	2003	2006-2007	N	2007	N ¹	N	N	Y	N	N
Burbo Bank Extension	1	UK	2014	2016-2017	N	2017	N ¹	N	N	Y	N	N
Dudgeon	1	UK	2012	2016-2017	N	2017	N ¹	Y	Y	Y	Y	Y
East Anglia ONE	1	UK	2014	2018-2020	N	Jul-20	Y	Y	Y	Y	Y	Y
EOWDC	1	UK	2014	2017-2018	N	Jul-18	Y	Y	N	Y	N	N
Galloper	1	UK	2013	2016-2018	N	Apr-18	N ¹	Y	Y	Y	Y	Y

Project	Tier	Country	Time of Consent	Phase of Project Considered in CIA				Spatial Area Screened in for				
				Construction phase	Potential for construction phase overlap?	Operation	Potential for operation phase overlap?	HP MU	BND MU	MW & WBD MU	GS MU	HS MU
Greater Gabbard	1	UK	2002	2008-2009	N	2009	N ¹	Y	Y	Y	Y	Y
Gunfleet Sands 3 (Demo Zone)	1	UK	2012	2012-2013	N	2013	N ¹	Y	Y	Y	Y	Y
Gunfleet Sands I	1	UK	2004	2008-2010	N	2010	N ¹	Y	Y	Y	Y	Y
Gwynt y Mor	1	UK	2008	2012-2015	N	2015	N ¹	N	N	Y	N	N
Hornsea Project One	1	UK	2014	2017-2021	N	Dec-19	Y	Y	Y	Y	Y	Y
Humber Gateway	1	UK	2011	2013-2015	N	2015	N ¹	Y	Y	Y	Y	Y
Hywind Scotland Pilot Park	1	UK	2015	2016-2017	N	2017	N ¹	Y	Y	Y	N	N
Inner Dowsing	1	UK	2003	2007-2009	N	2009	N ¹	Y	Y	Y	Y	Y
Kentish Flats	1	UK	2003	2004-2005	N	2005	N ¹	Y	Y	Y	Y	Y
Kentish Flats Extension	1	UK	2013	2014-2015	N	2015	N ¹	Y	Y	Y	Y	Y

Project	Tier	Country	Time of Consent	Phase of Project Considered in CIA				Spatial Area Screened in for				
				Construction phase	Potential for construction phase overlap?	Operation	Potential for operation phase overlap?	HP MU	BND MU	MW & WBD MU	GS MU	HS MU
Levenmouth (Demo)	1	UK	2013	2013	N	2013	N ¹	Y	N	Y	N	N
Lincs	1	UK	2008	2011-2013	N	2013	N ¹	Y	Y	Y	Y	Y
London Array	1	UK	2006	2011-2013	N	2013	N ¹	Y	Y	Y	Y	Y
Lynn	1	UK	2003	2007-2008	N	2008	N ¹	Y	Y	Y	Y	Y
North Hoyle	1	UK	2002	2003-2004	N	2004	N ¹	N	N	Y	N	N
Ormonde	1	UK	2007	2010-2011	N	2011	N ¹	N	N	Y	N	N
Race Bank	1	UK	2012	2016-2017	N	2017	N ¹	Y	Y	Y	Y	Y
Rampion Wind Farm	1	UK	2014	2015-2018	N	Nov-18	Y	Y	Y	Y	N	N
Rhyl Flats	1	UK	2002	2008-2009	N	2009	N ¹	N	N	Y	N	N
Robin Rigg East	1	UK	2006	2007-2009	N	2009	N ¹	N	N	Y	N	N
Robin Rigg West	1	UK	2006	2007-2009	N	2009	N ¹	N	N	Y	N	N
Scroby Sands	1	UK	2002	2003-2004	N	2004	N ¹	Y	Y	Y	Y	Y
Sheringham Shoal	1	UK	2008	2009-2012	N	2012	N ¹	Y	Y	Y	Y	Y

Project	Tier	Country	Time of Consent	Phase of Project Considered in CIA				Spatial Area Screened in for				
				Construction phase	Potential for construction phase overlap?	Operation	Potential for operation phase overlap?	HP MU	BND MU	MW & WBD MU	GS MU	HS MU
Teesside	1	UK	2007	2012-2013	N	2013	N ¹	Y	Y	Y	Y	N
Thanet	1	UK	2006	2009-2010	N	2010	N ¹	Y	Y	Y	Y	Y
Walney Extension	1	UK	2014	2016-2018	N	Sep-18	Y	N	N	Y	N	N
Walney Phase 1	1	UK	2007	2010-2011	N	2011	N ¹	N	N	Y	N	N
Walney Phase 2	1	UK	2007	2011	N	2011	N ¹	N	N	Y	N	N
West of Duddon Sands	1	UK	2008	2013-2014	N	2014	N ¹	N	N	Y	N	N
Westermost Rough	1	UK	2011	2013-2014	N	2014	N ¹	Y	Y	Y	Y	Y
Other offshore wind farms that are currently under construction												
Hornsea Project Two	2	UK	2016	2020-2022	N	2022	Y	Y	Y	Y	Y	Y
Kincardine - Phase 2	2	UK	2017	2020-2021	N	2021	Y	Y	Y	Y	N	N
Moray East	2	UK	2014	2019-2022	N	2022	Y	Y	Y	Y	N	N

Project	Tier	Country	Time of Consent	Phase of Project Considered in CIA				Spatial Area Screened in for				
				Construction phase	Potential for construction phase overlap?	Operation	Potential for operation phase overlap?	HP MU	BND MU	MW & WBD MU	GS MU	HS MU
Near na Gaoithe	2	UK	2014 & 2019	2019-2022	N	2022	Y	Y	Y	N	N	
Triton Knoll phase 1-3	2	UK	2013	2019-2022	N	2022	Y	Y	Y	Y	Y	
Other offshore wind farms that are consented												
Blyth Offshore Demonstrator Project - Array 3 & 4	3	UK	2013	On hold	N	Unknown	Y	Y	Y	Y	N	
Dogger Bank A	3	UK	2015	2022-2023	N	2023	Y	Y	Y	Y	Y	
Dogger Bank B	3	UK	2015	2023-2024	N	2024	Y	Y	Y	Y	Y	
Dogger Bank C	3	UK	2015	2024-2025	Y	2025	Y	Y	Y	Y	Y	
East Anglia THREE	3	UK	2017	2023-2026	Y	2026	Y	Y	Y	Y	Y	
ForthWind Demo Phase 1	3	UK	2016	2023 - Unknown	Y	Unknown	Y	N	Y	N	N	
Hornsea Project Three	3	UK	2020	2022-2025	Y	2025	Y	Y	Y	Y	Y	
Inch Cape	3	UK	2014	2021-2023	N	2023	Y	Y	Y	N	N	

Project	Tier	Country	Time of Consent	Phase of Project Considered in CIA				Spatial Area Screened in for				
				Construction phase	Potential for construction phase overlap?	Operation	Potential for operation phase overlap?	HP MU	BND MU	MW & WBD MU	GS MU	HS MU
Kincardine - DOLPHYN demo	3	UK	Unknown	Unknown	Y	2023	Y	Y	Y	Y	N	N
Moray West	3	UK	2014	2022-2025	Y	2025	Y	Y	Y	Y	N	N
Norfolk Vanguard	3	UK	2019	2025 - Unknown	Y	Unknown	Y	Y	Y	Y	Y	Y
Seagreen Phase One - Alpha Bravo	3	UK	2019	2021-2023	N	Nov-23	Y	Y	Y	Y	N	N
Sofia (formerly Dogger Bank Teesside B)	3	UK	2015	2023 - Unknown	Y	2026	Y	Y	Y	Y	Y	Y
Other offshore wind farms that have submitted planning applications, but are not yet consented												
East Anglia ONE North	4	UK	2020	2023-2026	Y	2026	Y	Y	Y	Y	Y	Y
East Anglia TWO	4	UK	2020	2023-2026	Y	2026	Y	Y	Y	Y	Y	Y
Norfolk Boreas	4	UK	2020	2025-2029	Y	2029	Y	Y	Y	Y	Y	Y
Wave Hub	4	UK	2020	2021 - Unknown	Y	Unknown	Y	N	N	Y	N	N

Project	Tier	Country	Time of Consent	Phase of Project Considered in CIA				Spatial Area Screened in for				
				Construction phase	Potential for construction phase overlap?	Operation	Potential for operation phase overlap?	HP MU	BND MU	MW & WBD MU	GS MU	HS MU
Other offshore wind farms that are currently in the process of drafting planning applications, or are in the early development stage												
Awel y Mor	5	UK	2023	2026-2028	Y	2028	Y	N	N	Y	N	N
Berwick Bank (Seagreen Charlie Delta Echo)	5	UK	2022	2025-2027	Y	2027	Y	Y	Y	Y	N	N
Dolphyn Project - commercial	5	UK	Unknown	2030-2034	Y	2034	Y	Y	Y	Y	N	N
Dolphyn Project - pre-commercial	5	UK	Unknown	2027-2030	Y	2030	Y	Y	Y	Y	N	N
<i>Dudgeon Extension</i>	5	UK	-	-	-	-	-	Y	Y	Y	Y	Y
Erebus (Commercial)	5	UK	Unknown	2030 - Unknown	Y	Unknown	Y	N	N	Y	N	N
Erebus (Demonstration)	5	UK	Unknown	2026 - Unknown	Y	Unknown	Y	N	N	Y	N	N
Five Estuaries	5	UK	2025	Unknown	Y	Unknown	Y	Y	Y	Y	Y	Y

Project	Tier	Country	Time of Consent	Phase of Project Considered in CIA				Spatial Area Screened in for				
				Construction phase	Potential for construction phase overlap?	Operation	Potential for operation phase overlap?	HP MU	BND MU	MW & WBD MU	GS MU	HS MU
ForthWind Demo Phase 2	5	UK	Unknown	Unknown	N	Unknown	Y	Y	N	Y	N	N
Hornsea Project Four	5	UK	2022	2025-2028	Y	2028	Y	Y	Y	Y	Y	Y
Marr Bank (Seagreen Foxtrot Golf)	5	UK	2022	2025-2028	Y	2028	Y	Y	Y	Y	N	N
North Falls	5	UK	2024	Unknown	Y	Unknown	Y	Y	Y	Y	Y	Y
Pentland	5	UK	2021	Unknown	Y	Unknown	Y	Y	Y	Y	N	N
Rampion Extension	5	UK	2023	2025-2028	Y	Jan-28	Y	Y	Y	Y	N	N
<i>Sheringham Shoal Extension</i>	5	<i>UK</i>	<i>2022</i>	-	-	-	-	Y	Y	Y	Y	Y
Valorous	5	UK	Unknown	2028-Unknown	Y	Unknown	Y	N	N	Y	N	N

¹Operational prior to DEP and SEP baseline surveys commencing

European Offshore Windfarms

36. European projects (**Table 12-2**) listed in Tier 1-4 were considered for the CIA. Where possible, known dates of offshore wind farm construction are used to assess whether there is the potential for construction periods to overlap with DEP and SEP. The screening for the construction of the European offshore wind farm Tier 3 projects was based on the seven year window in which construction could occur (e.g. from date of consent for Tier 3 projects). If there was no information or any uncertainty, the projects were initially screened in as a precautionary approach.
37. This screening process resulted in a list of 70 and 73 European offshore wind farms within the harbour porpoise and bottlenose dolphin MUs respectively, with the potential for construction, operation and decommissioning phase overlaps. Of these, up to eight and nine are within the harbour porpoise and bottlenose dolphin MUs, respectively, and have the potential for construction to overlap with the proposed construction of DEP and SEP (this includes one project with an unknown construction window). As for UK offshore wind farms, operational wind farms were considered part of the baseline if they were operational at the time of the start of the DEP and SEP site specific surveys (May 2018), with 38 and 42 (for harbour porpoise and bottlenose dolphin respectively) Tier 1 projects being screened out on this basis. A total of 32 and 31 offshore wind farms currently classed as Tier 1-4 (for harbour porpoise and bottlenose dolphin respectively) have the potential for overlapping operational phases, however, as noted above, operational wind farms are not considered further within this CIA. All projects have the potential for decommissioning to overlap with the operation and maintenance or decommissioning of DEP and SEP, and therefore have the potential for cumulative impacts for harbour porpoise and bottlenose dolphin.
38. For white-beaked dolphin and minke whale, a total of 80 European offshore wind farms are within the relevant MU, with the potential for construction, operation and decommissioning phase overlaps. Of these 80 projects, up to ten have the potential for construction to overlap with the proposed construction of DEP and SEP (this includes one project with an unknown construction window). A total of 44 Tier 1 projects were screened out as they became operational prior to the commencement of the DEP and SEP baseline surveys. A total of 36 offshore wind farms currently classed as Tier 1-4 have the potential for overlapping operational phases, however, as noted above, operational wind farms are not considered further within this CIA. All 80 projects have the potential for decommissioning to overlap with the operation and maintenance or decommissioning of DEP and SEP, and therefore have the potential for cumulative impacts for both white-beaked dolphin and minke whale.
39. For grey seal and harbour seal, six projects have been screened in, however, none have the potential for cumulative impacts during their construction phase. For operation and maintenance, there is the potential for cumulative impacts from three projects for both grey seal and harbour seal (taking into account the time projects became operational in relation to the DEP and SEP baseline surveys); and there is the potential for decommissioning cumulative impacts for all projects.

*The results of the screening are presented in **Table 12-2***

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Table 12-2: Results of the Initial CIA Screening for European Offshore Windfarm Projects: European Offshore Windfarms (Status at Time of Writing) Within the MUs with the Potential to Overlap with the DEP and SEP Construction, Operation or Decommissioning Phases [HP = harbour porpoise, BND = bottlenose dolphin, WBD = white-beaked dolphin, MW = minke whale, GS = grey seal, HS = harbour seal, Y = Yes, N = No]

Project	Tier	Country	Time of Consent	Phase of Project Considered in CIA				Spatial Area Screened in for				
				Construction phase	Potential for construction phase overlap?	Operation	Potential for operation phase overlap?	HP MU	BD MU	MW & WBD MU	GS MU	HS MU
Other offshore windfarms that are currently fully operational												
Belwind	1	Belgium	2008	2009-2010	N	2010	N ¹	Y	Y	Y	N	N
Belwind Alstom Haliade Demonstration	1	Belgium	Unknown	2013-2014	N	2014	N ¹	Y	Y	Y	N	N
Nobelwind	1	Belgium	2008	2016-2017	N	2017	N ¹	Y	Y	Y	N	N
Norther	1	Belgium	2012	2018-2019	N	Jun-19	Y	Y	Y	Y	Y	Y
Northwester 2	1	Belgium	2015	2019-2020	N	May-20	Y	Y	Y	Y	Y	Y
Northwind	1	Belgium	2009	2013-2014	N	2014	N ¹	Y	Y	Y	N	N
RENTEL	1	Belgium	2013	2017-2018	N	Dec-18	Y	Y	Y	Y	N	N
Seamade (Mermaid)	1	Belgium	2015	2017-2020	N	Dec-20	Y	Y	Y	Y	N	N
Seamade (SeaStar)	1	Belgium	2014	Unknown	N	Dec-20	Y	Y	Y	Y	N	N

Project	Tier	Country	Time of Consent	Phase of Project Considered in CIA				Spatial Area Screened in for				
				Construction phase	Potential for construction phase overlap?	Operation	Potential for operation phase overlap?	HP MU	BD MU	MW & WBD MU	GS MU	HS MU
Thornton Bank phase I	1	Belgium	2004	2008-2009	N	2009	N ¹	Y	Y	Y	N	N
Thornton Bank phase II	1	Belgium	2004	2010-2013	N	2013	N ¹	Y	Y	Y	N	N
Thornton Bank phase III	1	Belgium	2004	2011-2013	N	2013	N ¹	Y	Y	Y	N	N
Anholt	1	Denmark	2010	2011-2013	N	2013	N ¹	N	Y	Y	N	N
Frederikshavn	1	Denmark	2001	2002-2003	N	2003	N ¹	N	Y	Y	N	N
Horns Rev 1	1	Denmark	2001	2002	N	2002	N ¹	Y	Y	Y	Y	Y
Horns Rev 2	1	Denmark	2007	2008-2010	N	2010	N ¹	Y	Y	Y	N	N
Horns Rev 3	1	Denmark	2015	2018-2019	N	Aug-19	Y	Y	Y	Y	N	N
Nissum Bredning Vind	1	Denmark	2017	2017-2018	N	Mar-18	N ¹	Y	Y	Y	N	N
Rønland (Nissum Bredning)	1	Denmark	2009	2013-2014	N	2014	N ¹	Y	Y	Y	N	N
Samsø	1	Denmark	2001	2002-2003	N	2003	N ¹	N	Y	Y	N	N
Tunø Knob	1	Denmark	1994	1995	N	1995	N ¹	N	Y	Y	N	N

Project	Tier	Country	Time of Consent	Phase of Project Considered in CIA				Spatial Area Screened in for				
				Construction phase	Potential for construction phase overlap?	Operation	Potential for operation phase overlap?	HP MU	BD MU	MW & WBD MU	GS MU	HS MU
Alpha Ventus	1	Germany	2001	2008-2010	N	2010	N ¹	Y	Y	Y	N	N
Amrumbank West	1	Germany	2004	2013-2015	N	2015	N ¹	Y	Y	Y	N	N
BARD Offshore 1	1	Germany	2007	2010-2013	N	2013	N ¹	Y	Y	Y	N	N
Borkum Riffgrund I	1	Germany	2001	2008-2010	N	2010	N ¹	Y	Y	Y	N	N
Borkum Riffgrund II	1	Germany	2011	2017-2019	N	Dec-18	Y	Y	Y	Y	N	N
Butendiek (Offshore- Bürgerwindpark)	1	Germany	2002	2014-2015	N	2015	N ¹	Y	Y	Y	N	N
Dan Tysk	1	Germany	2005	2013-2015	N	2015	N ¹	Y	Y	Y	N	N
Deutsche Bucht	1	Germany	2010	2018-2019	N	Sep-19	Y	Y	Y	Y	N	N
ENOVA Ems Emden	1	Germany	2003	2004	N	2004	N ¹	Y	Y	Y	N	N
Global Tech I	1	Germany	2006	2012-2015	N	2015	N ¹	Y	Y	Y	N	N
Gode Wind 1 and 2	1	Germany	2009	2015-2017	N	2017	N ¹	Y	Y	Y	N	N

Project	Tier	Country	Time of Consent	Phase of Project Considered in CIA				Spatial Area Screened in for				
				Construction phase	Potential for construction phase overlap?	Operation	Potential for operation phase overlap?	HP MU	BD MU	MW & WBD MU	GS MU	HS MU
Hohe See	1	Germany	2010	Unknown	N	Nov-19	Y	Y	Y	Y	N	N
Meerwind Ost Sud	1	Germany	2007	2012-2014	N	2014	N ¹	Y	Y	Y	N	N
Merkur	1	Germany	2009	2017-??	N	Jun-19	Y	Y	Y	Y	N	N
Nordergrunde	1	Germany	2008	2016-2017	N	2017	N ¹	Y	Y	Y	Y	Y
Nordsee One (Innogy Nordsee I)	1	Germany	2012	2015-2017	N	2017	N ¹	Y	Y	Y	N	N
Nordsee Ost	1	Germany	2004	2012-2015	N	2015	N ¹	Y	Y	Y	N	N
OWP Albatros Phase 1	1	Germany	2015	2018 - Unknown	N	Jan-20	Y	Y	Y	Y	N	N
Riffgat	1	Germany	2010	2012-2014	N	2014	N ¹	Y	Y	Y	Y	Y
Sandbank	1	Germany	2004	2015-2017	N	2017	N ¹	Y	Y	Y	N	N
Trianel Windpark Borkum Phase 1 (Borkum West II phase 1)	1	Germany	2008	2011-2015	N	2015	N ¹	Y	Y	Y	N	N

Project	Tier	Country	Time of Consent	Phase of Project Considered in CIA				Spatial Area Screened in for				
				Construction phase	Potential for construction phase overlap?	Operation	Potential for operation phase overlap?	HP MU	BD MU	MW & WBD MU	GS MU	HS MU
Trianel Windpark Borkum Phase 2 (aka Borkum West II phase 2)	1	Germany	2007	2017-2020	N	Jul-20	Y	Y	Y	Y	N	N
Veja Mate	1	Germany	2009	2016-2017	N	2017	N ¹	Y	Y	Y	N	N
Arklow Bank Phase 1	1	Ireland	2002	2003-2004	N	2004	N ¹	N	N	Y	N	N
Galway Bay	1	Ireland	Unknown	Unknown	N	2006	N ¹	N	N	Y	N	N
Borssele I and II	1	Netherlands	2016	2019-2020	N	Oct-20	Y	Y	Y	Y	N	N
Borssele III and IV	1	Netherlands	2016	2019-2021	N	Jan-21	Y	Y	Y	Y	N	N
Egmond aan Zee (aka OWEZ)	1	Netherlands	2005	2006-2007	N	2007	N ¹	Y	Y	Y	N	N
Eneco Luchterduinen	1	Netherlands	2012	2014-2015	N	2015	N ¹	Y	Y	Y	N	N
Gemini ZeeEnergie	1	Netherlands	2009	2015-2017	N	Apr-17	N ¹	Y	Y	Y	N	N
Irene Vorrink	1	Netherlands	Unknown	1996	N	1996	N ¹	Y	Y	Y	N	N

Project	Tier	Country	Time of Consent	Phase of Project Considered in CIA				Spatial Area Screened in for				
				Construction phase	Potential for construction phase overlap?	Operation	Potential for operation phase overlap?	HP MU	BD MU	MW & WBD MU	GS MU	HS MU
Prinses Amalia Windpark (formerly Q7)	1	Netherlands	2002	2006-2007	N	2008	N ¹	Y	Y	Y	N	N
Westerveerwind	1	Netherlands	2012	2015-2016	N	Jun-16	N ¹	Y	Y	Y	N	N
Karmøy - Marine Energy Test Centre (Metcentre) - Fixed	1	Norway	2010	Unknown	N	Unknown	N ¹	Y	Y	Y	N	N
Karmøy - Marine Energy Test Centre (Metcentre) - Floating	1	Norway	2010	Unknown	N	Unknown	N ¹	Y	Y	Y	N	N
UNITECH Zefryos by Hywind Technology (Karmoy / Hywind)	1	Norway	2006	2009	N	2012	N ¹	Y	Y	Y	N	N
SeaTwirl S1	1	Sweden	2015	2015	N	2015	N ¹	Y	Y	Y	N	N
Other offshore wind farms that are currently under construction												

Project	Tier	Country	Time of Consent	Phase of Project Considered in CIA				Spatial Area Screened in for				
				Construction phase	Potential for construction phase overlap?	Operation	Potential for operation phase overlap?	HP MU	BD MU	MW & WBD MU	GS MU	HS MU
Borssele Site V - Leeghwater - Innovation Plot	2	Netherlands	2016	2020 - Unknown	Y	Unknown	Y	Y	Y	N	N	
Windpark Fryslân	2	Netherlands	2018	2020-2021	N	Jun-21	Y	Y	Y	Y	Y	
Other offshore wind farms that are consented												
Vesterhav Nord/Syd	3	Denmark	Unknown	2022-2023	N	2023	Y	Y	Y	N	N	
Eoliennes du Calvados	3	France	2016	2023-2024	N	2024	Y	Y	N	Y	N	
Parc éolien en mer de Dieppe - Le Treport	3	France	2019	2022-2023	N	2023	Y	Y	N	Y	N	
Parc éolien en mer de Fécamp	3	France	2016	2022-2023	N	2023	Y	Y	N	Y	N	
Projet éolien en mer de la Baie se Saint-Brieuc	3	France	2017	2021-2023	N	2023	Y	N	N	Y	N	
Borkum Riffgrund III	3	Germany	2011	2024-2025	Y	2025	Y	Y	Y	N	N	

Project	Tier	Country	Time of Consent	Phase of Project Considered in CIA				Spatial Area Screened in for				
				Construction phase	Potential for construction phase overlap?	Operation	Potential for operation phase overlap?	HP MU	BD MU	MW & WBD MU	GS MU	HS MU
EnBW He Dreiht	3	Germany	2010	2024-2025	Y	2025	Y	Y	Y	N	N	
Gode Wind 03	3	Germany	2016	2023 - Unknown	Y	Unknown	Y	Y	Y	N	N	
Kaskasi	3	Germany	2018	2021 - Unknown	Y	Unknown	Y	Y	Y	N	N	
Atlantic Marine Energy Test Site	3	Ireland	2015	Unknown	Y	Unknown	Y	N	N	Y	N	N
Hollandse Kust Noord Holland I and II	3	Netherlands	Unknown	2022-2023	N	Dec-23	Y	Y	Y	N	N	
Hollandse Kust Zuid Holland I and II - Chinook	3	Netherlands	2018	2020-2022	N	Dec-22	Y	Y	Y	N	N	
Hollandse Kust Zuid Holland III and IV	3	Netherlands	Unknown	2021-Unknown	Y	Unknown	Y	Y	Y	N	N	
Hywind Tampen	3	Norway	Unknown	2022	N	Oct-22	Y	Y	Y	N	N	

Project	Tier	Country	Time of Consent	Phase of Project Considered in CIA				Spatial Area Screened in for				
				Construction phase	Potential for construction phase overlap?	Operation	Potential for operation phase overlap?	HP MU	BD MU	MW & WBD MU	GS MU	HS MU
Kvitsøy Wind Turbine Demonstration Area	3	Norway	2010	Unknown	N	Unknown	Y	Y	Y	N	N	
Rennesoy Marine Energy Test Centre (Metcentre)	3	Norway	2010	Unknown	N	Unknown	Y	Y	Y	N	N	
TetraSpar Demo - Metcentre	3	Norway	Unknown	2021-Unknown	Y	Unknown	Y	Y	Y	N	N	
Kattegatt Offshore	3	Sweden	2015	Unknown	Y	Unknown	Y	N	Y	Y	N	N
Sotenas Offshore Park	3	Sweden	Unknown	Unknown	Y	Unknown	Y	Y	Y	N	N	
Other offshore wind farms that have submitted planning applications, but are not yet consented												
Mejlflak	4	Denmark	Unknown	ON HOLD	N	Unknown	Y	N	Y	Y	N	N

¹Operational prior to DEP and SEP baseline surveys commencing

Additional Screening of other UK and European Offshore Windfarms

41. Following the initial screening of other UK and European offshore windfarms as set out above, an additional screening exercise was undertaken on those projects that have been identified as having the potential for cumulative construction impacts. This additional screening is based on known construction periods of other UK and European offshore windfarm projects, including known piling and /or construction timings, in order to determine a more realistic, but still worst-case, list of other UK and European offshore windfarm projects that may the potential for overlapping piling or construction windows with DEP and / or SEP (**Table 12-3**).
42. Within this additional screening, it is also assumed that, where offshore wind farm developers have more than one offshore wind farm, they are unlikely to develop more than one site at a time, and in these cases, there will be no overlap in the piling periods, unless further information is available (for example in the case of the East Anglia Hub).

Table 12-3: Offshore windfarms (UK and European) screened for any potential cumulative disturbance from piling activities. All details presented are based on the most up to date information for each project at the time of writing (HP = harbour porpoise, BND = bottlenose dolphin, MW = minke whale, WBD = white-beaked dolphin, GS = grey seal, HS = harbour seal).

Name of Project	Tier	Within marine mammal management unit?					Piling window	Overlap of piling DEP/SEP with piling of OWF	Dates of offshore construction	Overlap of construction of DEP/SEP with construction of OWF
		HP (NS MU)	BND (GNS MU)	MW & WBD (CGNS MU)	GS (NE & SE MU, & Waden-zee)	HS (SE MU & Waden-zee)				
UK Offshore Wind Farms										
Awel y Mor ²	5	No	No	Yes	No	No	Unknown	Yes	2026-2028	No ⁵
Berwick Bank (Seagreen Charlie Delta Echo) ²	5	Yes	Yes	Yes	No	No	Unknown	No ²	2025-2027	Yes
Dogger Bank C	3	Yes	Yes	Yes	Yes	Yes	2024-2025	Yes	2024-2025	No ⁵
Dolphyn Project – commercial ³	5	Yes	Yes	Yes	No	No	No piling	No ³	2030-2034	Yes
Dolphyn Project - pre-commercial ³	5	Yes	Yes	Yes	No	No	No piling	No ³	2027-2030	Yes
East Anglia ONE North ¹	4	Yes	Yes	Yes	Yes	Yes	2024-2025	Yes	2023-2026	No ⁵
East Anglia THREE ¹	3	Yes	Yes	Yes	Yes	Yes	2024-2025	No ²	2023-2026	Yes
East Anglia TWO ¹	4	Yes	Yes	Yes	Yes	Yes	2024-2025	Yes	2023-2026	No ⁵
Erebus (Commercial) ³	5	No	No	Yes	No	No	No piling	No ³	2030-??	Yes
Erebus (Demonstration) ³	5	No	No	Yes	No	No	No piling	No ³	2026-??	Yes
Five Estuaries ²	5	Yes	Yes	Yes	Yes	Yes	Unknown – consent	No ²	Unknown – consent	Yes

Name of Project	Tier	Within marine mammal management unit?					Piling window	Overlap of piling DEP/SEP with piling of OWF	Dates of offshore construction	Overlap of construction of DEP/SEP with construction of OWF
		HP (NS MU)	BND (GNS MU)	MW & WBD (CGNS MU)	GS (NE & SE MU, & Waden-zee)	HS (SE MU & Waden-zee)				
							expected 2025		expected 2025	
ForthWind Demo Phase 1	3	Yes	No	Yes	No	No	Unknown	Yes	2023-??	No ⁵
Hornsea Project Four ²	5	Yes	Yes	Yes	Yes	Yes	2025-2026	Yes	2025-2028	No ⁵
Hornsea Project Three ²	3	Yes	Yes	Yes	Yes	Yes	2022-2025	No ²	2022-2025	Yes
Kincardine - DOLPHYN demo ³	3	Yes	Yes	Yes	No	No	Unknown	No ³	Unknown	Yes
Marr Bank (Seagreen Foxtrot Golf) ²	5	Yes	Yes	Yes	No	No	Unknown	Yes	2025-2028	No ⁵
Moray West	3	Yes	Yes	Yes	No	No	2022-2023	No	2022-2025	Yes
Norfolk Boreas ²	4	Yes	Yes	Yes	Yes	Yes	2025-2029	Yes	2025-2029	No ⁵
Norfolk Vanguard ²	3	Yes	Yes	Yes	Yes	Yes	2024-2028	No ²	2025-??	Yes
North Falls	5	Yes	Yes	Yes	Yes	Yes	Unknown – consent expected 2024	Yes	Unknown – consent expected 2024	No ⁵
Pentland	5	Yes	Yes	Yes	No	No	No piling	No ³	Unknown	Yes

Name of Project	Tier	Within marine mammal management unit?					Piling window	Overlap of piling DEP/SEP with piling of OWF	Dates of offshore construction	Overlap of construction of DEP/SEP with construction of OWF
		HP (NS MU)	BND (GNS MU)	MW & WBD (CGNS MU)	GS (NE & SE MU, & Waden-zee)	HS (SE MU & Waden-zee)				
Rampion Extension ²	5	Yes	Yes	Yes	No	No	Unknown	No ²	2025-2028	Yes
Sofia (formerly Dogger Bank Teesside B)	3	Yes	Yes	Yes	Yes	Yes	2023	No	2023-??	Yes
Valorous ³	5	No	No	Yes	No	No	No piling	No ³	2028-??	Yes
Wave Hub ³	4	No	No	Yes	No	No	No piling	No ³	2021-??	Yes
Germany Offshore Wind Farms										
Borkum Riffgrund III	3	Yes	Yes	Yes	No	No	Unknown	Yes	2024-2025	No ⁵
EnBW He Dreiht	3	Yes	Yes	Yes	No	No	2024	No	2024-2025	Yes
Gode Wind 03	3	Yes	Yes	Yes	No	No	Unknown	Yes	2023-??	No ⁵
Kaskasi	3	Yes	Yes	Yes	No	No	2021	No	2021-??	Yes
Ireland Offshore Wind Farms										
Atlantic Marine Energy Test Site ³	3	No	No	Yes	No	No	Unknown	No ³	Unknown	Yes
Netherlands Offshore Wind Farms										
Borssele Site V - Leeghwater - Innovation Plot	2	Yes	Yes	Yes	No	No	2020	No	2020-??	Yes
Hollandse Kust Zuid Holland III and IV	3	Yes	Yes	Yes	No	No	2022	No	2021-??	Yes

Name of Project	Tier	Within marine mammal management unit?					Piling window	Overlap of piling DEP/SEP with piling of OWF	Dates of offshore construction	Overlap of construction of DEP/SEP with construction of OWF
		HP (NS MU)	BND (GNS MU)	MW & WBD (CGNS MU)	GS (NE & SE MU, & Waden-zee)	HS (SE MU & Waden-zee)				
Norway Offshore Wind Farms										
TetraSpar Demo - Metcentre ³	3	Yes	Yes	Yes	No	No	No piling	No ³	2021-??	Yes
Sweden Offshore Wind Farms										
Kattegatt Offshore	3	No	Yes	Yes	No	No	Unknown	Yes	Unknown	No ⁵
Sotenas Offshore Park ³	3	Yes	Yes	Yes	No	No	Unknown	No ³	Unknown	Yes

¹ Constructed at the same time, referred to as the East Anglia Hub. Assume that no more than two projects will be piled at the same time

²Where projects are have the same developer, it is assumed (unless further information is known), that only one will be piled at a time, and therefore additional projects with the same developer and similar construction windows are screened out of assessment of concurrent piling with DEP/SEP

³project is floating offshore wind farm, and therefore assume that there will be no piling activity

⁴project was consented in 2010, with no further information on potential for construction to commence, therefore assume that the project is on hold until further information is available

⁵project considered in assessment of projects that may be piling at the same time as DEP and SEP, and therefore not included within assessment of projects that may be undergoing construction at the same time

12.3.3.2 Other Marine Renewable Developments

43. Other marine renewable projects (e.g. wave and tidal) assessed in the CIA screening were Tier 1-5 for UK based projects, and Tier 1-3 for other European projects.
44. UK based projects listed in Tiers 1-4 were considered for potential construction, operation and maintenance and decommissioning cumulative impacts, if those phases could overlap with the proposed construction, operation and maintenance, and decommissioning of DEP and SEP and sufficient information was available to determine this. Where no information was known on the potential construction phases of the other renewable energy projects, it was assumed that all Tier 2 and 3 projects would have completed construction prior to the construction of DEP and SEP. It was also assumed that all Tier 1 renewable energy projects are considered to be part of the existing baseline environment. No European projects have been screened in (Tier 3 or above). The results of the screening are in [Table 12-4](#).
45. A total of 22 projects were considered for the harbour porpoise CIA, 11 of which could have the potential for construction to overlap with the proposed construction of DEP and SEP, and 17 have the potential for operational cumulative impacts.
46. For bottlenose dolphin, a total of 21 projects were considered for the CIA, 10 of which could have the potential for construction to overlap with the proposed construction of DEP and SEP, and 15 have the potential for operational cumulative impacts.
47. For both white-beaked dolphin and minke whale, a total of 57 projects were considered for the CIA, 31 of which could have the potential for construction to overlap with the proposed construction of DEP and SEP, and 46 have the potential for operational cumulative impacts.
48. No wave and tidal projects were screened into the CIA for grey seal or harbour seal.
49. Piling is highly unlikely to be used during the installation of wave and tidal projects. The installation of wave/tidal projects is typically using drilled pins or gravity bases. Percussive piling is not anticipated to be used as an installation method and therefore the noise impacts during construction will have a very limited impact range, especially compared to offshore wind farms.
50. The installation of wave or tidal developments is highly unlikely to contribute to the cumulative impacts of the disturbance of harbour porpoise, bottlenose dolphin, white-beaked dolphin and minke whale from underwater noise sources. In addition, all renewable energy projects are located at significant distance from both DEP and SEP, with the closest being located to the south of the Isle of Wight (approximately 425km from the closest point of DEP and SEP). Therefore, the potential for cumulative impact from renewable energy projects with DEP and SEP have not been included in the CIA.

51. Similarly, the operation and maintenance of wave and tidal projects are also highly unlikely to contribute to the cumulative impacts of the disturbance of harbour porpoise from underwater noise sources and therefore have not been included in the CIA.

Table 12-4: Results of Initial CIA Screening for Marine Renewable Projects: List of UK Projects (Status at Time of Writing) within the MUs with the Potential to Overlap with the Proposed DEP and SEP Project Construction, Operation or Decommissioning [HP = harbour porpoise, BND = bottlenose dolphin, WBD = white-beaked dolphin, MW = minke whale, GS = grey seal, HS = harbour seal, Y = Yes, N = No]

Project	Type	Tier	Phase of Project Considered in CIA		Spatial Area Screened in for				
			Construction	Operation	HP MU	BND MU	MW & WBD MU	GS MU	HS MU
Other offshore renewable projects that are currently fully operational									
Bluemell Sound	Tidal	1	N	N	Y	Y	Y	N	N
EMEC Magallanes 2	Tidal	1	N	N	Y	Y	Y	N	N
EMEC OpenHydro	Tidal	1	N	N	Y	N	Y	N	N
Fabtest Polygen	Wave	1	N	N	N	N	Y	N	N
Holyhead Deep Phase 1	Tidal	1	N	N	N	N	Y	N	N
MeyGen Pentland Firth Phase 1a	Tidal	1	N	N	Y	N	Y	N	N
Minesto Strangford Loch	Tidal	1	N	N	N	N	Y	N	N
Seagen Strangford Lough	Tidal	1	N	N	N	N	Y	N	N
Shetland Tidal Array Phase 1	Tidal	1	N	N	Y	Y	Y	N	N
Wave Hub (Seatricity 1)	Wave	1	N	N	N	N	Y	N	N
Wave Net Array	Wave	1	N	N	N	N	Y	N	N
Other offshore renewable projects that are currently under construction									
EMEC Blue Horizon	Wave	2	N	Y	Y	Y	Y	N	N

Project	Type	Tier	Phase of Project Considered in CIA		Spatial Area Screened in for				
			Construction	Operation	HP MU	BND MU	MW & WBD MU	GS MU	HS MU
PLAT-1 Floating Tidal Energy	Tidal	2	N	Y	N	N	Y	N	N
Other offshore renewable projects that are consented									
EMEC Orbital O2	Tidal	3	N	Y	Y	Y	Y	N	N
MeyGen Pentland Firth Phase 1B	Tidal	3	N	Y	Y	N	Y	N	N
MeyGen Pentland Firth Phase 1C	Tidal	3	N	Y	Y	N	Y	N	N
Mull of Kintyre Phase 1	Tidal	3	N	Y	N	N	Y	N	N
Perpetuus Tidal Energy Centre (PTEC)	Tidal	3	N	Y	Y	N	Y	N	N
Shetland Tidal Array Phase 2	Tidal	3	N	Y	Y	Y	Y	N	N
Sound of Islay	Tidal	3	N	Y	N	N	Y	N	N
Wave Hub (CETO 6 Phase 1)	Wave	3	N	Y	N	N	Y	N	N
Wave Hub (CETO 6 Phase 2)	Wave	3	N	Y	N	N	Y	N	N
Wave Hub (GWave)	Wave	3	N	Y	N	N	Y	N	N
Wave Hub (Seatricity 2)	Wave	3	N	Y	N	N	Y	N	N
Wave Hub (South Pembrokeshire)	Wave	3	N	Y	N	N	Y	N	N
West Islay Tidal Energy Park	Tidal	3	N	Y	N	N	Y	N	N

Project	Type	Tier	Phase of Project Considered in CIA		Spatial Area Screened in for				
			Construction	Operation	HP MU	BND MU	MW & WBD MU	GS MU	HS MU
Other offshore renewable projects that have submitted planning applications, but are not yet consented									
Morlais	Tidal	4	Y	Y	N	N	Y	N	N
Other offshore renewable projects that are currently in the process of drafting planning applications, or are in the early development stage									
Bardsey Sound	Tidal	5	Y	Y	N	N	Y	N	N
Brims tidal array Phase 1	Tidal	5	Y	Y	Y	N	Y	N	N
Brims tidal array Phase 2	Tidal	5	Y	Y	Y	N	Y	N	N
Cardiff Tidal Lagoon	Tidal	5	Y	Y	N	N	Y	N	N
Duddon Estuary Tidal Lagoon	Tidal	5	Y	Y	N	N	Y	N	N
EMEC Harris Demo Zone	Wave	5	Y	Y	N	N	Y	N	N
EMEC Orbital O2 - Phase 2	Tidal	5	Y	Y	Y	Y	Y	N	N
EMEC Stronsay Firth	Tidal	5	Y	Y	Y	Y	Y	N	N
Fair Head Phase 1	Tidal	5	Y	Y	N	N	Y	N	N
Fair Head Phase 2	Tidal	5	Y	Y	N	N	Y	N	N
Holyhead Deep	Tidal	5	Y	Y	N	N	Y	N	N
Lashy Sound (1 & 2)	Tidal	5	Y	Y	Y	N	Y	N	N
MeyGen Pentland Firth Phase 2	Tidal	5	Y	Y	Y	N	Y	N	N

Project	Type	Tier	Phase of Project Considered in CIA		Spatial Area Screened in for				
			Construction	Operation	HP MU	BND MU	MW & WBD MU	GS MU	HS MU
Morecambe Bay Tidal Lagoon	Tidal	5	Y	Y	N	N	Y	N	N
Morlais Orbital 2	Tidal	5	Y	Y	N	N	Y	N	N
Mull of Galloway	Tidal	5	Y	Y	N	N	Y	N	N
Mull of Kintyre Phase 2	Tidal	5	Y	Y	N	N	Y	N	N
mWave	Wave	5	Y	Y	N	N	Y	N	N
Ness of Duncansby Phase 1	Tidal	5	Y	Y	Y	N	Y	N	N
Ness of Duncansby Phase 2	Tidal	5	Y	Y	Y	N	Y	N	N
Oran na Mara	Tidal	5	Y	Y	N	N	Y	N	N
Portland Bill Tidal Site	Tidal	5	Y	Y	Y	N	Y	N	N
Seagen Brough Ness	Tidal	5	Y	Y	Y	N	Y	N	N
Seagen Strangford Lough Array	Tidal	5	Y	Y	N	N	Y	N	N
St Davids Head	Tidal	5	Y	Y	N	N	Y	N	N
Torr Head	Tidal	5	Y	Y	N	N	Y	N	N
Wave Hub North Devon Test Site	Tidal	5	Y	Y	N	N	Y	N	N
West Somerset Tidal Lagoon	Tidal	5	Y	Y	N	N	Y	N	N
Westray South	Tidal	5	Y	Y	Y	N	Y	N	N

Project	Type	Tier	Phase of Project Considered in CIA		Spatial Area Screened in for				
			Construction	Operation	HP MU	BND MU	MW & WBD MU	GS MU	HS MU
Wyre Estuary Tidal Barrage	Tidal	5	Y	Y	N	N	Y	N	N

12.3.4 References

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Annex 1 UK and European Offshore Windfarm Long List

Name of Project	Country	Tier	Harbour porpoise (NS MU)	Bottlenose dolphin (GNS MU)	Bottlenose dolphin (CES MU)	Minke whale and white beaked dolphin (CGNS MU)	Grey seal (NE MU)	Grey seal and harbour seal (SE MU)	Grey seal and harbour seal (Waddensee)
Aberdeen (EOWDC)	UK	1	Y	N	Y	Y	N	N	N
Alpha Ventus	Germany	1	Y	Y	N	Y	N	N	N
Amrumbank West	Germany	1	Y	Y	N	Y	N	N	N
Anholt	Denmark	1	N	Y	N	Y	N	N	N
Arcadis Ost 1	Germany	3	N	N	N	N	N	N	N
Arklow Bank Phase 1	Ireland	1	N	N	N	Y	N	N	N
Arkona	Germany	1	N	N	N	N	N	N	N
Atlantic Marine Energy Test Site	Ireland	3	N	N	N	Y	N	N	N
Avedøre Holme	Denmark	1	N	N	N	N	N	N	N
Awel y Mor	UK	5	N	N	N	Y	N	N	N
Baltic Eagle	Germany	3	N	N	N	N	N	N	N
BARD Offshore 1	Germany	1	Y	Y	N	Y	N	N	N
Barrow	UK	1	N	N	N	Y	N	N	N
Beatrice	UK	1	Y	N	Y	Y	N	N	N
Belwind	Belgium	1	Y	Y	N	Y	N	N	N
Belwind Alstom Haliade Demonstration	Belgium	1	Y	Y	N	Y	N	N	N
Berwick Bank (Seagreen Charlie Delta Echo)	UK	5	Y	Y	Y	Y	N	N	N

Name of Project	Country	Tier	Harbour porpoise (NS MU)	Bottlenose dolphin (GNS MU)	Bottlenose dolphin (CES MU)	Minke whale and white beaked dolphin (CGNS MU)	Grey seal (NE MU)	Grey seal and harbour seal (SE MU)	Grey seal and harbour seal (Waddenzee)
Blyth Offshore Demonstrator Project - Array 2	UK	1	Y	Y	N	Y	N	Y	N
Blyth Offshore Demonstrator Project - Array 3 & 4	UK	3	Y	Y	N	Y	Y	N	N
Bockstigen	Sweden	1	N	N	N	N	N	N	N
Borkum Riffgrund I	Germany	1	Y	Y	N	Y	N	N	N
Borkum Riffgrund II	Germany	1	Y	Y	N	Y	N	N	N
Borkum Riffgrund III	Germany	3	Y	Y	N	Y	N	N	N
Borssele I and II	Netherlands	1	Y	Y	N	Y	N	N	N
Borssele III and IV	Netherlands	1	Y	Y	N	Y	N	N	N
Borssele Site V - Leeghwater - Innovation Plot	Netherlands	2	Y	Y	N	Y	N	N	N
Breitling	Germany	1	N	N	N	N	N	N	N
Burbo Bank	UK	1	N	N	N	Y	N	N	N
Burbo Bank Extension	UK	1	N	N	N	Y	N	N	N
Butendiek (Offshore- Bürger-windpark)	Germany	1	Y	Y	N	Y	N	N	N
Dan Tysk	Germany	1	Y	Y	N	Y	N	N	N
Deutsche Bucht	Germany	1	Y	Y	N	Y	N	N	N
Dogger Bank A	UK	3	Y	Y	N	Y	N	Y	N
Dogger Bank B	UK	3	Y	Y	N	Y	N	Y	N
Dogger Bank C	UK	3	Y	Y	N	Y	N	Y	N

Name of Project	Country	Tier	Harbour porpoise (NS MU)	Bottlenose dolphin (GNS MU)	Bottlenose dolphin (CES MU)	Minke whale and white beaked dolphin (CGNS MU)	Grey seal (NE MU)	Grey seal and harbour seal (SE MU)	Grey seal and harbour seal (Waddenzee)
Dolphyn Project - commercial	UK	5	Y	Y	Y	Y	N	N	N
Dolphyn Project - pre-commercial	UK	5	Y	Y	Y	Y	N	N	N
Dudgeon	UK	1	Y	Y	N	Y	N	Y	N
Dudgeon Extension ²	UK	5	y	y	N	y	N	Y	N
East Anglia ONE	UK	1	Y	Y	N	Y	N	Y	N
East Anglia ONE North ¹	UK	4	Y	Y	N	Y	N	Y	N
East Anglia THREE ¹	UK	3	Y	Y	N	Y	N	Y	N
East Anglia TWO ¹	UK	4	Y	Y	N	Y	N	Y	N
Egmond aan Zee (aka OWEZ)	Netherlands	1	Y	Y	N	Y	N	N	N
EnBW Baltic 1	Germany	1	N	N	N	N	N	N	N
EnBW Baltic 2	Germany	1	N	N	N	N	N	N	N
EnBW He Dreiht	Germany	3	Y	Y	N	Y	N	N	N
Eneco Luchterduinen	Netherlands	1	Y	Y	N	Y	N	N	N
ENOVA Ems Emden	Germany	1	Y	Y	N	Y	N	N	N
Eoliennes du Calvados	France	3	Y	N	N	Y	N	N	N
EolMed	France	3	N	N	N	N	N	N	N
Erebus (Commercial)	UK	5	N	N	N	Y	N	N	N
Erebus (Demonstration)	UK	5	N	N	N	Y	N	N	N
Five Estuaries	UK	5	Y	Y	Y	Y	N	Y	N
Floatgen Project	France	1	N	N	N	N	N	N	N

Name of Project	Country	Tier	Harbour porpoise (NS MU)	Bottlenose dolphin (GNS MU)	Bottlenose dolphin (CES MU)	Minke whale and white beaked dolphin (CGNS MU)	Grey seal (NE MU)	Grey seal and harbour seal (SE MU)	Grey seal and harbour seal (Waddenzee)
ForthWind Demo Phase 1	UK	3	Y	N	Y	Y	N	N	N
ForthWind Demo Phase 2	UK	5	Y	N	Y	Y	N	N	N
Frederikshavn	Denmark	1	N	Y	N	Y	N	N	N
Galloper	UK	1	Y	Y	N	Y	N	Y	N
Galway Bay	Ireland	1	N	N	N	Y	N	N	N
Gemini ZeeEnergie	Netherlands	1	Y	Y	N	Y	N	N	N
Gennaker	Germany	3	N	N	N	N	N	N	N
GICON SOF (PILOT)	Germany	3	N	N	N	N	N	N	N
Global Tech I	Germany	1	Y	Y	N	Y	N	N	N
Gode Wind 03	Germany	3	Y	Y	N	Y	N	N	N
Gode Wind 1 and 2	Germany	1	Y	Y	N	Y	N	N	N
Greater Gabbard	UK	1	Y	Y	N	Y	N	Y	N
Gunfleet Sands 3 (Demo Zone)	UK	1	Y	Y	N	Y	N	Y	N
Gunfleet Sands I	UK	1	Y	Y	N	Y	N	Y	N
Gwynt y Mor	UK	1	N	N	N	Y	N	N	N
Havsul I	Norway	3	N	N	N	N	N	N	N
Hohe See	Germany	1	Y	Y	N	Y	N	N	N
Hollandse Kust Noord Holland I and II	Netherlands	3	Y	Y	N	Y	N	N	N
Hollandse Kust Zuid Holland I and II - Chinook	Netherlands	3	Y	Y	N	Y	N	N	N

Name of Project	Country	Tier	Harbour porpoise (NS MU)	Bottlenose dolphin (GNS MU)	Bottlenose dolphin (CES MU)	Minke whale and white beaked dolphin (CGNS MU)	Grey seal (NE MU)	Grey seal and harbour seal (SE MU)	Grey seal and harbour seal (Waddensee)
Hollandse Kust Zuid Holland III and IV	Netherlands	3	Y	Y	N	Y	N	N	N
Horns Rev 1	Denmark	1	Y	Y	N	Y	N	N	Y
Horns Rev 2	Denmark	1	Y	Y	N	Y	N	N	N
Horns Rev 3	Denmark	1	Y	Y	N	Y	N	N	N
Hornsea Project Four	UK	5	Y	Y	N	Y	N	Y	N
Hornsea Project One	UK	1	Y	Y	N	Y	N	Y	N
Hornsea Project Three	UK	3	Y	Y	N	Y	N	Y	N
Hornsea Project Two	UK	2	Y	Y	N	Y	N	Y	N
Humber Gateway	UK	1	Y	Y	N	Y	N	Y	N
Hywind Scotland Pilot Park	UK	1	Y	Y	Y	Y	N	N	N
Hywind Tampen	Norway	3	Y	Y	N	Y	N	N	N
Inch Cape	UK	3	Y	Y	Y	Y	N	N	N
Inner Dowsing	UK	1	Y	Y	N	Y	N	Y	N
Irene Vorrink	Netherlands	1	Y	Y	N	Y	N	N	N
Karehamn	Sweden	1	N	N	N	N	N	N	N
Karmøy - Marine Energy Test Centre(Metcentre) - Fixed	Norway	1	Y	Y	N	Y	N	N	N
Karmøy - Marine Energy Test Centre(Metcentre) - Floating	Norway	1	Y	Y	N	Y	N	N	N
Kaskasi	Germany	3	Y	Y	N	Y	N	N	N

Name of Project	Country	Tier	Harbour porpoise (NS MU)	Bottlenose dolphin (GNS MU)	Bottlenose dolphin (CES MU)	Minke whale and white beaked dolphin (CGNS MU)	Grey seal (NE MU)	Grey seal and harbour seal (SE MU)	Grey seal and harbour seal (Waddenzee)
Kattegatt Offshore	Sweden	3	N	Y	N	Y	N	N	N
Kentish Flats	UK	1	Y	Y	N	Y	N	Y	N
Kentish Flats Extension	UK	1	Y	Y	N	Y	N	Y	N
Kincardine - DOLPHYN demo	UK	3	Y	Y	Y	Y	N	N	N
Kincardine - Phase 2	UK	2	Y	Y	N	Y	N	N	N
Kreigers Flak II	Sweden	3	N	N	N	N	N	N	N
Kriegers Flak	Denmark	2	N	N	N	N	N	N	N
Kvitsøy Wind Turbine Demonstration Area	Norway	3	Y	Y	N	Y	N	N	N
Les eoliennes flottantes de Groix & Belle-Lle	France	3	N	N	N	N	N	N	N
Les eoliennes flottantes de Provence Grand Large	France	3	N	N	N	N	N	N	N
Les eoliennes flottantes du Golf du Lion	France	3	N	N	N	N	N	N	N
Levenmouth (Demo)	UK	1	Y	N	Y	Y	N	N	N
Lillgrund	Sweden	1	N	N	N	N	N	N	N
Lincs	UK	1	Y	Y	N	Y	N	Y	N
London Array	UK	1	Y	Y	N	Y	N	Y	N
Lynn	UK	1	Y	Y	N	Y	N	Y	N
Marr Bank (Seagreen Foxtrot Golf)	UK	5	Y	Y	N	Y	N	N	N

Name of Project	Country	Tier	Harbour porpoise (NS MU)	Bottlenose dolphin (GNS MU)	Bottlenose dolphin (CES MU)	Minke whale and white beaked dolphin (CGNS MU)	Grey seal (NE MU)	Grey seal and harbour seal (SE MU)	Grey seal and harbour seal (Waddensee)
Meerwind Ost Sud	Germany	1	Y	Y	N	Y	N	N	N
Mejflak	Denmark	4	N	Y	N	Y	N	N	N
Merkur	Germany	1	Y	Y	N	Y	N	N	N
Middelgrunden	Denmark	1	N	N	N	N	N	N	N
Moray East	UK	2	Y	Y	Y	Y	N	N	N
Moray West	UK	3	Y	Y	Y	Y	N	N	N
Neart na Gaoithe	UK	2	Y	Y	Y	Y	N	N	N
Nissum Bredning Vind	Denmark	1	Y	Y	N	Y	N	N	N
Nobelwind	Belgium	1	Y	Y	N	Y	N	N	N
Nordergrunde	Germany	1	Y	Y	N	Y	N	N	Y
Nordsee One (Innogy Nordsee I)	Germany	1	Y	Y	N	Y	N	N	N
Nordsee Ost	Germany	1	Y	Y	N	Y	N	N	N
Norfolk Boreas	UK	4	Y	Y	N	Y	N	Y	N
Norfolk Vanguard	UK	3	Y	Y	N	Y	N	Y	N
North Falls	UK	5	Y	Y	N	Y	N	y	N
North Hoyle	UK	1	N	N	N	Y	N	N	N
Norther	Belgium	1	Y	Y	N	Y	N	N	Y
Northwester 2	Belgium	1	Y	Y	N	Y	N	N	Y
Northwind	Belgium	1	Y	Y	N	Y	N	N	N
Nysted	Denmark	1	N	N	N	N	N	N	N

Name of Project	Country	Tier	Harbour porpoise (NS MU)	Bottlenose dolphin (GNS MU)	Bottlenose dolphin (CES MU)	Minke whale and white beaked dolphin (CGNS MU)	Grey seal (NE MU)	Grey seal and harbour seal (SE MU)	Grey seal and harbour seal (Waddensee)
Ormonde	UK	1	N	N	N	Y	N	N	N
OWP Albatros Phase 1	Germany	1	Y	Y	N	Y	N	N	N
Parc des Iles d'Yeu et de Noirmoutier	France	3	N	N	N	N	N	N	N
Parc eolien en mer de Dieppe - Le Treport	France	3	Y	N	N	Y	N	N	N
Parc éolien en mer de Fécamp	France	3	Y	N	N	Y	N	N	N
Pentland	UK	5	Y	Y	Y	Y	N	N	N
Prinses Amalia Windpark (formerly Q7)	Netherlands	1	Y	Y	N	Y	N	N	N
Projet de parc eolien en mer de Saint Nazaire	France	2	N	N	N	N	N	N	N
Projet eolien en mer de la Baie se Saint-Brieuc	France	3	N	N	N	Y	N	N	N
Race Bank	UK	1	Y	Y	N	Y	N	Y	N
Rampion Extension	UK	5	y	Y	N	y	N	N	N
Rampion Wind Farm	UK	1	Y	Y	N	Y	N	N	N
Rennesoy Marine Energy Test Centre (Metcentre)	Norway	3	Y	Y	N	Y	N	N	N
RENTEL	Belgium	1	Y	Y	N	Y	N	N	N
Rhyl Flats	UK	1	N	N	N	Y	N	N	N
Riffgat	Germany	1	Y	Y	N	Y	N	N	Y

Name of Project	Country	Tier	Harbour porpoise (NS MU)	Bottlenose dolphin (GNS MU)	Bottlenose dolphin (CES MU)	Minke whale and white beaked dolphin (CGNS MU)	Grey seal (NE MU)	Grey seal and harbour seal (SE MU)	Grey seal and harbour seal (Waddensee)
Robin Rigg East	UK	1	N	N	N	Y	N	N	N
Robin Rigg West	UK	1	N	N	N	Y	N	N	N
Rodsand 2	Denmark	1	N	N	N	N	N	N	N
Rønland (Nissum Bredning)	Denmark	1	Y	Y	N	Y	N	N	N
Samsø	Denmark	1	N	Y	N	Y	N	N	N
Sandbank	Germany	1	Y	Y	N	Y	N	N	N
Scroby Sands	UK	1	Y	Y	N	Y	N	Y	N
Seagreen Phase One - Alpha Bravo	UK	3	Y	Y	N	Y	N	N	N
Seamade (Mermaid)	Belgium	1	Y	Y	N	Y	N	N	N
Seamade (SeaStar)	Belgium	1	Y	Y	N	Y	N	N	N
SeaTwirl S1	Sweden	1	Y	Y	N	Y	N	N	N
SEM-REV - SITE D'EXPERIMENTATION EN MER - MARINE TEST SITE	France	1	N	N	N	N	N	N	N
Sheringham Shoal	UK	1	Y	Y	N	Y	N	Y	N
Sheringham Shoal Extension ²	UK	5	y	y	N	y	N	y	N
Sodra Midsjobanken	Sweden	4	N	N	N	N	N	N	N
Sofia (formerly Dogger Bank Teesside B)	UK	3	Y	Y	N	Y	N	y	N
Sotenas Offshore Park	Sweden	3	Y	Y	N	Y	N	N	N
Sprogø	Denmark	1	N	N	N	N	N	N	N

Name of Project	Country	Tier	Harbour porpoise (NS MU)	Bottlenose dolphin (GNS MU)	Bottlenose dolphin (CES MU)	Minke whale and white beaked dolphin (CGNS MU)	Grey seal (NE MU)	Grey seal and harbour seal (SE MU)	Grey seal and harbour seal (Waddensee)
Stenkalles grund	Sweden	3	N	N	N	N	N	N	N
Storgrundet	Sweden	3	N	N	N	N	N	N	N
Svenska Bjorn Offshore	Sweden	4	N	N	N	N	N	N	N
Teesside	UK	1	Y	Y	N	Y	Y	N	N
Test Area Stadt	Norway	3	N	N	N	N	N	N	N
TetraSpar Demo - Metcentre	Norway	3	y	y	N	y	N	N	N
Thanet	UK	1	Y	Y	N	Y	N	Y	N
Thornton Bank phase I	Belgium	1	Y	Y	N	Y	N	N	N
Thornton Bank phase II	Belgium	1	Y	Y	N	Y	N	N	N
Thornton Bank phase III	Belgium	1	Y	Y	N	Y	N	N	N
Trianel Windpark Borkum Phase 1 (Borkum West II phase 1)	Germany	1	Y	Y	N	Y	N	N	N
Trianel Windpark Borkum Phase 2 (aka Borkum West II phase 2)	Germany	1	Y	Y	N	Y	N	N	N
Triton Knoll phase 1-3	UK	2	Y	Y	N	Y	N	Y	N
TunØ Knob	Denmark	1	N	Y	N	Y	N	N	N
UNITECH Zefryos by Hywind Technology (Karmoy / Hywind)	Norway	1	Y	Y	N	Y	N	N	N
Valorous	UK	5	N	N	N	Y	N	N	N
Veja Mate	Germany	1	Y	Y	N	Y	N	N	N

Name of Project	Country	Tier	Harbour porpoise (NS MU)	Bottlenose dolphin (GNS MU)	Bottlenose dolphin (CES MU)	Minke whale and white beaked dolphin (CGNS MU)	Grey seal (NE MU)	Grey seal and harbour seal (SE MU)	Grey seal and harbour seal (Waddenzee)
Vesterhav Nord/Syd	Denmark	3	Y	Y	N	Y	N	N	N
Vindpark Vanern	Sweden	1	N	N	N	N	N	N	N
Walney Extension	UK	1	N	N	N	Y	N	N	N
Walney Phase 1	UK	1	N	N	N	Y	N	N	N
Walney Phase 2	UK	1	N	N	N	Y	N	N	N
Wave Hub	UK	4	N	N	N	Y	N	N	N
West of Duddon Sands	UK	1	N	N	N	Y	N	N	N
Westermeerwind	Netherlands	1	Y	Y	N	Y	N	N	N
Westermost Rough	UK	1	Y	Y	N	Y	N	Y	N
Wikinger	Germany	1	N	N	N	N	N	N	N
Wikinger Sud	Germany	3	N	N	N	N	N	N	N
Windpark Fryslân	Netherlands	2	Y	Y	N	Y	N	N	Y