REPORT

National Approaches Marine Uses

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1 Introduction

To fulfil both European and national ambitions, several countries drafted plans to increase the number of windfarms in the North Seas. These plans have been developed at a national level considering, among other things, the space required at the national level for other important values and issues. Now that these national plans have been drawn up, the question arises to what the joint results and combination of effects will be on a regional sea scale when these plans are realized up to 2030.
In order to give insight in the regional scale effects up to 2030, the 'Spatial study North Seas 2030 – Offshore Wind Development' (August, 2022) was conducted. In this report the findings of a high-level study towards offshore wind development are discussed. The study was commissioned by the North Sea Energy cooperation, Support Group 2 (Maritime Spatial Planning including the environmental subgroup). The results will feed into recommendations for the North Seas energy ministers on collaboration opportunities to prevent future spatial obstacles in offshore wind farm development and stimulate knowledge and exchange and development.
This document is one of the building blocks for the report and gives insight into the national approaches of countries on how to deal with potential spatial interactions between offshore windfarms and other spatial marine uses and can be used as background information while reading the main report.

1.1 Reading guide

Within this document, the national approaches towards marine uses at the North Seas will be presented for the eight countries that are adjacent to the North Seas: Ireland, UK, France, Belgium, Netherlands, Germany, Denmark and Norway. It will discuss the national approaches of offshore wind energy in relation to five main marine uses: Shipping, Fisheries, Grid Connections, Military Uses and Ecology. The document is based on official governmental information that is delivered by delegates of the collaborating countries. The criteria that is used are retrieved from the Planning Criteria Offshore Wind Energy (SEANSE).
In Part I the national approaches and planning criteria for the different marine uses in relation to offshore wind development are presented. In Chapter 2, the national approaches of offshore wind development in relation to shipping will be presented. Followed by the national approaches of offshore wind development in relation to fisheries in Chapter 3. Chapter 4 zooms into the planning criteria for the development of grid connections. Lastly, the national approaches towards Military Activities (Chapter 5) and Ecology (Chapter 6) in relation to offshore wind development will be explored. Due to its importance, ecology is explored more extensively than the other marine uses and included as a separate part of the report (Part II).

2 National approaches towards OWF in relation to shipping

General findings

In general, the planning criteria on the relation between offshore windfarms (OWF) and shipping is limited in the consulted Marine Spatial Plans (MSP). Spatial shipping regulations are often framed by international regulations, which are set by international organizations. One of these international organizations is the International Maritime Organization (IMO), which is the United Nations specialized agency with responsibility for the safety and security of shipping and the prevention of marine and atmospheric pollution by ships (Introduction to IMO). The IMO is responsible for four important legal frameworks, such as the United Nations Convention of the Law of the Sea (UNCLOS), the International Convention for the Safety of Life at Sea (SOLAS), International Regulations for Preventing Collisions at Sea (COLREGs) and the International Convention for the Prevention of Pollutions from Ships (MARPOL) (European MSP Platform, shipping).

	Criteria			
Country	**Specifications** *Spatial determinations, defined requirements, rules and conditions.*	**Anchoring areas** *Spatial relation between OWF and anchoring areas.*	**Adjustments** *Possible change/adjustment of planning determinations for other use e.g. to solve conflicts on a case-by-assessment.*	**Transboundary issues** *Planning specifications that have or might have a transboundary relevance or impact.*

Ireland	• To provide for shipping activity and freedom of navigation the following factors will be taken into account when reaching decisions regarding development and use: The extent to which the locational decision interferes with existing or planned routes used by shipping, access to ports and harbours and navigational safety. This includes commercial anchorages and approaches to ports as well as key littoral and offshore routes (NMPF, 2021, p. 152).
	• A chapter of the NMPF is dedicated to Safety at Sea that includes five related policies (NMPF, 2021, p.161).
	• Establishment of working groups in order to establish constructive engagement between stakeholders (NMPF, 2021, p. 127).
	• Allow for recreational vessels within the OWF (including consideration of turbine height) or redirect recreational vessels, minimizing navigational risk arising between recreational and commercial vessels (NMPF, 2021).
		• Proposals within port limits, beside or in the vicinity of ports, and / or that impact upon the main routes of significance to a port, must demonstrate within applications that they have:
		  • been informed by consultation at pre-application stage or earlier with the relevant port authority;
		  • have carried out a navigational risk assessment
		  • including an analysis of maritime traffic in the area; and
		  • have consulted Department of Transport, MSO and Commissioners of Irish Lights.
		Applicants must continue to engage parties identified in pre-application processes as appropriate during the decision-making process (NMPF, 2021, p. 150 + maps on p.158-160)
		
		NOTE: While the above does not handle anchorages directly, many anchorages fall within the limits of ports and harbours that are spatially described in the plan.
		
		(Added by Country)
			• Provisions are in place for these to be determined at the project level (added by country).	• Planning for OWF in Ireland beyond the NMPF is being undertaken through the Offshore Renewable Energy Plan (OREDP) II process. This will be followed by production of a Designated Maritime Area Plan (DMAP) for OWF. Both of these processes are subject to SEA and AA including related transboundary consultation (added by country).

UK	• The impact on shipping by offshore energy development, and other activities, should be an ongoing marine planning concern for all marine planning authorities, and stronger policy (i.e. the creation of "clearways") where further development cannot take place should be considered, or at the least, updates to the location and nature of strategically important shipping routes should be mapped against relevant policies (UK Offshore Energy Strategic Environmental Assessment, 2022). • The displacement of shipping and subsequent impact on the cost of shipping and port revenues is potentially significant, and should be taken into account when siting arrays of offshore renewable devices. The SEA concluded that wind farm (and other large footprint development) siting should be outside areas important for navigation (these are mapped in the Environmental Report) and that this would not preclude the attainment of the draft plan/programme objectives (UK Offshore Energy Strategic Environmental Assessment, 2022). • Safety distance is according to IMO/UNCLOS – 500 m safety zone between shipping and OWF during works and 50 m during operations. Corridors must be created between sites to allow safe passage, with corridor width assessed on a case-by-case basis taking into account, e.g. shipping density, size and type of	• Mapped ship anchorages are not compatible with offshore wind developments (SEANSE report, 2019, Scotland).	• In terms of renewable energy, there are some requirements for locations related to shipping: 1) the proximity of the port to the renewables site, 2) Sites that have, or have the potential for, integrated manufacturing or space for distributed manufacturing, 3) appropriate water depth, 4) a skilled workforce, 5) already have investment plans or agreements of plans (unknown source)	• Consent cannot be granted for an OWF which is likely to interfere with the use of recognized sea lanes essential to international navigation (SEANSE, 2019 report, Scotland). • Co-ordination with countries sharing the same regional seas is necessary, including the Republic of Ireland. This will include sharing data and consultation with affected authorities and Member States when Marine Plans are being proposed (MPS, 2011, 1.2.3. p. 8).

	vessels and proximity of navigational hazards. (SEANSE report, 2019 [Scotland]). • The construction or extension of an offshore wind farm should not be granted if interference with the use of shipping (Interreg, 2019, p. 33).			
France				
Belgium	• Actual and new OWFs respect International Maritime Organization rules and need for connections between seaports, shipping routes and other uses. Natural conditions are also considered, e.g. the presence of sandbanks can be an extra safety measure because if a ship loses control it will strand on a sandbank and not against the OWF (SEANSE report, 2019). • Shipping and dredging is not allowed in and around windfarms, safety zone 500 m. (Interreg, 2019, p. 16).		• No overlap, except for dedicated vessels and some designated activities (SEANSE report, 2019).	• IMO routes and other shipping connections shall be coordinated. IMO rules are respected, of course (SEANSE report, 2019).
Netherlands	**1.** Windfarms OWEZ and PAWP (gedragscode doorvaart, 2018): a. only accessible during the day, closed after sunset b. only ships with a maximum total length of 24 meters are allowed in the windfarms. c. 50 m distance to turbinepoles and 500 distance of transformation stations, 500m safety zone around windfarm area. d. windfarm access will be phased out and replaced by corridor/passage policy as described under 2 – 4 below.	• The same distances can be applied between anchor areas and wind farms and precautionary areas and wind farms. • Anchoring is not allowed in corridor/passage in windfarm area. (gedragscode doorvaart, 2018 (Borssele))	Provisions are in place for these to be determined at the project level (added by country)	IMO routes and other shipping connections are coordinated with neighbouring countries. IMO rules are respected (added by country)

	2. Windfarm Borssele (gedragscode doorvaart, Borssele) corridor: a. only ships with a maximum total length of 45 meters, not carrying dangerous cargo, are allowed in the corridor (IMO routing measure - Windfarm Borssele Pass). b. accessible day and night c. 500 distance of transformation stations, 500m safety zone around windfarm areas. 3. Windfarms Gemini I and II will become part of future windfarm area 'Ten Noorden van de Wadden'. a. passage (day and night) is only possible between Gemini I and II. b. 500 distance of transformation stations, 500m safety zone around windfarm areas. 4. Future windfarm areas (still under construction Hollandse Kust and IJVer) passage a. only ships with a maximum total length of 46 meters are allowed in the passages, allocated under national legislation. b. accessible day and night c. 500 distance of transformation stations, 500m safety zone around windfarm area 'Afwegingskader voor veilige afstanden tussen scheepvaartroutes en windparken op zee' applicable.			
Germany	• Shipping enjoys priority due to SRÜ (UNCLOS in Germany) (added by country).	• The area Lower Saxony of the coastal sea must be kept free of offshore wind energy plants in principle, due to conflicts with shipping and other	• The MSP consist of conditional designations for shipping. Some areas (f.e. Area EN-13 North, Area EO2-West are under proof,	• According to Article 60, paragraph 7 UNCLOS, artificial islands, installations and structures and

	• The priority areas for shipping represent the basic framework which must be kept free of all incompatible uses, in particular construction above the seabed, to secure the safety and efficiency of shipping (MSP 2021, Justification for objective 2.1 (1). Safety zones of 500 m around OWF are defined in para. 10 - Seeanlagengesetz (SeeAnlG) and applied through the designated priority areas for shipping and offshore wind in the MSP (MSP, 2021).	sectors (Interreg, 2019, p.20).	whether they are required for compelling reasons of safety and efficiency of shipping. Sites that are no longer used for shipping could be redesignated for f.e. offshore wind energy (MSP, 2021, principle 2.1 (3)).	the safety zones surrounding them shall not be constructed where they may impede the use of recognised shipping routes important for international navigation (MSP 2021, Justification for chapter 2.1)
Denmark	• Sailing can take place in all zones unless other legislation prohibits it or until constructions are built or in case other regulation is for-mulated that limits the activity. (explanatory notes) • There is freedom of navigation in Denmark, but the maritime spatial plan allocates the most important shipping corridors used today, so that shipping can continue to sail in the safest and most direct route through Danish waters (explanatory notes).	• Order no.135 of 4 March 2005 on a ban on sailing, anchoring and fishing, etc. in certain areas of Danish waters, specifies some more defined areas where sailing, anchoring and fishing, etc. are prohibited. Some of these areas are designated for the sake of aviation, including §15, which prohibits sailing with ships higher than 6 metres near Sønderborg Airport, and §19, which prohibits visiting and fishing in defined areas around Copenhagen Airport (explanatory notes).		• The shipping corridors are coordinated with our neighbouring countries, so that they constitute the best and most efficient routes, where the ships can use the least possible fuel and thus avoid unnecessary greenhouse gas emissions in the Danish sea area (explanatory notes)
Norway	• Safety zone of 500 m (Interreg, 2019 p. 24).			

	Criteria			
Country	**Specifications** *Spatial determinations, defined requirements, rules and conditions.*	**Anchoring areas** *Spatial relation between OWF and anchoring areas.*	**Adjustments** *Possible change/adjustment of planning determinations for other use e.g. to solve conflicts on a case-by-assessment.*	**Transboundary issues** *Planning specifications that have or might have a transboundary relevance or impact.*

Ireland	• To provide for shipping activity and freedom of navigation the following factors will be taken into account when reaching decisions regarding development and use: The extent to which the locational decision interferes with existing or planned routes used by shipping, access to ports and harbours and navigational safety. This includes commercial anchorages and approaches to ports as well as key littoral and offshore routes (NMPF, 2021, p. 152).
	• A chapter of the NMPF is dedicated to Safety at Sea that includes five related policies (NMPF, 2021, p.161).
	• Establishment of working groups in order to establish constructive engagement between stakeholders (NMPF, 2021, p. 127).
	• Allow for recreational vessels within the OWF (including
		• Proposals within port limits, beside or in the vicinity of ports, and / or that impact upon the main routes of significance to a port, must demonstrate within applications that they have:
		  • been informed by consultation at pre-application stage or earlier with the relevant port authority;
		  • have carried out a navigational risk assessment
		  • including an analysis of maritime traffic in the area; and
		  • have consulted Department of Transport, MSO and Commissioners of Irish Lights.
		Applicants must continue to engage parties identified in pre-application processes as appropriate during the
			• Provisions are in place for these to be determined at the project level (added by country).	• Planning for OWF in Ireland beyond the NMPF is being undertaken through the Offshore Renewable Energy Plan (OREDP) II process. This will be followed by production of a Designated Maritime Area Plan (DMAP) for OWF. Both of these processes are subject to SEA and AA including related transboundary consultation (added by country).

	consideration of turbine height) or redirect recreational vessels, minimizing navigational risk arising between recreational and commercial vessels (NMPF, 2021).	decision-making process (NMPF, 2021, p. 150 + maps on p.158-160) NOTE: While the above does not handle anchorages directly, many anchorages fall within the limits of ports and harbours that are spatially described in the plan. *(Added by Country)*		
UK	• the impact on shipping by offshore energy development, and other activities, should be an ongoing marine planning concern for all marine planning authorities, and stronger policy (i.e. the creation of "clearways") where further development cannot take place should be considered, or at the least, updates to the location and nature of strategically important shipping routes should be mapped against relevant policies (UK Offshore Energy Strategic Environmental Assessment, 2022). • The displacement of shipping and subsequent impact on the cost of shipping and port revenues is potentially significant, and should be taken into account when siting arrays of offshore renewable devices. The SEA concluded that wind farm (and other large footprint development) siting should be outside areas important for navigation (these are mapped in the Environmental Report) and that this would not preclude the attainment of the draft	• Mapped ship anchorages are not compatible with offshore wind developments (SEANSE report, 2019, Scotland).	• In terms of renewable energy, there are some requirements for locations related to shipping: 1) the proximity of the port to the renewables site, 2) Sites that have, or have the potential for, integrated manufacturing or space for distributed manufacturing, 3) appropriate water depth, 4) a skilled workforce, 5) already have investment plans or agreements of plans (unknown source)	• Consent cannot be granted for an OWF which is likely to interfere with the use of recognized sea lanes essential to international navigation (SEANSE, 2019 report, Scotland). • Co-ordination with countries sharing the same regional seas is necessary, including the Republic of Ireland. This will include sharing data and consultation with affected authorities and Member States when Marine Plans are being proposed (MPS, 2011, 1.2.3. p. 8).

	plan/programme objectives (UK Offshore Energy Strategic Environmental Assessment, 2022). • Safety distance is according to IMO/UNCLOS – 500 m safety zone between shipping and OWF during works and 50 m during operations. Corridors must be created between sites to allow safe passage, with corridor width assessed on a case-by-case basis taking into account, e.g. shipping density, size and type of vessels and proximity of navigational hazards. (SEANSE report, 2019 [Scotland]). • The construction or extension of an offshore wind farm should not be granted if interference with the use of shipping (Interreg, 2019, p. 33).			
France				
Belgium	• Actual and new OWFs respect International Maritime Organization rules and need for connections between seaports, shipping routes and other uses. Natural conditions are also considered, e.g. the presence of sandbanks can be an extra safety measure because if a ship loses control it will strand on a sandbank and not against the OWF (SEANSE report, 2019). • Shipping and dredging is not allowed in and around windfarms, safety zone 500 m. (Interreg, 2019, p. 16).		• No overlap, except for dedicated vessels and some designated activities (SEANSE report, 2019).	• IMO routes and other shipping connections shall be coordinated. IMO rules are respected, of course (SEANSE report, 2019).

Netherlands	**2.** Windfarms OWEZ and PAWP (gedragscode doorvaart, 2018): e. only accessible during the day, closed after sunset f. only ships with a maximum total length of 24 meters are allowed in the windfarms. g. 50 m distance to turbinepoles and 500 distance of transformation stations, 500m safety zone around windfarm area. h. windfarm access will be phased out and replaced by corridor/passage policy as described under 2 – 4 below. **3.** Windfarm Borssele (gedragscode doorvaart, Borssele) <u>corridor</u>: d. only ships with a maximum total length of 45 meters, not carrying dangerous cargo, are allowed in the corridor (IMO routing measure - Windfarm Borssele Pass). e. accessible day and night f. 500 distance of transformation stations, 500m safety zone around windfarm areas. **4.** Windfarms Gemini I and II will become part of future windfarm area 'Ten Noorden van de Wadden'. c. passage (day and night) is only possible between Gemini I and II. d. 500 distance of transformation stations, 500m safety zone around windfarm areas. **5.** Future windfarm areas (still under construction Hollandse Kust and IJVer) <u>passage</u> d. only ships with a maximum total length of 46 meters are allowed in the passages, allocated under national legislation.	• The same distances can be applied between anchor areas and wind farms and precautionary areas and wind farms. • Anchoring is not allowed in corridor/passage in windfarm area. (gedragscode doorvaart, 2018 (Borssele))	Provisions are in place for these to be determined at the project level (added by country)	IMO routes and other shipping connections are coordinated with neighbouring countries. IMO rules are respected (added by country)

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Germany	• Shipping enjoys priority due to SRÜ (UNCLOS in Germany) (added by country). • The priority areas for shipping represent the basic framework which must be kept free of all incompatible uses, in particular construction above the seabed, to secure the safety and efficiency of shipping (MSP 2021, Justification for objective 2.1 (1). Safety zones of 500 m around OWF are defined in para. 10 - Seeanlagengesetz (SeeAnlG) and applied through the designated priority areas for shipping and offshore wind in the MSP (MSP, 2021).	• The area Lower Saxony of the coastal sea must be kept free of offshore wind energy plants in principle, due to conflicts with shipping and other sectors (Interreg, 2019, p.20).	• The MSP consist of conditional designations for shipping. Some areas (f.e. Area EN-13 North, Area EO2-West are under proof, whether they are required for compelling reasons of safety and efficiency of shipping. Sites that are no longer used for shipping could be redesignated for f.e. offshore wind energy (MSP, 2021, principle 2.1 (3)).	• According to Article 60, paragraph 7 UNCLOS, artificial islands, installations and structures and the safety zones surrounding them shall not be constructed where they may impede the use of recognised shipping routes important for international navigation (MSP 2021, Justification for chapter 2.1)
Denmark	• Sailing can take place in all zones unless other legislation prohibits it or until constructions are built or in case other regulation is for-mulated that limits the activity. (explanatory notes) • There is freedom of navigation in Denmark, but the maritime spatial plan allocates the most important shipping corridors used	• Order no.135 of 4 March 2005 on a ban on sailing, anchoring and fishing, etc. in certain areas of Danish waters, specifies some more defined areas where sailing, anchoring and fishing, etc. are prohibited. Some of these areas are designated for the sake of aviation, including §15, which		• The shipping corridors are coordinated with our neighbouring countries, so that they constitute the best and most efficient routes, where the ships can use the least possible fuel and thus avoid unnecessary

	today, so that shipping can continue to sail in the safest and most direct route through Danish waters (explanatory notes).	prohibits sailing with ships higher than 6 metres near Sønderborg Airport, and §19, which prohibits visiting and fishing in defined areas around Copenhagen Airport (explanatory notes).		greenhouse gas emissions in the Danish sea area (explanatory notes)
Norway	• Safety zone of 500 m (Interreg, 2019 p. 24).			

3 National approaches towards OWF in relation to fisheries

General findings

Given the growth of OWF in the North Seas, fisheries will experience increasing pressure. The main issue is the fact that OWF leads to a limitation of available space for fisheries, due to access restriction for fisheries, as well as restrictions of movements for fisheries, which might result in economic losses. In many countries, the access granted to fisheries in windfarms is related to the kind of fishing gear that is used. In most cases, the use of seabed disturbing fishing gear (such as bottom trawling) is not allowed.

For EU member states, fishing is governed by the *Common Fisheries Policy,* that applies to community waters and fishing vessels that sail the flag of a member state. Fish stocks shall be maintained to enable sustainable fishing practices and it must be ensured that they are managed in rational, responsible and sustainable manner under economically and socially appropriate conditions, taking into account their impact on the marine ecosystem (Interreg, 2019, 2019, p. 14). Additionally, the UNCLOS is relevant for fisheries (European MSP Platform, fisheries).

	Criteria				
Country	**Specifications** *Spatial determinations, defined requirements, rules and conditions*	**Exceptions** *Exceptions from specifications or planning determinations*	**Fishing zones** *Spatial regulations for fishing*	**Aquaculture** *Spatial regulations for aquaculture*	**Monetary compensation** *Existing financial compensation*
Ireland	• To ensure sustainable development, it is important that the development opportunity should be managed efficiently and effectively and in a co-ordinated fashion through the marine planning process. • This may include the establishment of steering groups or working groups in order to establish constructive engagement between various marine	X	• Reasonable measures to mitigate any constraints which the proposed development or use may place on existing or proposed fishing activity (NMPF, 2021).	• Reasonable measures to mitigate any potential impacts on sustainability of fish stocks (e.g. impacts on spawning grounds or areas of fish and shellfish abundance) and any socio-economic impacts (NMPF).	

	stakeholders (NMPF, 2021).				
UK	• Proposals that may have significant adverse impacts on access for fishing activities or aquaculture sites must demonstrate that they will, in order of preference: a) avoid b) minimise c) mitigate - adverse impacts so they are no longer significant (North East Inshore and North East Offshore Marine Plan, 2021; South Marine Plan, 2021). • While planning policy indicates that developers and decision makers must consider displacement issues, including of fisheries, the cumulative and incremental effect on the fisheries sector from increasing offshore development is not well understood and is challenging to assess (UK Offshore Energy Strategic Environmental Assessment, 2022). • The Fishery Limits Act (Parliament of the United Kingdom, 1976) identifies fishing areas currently extending to 200 NM from the baseline (Interreg, 2019, p. 29). •). • Fishing inside OWFs is allowed, except for the safety zone around each turbine (50 m during operation and 500m	X	• No specific fishing zones are allocated (SEANSE report, 2019, [Scotland]))	• Proposals that enable the provision of infrastructure for sustainable fisheries and aquaculture and related industries will be supported (South Marine Plan, 2021). • Scotland → appropriate locations for future aquaculture sites shall be identified in the future plan. • Scotland → Locations leased to aquaculture farming are considered incompatible with offshore wind developments, unless offshore wind is used as a power source for the aquaculture sites themselves (SEANSE report, 2019)	• Support for existing fisheries might include providing financial assistance to allow fishermen to operate within OWFs. This might include assistance to purchase new or modified gear, support for maintenance costs, provision of safety equipment or support for insurance for fishing within windfarms. Establishing fuel subsidy schemes for fishermen affected by displacement and promoting local fisheries and regulating access to fishing within developments are other ways in which the industry might be supported (UK Offshore Energy Strategic Environmental Assessment, 2022). • There is no legal basis for financial compensation associated with the loss of access to fishing grounds. However, settlements agreed on a mutual basis may aim to counterbalance or offset any residual

	during maintenance) (SEANSE report, 2019 [Scotland]). • Wherever possible, decision makers should seek to encourage opportunities for co-existence between fishing and other activities. Inshore Fisheries Groups in Scotland and Inshore Fisheries and Conservation Authorities (IFCAs) in England will be expected to participate fully in wider marine planning. Welsh Ministers are also seeking to put in place a mechanism to enable local and national input into fisheries management plans and policies (MPS, 2011)				fisheries related impacts associated with an OWF. This commercial compensation should only be used as a last resort, when there are significant residual impacts that cannot otherwise be mitigated (SEANSE report, 2019, [Scotland]).
France	• Professional fisheries is allowed everywhere in the sea areas, but fishing is not allowed in and around the existing wind farms. (source unknown) • Fisheries is of national interests (strategie de façade maritime memnor, 2019.				
Belgium	• Fishing allowed everywhere, except around windfarms (Marien ruimtelijk plan | FOD Volksgezondheid (belgium.be)).	• In two windfarms, sustainable aquaculture is allowed as consent is given by the holder of the farm, and the aquaculture reduces the level of eutrophication within the zone (Interreg, 2019, p. 17).	• Fishing is permitted everywhere, unless forbidden (e.g. in the OWF area designated in the MSP of 2014) (SEANSE report, 2019)	• Under new MSP 2020-2026: allowed in existing OWF with permission from concessionary and everywhere in the new OWF area (SEANSE report, 2019).	• No (SEANSE report, 2019).

Netherlands	• Fishing has access to all areas", but activities identified as activities with a national interest (such as OWF) have priority (Interreg, 2019, p. 79). • Ships longer than 24 m in length are not allowed in the windfarms (gedragscode doorvaart, 2018). • Bottom trawling is not allowed within wind farms (gedragscode doorvaart, 2018; NZP 2022-2027; NZA). • In windfarms operational before 31-12-2020 only fishing with handlines and -rods (gearcode LHP) is allowed. Pots (gearcode FPO) are allowed additionally in windfarm Prinses Amalia provided that the fishing activity with that gear is part of a research experiment (Beleidsnota Noordzee 2016-2021). In windfarms operational after 1-1-2021 it is allowed to use handlines and -rods (gearcode LHP), pots (gearcode FPO) and set/anchored longlines (gearcode LLS) provided that the fishing activity with those gears is part of a research experiment. (gedragscode doorvaart, 2018, "	• Depending on the age of the windfarm, fisheries with either pots, handlines and -rods and set/anchored longlines is only allowed based on an experiment. In 2024 there will be new legislation on allowed gear and commercial instead of experimental passive fisheries in windfarms. (NZA + PNZ2022-2027) •	• The new North Sea Strategy 2030 strives to avoid rich fishing grounds while combining functions in an offshore windfarm with e.g. passive fisheries and/or aquaculture. (especially of the sea floor) and avoiding the areas where most money is earned with fisheries or where a combination with certain types of fisheries is possible SEANSE report, 2019).	• Allowed based on licences and permits. Discussion on maximum allowed area due to ecological impacts (SEANSE report, 2019). • OWF can be an opportunity for offshore mussel farms (ontwerp programma noordzee).	• A transition fund is in place, discussion is taking place on how to efficiently use this fund for fisheries (added by countr.
Germany	• Fishing vessels should be able to pass through windfarms on their way to	• The area Lower Saxony of the coastal sea must be kept free	• Area FiN1 in the area of "Südlicher Schlickgrund" is	• Aquaculture facilities should be set up in close	X

	their fishing grounds. Passive fishing with fish traps and baskets shall be possible in the safety zones of the wind farms; however, this shall not apply to the area enclosed by the outer installations of the wind farm nor to the immediate vicinity of the outer installations (MSP, 2021, principle 2.2.2 (4))	of offshore wind energy plants in principle, due to conflicts with fisheries and other sectors (Interreg, 2019, p.20).	designated as a reservation area for Norway lobster fishing (MSP, 2021, principle 2.2.5 (1))	proximity to or in combination with other existing or under-construction installations (MSP, Ch. 2.2.5).	
Denmark	• Fishing can take place in all zones unless other legislation prohibits it or until constructions are built or in case other regulation is for-mulated that limits the activity (explanatory notes).	• Order no.135 of 4 March 2005 on a ban on sailing, anchoring and fishing, etc. in certain areas of Danish waters, specifies some more defined areas where sailing, anchoring and fishing, etc. are prohibited. Some of these areas are designated for the sake of aviation, including §15, which prohibits sailing with ships higher than 6 metres near Sønderborg Airport, and §19, which prohibits visiting and fishing in defined areas around Copenhagen Airport (explanatory notes). •	• The Danish plan as of March 2022 does not restrict fishing from any area, but other regulations can limit fisheries (e.g. Cable Protection Act)However, there are ongoing political negotiations pertaining to the estbalishment of a trawl-free zone. • Consequences for fishing activities are considered for every project.	• The maritime spatial plan has three types of development zones, i.e. the cultivation of shellfish on the seafloor, shellfish farming and fish farming, respectively. • Permits for the three activities can only be granted within the designated zones. • There are some overlapping zones for OWF and fish farming. This will be solved depending on whether the area for OWF will be taken in use.	• There is no legal framework for financial compensation in relation to the maritime spatial plan. • The legal framework for fishery compensation is stipulated in the Fisheries Act for possible compensation for documented losses.
Norway	No specified areas for fishing.				

4 National approaches towards OWF in relation to grid connections

General findings

Article 58 of UNCLOS recognizes the freedom of states to lay submarine cables and pipelines within the EEZ. However, existing pipelines and cable infrastructure, including the need for their maintenance may hinder the spatial arrangement of an OWF farm. Conflicts may exist when laying cables around renewable energy systems installations and a proximity agreement might be needed if inside the exclusion zone of the installation (Interreg, 2019, 2019). Additionally, potential conflicts may arise when cables are laid through ecologically protected areas.

Criteria									
Country	**Distance to OWF**	**Distance for parallel routing**	**Safety zone**	**Specifications** Spatial determinations, defined requirements, rules and conditions, seabed conditions.	**Bundling**	**Crossings**	**Avoidance of impacts**	**Land-Sea interaction**	**Adjustments**
Ireland	• Within offshore wind farms, cable burial depth is at least 0.6 m. In tidal channels of the Wadden Sea cables are buried at least 2 m below the seabed. (see OSPAR 2008a). Other sources report about preferred burial depths of 0.6 to 0.9 m in many coastal areas of the U.K. (OSPAR 2008a) (Ospar Commision) **only depth!!**	X	X	• Proposals for OWF must demonstrate consideration of existing cables passing through or adjacent to areas for development, making sure ability to repair and carry out cable-related remedial work is not significantly	• Preference should be given to proposals where evidence is provided of an integrated approach to development and activity, such as the bundling of cables (electricity and communications), where suitable, as well as pipelines for multiple activities, to minimize	• If construction or operation activities involve the crossing of either of the two existing natural fast interconnector pipelines by other pipelines or cables, the views of Gas Networks Ireland in relation to how such activities could impact the	• Cables in situ may conflict/interact unintentionally with other sectors that make contact with the ocean floor – such as fishing/dredging, laying of electricity transmission cables, interconnectors and oil exploration. Considerable care is taken in planning new cable routes to	X	• Provisions are in place for these to be determined at the project level (added by country).

				• compromised (NMPF, 2021). • Preference given to proposals that protect submarine cables, whilst achieving successful seabed user coexistence (NMPF, 2021).	impacts on the marine environment, infrastructure and other users (NMPF, 2021).	pipelines shall be taken into account and either appropriate mitigation measures be put in place or the proposed activities altered (NMPF, 2021).	ensure that other marine interests are avoided where possible (NMPF, 2021).		
UK	• Proposals for alternative development at existing landing facilities (excluding safeguarded sites) should not be supported unless that facility is no longer viable or capable of being made viable for waterborne transport (North East Inshore and North East Offshore Marine Plan, 2021). • At developers own risk. But also use cables and pipelines in the opportunity and constraint analysis and plan around these accordingly (SEANSE report, 2019, Scotland).	X	• Corridor for cable repair: 50 m min and 200 m max. 750 m separation between cables and renewable energy installation • Cable maintenance vessel safety zone is all ships keep at least 1NM clear whilst on-going cable operations. • Working zone = 500m. • Hazard area = begins at 250 m (SEANSE report, 2019, Scotland).	• Cables are buried deep in the seabed where possible and installers and operators promote marine safety and protection (Interreg, 2019, p. 34; SEANSE report, 2019, Scotland, seabed conditions). • No planning areas or cable corridors identified in NMP. SG will seek to develop a spatial plan for an offshore electricity network (SEANSE report, 2019). • Potential for other uses of the sea	• Yes in some cases (SEANSE report, 2019). • Bundling where it is safe to (Ospar Commission)	• Cable crossing agreement set up to identify existing and planned cables that new cable will closely approach or cross (SEANSE report, 2019, Scotland). • minimal number of crossings with other cables or pipelines to reduce the number of crossing structures (Ospar Commision)	• The coordination of infrastructure needed to bring offshore wind energy to shore is currently under review (see Offshore Transmission Network Review) and the outputs and future coordinated grid designs will help reduce environmental and community impacts (UK Offshore Strategic Environmental Assessment, 2022). • Cable crossing agreement set up to identify existing and planned cables that new cable will closely approach or cross (SEANSE	X	X

				bed to impede the ability of cable owners to maintain and repair damaged cables should be taken into account (MPS, p. 41).			report, 2019, Scotland). • Cables buried and protected to minimize conflict with fishing activities (SEANSE report, 2019, Scotland). • application of best environmental practice (BEP) is a requirement for effective avoidance and minimization of environmental impacts by means of mitigation measures (Ospar Commission)		
France Belgium	• Cable corridors 'overlap' with OWF (in order to transmit the energy, generated by OWF). Zones for OWF are designated for the production as well as the transmission of energy (SEANSE report, 2019.	• 50m between cables (SEANSE report, 2019).	• 250 m between activities that might harm cable (SEANSE report, 2019).	• Activities which render impossible or restrict the laying or operation of piping and cables are prohibited (Interreg, 2019, p. 34).	• Corridors are foreseen within the MSP (SEANSE report, 2019).	• Crossings sometimes are unavoidable. But avoidance is preferable (SEANSE report, 2019).	• Via corridor • Via cable laying permit and environmental permits (SEANSE report, 2019).	• Coordination with land planning and permitting authorities (SEANSE report, 2019).	• To corridor: yes, if accepted by Minister for the North Sea and Minister for Energy (SEANSE report, 2019).
Netherlands	• When building wind farms, a 500-metre zone should be adhered to for pipelines and electricity cables and a 500-metre zone for telecommunication cables	X	• 500 m (both sides), less possible after agreement (SEANSE report, 2019).	• There is a maintenance zone of 500 metres around cables and pipelines in the North Sea and sand may not be extracted	• Parallel routing as much as possible (SEANSE report, 2019)	X	• No anchoring allowed.	• Cables from wind parks to the coast cross the sand mining area. A distance of 500 m on both sides from the	X

	(Interreg, 2019, p. 34; SEANSE report, 2019; added by country).			within this zone (Interreg, 2019, p. 34). • New cables preferable not passing through wind parks (SEANSE report, 2019).				cables is excluded for sand mining. There are preferred routes for cables through the sand mining area to the coast. These routes follow other cables or areas where the amount or quality of the sand is not sufficient (SEANSE report, 2019)	
Germany	500 m distance: Due regard shall be given to existing and approved offshore wind farms, offshore platforms, and approved other structures identified within this plan by regularly maintaining a distance of 500 m unless subsoil conditions require greater distances (FEP 2020, Principle 4.4.1.6)	100 m distance: When laying submarine cable systems in parallel, a distance of 100 m must be maintained between the individual systems. A distance of 200 m must be maintained after every second cable system (FEP 2020, principle 4.4.4.2)	• 500 m, less possible after agreement. (FEP, 2020).	• Areas LN1 to LN15 and LO1 to LO8 are designated as reservation areas for cables. Submarine cables should be routed in the designated reservation areas (MSP, Ch. 2.2.3).	• Lines should be bundled as far as possible (MSP, Ch. 2.2.3). • The routing should be chosen parallel to existing structures and installation as far as possible (MSP, 2.2.3).	• Crossing of lines among themselves should be avoided as far as possible (MSP, Ch, 2.2.3).	• Power and data cables shall be provided with a permanent cover necessary to safeguard other uses and functions. • When laying cables, overall temporal coordination must be ensured and the most non-disruptive laying procedure possible must be chosen. (MSP Ch. 2.2.3)	• At the transition to the territorial waters, cables must be routed through the designated connecting gates. Conflicting uses are excluded in these corridors (MSP Ch. 2.2.3) • Coordination with on-land transmission net (SEANSE	• Possible e.g. due to geological surveys in the permitting process (added by country).

								report, 2019).	
Denmark	• Open-door projects can only be proposed within 15km of the coast. • Public tenders can be planned 20km from the coast (North Sea and Baltic Sea) and 15km in inner Danish waters. • Cable corridors go from the coast to specific OWF areas; caveat that Energy Islands can pose a different setup		• The plan allocates zones for protective measures for aviation, which limits the placement of OWF. • The is a 200m protection zone on either side of power cables.	• Cables for renewable energy in the Danish sea areas is regulated by both Danish and international rules (explanatory notes).		• Commercial cable crossing agreement between asset owners, where new asset needs approval from existing asset		• Zones for cable corridors are allocated from specific OWF to the coast.	• Adjustments are possible through addendums to the plan.
Norway				• Subsea installations and pipelines must be designed to avoid interference with fishing operations (Interreg, 2019, p. 34).					

5 National approaches of OWF in relation to military activities

General information

The use of the marine and coastal areas for puproses of security and defence is a reality for all countries adjacent to the North Seas. Defence interests are varied and cannot always be communicated openly, so it might be difficult to include this information in the MSPs. Defence interests usually take priority over other interests, and the military can be an important employer to the coast (European MSP Platform, defence). Therefore, military use poses barriers for offshore windfarm developments. Windfarms largely affect the possibility of defence activities, and therefore OWF is often avoided in military training areas. Additionally, the use of radars by the military can be negatively affected by the presence of OWF (and other tall objects (Interreg, 2019, p.36).

6 National approaches of OWF in relation to ecology

For ecology there is an distinction made between national approaches towards Marine Protected Area (MPA) criteria, and national approaches towards species protection.

6.1 National approaches of OWF in relation to MPA Criteria

Over the last years, the knowledge and awareness of the marine environment is grown. OWF is a relatively new activity which has various impacts on marine plants and animals. Marine conservation is operating at the international, national and sub-national level, as well as approaches that target particular species or the ecosystem health in general, such as bird protection or efforts to reduce pollution. The main tool for 'area-based marine conservation' is the use of MPAs. MPAs are 'geographically distinct zones for which protection objectives are set. They constitute a globally connected system for safeguarding biodiversity and maintaining marine ecosystem health and the supply of ecosystem services' Marine protected areas - European Environment Agency (EEA) (europa.eu). However, there are also other designations that have the same goal (such as Natura 2000). In this chapter we analyse the national approaches of OWF in relation to MPA criteria Offshore wind and Conservation of nature and species (MSP Platform).

Country	Criteria					
	MPAs	*MPA exclusion*	*Mitigation measures*	*Compensation measures*	*Adjustments*	*Transboundary issues*
Ireland		Not excluded. In the MSP OWF development in relation to MPAs is not explicitiy mentioned. It is mentioned that ORE proposals must demonstrate that they can be implemented without adverse effects on the integrity of Special Areas of Conservation (SACs) or Special Protection Areas (SPAs). Where adverse effects from proposals remain following mitigation, in line with Habitats Directive Article 6(3), consent for the proposals cannot be granted unless the prerequisites set by Article 6(4) are met. Additionally, a process is underway alongside NMPF				A clear protocol is required to facilitate transboundary consultation on matters related to European sites and associated QI and SCI to ensure that indirect impacts on sites and species outside of the NMPF jurisdiction are robustly addressed.

		development that will identify Ireland's approach to MPAs.				
UK	Scotland: MPAs, Natura 2000 sites, Sites of Special Scientific Interest (SSSI) and Ramsar sites UK: The MPA network will comprise existing MPAs as well as new sites. It will be made up of both national (in particular Marine Conservation Zones (MCZs) and MPAs under legislation applying to Scottish waters and Sites of Special Scientific Interest) as well as European designations such as Special Areas of Conservation (as designated) and Special Protection Areas (as classified under the Wild Birds Directive) and sites of international importance (Ramsar sites). This network of MPAs will be a key tool in contributing to achieving good environmental status.	Scotland: This is not explicity mentioned. It is possible that MPAs are not excluded. UK: Not excluded			Scotland: A new Scottish Offshore Renewables Research Framework with a supporting research strategy is being developed. This new framework will provide a mechanism for understanding, collaborating and co-ordinating research priorities across a range of topic areas. It will also provide a mechanism for new knowledge to feed into updates to the sectoral marine plans and support Marine Scotland's risk based licencing and consenting approach. UK: Statutory protection for international sites, but do not provide statutory protection for potential Special Protection Areas (pSPAs) before they have been classified as SPAs. For the purpose of considering development proposals affecting them, as a matter of policy, UK Administrations wish pSPAs to be considered in the same	

					way as if they had already been classified.	
France	Marine protected areas (MPAs) are defined areas at sea that meet long-term nature protection objectives. Additionally there is another level of preservation under the The Conservatoire du littoral. The Environment Code now recognizes 15 types of marine protected areas , each of which has its own management method and purpose of protection. The MPAs include: - The Marine Nature Park of the Picardy Estuaries and the Opal Sea - 6 national nature reserves - 45 Natura 2000 sites at sea (16 SPAs and 29 SICs/SACs)	This was not mentioned in the MSP.				
Belgium	The European habitat and bird directive and the MMM-law are the basis for Key Biodiversity areas for the protection of species and habitats in the Belgium Economic Zone. Natura 2000 areas	MPAs are not excluded. Special protection areas for birds are outlined, where civil engineering and industrial activities are prohibited.	Mitigation measures are mentioned, but not in detail.	If it can be ensured that the original habitat is not irreparably damaged, a recovery and increase in quality of the natural habitat can occur during operation of the wind farms, possibly stimulated by the lack of bottom-disturbing		The construction and operation of wind farms also has numerous effects on the marine ecosystem, especially in the Habitats Directive area of the Flemish Banks, given the location of various new wind zones in or near this protected area.

	Vlakte van de Raan, Vlaamse banken and three designated offshore Bird directive sites. The zone 'Flemish banks' has four subzones based on the habitat characteristics: A) A complex of sandbanks with the dominant biotope Abra alba. This is classified as habitat type = Sandbanks which are slightly covered by sea water all the time (1110) en Lanice conchilega aggregations = habitattype 'Reefs' (1170) B. Sandbanks with a dominant presence of Nephtys cirrosa en Ophelia limacina biotopes (1110) C) A complex of sandbanks with a dominant presence of Nephtys cirrosa en Ophelia limacina biotopes (1110) en reefs (1170) D) Sandbanks with a dominant biotope Ophelia limacina en Nephtys cirrosa (1110) <u>Special protection areas for birds</u> Nieuwpoort SBZ 1,			fisheries in view of the ban on shipping. Additionaly, a new habitat is created in this environment by the introduction of hard substrate, resulting in an increase in biodiversity.		There is soil disturbance and an increase in turbidity due to the placement of foundations and erosion protection, the execution of dredging works and the laying of cables. The greatest impact can be expected for the new wind zones that effectively are situated within SBZ-H; the zones near SBZ-H, for example, do not imply direct habitat loss. However, the disturbance of the soil mainly occurs during the construction phase, although permanent changes in sediment and ecology in the vicinity of the foundations can be expected.

	Oostende SBZ 2 (grebe) en Zeebrugge SBZ 3 (sandwich tern and common tern) Marine sanctuary Baai van Heist (sandwich tern and common tern)					
Netherlands	Natura 2000 Dogger Bank, Cleaver Bank, Frisian Front, North Sea Coastal Zone, Voordelta, Vlakte van de Raan and Brown Ridge. MSFD Central Oyster Grounds and Borkum Reef Grounds Based on the Marine Strategy Framework Directive (MSFD), it has been decided to protect parts of the seabed ecosystem in the Frisian Front and Central Oyster Grounds.	Yes, excluded. When identifying the search areas for wind energy, based on the North Sea Agreement, any areas designated or to be designated as nature conservation areas are avoided.	Minimum distance of 1500 m from a Bird Directive area			The effects of large-scale ofshore wind energy on the North Sea ecosystem, such as destratification or turbidity of the seawater (research will take place under WOZEP).
Germany	The national marine protected areas in the EEZ "Borkum Riffgrund3, "Doggerbank", and "Sylter Außenriff – Östliche Deutsche Bucht" in the North Sea as well as "Fehmarnbelt", "Kadetrinne" and "Pommersche Bucht – Rönnebank" in the	Yes, excluded. The areas of the bird migration corridors "Fehmarn-Lolland" and "Rügen-Skåne" can, in principle, be used by wind energy provided they are designated as priority or	Compliance with mandatory avoidance measures: - Noise mitigation, the noise abatement concept of the BMU for the North Sea of 2013 should be taken into consideration.			

	Baltic Sea are designated as nature conservation priority areas.	reservation areas for wind energy.	- overall coordination of the timing of the construction work should be considered in order to avoid/mitigate cumulative impacts. - Minimum distance of 500 m of MPA unless habitats and their protection objectives require a greater distance.			
Denmark		MPA's are not excluded	Plans and projects will have to be subject to materiality assessment and possibly impact assessments, regardless of whether an area in the MSP is allocated for the purpose pursued by the plan or project. In Danish law, Article 6(3) and (4) of the Habitats Directive is implemented through §6 and §9 of the Habitat Order, and a number of laws and executive orders that regulate the			

			adoption, approval, etc. of plans and projects that may affect the physical environment.			
Norway	OSPAR zones **MPAs since 2020:** Innervisten, Kaldvågfjorden and Innhavet, Karlsøyfjorden, Lurefjorden and Lindåsosane, Nordfjorden, Rossfjordstraumen, Rystraumen, Skarnsundet, Ytre Karlsøy.	The government will: - Open areas for license applications for renewable energy production at sea and determine regulation to the Marine Energy Act. - Emphasize new knowledge when assessing opening of areas and determination of environmental conditions in future licenses, among other things about the seabirds' land use and the consequences offshore wind has. - Build up competence and knowledge about the environmental effects of offshore wind power. In general in MPAs protected by biodiveristy act, activities that does not influence the rationale for				

		protection can be included.				
General	It was agreed that in 2030, in total 30 percent of European seas will be ecologically protected, of which 10% are strictly protected. Between 2021 and 2023, the European Commission and the member states will elaborate legally binding nature restoration goals.					

6.2 National approaches towards OWF in relation to species protection

Within this chapter a closer look is taken on the criteria that countries have set for the protection of vulnerable species.

6.2.1 6.2.1 Species protection criteria part 1/2

Country	***Criteria***			
	Species of main concern	*Species protection plans*	*Precautionary actions when planning/siting OWF*	*Conditions for permitting*
Ireland	Birds, marine mammals and turtles	Following international legislation (Habitats Directive, Birds Directive and OSPAR Convention, which provide the basis for species and habitats, warranting protection measures). No specific species protection plans for OWF development are metioned.	There was no mention of this in the MSP/SEA statement	Following international legislation.
UK	Scotland: Seabirds, cetaceans and basking sharks. Additionally, diadromous fish species should be considered in marine planning and decision-making processes. UK: Species included on the Ospar list of threatened and declining species and habitats and species of principal importance for the conservation of biological diversity in the UK.	Scotland: The presence (or potential presence) of a legally protected species is an important consideration. If there is evidence to suggest that a protected species is present or may be affected by a proposed development, steps must be taken to establish their presence. The level of protection afforded by legislation must be factored into the planning and design of the development and any impacts must be fully	Scotland: Strategic Environmental Assessment, Habitats Regulations Appraisal and Environmental Impact Assessment will assess key environmental risks which will be taken into account in plan and project development and consenting procedures. The Marine Acts place a duty on all regulators to ensure that there is no significant risk of hindering the achievement of the conservation objectives of an MPA before giving consent	Scotland: Assessed on a case-by-case basis.

		considered prior to the determination of the application. Priority Marine Features are species and habitats which have been identified as being of conservation importance to Scotland. Most are a subset of species and habitatsidentified on national, UK or international lists. They provide a new focus for marine conservation in Scotland. The list does not currently include wild birds species, which are protected under the EU Birds Directive.	to an activity. Where an on-going activity presents a significant risk of hindering the achievement of the conservation objectives of an MPA there will be a management intervention. Locally designated natural heritage areas reflect areas of at least local importance. Where it is appropriate to do so, the Scottish Planning Policy approach to local designations should be considered	
France	Birds, marine mammals,fish, benthic communities.	Habitats and Birds Directive, Good Environmental Status and the nationally implemented environmental laws	There was no mention of this in the MSP/SEA statement	Following international legislation.
Belgium	Seabirds (especially divers and great crested grebe), marine mammals (mostly harbour porpoise, but also seals); marcobenthic communities.	Habitat and Bird Directive	Environmental Impact Assessment (EIA) and Appropriate Assessment.	In order to prevent any undesirable effects, rules will be incorporated into the terms and conditions applicable to the plot. Mitigating measures are prescribed in the wind farm site decisions for the relevant wind farms. Necessary compensatory measures must be implemented before the wind farms are put into use.
Netherlands	Harbour porpoise and birds. The birds include especially divers such as the common guillemot, red-throated divers,	In the North Sea Agreement, it has been agreed that for species for which there is no species protection plan, such	Environmental Impact Assessment (EIA), Appropriate Assessment and expert sessions with	In order to prevent any undesirable effects, rules will be incorporated into the terms and conditions applicable to

	lesser black-backed gull and the black-legged kittiwake.	plans will be developed based on EU directives (BD, HD and MSFD), international agreements (OSPAR, ASCOBANS, CMS, MoU Sharks), and the Framework for the Assessment of Ecological and Cumulative Efects for the rollout of ofshore wind farms (FAECE). Species which have been identified as vulnerable for effects of offshore wind farms will be given priority. These mainly inlcude seabird species, sharks and rays, marine mammals and seabed animals.	ecologists. Within the EIA the Framework for the Assessment of Ecological and Cumulative Efects (FAECE) is applied as an assessment is to whether or not it is possible to rule out an offshore wind farm having undesirable ecological effects. Either individually or cumulatively with other wind farms and other activities. The KEC is based on the most recent research findings and monitoring results (see Monitoring). Marine mammal pingers, which help to clear the area of marine mammals before and during piling activities.	the plot. Mitigating measures are prescribed in the wind farm site decisions for the relevant wind farms. Necessary compensatory measures must be implemented before the wind farms are put into use.
Germany	Birds (especially divers) and Marine mammals	Habitat and Bird Directive	Exclusion of main distribution areas of divers and mammals (in and outside MPAs); low-noise foundations.	Always defined, e.g. restrictions in time, monitoring requirements.
Denmark	Birds, marine mammals, bats	Habitats and Birds Directive and the nationaly implemented Habitat Order	**Birds** - Development of offshore wind should avoid primary migration routes for birds listed on the annexes of the Birds Directive. - Development of offshore wind should avoid important Bird and biodiversity Areas (IBAs). **Bats & Marine mammals** - Before establishing installations for renewable energy and wind power hubs an appropriate assessment of the projects implications	

			according to the Habitat Directive should be carried out.	
Norway	Birds, marine mammals,fish, benthic communities.	The Habitats Directive and Birds Directive are not apliccable in Norway however OSPAR Convention and other conventions like Bern convention (emareld network)		

6.2.2 Species protection criteria Part 2 / 2

Country	***Criteria***			
	Exceptions	***Mitigation measures***	***Monitoring***	***Other ecological considerations***
Ireland		There was not mention of this in the MSP or SEA Statement.		
UK		Scotland: The mitigation measures are identified on a case by case basis and in line with plan level assessments. As an example: Before and during piling, a mitigation zone should be established around the piling site, with a radius depending on the sound frequency and intensity (minimum of 500m). This zone should be monitored visually and/or acoustically for marine mammals. 'Soft-start' (gradually increasing piling power) should be implemented.	Scotland: Yes, required. Monitoring measures must be incorporated into a consent or licence for a project if the project is likely to have significant adverse effects on the environment. Proposed monitoring measures should be included in the EIA Report. UK: Opportunities for building-in beneficial features for marine ecology, biodiversity and geodiversity as part of good design; for example, incorporating use of shelter for juvenile fish alongside proposals for structures in the sea	
France				

Belgium			A monitoring program is attached to the permitcconnected to study the ecological effects of the parks. Monitoring the disturbance of birds is a strict precondition for the implementation of new wind projects.	Terns, common gulls and herring gulls have been found in the wind farms in Belgian waters.
Netherlands	Based on the Ofshore Wind Energy Act, the competent authority may also grant exemptions for the construction and operation of wind farms from the ban on disturbing or killing birds, marine mammals and/or bats. Such an exemption is only granted if various specifc conditions are met, described in the Nature Management Act. For birds, activities for which an exemption is granted may not result in a deterioration of the conservation status of a species of bird. For marine mammals, the criterion is that there must be no compromise on the aim to enable the population of the relevant species to continue its favourable conservation status in its natural distribution area. Further rules or limitations may be bound to the exemption in a site decision.		The research and monitoring of the efects of wind farms on the marine ecosystem takes place in the Ecological Ofshore Wind Energy Programme (WOZEP). The results of the research can lead to measures that limit negative effects as much as possible (mitigation), in accordance with the requirements of the Bird and Habitats Directives (BHD). The national government applies the results in decision-making on wind farm site decisions and permits and in their design. This procedure runs through the Ecology and Accumulation Framework (KEC), the environmental impact study, the appropriate assessment and the assessment advice of the Environmental Impact Assessment Commitee.	Nature inclusive construction in OWFs. This policy focuses on species and habitats from the EU Habitats Directive whose conservation status is not favourable, species on national Red Lists and species or habitats on the OSPAR List of Threatened and/or Declining Species and Habitats for which recommendations have been adopted.
Germany	The areas of the bird migration corridors “Fehmarn-Lolland” and “Rügen-Skåne” x can, in principle, be used by wind energy provided they are designated as priority or reservation areas for wind energy.	Compliance with mandatory avoidance measures: - Noise mitigation, the noise abatement concept of the BMU for the North Sea of 2013 should be taken into consideration. - overall coordination of the timing of the construction work should be considered in order to avoid/mitigate cumulative impacts.	Yes, according to standard monitoring procedures. Not explained what these are.	Best environmental practices according to OSPAR.

		Bird migration During periods of mass migration events, wind turbines shall not be operated in bird migration corridors if other measures are not sufficient to exclude a proven significantly increased risk of collision of birds with wind turbines. Under the same conditions, construction and maintenance work should not take place		
Denmark		Development zones: Specific mitigation measures adopted at this stage of planning involves requirements set forth as guidance for subsequent planning as well as a requirement to investigate such impacts when project development consent becomes relevant.	The monitoring of the significant impacts on the environment caused by the adoption of the MSP as well as the environmental status in Danish waters will be carried out through existing monitoring activities in programmes monitoring the environmental state of water bodies, programmes under Denmark's marine strategy and programmes supporting the protection of areas/sites designated under EU Nature Directives as well as in connection to the Danish NOVANA programme.	
Norway				Knowledge development.

7 Sources

In the table below, the information is presented that is used to create the overview of national approaches presented in this report. The information is mainly official governmental documents, which are delivered and checked by delegates from the countries.

Country	Available information
Europe	1) Interreg report a-comparative-analysis-of-spatial-planning-designations-in-north-sea-countries-fraunhofer.pdf 2) MSP Platform EU mspforbluegrowth_sectorfiche_offshorewind.pdf (europa.eu) 3) UNCLOS+ANNEXES+RES.+AGREEMENT 4) European Commission (2018) gp_daily_WEB_EA0221387ENN_002.pdf.en.pdf
Ireland	1) NMPF https://www.gov.ie/en/publication/60e57-national-marine-planning-framework/ 2) OREDP https://www.gov.ie/en/publication/e13f49-offshore-renewable-energy-development-plan/ 3) www.marineplan.ie,
UK	1) MSP 10164_Marine Statement_Cov.indd (publishing.service.gov.uk) 2) http://marine.gov.scot/ 3) The Crown Estate Open Data Portal (arcgis.com) 4) Documents - Resources - Crown Estate Scotland 5) Microsoft Word - 12-02e_agreement_cables_guidelines.doc (noaa.gov)
France	1) Sea basin strategy document Eastern Channel - North Sea en_dsfsynthetique_memnor_v1-4_vu_dirm.pdf (developpement-durable.gouv.fr) 2) straegie_de_facade_maritime_memnor_synthese.pdf (developpement-durable.gouv.fr) 3) 20210204_pda_memn_web_vf.pdf (developpement-durable.gouv.fr) 4) 20210202_pda_memn_vf_imprimeur_interieur_0.pdf
Belgium	1) all shapefiles, MARINEATLAS.BE
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