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DANISH MARITIME AUTHORITY

STRATEGIC ENVIRONMENTAL ASSESSMENT OF PROPOSED AMENDMENTS TO THE DANISH MARITIME SPATIAL PLAN

TRANSBOUNDARY ENVIRONMENTAL IMPACT REPORT (ESPOO REPORT)

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1 Introduction

On 7 June 2023, the Danish government reached an agreement with all parties in the Danish Parliament on the Maritime Spatial Plan (MSP)[1]. On this basis, the Danish Maritime Authority has prepared an amendment to the Danish MSP.

The proposed changes include withdrawing previously designated zones for aquaculture, shellfish farming and raw material extraction from the plan, and expanding existing zones for renewable energy and energy islands. The proposed changes also include new zoning for CO2 storage, specific transport infrastructure projects, raw material extraction, cable corridors for renewable energy, land reclamation and marine archaeological heritage sites. Finally, new zones are proposed for nature and environmental protection.

This document describes the Espoo process for proposed amendments to the Danish MSP, involving neighbouring states on the potential significant transboundary environmental impacts of the proposal.

1.1 Strategic environmental assessment of proposed amendments to the Danish MSP

The amendments to the Danish MSP are covered by the requirement to assess the impact on the environment laid down in the Danish Environmental Assessment Act (Miljøvurderingsloven)[2], and Section 8(1) no 1 calls for a strategic environmental assessment (SEA). An environmental report has therefore been prepared.

The SEA should provide for a high level of environmental protection and sustainable development by assessing the likely significant impact of the plan and of any reasonable alternatives to it. The SEA also helps to provide systematic and structured documentation of the way in which environmental

[1] https://em.dk/Media/638314155637865872/aftaletekst-danmarks-havplan.pdf
[2]Consolidated Act no 4 of 3 January 2023 on environmental assessment of plans and programmes and of concrete projects (EIAs)

considerations have been incorporated into the drafting of the proposed amendments to the MSP.

The SEA should be based on whatever information may reasonably be required in the light of current knowledge and prevailing assessment methods, the contents and level of detail in the MSP, the stage in the decision-making process the plan has reached, and the extent to which some matters may be better assessed at a different stage in that process, cf. Section 12(1) and (2) of the Environmental Assessment Act.

In drafting proposed amendments to the MSP, an initial screening of the effects on marine Natura 2000 sites was carried out in accordance with Article 6(3) of the Habitats Directive. The screening led to the preparation of an impact assessment of the plan to determine whether it could have significant adverse effects on the integrity of a number of Natura 2000 sites. The impact assessment pursuant to Article 6(3) of the Habitats Directive concluded that, at the level of detail of the MSP and the other available information on the nature and extent of possible future activities, any significant impact on the integrity of the Natura 2000 sites in question can be ruled out. The assessment contains a number of guidelines for the subsequent planning and authorisation processes for activities in or near the Natura 2000 sites.

Before preparing the environmental report, a scoping process was carried out, in which affected authorities, organisations and neighbouring countries were consulted on the scoping of the SEA.

This report constitutes the environmental report on the likely transboundary impacts on the environment from the proposed amendments to the Danish MSP.

2 Proposed amendments to the Danish MSP

2.1 The Danish Maritime Spatial Plan

The Danish MSP constitutes the overall spatial plan for the Danish marine areas. The MSP only establishes the general framework within which public authorities can issue permits or adopt regulations, plans or strategies for different purposes and activities. The MSP does not affect whether permits can be issued under sectoral legislation or whether regulations, plans or strategies may be adopted under other legislation in an area designated for the activity in question. However, it does require any subsequent sectoral regulation, planning and strategy, and any granting of permits for activities, to comply with the area designations in the MSP and the provisions relating to these.

The MSP designates areas that can be used for specific types of activity and installations, and the area allocation is based on zones. The marine areas are divided into four zone types:

- **Development zones**: development zones contribute to economic development and growth. For activities and uses for which development zones are designated, permits may in future be issued for the relevant purpose within the areas designated for this. Other areas are then kept free from these activities and uses. The development zones cover renewable energy and energy islands, oil and gas exploration and extraction, CO_2 storage, specific transport infrastructure projects, aquaculture including shellfish production and fish farming, and raw material extraction.

- **Special utilisation zones:** marine areas designated for specific uses cover pipelines, cable corridors for renewable energy, approach plans and safe distances for aviation, specific land reclamation projects, marine archaeological heritage sites and shipping corridors. Special utilisation zones designate areas for these activities and uses, but do not prevent them from being carried out elsewhere.

- **Nature and environmental protection zones:** Nature and environmental protection zones cover marine strategy areas, Natura 2000 sites (habitat areas, bird protection areas), Ramsar areas, conservation areas and nature and wildlife reserves. The areas cover existing and projected future nature protection areas.

- **General utilisation zones:** The general utilisation zones cover all of the areas in the MSP not designated for other purposes.

Fishing, shipping, recreational use and tourism are permitted in all areas unless prohibited under other regulation.

2.2 Proposed amendments to the MSP

With the agreement on the Danish MSP of 7 June 2023, the Government and the other parties agreed, among other things, on:

- A doubling of the area designated in the MSP for renewable energy and energy islands from approx. 15 per cent of the sea area in the current MSP to approx. 30 per cent of the sea area, to provide for a significant expansion of renewable energy production in Danish waters to support the national climate policy and to make Denmark and Europe independent of fossil energy.

- Enhanced nature conservation at sea. To achieve this, the MSP designates more than 30 per cent of the area for nature conservation, and gradually increases the proportion of strictly protected areas at sea from approx. 4 per cent of the sea area in the current MSP to 8 per cent in 2028 and 10 per cent in 2030. This will double the area under strict protection in 2028 compared to the current MSP, and Denmark will meet the 2030 target of 10% laid down in the EU's biodiversity strategy.

A number of changes to the MSP are proposed. Amendments are proposed for 13 of the 17 zone categories in the MSP, as well as splitting the previous zone for aviation protection measures and establishing a new zone category for marine archaeological heritage sites.

Moreover, since the draft MSP was published on 31 March 2021, several authorities have identified a need for new or adjusted area designations, partly to enable specific projects, and several project applications for designated areas have been dropped, which is why the reservation for these areas has been withdrawn in many cases.

The SEA focuses on the changes to the MSP. The amended plan (amending Executive Order) and the environmental report are being sent out for consultation at the same time. The changes in the draft plan are explained in the environmental report. The changes cover new designated areas, release of areas for other uses and adjustments to existing designations.

2.3 Approach and method in the planning process

The maritime spatial planning is based on five elements:

- Ecosystem-based approach
- Inclusiveness
- Best available knowledge and practice
- Coexistence
- Interaction between land and sea

2.3.1 Ecosystem-based approach

The preparation of the Danish MSP has taken an ecosystem-based approach[3].

The ecosystem-based approach entails considering:

- Best available knowledge and practice
- Application of a general precautionary principle
- Examination of alternative solutions in the case of significant environmental impacts
- Identification of ecosystem services
- Minimising negative environmental impacts
- Relational understanding of life and activities in and on the sea
- Involvement of stakeholders and the general public and improved information on the state of marine areas
- Subsidiarity and context
- Modifying the plan during the environmental assessment process

The creation of the MSP is based on the same holistic ecosystem-based approach as the Danish Marine Strategy (2019), which led to a focus on geographical delineation, ecosystem-human relationships and cumulative impacts.

In the preparation of the MSP, the environmental assessment has helped to identify where and to what extent possible future activities in the designated areas could conflict with limit or threshold values established by other legislation. This has enabled the Danish Maritime Authority, as the planning authority, to take account of any negative environmental effects by adjusting the area designations in the plan.

The implementation of the environmental assessment, along with the environmental authorities' input to the knowledge base behind the MSP and their contributions to the design of the plan, make up the ecosystem-based approach to maritime spatial planning.

2.4 Relationship to other plans and programmes

The MSP covers the overall spatial planning at sea. The MSP designates physically delimited areas of the sea for different uses. As this is a high-level plan and there is currently no knowledge of the extent and location of future uses of the areas for the individual purposes, it is not possible to include this in the environmental assessment.

The legal effects of the MSP only set the framework for the authorities' subsequent planning and issuing of permits for projects. The environmental impacts therefore arise not out of the area designations in the MSP, but rather out of the activities that may be authorised as a result of the MSP's designation of areas for the activities in question.

The subsequent environmental assessment by public authorities prior to the adoption of plans or granting of permits etc. for the uses planned for in the MSP will require more detailed assessments of the effects on the environment than are currently possible.

The proposed amendments to the MSP lay down the physical framework for various activities and installations at sea. The MSP has no bearing on whether the areas are utilised for these purposes and, if so, how much.

Large parts of the marine area are designated in the MSP as environmental and nature conservation areas. However, the designation of nature and environmental protection areas in the MSP does not imply any special protection of these areas, nor does the MSP define how any such protection might be provided. The designation of nature and environmental protection areas in the plan follows other legislation on nature and environmental protection and is included in maritime spatial planning to ensure that the MSP supports this protection.

3 Process for the strategic environmental assessment (SEA)

The proposed amendments to the Danish MSP are covered by the requirement for an environmental assessment in the Danish "Act on environmental assessment of plans and programmes and specific projects", cf. Section 8(1) no 1 of the Act. This means that an environmental assessment of the plan must be carried out and an environmental report prepared, which will be published together with the proposed amendment to the Danish MSP.

The SEA was carried out according to the six steps shown in Figure 3-1.

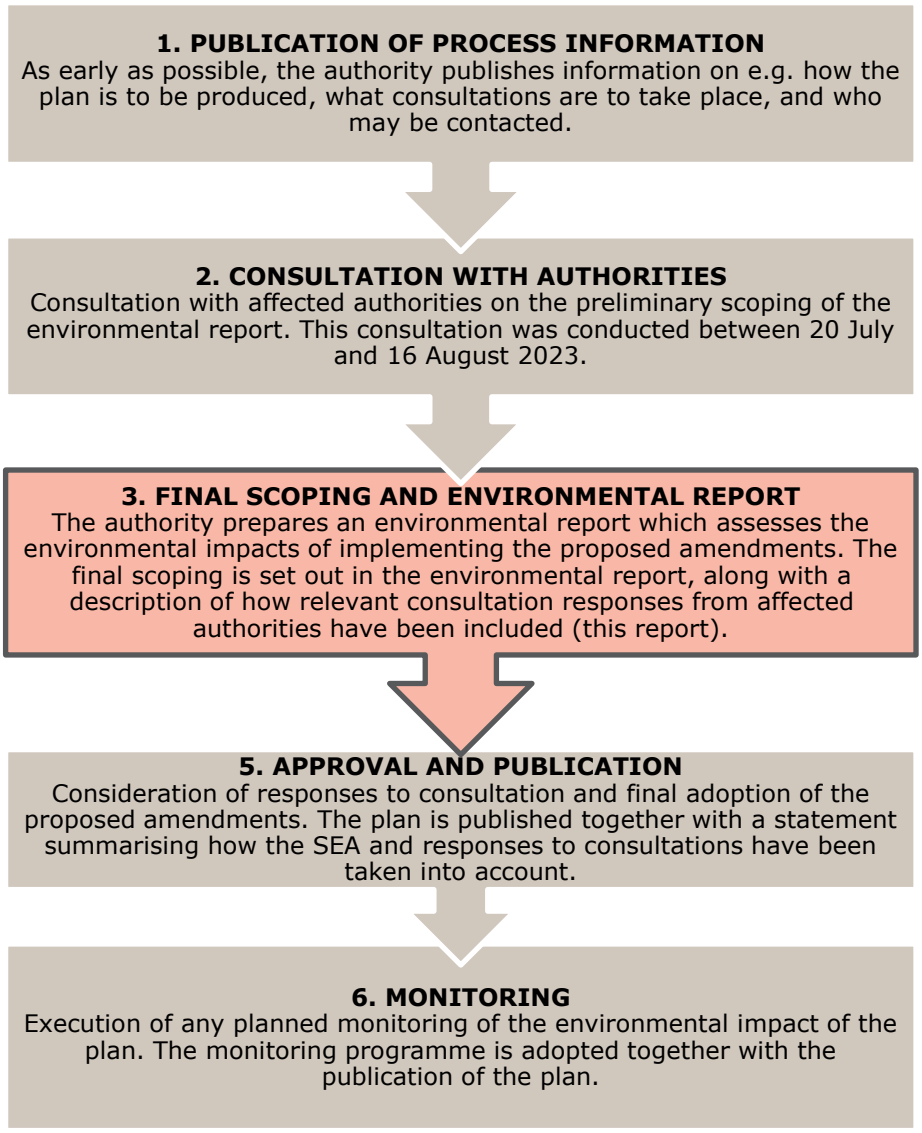

Figure 3-1: Graphical overview of the phases in the SEA process.

Regulatory processing: Danish Maritime Authority
Consultation period
Current phase in the SEA process

*The Danish Maritime Authority is the environmental authority for the Espoo consultation

3.1 Scoping of the SEA

Before drafting the environmental report, a scoping of the environmental assessment was carried out and a draft scoping was circulated for consultation with affected authorities and neighbouring countries that could potentially be affected by the MSP.

The purpose of the scoping was to identify:

- The environmental impacts which derive directly or indirectly from the MSP
- The environmental impacts which are expected to be addressed later in the overall approval process.
- The relevant environmental goals (national/regional/international) to be included in the SEA.
- Evaluation criteria associated with the identified environmental impacts, including a mapping of data needs and data availability.

All neighbouring countries were notified of the draft amendments to MSP and were asked whether they wished to participate in the environmental assessment process. In response to the Espoo notification, the following stated that they wished to participate:

- Finland
- Poland
- The Netherlands
- Sweden
- Germany
- Norway
- Latvia

These countries' comments on the scoping of the environmental report focused mainly on a number of topics to be included in any assessment of the likely significant impacts. These topics are:

- Clarifying how and to what extent ecosystem-based planning will be followed up and monitored after the amendments to the MSP enter into force.
- Mapping and assessing transboundary impacts on migratory species (birds and bats) resulting from intensified development of renewable energy, including barrier effects from the overall expansion of offshore wind energy.

- Mapping and assessing impacts from the expansion of offshore wind energy resulting from more intensive human activities with an effect on marine mammals from noisy construction works.

- Mapping and assessing the impacts on Natura 2000 sites in neighbouring countries' marine areas resulting from the cumulative effects of maritime spatial planning in Denmark and the neighbouring countries.

- Assessing possible hydrographic changes to the marine areas in Denmark and neighbouring countries from more intensive utilisation of these marine areas for renewable energy

- Assessing impacts on the seabed and benthic fauna in the marine areas in Denmark and the neighbouring countries from more intensive utilisation of these marine areas for renewable energy

A number of more specific topics were identified by Swedish authorities. These are:

- The impact of the Lynetteholm landfill operations on oxygen depletion in the Baltic Sea

- The visual effects on Swedish coastal landscapes of designating further areas for renewable energy development in the southern Øresund

Many of the responses to consultation also provided fresh knowledge of existing environmental conditions and mapping of bird migration routes etc., which have been included wherever necessary in assessing the impact of the amendments to the MSP.

Estonia stated in their response that they did not wish to participate in the environmental assessment process but would like to receive a summary of the environmental report in English. Lithuania had no comments on the material that was circulated.

3.2 Approach and method in the SEA

The SEA makes an objective-based assessment where the designation of zones in the MSP is viewed against the environmental goals applicable to the different parts of the marine area. The assessment is also based on the environmental factors which are described in Section 1(2) of the Environmental Assessment Act. The environmental factors cover a range of specific environmental topics which are used as a basis for describing possible environmental impacts in section 4. The likely significant environmental impacts are described for each of these environmental factors, both in isolation and across different factors.

The assessments are qualitative and are based on identified evaluation criteria. The assessment criteria are based on national targets and reflect the reasons for designating the specific development zones. The assessment judges whether the

expected likely impact is significant or insignificant. The assessments are based on existing knowledge and experience from carrying out strategic environmental assessments as well as information that may reasonably be expected to be considered in light of current knowledge and assessment methods.

The SEA assessed whether the impacts can be averted, minimised or delayed, or whether impacts arising from the MSP can be offset by altering the designation of development zones under the MSP. As part of the iterative approach to maritime spatial planning and assessment of the early drafts of the plan, a precautionary approach has been taken as a fundamental element of the planning and assessment of the planning. The draft plan and the draft environmental report were constantly compared to ensure that some probable impacts could be averted and/or minimised as far as possible at the aggregated level of the plan.

As part of the environmental assessment process for the proposed amendments to the Danish MSP, a materiality assessment of the potential impacts on designated Natura 2000 sites was carried out in accordance with Article 6(3) of the Habitats Directive in the autumn of 2020. The outcome of the materiality assessment could not effectively rule out a significant impact on a number of Natura 2000 sites, and an impact assessment in accordance with Article 6(3) of the Habitats Directive[4] was carried out in winter 2020/2021.

The outcome of this impact assessment was that, at the current level of planning, it was possible to avoid any significant impact on the integrity of the Natura 2000 sites, but that recommendations and guidelines considered necessary in the assessment point to a need for further assessments of the potential impacts in the course of subsequent planning and in the handling of permit applications for future projects.

3.3 Assessment of environmental impacts across national borders

Under the Espoo Convention[5], Denmark is required to involve all of the countries that could potentially be affected by the Danish MSP in the environmental assessment process.

If a plan is expected to have a significant impact on the environment in another country, the authority must inform the Minister for the Environment and Food (via the Danish Environmental Protection Agency) as soon as possible, with a view to consulting neighbouring countries, cf. Environmental Assessment Act, Section 38(1).

[44] EU Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora

[5] Executive Order of 25 February 1991 on environmental impact assessment in a transboundary context

The affected neighbouring countries have been involved in the environmental assessment process at the same time and in the same way as the Danish public, Danish NGOs and affected authorities.

3.3.1 The ongoing consultation phase

Step one in the Espoo process was the dispatch of an Espoo notification in which Denmark notified the countries that could be affected by the plan. The purpose of the notification was both to ask the countries concerned whether they wished to participate in the SEA process, and to ask whether they had any comments on the draft scoping note sent to them or any other topics they would like examined in the environmental assessment of the transboundary impacts. The countries concerned were also informed of the timetable for the MSP and the SEA and the type of the decision that may be made at the end of the process, with guidance on how to appeal.

Step two in the Espoo process was a consultation of the affected countries that wished to participate in the environmental assessment procedure. The material for this consultation includes the present SEA report on the transboundary environmental impacts the Danish MSP could have on the affected countries, and a draft of the MSP itself. The neighbouring countries are invited to comment on the SEA.

If a country has questions or comments on the SEA of the transboundary impacts, these must be resolved with that country before the amended MSP can be adopted.

4 Strategic environmental assessment

Ocean currents and the distribution of flora and fauna do not respect national borders, and utilisation of the development zones of the MSP could therefore have transboundary effects on the marine area in neighbouring countries. This section assesses the likely transboundary impacts of the MSP on the marine environment in Denmark's neighbour countries.

It should be noted that some migratory birds and marine mammals are in the basis for designation for Natura 2000 sites in Sweden, Germany, the UK and the Netherlands, among others, so there could be indirect effects on Natura 2000 sites in these countries.

4.1 Renewable energy and energy islands (Ei)

4.1.1 Western North Sea

The extended development zone for renewable energy and energy islands in the western part of the Danish Exclusive Economic Zone in the North Sea borders on the German Natura 2000 site DE 1003-301 Doggerbank.

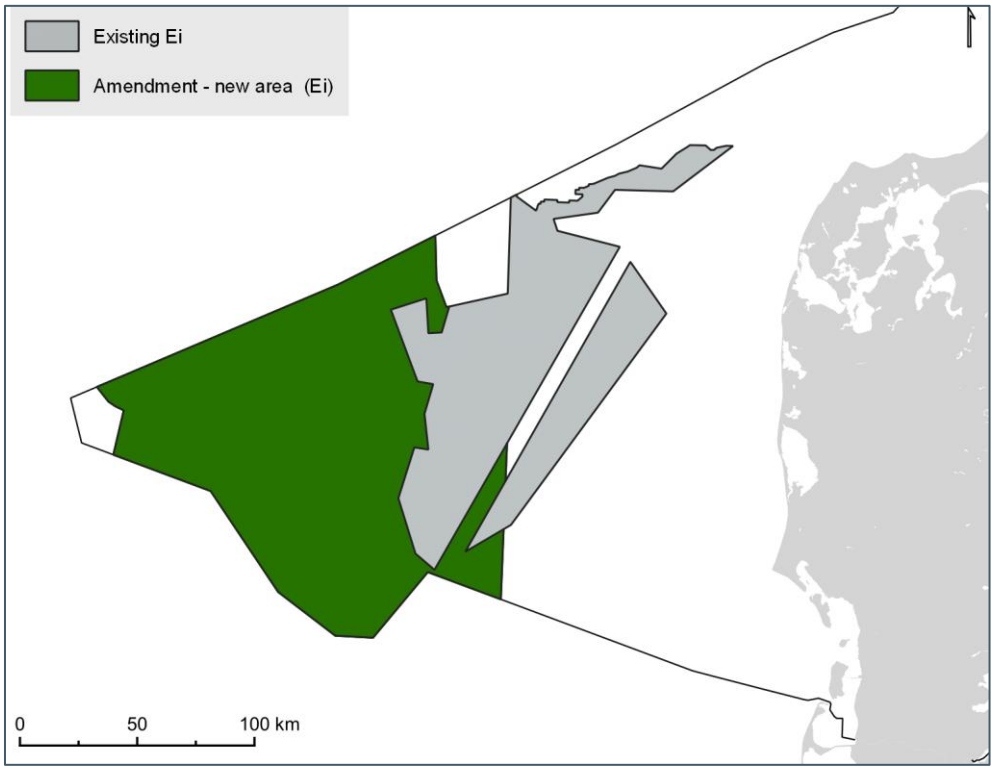

Figure 4-1 Zones for renewable energy and energy islands (Ei) in the North Sea

This German Natura 2000 site includes the habitat type sandbanks (1110) and the species harbour porpoise (1351) and harbour seal (1365) in its basis for designation.

Hydrographic conditions and water quality

Radar surveys from aircraft and satellites show that an offshore wind turbine causes a reduction in wind speed and increased turbulence on the leeward side of the turbine. This is because the turbine "draws power (kinetic energy) from the wind". Reductions of up to 10-12% have been measured within 10 kilometres of an offshore wind turbine, and the speed reduction can be detected up to 50 kilometres away (Christiansen m.fl., 2022), (Vedel m.fl, 2021). Several studies have shown that the reduced wind speed and increased turbulence downwind of the turbines reduces the speed of horizontal surface currents. This can affect the vertical water exchange, water temperature, salinity and stratification of the water column (see e.g., (Christiansen , 2022)).

In light of this, impacts on hydrographic conditions and indirect effects on marine ecosystems from the utilisation of the designated development zone for renewable energy and energy islands are judged to be moderate. In the event of very intensive utilisation of the development zone to establish both energy islands and large offshore wind farms, project applications should be carefully assessed to determine whether the erection of offshore wind turbines will have a significant impact. Significant impacts could arise from local currents, seawater temperature and salinity causing changes in local marine ecosystems. This could be compounded by cumulative impacts from similar renewable energy developments in the German, Dutch and British areas of the central North Sea.

Birds

There is as yet no concrete evidence of how energy islands affect birds. The birds commonly found in the central North Sea are mainly kittiwakes and fulmars. Migrating land birds may also be affected by a possible barrier effect from offshore wind turbines.

An energy island with associated offshore wind turbines may be expected to impact seabirds and shorebirds in the following ways:

- Offshore wind turbines installed around an energy island may displace wintering and resting birds, as well as creating a barrier effect for migratory birds or causing deaths from collisions with the turbine blades.

A displacement effect refers to the way in which some bird species appear to avoid areas where offshore wind farms are established, which may limit their foraging opportunities by displacing them from major feeding grounds or from important breeding, resting or moulting areas.

A barrier effect refers to the way in which offshore wind farms can act as barriers to migrating birds by blocking a preferred migration route (e.g., the shortest stretch of the route over water) because such an offshore wind farm has been constructed and the birds will try to avoid it.

- The establishment of an artificial energy island in the form of a platform, turbine foundations or erosion protection may destroy foraging areas for birds by burying food sources on the seabed.

- The establishment of an energy island may have a positive effect on migratory birds by providing a resting place on their journey, e.g. for small land birds that migrate across the North Sea between breeding grounds in Denmark and wintering grounds in the UK.

- The construction of an island (in the form of reclaimed land or a platform), along with offshore wind turbine foundations and erosion protection, may give rise to new feeding grounds for birds resulting from fouling on the construction elements.

Several studies have shown that kittiwakes are not displaced by offshore wind farms (see e.g. (Goddard m.fl., 2017)), but a study conducted at Thanet offshore wind farm in southern England did show displacement behaviour, with most of the kittiwakes observed to congregate just outside the wind farm (Skov m.fl., 2018).

Fulmars display weak displacement behaviour around offshore wind turbines. It has been suggested that the displacement may be due to the introduction of a fishing ban around the turbines, which has made the areas less attractive to fulmars, as they generally feed by following fishing boats and living off the fish waste that is thrown overboard (Deakin m.fl., 2022).

Collision risk - kittiwakes and fulmars

There is conflicting information regarding flying heights and hence the risk of collision with turbine blades for kittiwakes that might find themselves inside an offshore wind farm. The average flying height of the kittiwakes around the Thanet offshore wind farm was 33 m, carrying a risk of collision with the turbines, while kittiwakes at the German Alpha Ventus site preferred heights between 10 and 20 m, i.e., below collision height (Skov m.fl., 2018). The vast majority of the kittiwakes at Thanet (96.9% of the birds observed) flew between the rows of turbines, avoiding collision (Skov m.fl., 2018).

The risk of fulmars colliding with turbine blades is minimal, as they generally fly low and below collision height (Deakin m.fl., 2022).

Impacts - food base for kittiwakes, fulmars and other seabirds

Land reclamation for an energy island with associated offshore wind turbines can destroy foraging areas for birds by burying food sources on the seabed.

The fulmar feeds on the surface or dives for food, which mainly consists of small fish, squid and crustaceans. It also tends to follow fishing boats and pick up the fish waste that is thrown overboard. The kittiwake feeds on smaller fish such as sand eel and, in winter, on small crustaceans and sea butterflies which it catches on the surface. Like the fulmar, it also follows fishing boats to pick up fish waste that is thrown overboard.

The establishment of an energy island on a clean sandy bottom or on coarse sand and gravel will bury sand eel habitats (see section on fish below) and thus reduce the supply of eels as food. This is especially true if the energy island takes the form of reclaimed land. A possible ban on fishing in the area will also reduce the food supply for kittiwakes and fulmars in the form of fish waste. Conversely, hard substrate around the energy island, turbine foundations and

erosion protection will act as an artificial stone reef, attracting fish and so increasing the food supply (see section on fish below).

Impacts - migrating land birds.

Most small birds migrate at night. At an offshore wind farm at Utgrunden in Kalmar Sound in Sweden, radar surveys showed that the average flying height of small nocturnal migrants such as thrushes, starlings and warblers was 330 m in the autumn and 529 m in the spring, which was much higher than the tips of the uppermost turbine blades. The same study also found that the flying height of the small birds remained unchanged after passing the wind farm (Pettersson , 2011). If 15 MW or 27 MW offshore wind turbines, which will be approx. 260 and 330 metres high respectively, are installed in the designated area, a large proportion of nocturnal migrants will fly above the turbines and avoid collision. Moreover, only a minimal proportion of the migration volume over the North Sea will pass the turbines, as the night-time migration in both spring and autumn takes place over a broad front (Therkildsen m.fl., 2019). The number of small birds killed in collisions with the turbine blades while migrating at night is therefore expected to be negligible.

Chaffinches and bramblings, which could also pass through the wind farm, migrate during the day. A study of bird migration patterns conducted as part of environmental surveys for the Aflandshage and Nordre Flint offshore wind farms showed that the average and maximum flying heights of small diurnal migrants were 29.8 m and 159 m (Therkildsen m.fl., 2019). This finding suggests that the risk of small diurnal migrant birds colliding with large 15 MW or 27 MW offshore wind turbines is greater than for nocturnal migrants. However, as bird migrations cover a wide front, the number of small birds killed in collisions with the turbine blades while migrating in the daytime is expected to be negligible

The establishment of an energy island may have a positive impact on migrating land birds, as it can act as a resting place on their journey.

In summary, the utilisation of the designated development zone for renewable energy and energy islands in the central part of the North Sea is expected to have a moderate impact on birds, with the greatest impact coming from energy islands in the form of reclaimed land.

Habitat types

Most of the seabed in the western part of the exclusive economic zone in the North Sea, which is designated for renewable energy and energy islands (Ei), consists of sand or muddy sand. There are also areas of mud/sandy mud as well as gravel and coarse sand (Figure 4-2).

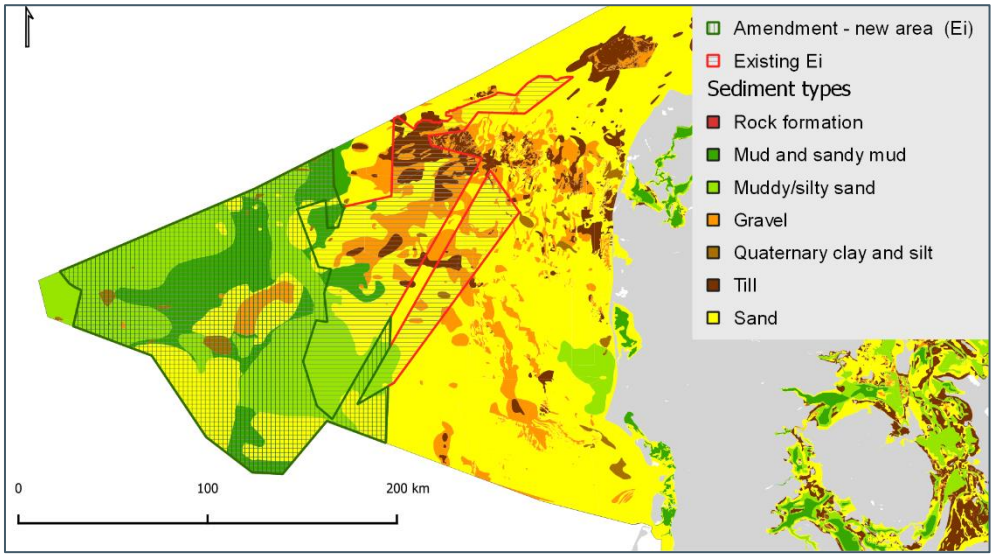

Figure 4-2 Seabed sediments in the Danish sector of the North Sea (GEUS, 2018a)

The seabed is home to invertebrates (benthic fauna) which live buried in the sediment (infauna) or on the sediment surface (epifauna), and covers a wide range of species of polychaetes, mussels, snails, crustaceans, echinoderms, etc. The breakdown of species in a given area depends on a complex interaction between environmental factors such as sediment type, water depth, salinity and oxygen conditions on the seabed, with different species having different tolerances and preferences.

WSP/GEUS conducted a habitat survey in the western part of the Danish sector of the North Sea and found that the infauna in areas of mud/sandy mud was dominated by species such as brittle stars (*Amphiura filiformis*), sea urchins (*Echinocardium* sp.) and horseshoe crabs (*Phoronis* sp.), while areas of sand or muddy sand were dominated by the polychaetes *Lanice conchilega*, *Spiophanes bombyx* and *Galathowenia oculata* (WSP/GEUS, 2021).

The epifauna species living attached to rocks included sea sponge, feather polyp, dead man's hand coral, large sea anemone, swimming anemone, tubeworm, posthorn worm, barnacles, hermit crab, brown crab, hornwrack, Luidia starfish, sunflower sea star, common starfish, spiny starfish, sea urchin and sea squirt.

There is no bottom vegetation in the area, as it is too deep for algae or flowering plants such as eelgrass to get enough light to thrive.

Utilisation of the designated development zone for energy islands with associated offshore wind turbines could potentially impact habitats through:

- Permanent loss of seabed habitats buried under energy islands, turbine foundations and erosion protection.

- Temporary destruction of natural habitats by excavation works for power cables or pipelines.
- Sediment spill from backfilling for energy islands and excavation for power cables, possibly affecting habitats.
- The presence of energy islands, turbine foundations and erosion protection causing changes in local current conditions which affect seabed habitats.
- Hard substrates around energy islands, turbine foundations and erosion protection creating new stone reef habitats.
- Discharges of hypersaline brine from desalinated seawater used for electrolysis of water to produce oxygen and hydrogen in a PtX plant, possibly affecting benthic organisms.

Where a development zone is to be utilised for one or more specific projects, we must determine whether sediment spill from backfilling or excavation works could be carried by the current into the German Natura 2000 site DE 1000-301 and affect the habitat type sandbanks (1110), and whether underwater noise from ramming e.g. sheet piling or monopile foundations for offshore wind turbines could affect the species harbour porpoise (1351) and harbour seal (1365).

4.1.2 Hesselø in the Kattegat

The amendment to the MSP includes a new development zone for renewable energy (Ev) at Hesselø. Another development zone in the area has been withdrawn (Figure 4-3).

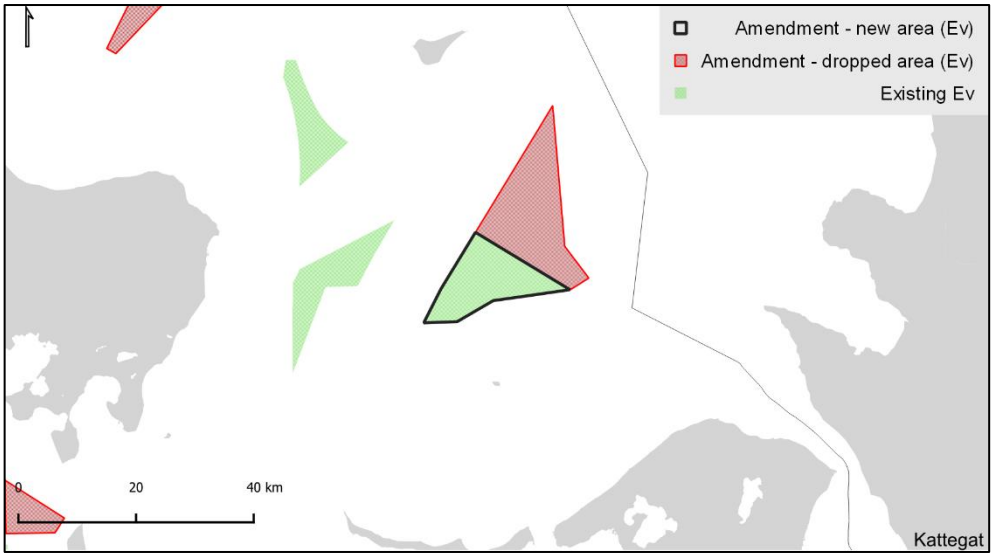

Figure 4-3 Location of the designated area for renewable energy (Ev) at Hesselø.

Birds

Overwintering auks and guillemots have been observed (Petersen, & Sterup, 2019a) in the proposed new renewable energy development zone at Hesselø, where the water depth is between 20 and 25 metres. However, the density of auks and guillemots was significantly higher in the deeper water to the north and northeast of the renewable energy development zone, including the zone slated for withdrawal from the MSP, where the depth is more than 30 metres. The deeper water in this zone is (Holm m.fl, 2021a) an important overwintering area for auks and guillemots. The Kattegat is one of the most important resting areas in the world for auks (DOF , 2021). Petersen and Sterup also noted the presence of gannets and several different gull species.

Displacement effects

Numerous studies have shown that auks, guillemots and gannets are often, but not always, displaced from offshore wind farms during and immediately after the construction of the turbines. Other studies have also shown that they can gradually get used to the turbines and return to the area again. Gulls, on the other hand, do not tend to be displaced by offshore wind turbines.

Auks occur in small densities over a large area in the Kattegat. In 2016, 1-3 birds were observed at each observation point in an area extending from Læsø to the waters immediately north of the north coast of Zealand (Holm et al., 2021). The installation of offshore wind turbines in the new development zone at Hesselø may displace a small number of birds in relation to the total population of overwintering auks in the Kattegat. Auks and guillemots feed on fish, especially pelagic schooling fish such as herring and sprat, as well as sand eels and small cod, which are found throughout the Kattegat. Any displaced auks will therefore be able to find alternative foraging grounds in the Kattegat. The same goes for gannets.

The populations of auks and gannets are not therefore expected to be significantly impacted by displacement effects if the designation is utilised and an offshore wind farm is established in the new development zone.

Collision risk

Studies of the risk of collision with turbines for different birds have shown that gannets, guillemots and auks generally fly low over the surface of the water inside wind farms, below the lower tips of the turbine blades, which significantly reduces the risk of collision. However, this does not mean that collisions cannot ever happen, especially if the birds have the wind at their backs (when they tend to fly at higher altitudes), but the risk of collisions is generally low.
The populations of auks and gannets are not therefore expected to be significantly impacted by collisions with turbine blades.

Conclusion

In summary, the utilisation of the renewable energy development zone at Hesselø is expected to have a moderate impact on seabirds in the Kattegat.

Habitat types and fish

Existing environmental status

The surface sediments on the seabed in the designated area include sand, muddy sand, gravel and coarse sand as well as moraine (GEUS, 2018a) ().

Bottom fauna on sandy seabed

The water depth in the area with a sandy seabed is 21-22 m. The benthic fauna on the sandy seabed in the Kattegat at this depth can typically be described as a Venus community with the following characteristic species: striped venus clam (*Chamelea gallina*), thin tellin (Angulus tenuis), cut-through shell (*Spisula subtruncata*) and sea potato (*Echinocardium cordatum*) (Thorson , 1979).

Benthic fauna on a muddy sand seabed

The water depth of the muddy sand seabed in the development zone is 29-31 metres. The Danish Nature Agency surveyed a soft seabed area with a depth of 28-34 metres northeast of the development zone. The species making up the benthic fauna in this zone are judged to representative of the population on the muddy sand seabed in the area. The benthic fauna community can be characterised as an Amphiura community dominated by brittle stars (*Amphiura filiformis*), horseshoe crabs (*Phoronis* sp.), the bivalve *Mysella bidentata* and the polychaetes *Scoloplos armiger* and *Pectinaria auricoma*. The benthic fauna also includes Norway lobster (*Nephrops norvegicus*), which is a very important species for commercial fisheries (see below) (SVANA , 2017), (Naturstyrelsen , 2016a) (Warnar m.fl., 2012)

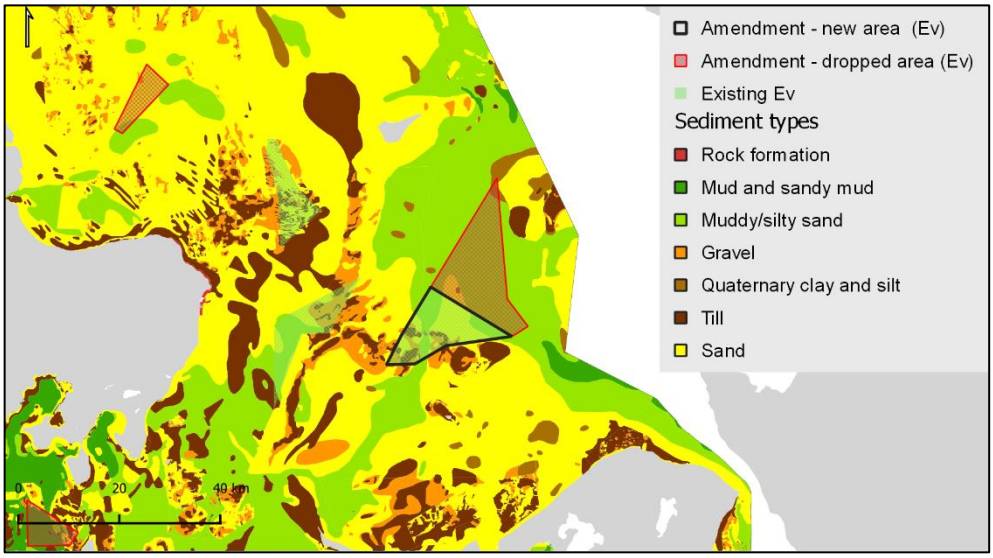

Figure 4-4 Surface sediments on the seabed in the southern Kattegat and the location of the proposed designated and withdrawn areas for renewable energy (Ev) (GEUS, 2018a). The assessment covers the proposed development zone at Hesselø.

Bottom vegetation and fauna on moraine seabeds

In the south-western part of the proposed development zone, the seabed consists mainly of moraine (Figure 4-4). Here, the bottom is probably rocky. Rocks are a substrate for macroalgae in shallow waters where there is good light penetration. The zone borders on habitat area H167 *Lysegrund*, where red algae grow on the rocks, including Christmas tree algae (*Brongniartella byssoides*), clawed fork weed (*Furcellaria lumbricalis*), filamentous red algae (*Polysiphonia* sp.), sea beech (*Delsesseria sanguinea*) and red seaweed (*Phycodrys rubens*), as well as red lime crusts.

Various benthic organisms are also attached to the rocks, including polyps, dead man's hand coral and animal sponges (Miljøstyrelsen , 2021). The depth of the surveyed areas at Lysegrund is between 8 and 18.5 metres. The depth of the moraine seabed in the development zone is around 21-22 m. It is therefore possible that the coverage of the red algae mentioned above is less than at Lysegrund and that the rocks are more of a habitat for sessile benthic organisms.

Pelagic fish

The most common pelagic[6] fish species in the development zone are herring and sprat (Warnar m.fl., 2012).

Bottom-dwelling fish on sandy and muddy sand seabeds

The following commercially exploited bottom-dwelling fish species typically live on sandy and muddy sand seabeds in the southern Kattegat: cod, whiting, flatfish (especially plaice, flounder and dab, but also turbot and sole) (Warnar m.fl., 2012). There are also large numbers of sand goby and sand eel, which are especially common on sandy seabeds. The sand goby is an important food source for other fish, such as cod. Sand eels, of which there are five different species in Danish waters, are also an important food source for seabirds and a number of commercially important fish species such as mackerel, whiting and cod.

Fish fauna on stone reefs

The fish fauna on the stone reefs on the neighbouring Lysegrund includes goldsinny wrasse, greater weever, cod, goby and corkwing wrasse. (Miljøstyrelsen , 2021)

Based on previous experience of the extent of impacts from areas of seabed buried under foundations and erosion protection, sediment dispersal and localised changes in current conditions, in relation to the sensitivity of different species to these impacts, there is expected to be only minimal impact on benthic fauna and fish from the utilisation of the renewable energy development zone at Hesselø.

Conclusion

The impact on habitats and fish from utilising the development zone for renewable energy at Hesselø is therefore expected to be negligible.

Marine mammals

Harbour porpoises may occur in the area of the proposed development zone, but it is not a core area for this species. They may be found quite frequently northeast of the zone, around Store Middelgrund, which is characterised as an area with a high density of harbour porpoises, but too small in extent to have a significant impact on the harbour porpoise population (Sveegaard, Nabe-Nielsen, og Teilmann, 2018). The species is in the basis for designation for Natura 2000 site no 193, Store Middelgrund.

Seals

Hesselø, located 14 kilometres south of the proposed development zone, is one of the most important breeding sites for harbour seals in Denmark. With a growing breeding population of up to 1400 individuals in 2020 (Miljøstyrelsen ,

[6] Species that live in the open water

2020a) this colony is one of the largest in Europe. Anholt is home to another of Europe's largest seal colonies. The development zone lies between the two breeding sites, and the area is therefore used extensively by harbour seals as they forage and swim between the sites at Anholt and Hesselø. No fewer than (Petersen, & Sterup, 2019a) 130 and 400 harbour seals were observed in the area between Anholt and Hesselø on 9 September and 6 November 2019 respectively, in connection with bird migration counts.

The grey seal regularly moults on the reef in the Hesselø area, with a small regular community of 1-3 individuals (Miljøstyrelsen , 2021). Seals are vulnerable during the moulting period and often stay out of the water during this time. There is no evidence that the species breeds at Hesselø. However, there are only a few grey seals in Denmark, and Hesselø must therefore be considered an important site that could potentially develop into a permanent population over time.

Both seal species are in the basis for designation for Natura 2000 site no 128"*Hesselø and surrounding stone reefs*" to the south of the project area (see section on 'Protected nature areas' below).

Harbour porpoise - assessments

Porpoise hearing and behaviour may be affected by underwater noise or vibrations during the construction phase from e.g., pile driving. The establishment of offshore wind turbines is subject to the Danish Energy Agency's standard conditions, such as the use of soft-start, bubble curtains and seal scarers in the course of noisy construction activities. Offshore wind turbines may attract harbour porpoises during the operational phase, possibly because of the increased food supply from the reef effect or from less ship traffic. Perceptions differ as to the vulnerability of the harbour porpoise population in the Kattegat and the Belt Sea (the so-called Belt Sea population). In Denmark, the official view is that this is a stable population (although the latest census (2023) will probably lead to a revision of this characterisation). In Sweden and in HELCOM, the population is characterised as being in a critical state. Any assessment of possible impacts on the harbour porpoise population in inner Danish waters must also recognise that there will be differences in assessments of potential impacts.

A difference in assumptions may cause the same impact to be judged differently in Sweden and Denmark. The countries should therefore seek to co-operate to find a common basis for assessing impacts on e.g. harbour porpoises.

Seals - assessments

Underwater noise during the construction phase can also cause hearing damage in seals and affect their behaviour, including triggering flight behaviour. However, seals are far less sensitive to underwater noise than harbour porpoises. Seals are particularly sensitive to airborne noise on their resting and breeding grounds, but as the nearest site is Hesselø, 14 kilometres from the designated development zone, this is not considered to be a problem.

Conclusion

In summary, the utilisation of the renewable energy development zone at Hesselø is expected to have a negligible negative impact on marine mammals.

Nature and environmental protection areas

Natura 2000 sites

The closest Natura 2000 sites to the development zone are (Figure 4-5)

- Natura 2000 site no 207 Lysegrund, which includes habitat area H167. The basis for designation for the site includes sandbanks (1110) and reefs (1170).
- Natura 2000 site no 128 Hesselø with surrounding stone reefs, which includes habitat area H112. The basis for designation for the marine area includes sandbanks (1110), lagoons (1150), reefs (1170), grey seal (1364) and harbour seal (1365).
- Natura 2000 site no 204 Schultz and Hastens Grund and Briseis Flak. The basis for designation for the site includes sandbanks (1110) and reefs (1170).
- Natura 2000 site no 193 Store Middelgrund, which includes habitat area H169. The basis for designation for the site includes harbour porpoise (1351), sandbanks (1110), reefs (1170) and bubble reefs (1180).

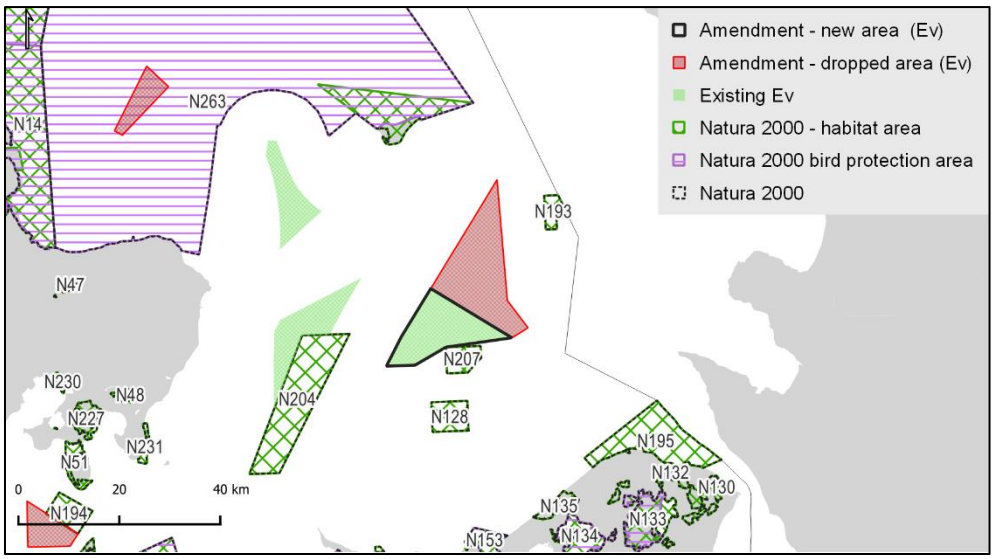

Figure 4-5 Location of the proposed renewable energy development zone (Ev) at Hesselø in relation to the Natura 2000 sites.

Marine strategy areas

To improve the environmental status and fulfil the requirement in the Marine Strategy Directive for a coherent and representative network of marine protected areas, six areas in the Kattegat, so-called marine strategy areas, have been designated to protect soft-bottom habitats. These areas supplement the Natura 2000 areas. Marine strategy areas have been designated immediately to the south and northeast of the development zone.

Natura 2000 sites

A Natura 2000 materiality assessment has been carried out on the expected impact on these from the utilisation of the renewable energy development zone

at Hesselø. The assessment is described in the Natura 2000 assessment of the amended MSP (COWI, 2023). The conclusion was that any significant impact on the Natura 2000 sites can be ruled out.

Marine strategy areas

Based on the nature and expected impact of the project, as well as the distance and location, the marine strategy areas are not expected to be affected by the utilisation of the renewable energy development zone at Hesselø. . Only activities within the designated marine strategy areas are regulated.

Visual impact

The development zone is located at a distance of more than 20 kilometres from Anholt, the east coast of Jutland, the coast of North Zealand and the west coast of Sweden, which significantly reduces the visual impact of a potential offshore wind farm from the shore. Most of the development zone is less than 20 kilometres from the coast of Hesselø and will therefore be visible from the coastal areas.

The impact on the surrounding coastal areas is expected to be moderate.

Material assets

Fishing

Fishing

Fishing for Norway lobster and mixed fish for human consumption is carried out with bottom trawls in parts of the development zone (Figure 4-6 and Figure 4-7). There could therefore be conflicts of interest with commercial fishing, as a possible ban on trawling in areas where offshore wind turbines are installed cannot be ruled out. However, any conflicts of interest with fishing to the north of the development zone have been averted by withdrawing this area as a development zone from the MSP.

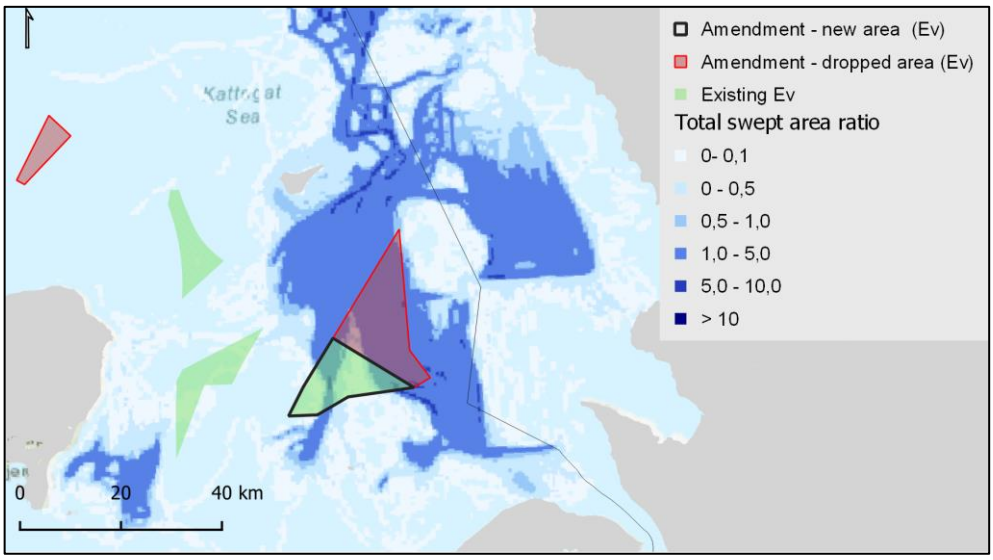

Figure 4-6 Trawling for Norway lobster in the southern Kattegat in the period 2012-2020. Fishing intensity expressed as SAR (swept area ratio) (DTU-Aqua , 2023). The locations of the proposed renewable energy development zone (Ev) and the withdrawn area at Hesselø are also shown.

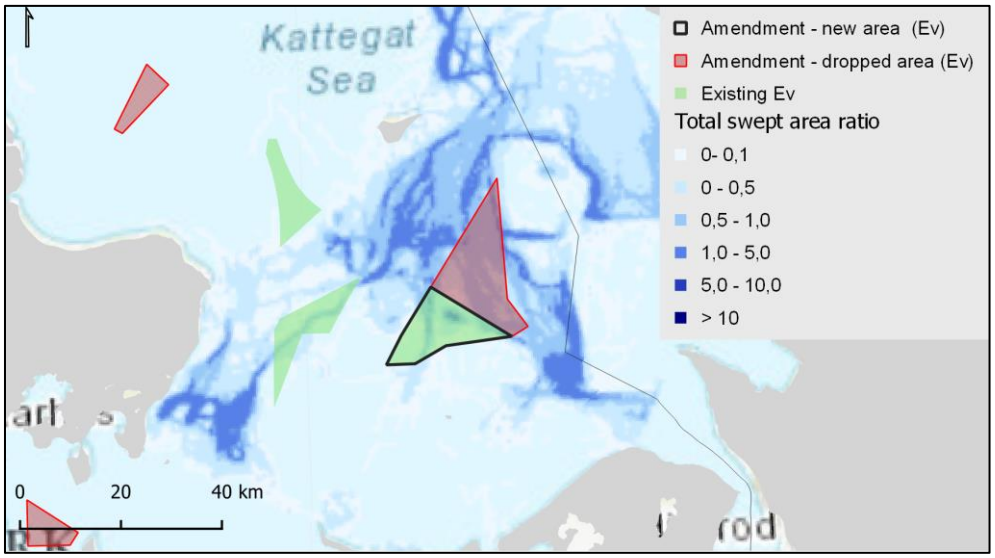

Figure 4-7 Trawling for mixed fish for human consumption in the southern Kattegat in the period 2012-2020. Fishing intensity expressed as SAR (swept area ratio) (DTU-Aqua, 2023). Location

4.1.3 Renewable energy (Ev) at Bornholm

It is proposed to designate a development zone for renewable energy (Ev) south of Bornholm (Figure 4-8). A small area to the south of the designated development zone has also been set aside.

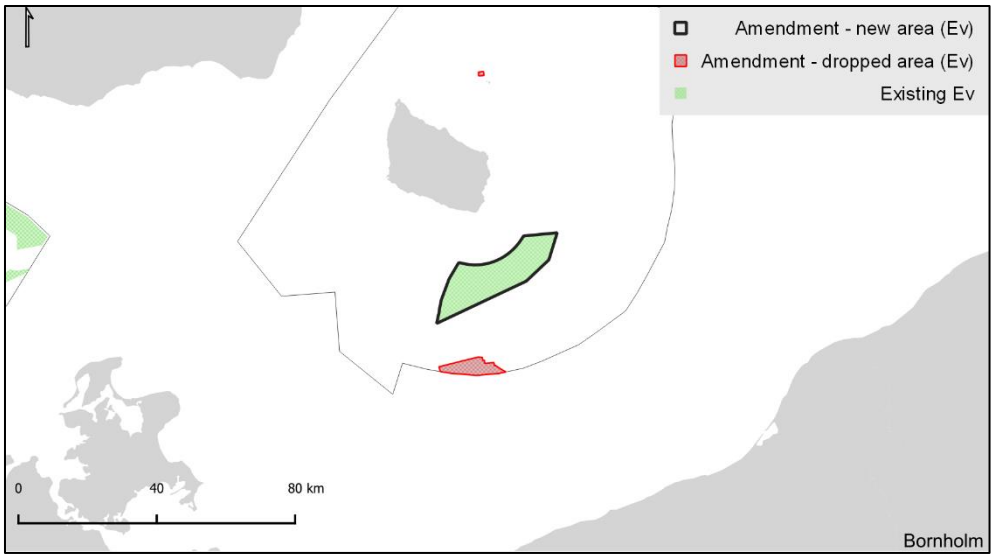

Figure 4-8 Location of the proposed renewable energy development zone (Ev) south of Bornholm.

Birds

Long-tailed duck

Approx. 20 km west of the proposed development zone is Bird Protection Area no 129 "Rønne Banke", which is for the protection of long-tailed ducks.

Velvet scoter and common scoter

The Bird Protection Area is also of international importance as an overwintering area for velvet and common scoters (BirdLife International 2020). The importance of the site as an overwintering area for long-tailed ducks, velvet scoters and common scoters is due to the abundance of food, especially blue mussels, which are found in large quantities on Rønne Banke. There is a significant correlation between the occurrence of blue mussels and that of e.g. long-tailed ducks on Rønne Banke (Edelvang m.fl, 2017). However, the development zone is not important as an overwintering area for either long-tailed ducks, velvet scoters or common scoters, probably because blue mussels are very scarce in this area. (Edelvang m.fl, 2017).

The development zone lies on the migration routes of cranes which breed in Sweden and Norway and overwinter to the south (DHI , 2019).

Impact assessment

It has been observed that most cranes pass through the area between Sweden and Germany at a height of 150 to 200 metres. The latest observations using radar and GPS tagging of birds in 2021-2023 show that cranes fly over the sea at all heights, from close to the surface up to an altitude of one kilometre (WSP for Energinet, Sept. 2023). None of the cranes that were observed collided with the offshore wind turbines in Kriegers Flak or Baltic II. The risk of impacts on migrating birds in the proposed development zone is therefore judged to be minimal.

The impacts on migrating birds should be coordinated with German and especially Polish authorities in connection with later planning and permit applications for future projects, to ensure that any cumulative effects from such plans do not cause any significant impact on migrating birds.

Conclusion

Utilisation of the development zone for renewable energy is expected to have a moderate impact on migrating birds.

Habitat types and fish

Benthic fauna

The seabed sediment in the development zone consists of clay and silt, mud, sandy mud and muddy sand (GEUS, 2018a). The clay and silt area is home to a benthic fauna community dominated by the crustacean *Monoporeia affinis*, the shellfish *Macoma balthica* and the polychaete *Marenzelleria* ssp. Also present are the crustaceans *Saduria etomo* and *Pontoporeia femorata* and the worm *Halicryptus spinulosus*. The composition of the benthic fauna in the areas with mud, sandy mud and muddy sand differs in the species found there. Here, the benthic fauna is dominated by the polychaete *Bylgides sarsi* and the crustacean *Pontoporeia femorata* (Edelvang m.fl, 2017).

Bottom vegetation

There is no bottom vegetation in the area of the development zone.

Fish

The fish fauna in the development zone is dominated by cod, flounder, herring and sprat (Edelvang m.fl, 2017), (Warnar m.fl., 2012). No spawning areas for fish that lay their eggs on the seabed or nursery areas for fish fry which could be affected by seabed cover under turbines, turbine foundations or erosion protection have been identified in the development zone.

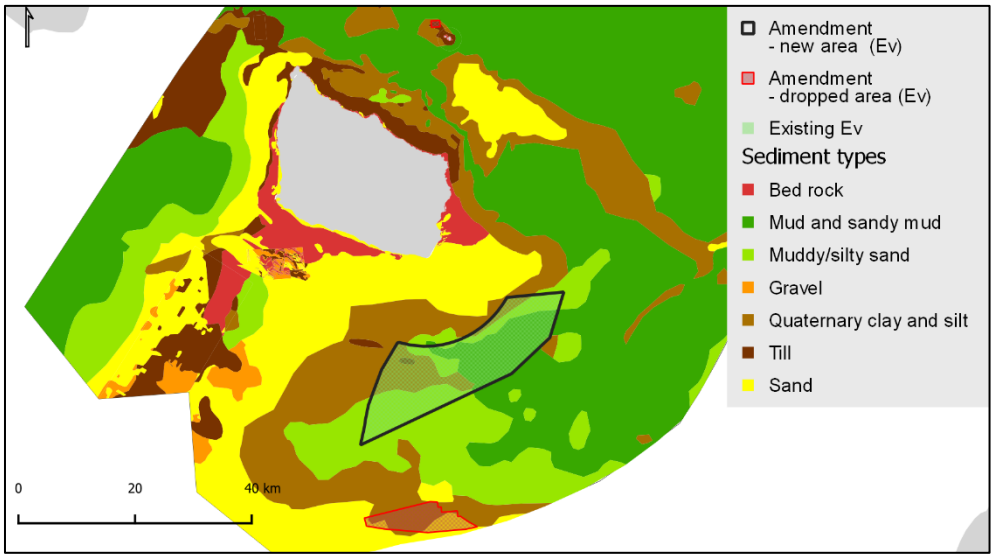

Figure 4-9 Surface sediments on the seabed around Bornholm and the location of the renewable energy development zone (Ev) south of Bornholm (GEUS, 2018a).

Impact assessment

Based on previous experience of the extent of impacts from areas of seabed buried under foundations and erosion protection, sediment dispersal and localised changes in current conditions, in relation to the sensitivity of different species to these impacts (see section above), there is expected to be only minimal impact on benthic fauna and fish from the utilisation of the renewable energy development zone.

Conclusion

Utilisation of the development zone for renewable energy will have a negligible impact on benthic fauna and fish.

Marine mammals

Harbour porpoise

High densities of harbour porpoise have been observed south of Bornholm, including in the proposed development zone. Harbour porpoises are included in the basis for designation for Habitat Area H261 "Adler Grund and Rønne Banke" and are listed in Annex IV of the Habitats Directive as species requiring special protection. The harbour porpoises found around Bornholm are a mixture of two populations: the Belt Sea population (found in the Kattegat, Little Belt, Great Belt, Øresund and the western Baltic) and a separate Baltic Sea population that only occurs in the Baltic itself. The core area for the Baltic population is the central Baltic Sea, especially Midsjö Banke and Hoburgs Banke, where harbour porpoises breed during the summer period (Wiemann, et al., 2010), (Galatius m.fl., 2012a), (LIFE, 2016), (Sveegaard m.fl., 2015a)

Seals

The development zone is not particularly important for seals. There are no resting and breeding sites for harbour seals on Bornholm, and the waters around Bornholm are not regularly visited by this species (Edelvang m.fl, 2017).

The grey seal, which used to be a common and widespread seal species in Danish waters, is now rare, but in recent years the number of grey seals seen in

Danish waters has increased, with particularly high numbers seen around Bornholm and Christiansø (Miljøstyrelsen , 2020a). The Ertholmene islands are the only resting and breeding ground for the species around Bornholm and the core area for grey seals is in the waters north of Bornholm.

Impacts during the construction phase

Porpoise hearing and behaviour may be affected by underwater noise or vibrations during the construction phase from e.g. pile driving works. As described in section 7.1.2 above, by applying suitable mitigating measures such as soft-start, bubble curtains or seal scarers, most construction activities to establish offshore wind farms can be carried out without causing any significant impact on the harbour porpoise populations.

Underwater noise during the construction phase can also cause hearing damage in seals and affect their behaviour. However, seals are much less sensitive to underwater noise than harbour porpoises. Seals are particularly sensitive to airborne noise on their resting and breeding grounds, but as these are a long way from the designated area, this is not considered likely to be a problem.

Impacts in the operational phase

As described above offshore wind farms are likely to attract harbour porpoises during the operational phase, possibly because of the increased food supply from the reef effect or from less ship traffic.

Conclusion

In summary, the utilisation of the renewable energy development zone at Bornholm is expected to have a negligible negative impact on marine mammals.

The impacts on marine mammals should be coordinated with German and especially Polish authorities in connection with later planning and permit applications for future projects, to ensure that any cumulative effects from such plans do not cause any significant impact on these animals.

Nature and environmental protection areas

Nature and environmental protection

The designated development zone is located more than 15 kilometres to the east of the nearest Natura 2000 areas, i.e. Bird Protection Area F129 *Rønne Banke* and Habitat Area H261 *Adler Grund and Rønne Banke.*

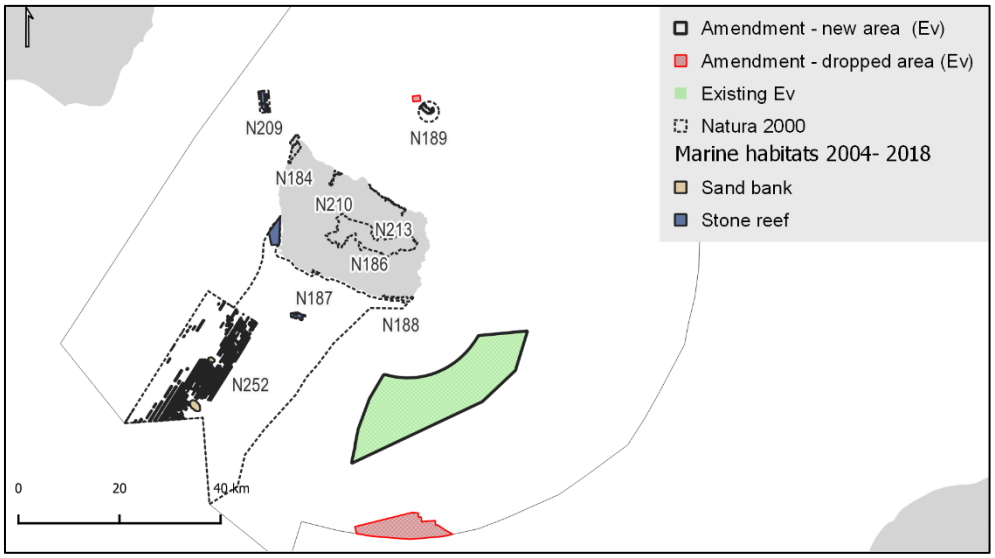

Figure 4-10 Location of the proposed renewable energy development zone (Ev) at Bornholm in relation to the Natura 2000 sites and the distribution of habitat types.

Impact assessment

The basis for designation for the Bird Protection Area is the long-tailed duck (protection of overwintering birds). As described above in the section on birds, the designated development zone is not important as an overwintering area. Moreover, based on the nature and expected impact of the project and the distance, species and habitat types in the bases for designation for the habitat areas in the Natura 2000 sites are not expected to be significantly affected by the utilisation of the development zone for renewable energy. Underwater noise could potentially be generated during the construction phase, e.g. by driving monopiles, at levels that could affect harbour porpoises in the basis for designation for N261 Adler Grund and Rønne Banke. It is therefore important for a specific assessment to be made at the project level, and mitigating measures are likely to be needed.

Conclusion

Species and habitats in the bases for designation for Bird Protection Area F129 *Rønne Banke* and Habitat Area H261 *Adler Grund and Rønne Banke* are not therefore expected to be significantly affected by the utilisation of the development zone for renewable energy, and it is not expected to prevent the objectives set out in the Natura 2000 plans from being achieved.

Visual impact

The renewable energy development zone at Bornholm is a little under 20 kilometres from the coast. It is therefore felt that any offshore wind turbines erected in the area will probably be visible from the south coast of Bornholm. The extent of the visual impact needs to be investigated through a visualisation analysis linked to the environmental assessment of a specific future project within the proposed development zone.

Material assets

Fishing

In the development zone, there is a significant amount of commercial fishing for mixed fish for human consumption with otter trawls from large vessels, especially for cod and flatfish. Fishing operates mainly in the eastern part (Figure 4-11). There could therefore be conflicts of interest with commercial fishing, as a possible ban on trawling in areas where offshore wind turbines are installed cannot be ruled out.

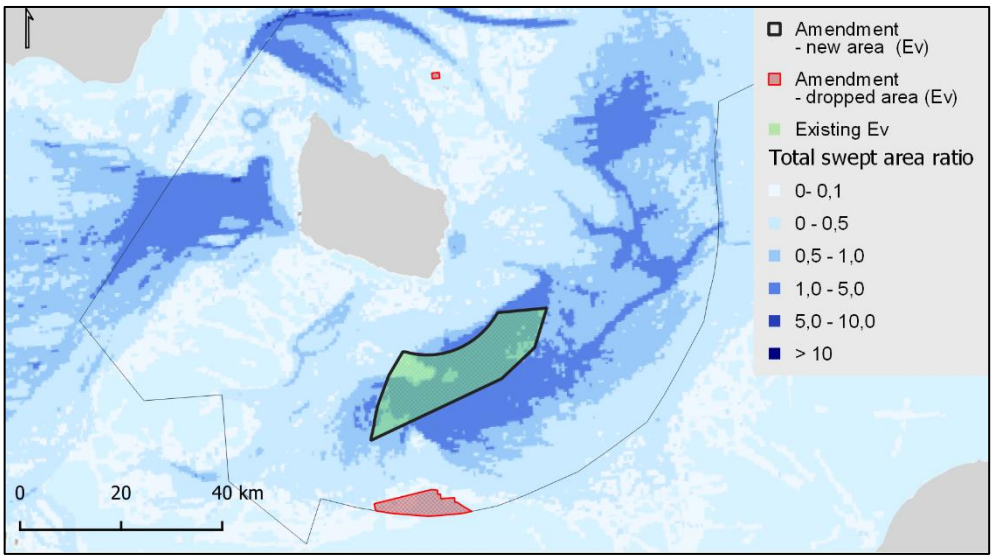

Figure 4-11 Trawling for mixed fish for human consumption in the proposed renewable energy development zone south of Bornholm in the period 2012-2020. Fishing intensity expressed as SAR [7](swept area ratio) (DTU-Aqua , 2023)

No conflicts of interest are expected to arise in relation to raw material extraction and pipelines.

Cultural heritage

A number of shipwrecks have been recorded in the development zone. None of these wrecks are protected (Slots- og Kulturstyrelsen, 2021).

[7] SAR is the ratio between the area (m²) affected by bottom-dragging tackle and the total area (m²) within a 100 x 100 metre section.

4.2 CO_2 storage in Skagerrak/North Sea (Ec)

Three new areas are being designated for CO_2 storage in the seabed in the Skagerrak/North Sea. These areas are relatively close to the Norwegian EEZ in the Skagerrak.

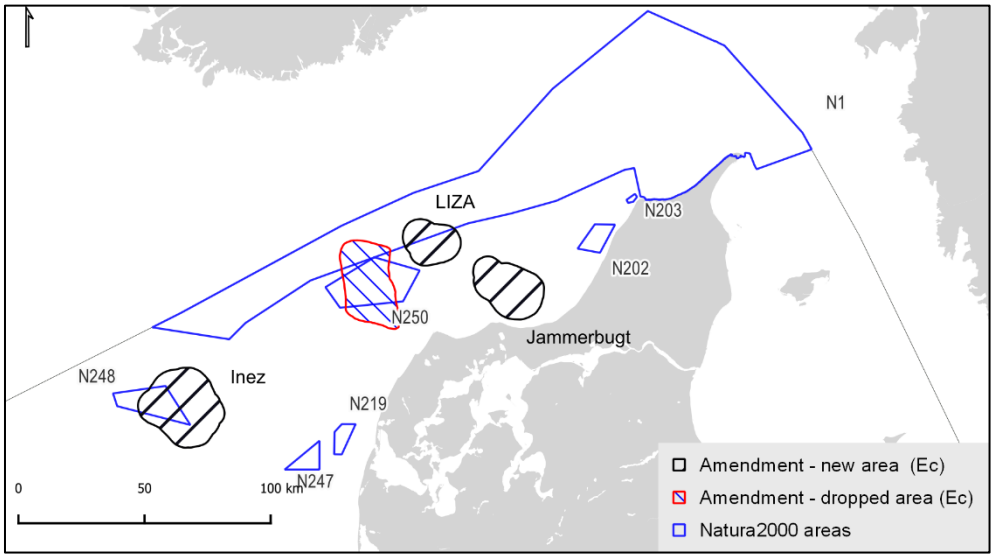

Figure 4-12 Overview map of the location of the three development zones for CO_2 storage, Inez, Liza and Jammerbugt, and as the seven identified Natura 2000 sites N1, N202, N203, N219, N247, N248 and N250 that could potentially be affected by the development of the two development zones Inez and Lisa.

The Inez and Lisa development zones earmarked in the MSP for CO_2 storage in the Skagerrak/North Sea could potentially affect marine mammals in the form of underwater noise from the expected seismic surveys. For example, modelling of the extent of underwater noise has indicated that there are likely to be behavioural changes among harbour porpoises within an 11.8 km radius and behavioural changes for minke whales within a 20.6 km radius of the seismic surveys.

This means that conducting seismic surveys for specific projects within the Inez and Lisa areas could potentially lead to transboundary impacts. The designated areas are located relatively close to Norwegian waters.

The North Sea is an important area for seabirds. This is mainly due to the highly productive hydrographic fronts, which are important feeding grounds for birds. It is estimated that more than 10 million birds use the North Sea every year for breeding, feeding or resting. There are also important breeding colonies located along the coastlines (Skov et al. 1995).

The important areas for birds in the North Sea therefore coincide with the highly productive areas where hydrographic fronts can form, producing food for seabirds (Figure 4-13).

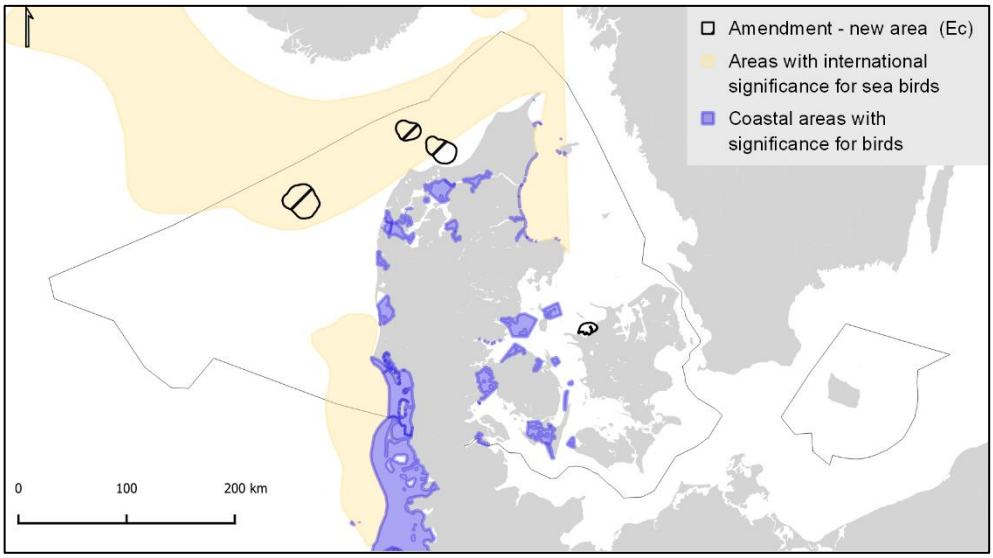

Figure 4-13 Areas of international importance for seabirds (light brown shading) and coastal areas important for birds (blue shading) together with proposed areas for the three development zones for CO_2 storage in the Skagerrak/North Sea. (Data: Skov et al. 1995, Falk & Brøgger Jensen 1995).

Two of the three designated areas for development zones for CO_2 storage in the Skagerrak/North Sea overlap with an internationally important bird area IBA DK121 Skagerrak and Southwest Norwegian Trench (Figure 4-14). These are the areas of Lisa and Jammerbugt. The area is an important resting and overwintering area for fulmars *(Fulmarus glacialis*), gannets (*Sula bassanus*), great skuas (*Stercorarius skue*), herring gulls (*Larus aegentatus*) and guillemots (*Uria aalge*). These bird species tend to feed on the surface or in the bodies of open water that are most often found in the highly productive hydrographic areas.

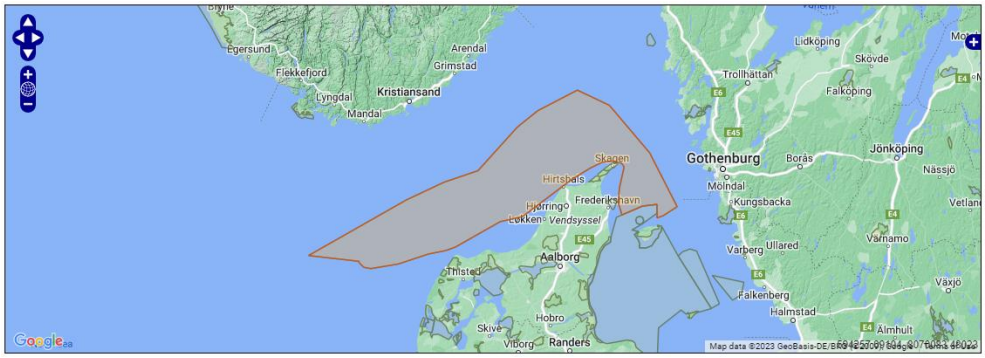

Figure 4-14 IBA area DK121 Skagerrak and Southwest Norwegian Trench (Data: [BirdLife Data Zone)](BirdLife Data Zone)

The importance for birds of the area allocated for the three CO_2 storage development zones is also reflected in the designation of the new bird protection area F126 (formerly an important bird area, IBA). However, F126 is smaller in extent than IBA site DK121 Skagerrak and Southwest Norwegian Trench. A

Natura 2000 materiality assessment ruling out any significant impact on the two bird species, the skylark and the great crested grebe, was produced as part of the basis for designation of bird protection area F126 (COWI, 2023).

However, disturbances and displacement effects could potentially arise from the construction and physical presence of installations. Any potential displacement effect will be concentrated in small areas where an impact may be relatively brief. The birds may be expected to return to these areas after the disturbance has ended.

With sediment spill from the installation of structures and pipelines, birds that forage by sight could potentially be affected by reduced visibility in the water. However, sediment spill is expected to be very limited in extent and duration, and the birds should be able to forage in alternative areas not far from the affected areas.

For the Inez and Lisa CO_2 storage development zones, no significant collision risk or blocking effect for birds has been identified. In any case, the size of the installations is not expected to cause anything but a very localised impact.

Indirect impacts on birds, e.g. on the food base, are expected to be negligible. Potential impacts on benthic fauna and fish are judged to be negligible.

Based on the above, utilisation of the development zones for CO_2 storage is expected to have a negligible impact on coastal and seabirds.

4.2.1 Habitat types (benthic fauna and underwater vegetation)

CO_2 storage and the associated transport infrastructure may potentially impact benthic fauna and underwater vegetation through the physical presence of structures, altered local seabed conditions as a result of drilling activities, and disturbance from pipeline laying and sediment dispersal, including the spread of environmentally hazardous pollutants. Finally, benthic fauna could potentially be affected by seepage of stored CO_2.

Infrastructure including installations and wells may lead to a loss of seabed. This is expected to be very limited in extent, but as the effect will be long-lasting (over the full lifetime of the various projects), the impact is judged to be moderate.

If stored CO_2 seeps out, it will cause acidification of the surrounding water. Acidification could affect calcifying benthic fauna, such as mussels, as acidification reduces the availability of carbonate which is used in calcifying structures such as shells. A significant change in the pH value of the water will typically be seen 200 m from the seepage and 5 m above the seabed (Rashidi et al., 2020).

The Geological Survey of Denmark (GEUS) has prepared an assessment of the safety and risk associated with CO_2 storage, which rates the risk of seepage as minimal. Only relatively localised impacts are therefore expected. (DNV GL, 2019). On this basis, the potential impact is judged to be negligible, but in connection with specific CO_2 storage projects, it is recommended that a study should be carried out to determine the presence of potentially sensitive benthic fauna species.

Based on the above, the impact on benthic fauna and underwater vegetation from the utilisation of the development zones for CO_2 storage is expected to be negligible. If any infrastructure is placed on the bottom, causing a physical loss of seabed, the impact is rated as moderate.

4.2.2 Marine mammals

Any potential impact on marine mammals in this section will cover the two seal species, harbour seal and grey seal. Potential impacts on harbour porpoises have been assessed as part of the Natura 2000 materiality and impact assessments and as part of the assessment of Annex IV species. The two other relevant cetacean species in the North Sea, white-beaked and minke whales, have also been assessed as Annex IV species.

Potentially the most significant impact on marine mammals is considered to come from underwater noise during both the construction and operational phases. Harbour seal (*Phoca vitulina*) and grey seal (*Halichoerus grypus*) both belong to the PCW hearing group.

Occurrence of harbour seal (*Phoca vitulina*)
Observations and data collected via satellite tagging in the period 2000-2011 have shown that harbour seals are present in all Danish waters with the exception of the Baltic Sea region around Bornholm (Søgaard, et al., 2018). In Danish waters, the species occurs in four geographically and genetically distinct populations in the Wadden Sea, Limfjord, Kattegat and western Baltic Sea (Figure 4-15). Harbour seals in the vicinity of the three development zones for CO_2 storage are likely to belong to the Limfjord population, but it is possible that some individuals will be from the Wadden Sea population.

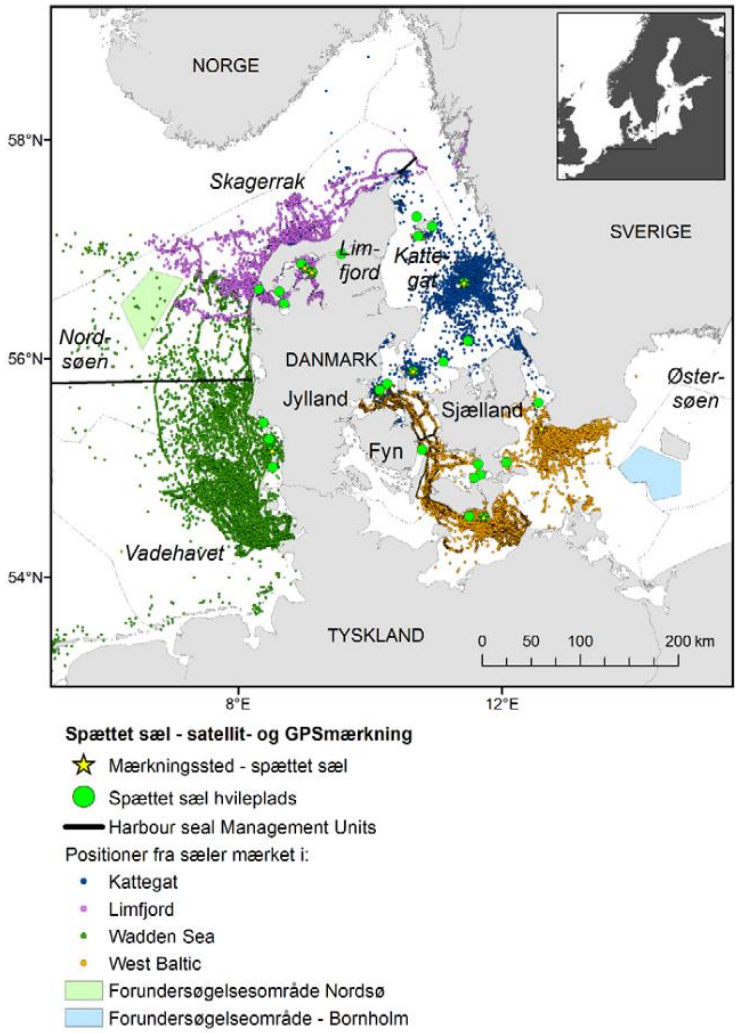

Figure 4-15 Overview map of harbour seal resting places and movement patterns in Danish waters (Kyhn, 2021). Regarding the signature: Star marks location for marking of harbour seals. Green dot: Resting place for harbour seal. Other dots mark positions from seals marked in Kattegat, Limfjord, Wadden Sea and West Baltic. Green polygon: Survey area around Energy Island North Sea. Blue polygon: Survey area around Energy Island Bornholm

Harbour seals are very settled in their choice of resting places (Dietz et al., 2013). This is the case both in terms of resting and during the mating season, and when seal pups are born (Kyhn, 2021). No resting places have been registered in the vicinity of the development zones for CO_2 storage.

Occurrence of grey seal (*Halichoerus Grypus*)

The grey seal is found in all Danish waters, with increasing numbers in the Wadden Sea, Kattegat and Baltic Sea (Søgaard et al., 2018a). The species occurs in two genetically distinct populations in the North Sea/Wadden Sea and the Baltic Sea (Figure 4-16). It is estimated that there were around 1600 grey seals in Denmark in 2020 (Hansen J.W. & Høgslund S. (red.), 2021). The grey seal, like the harbour seal, is very attached to the more coastal waters where there is a large food base and where there are undisturbed breeding and resting places on uninhabited islands, sandbanks, reefs and skerries (Søgaard, et al., 2018).

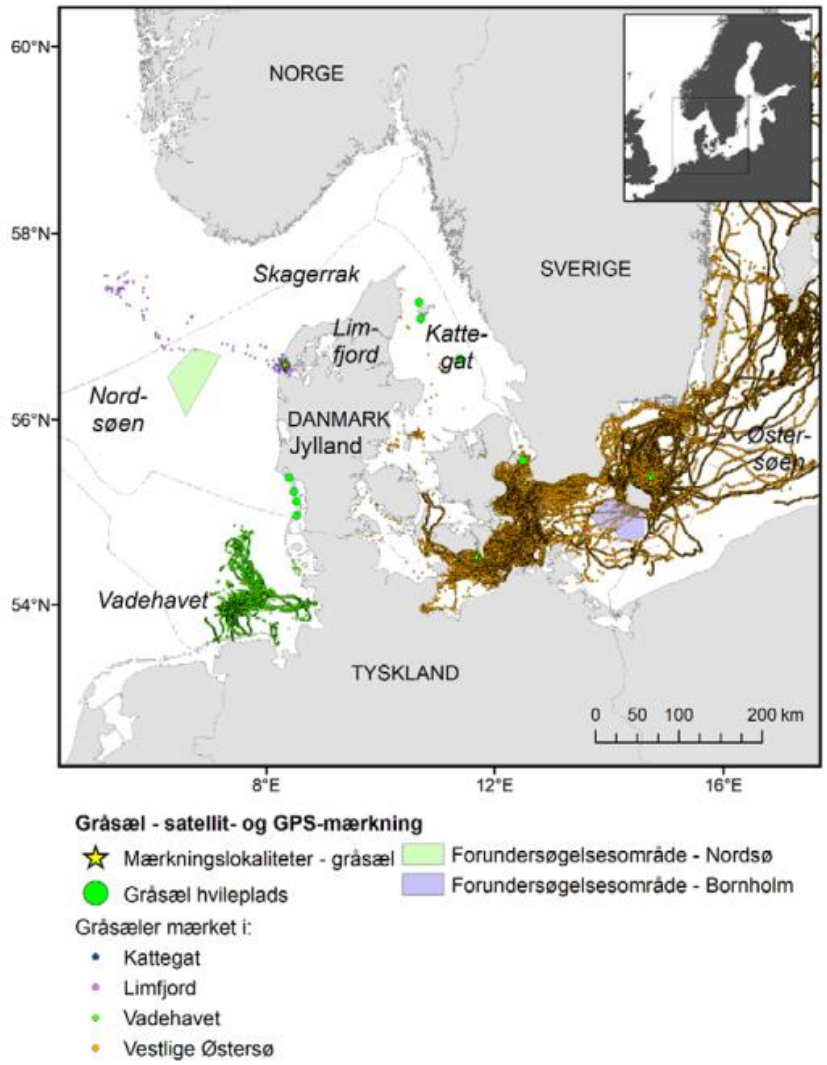

Figure 4-16 Overview map of resting places and movement patterns of grey seals in Danish waters (Kyhn, 2021). Regarding the signature: Star marks location for marking of grey seals. Green dot: Resting place for grey seal. Other dots mark positions from seals marked in Kattegat, Limfjord, Wadden Sea and West Baltic. Green polygon: Survey area around Energy Island North Sea. Blue polygon: Survey area around Energy Island Bornholm

Grey seals, like harbour seals, are relatively settled and like to return to the same resting place they left for a foraging trip that may last several days (McConnell et al., 1999). This is also the case during mating and when they give birth to their young, but these resting places are not necessarily the same locations as their foraging grounds. It is also not unheard of for grey seals to change locations over relatively long distances if there are better opportunities for foraging or mating.

Harbour seals in the vicinity of the two development zones for CO_2 storage, Inez and Lisa, are likely to belong to the Limfjord population. No resting places have been registered in the vicinity of the development zones for CO_2 storage. The development zones are not considered to be of particular importance to harbour seals.

4.2.3 Assessment of common and grey seals

It is expected that any seismic surveys will be carried out in accordance with the Danish Energy Agency's standard conditions for preliminary investigations and that an acoustic alarm will be used. An MMO, a PAM system, an acoustic alarm and a soft-start procedure will therefore be used. Based on this, it is expected that the seals will swim away from the sound source when the acoustic alarm is sounded and during the soft-start procedure, thus avoiding any hearing damage.

The two development zones for CO_2 storage and the areas in the vicinity of these zones are not considered particularly important for either harbour seals or grey seals. However, harbour seals use the area more than grey seals. In these areas, relatively greater impacts will be acceptable than in important areas such as resting or breeding grounds.

Based on the above, and on the temporary and relatively short period during which seismic surveys are conducted, it is estimated that the potential impact on seals will affect very few individuals, especially considering the size of the two populations. The temporary impact from noise is not expected to affect the harbour seal or grey seal population.

Based on this, only negligible impacts on harbour seals and grey seals are expected.

4.2.4 Harbour porpoises

Natura 2000 materiality and impact assessments have been carried out for impacts on harbour porpoises. These assessments concluded that it can be established beyond reasonable doubt that the allocation of the two development zones for CO_2 storage, Inez and Lisa, will not have any adverse effect on the chances of this species achieving a favourable conservation status in the nearby Danish Natura 2000 sites where the species is in the basis for designation. So, the possibility of achieving a favourable conservation status is not affected, and the integrity of the areas can be maintained.

An assessment of harbour porpoise as an Annex IV species has also been carried out. The temporary impact from noise and vibration is not expected to affect harbour porpoises to an extent that could impact on ecological functionality.

Some potential impacts have however been identified, and when the areas set aside for CO_2 storage are used, the focus must therefore be on assessing these potential impacts in later planning or in connection with the subsequent approval of specific projects. Mitigating measures may need to be implemented in later steps in the decision-making process in order to reduce potential impacts.

Based on this, the potential impacts on harbour porpoise are expected to be significant, but they can be managed as part of subsequent approval processes for specific projects within the development zones by applying relevant conditions.

4.2.5 Fish

Potential impacts on fish include impacts on spawning areas, impacts from underwater noise and impacts from sediment dispersal.

Potential impacts on spawning areas

The fish species in the North Sea can be divided into pelagic (open water) and demersal (bottom-dwelling) species. Pelagic species commonly found in the Danish sector of the North Sea include herring (*Clupea harengus*), sprat (*Sprattus sprattus*) and mackerel (*Scomber scombrus*). Typical demersal fish species include whiting (*Merlangius merlangus*), haddock (*Melanogrammus aeglefinus*), common dab (*Limanda limanda*), American plaice (*Hippoglossus platessoides*), European plaice (*Pleuronectes platessa*), grey gurnard (*Eutrigla gurnardus*), cod (*Gadus morhua*), lemon sole (*Microstomus kitt*) and sand eel (*Ammodytes/Hyperoplus sp.*).

There are two main ways in which fish spawn: demersal and pelagic spawning. Demersal spawners lay their eggs on the seabed, while pelagic spawners lay their eggs in the open water where they remain afloat and are fertilised. Cod, plaice, dab, ling, lemon sole, mackerel and herring are examples of pelagic spawners, while the sand eel is an example of a demersal spawner (which lays its eggs on the seabed and is dependent on sandbanks).

After spawning, the eggs and larvae from the pelagic spawners will be carried by the prevailing easterly, northeasterly and northerly currents to the front areas close to the coasts of the eastern North Sea and Skagerrak, where they can take advantage of the rich plankton production at the hydrographic fronts. The limited extent and scale of the transport infrastructure that will be established is not expected to have any impact on the current-borne transport of fish eggs or larvae. Similarly, only limited and localised impacts on water quality are expected during the construction phase of a possible future CO_2 transport infrastructure, with no impact on fish eggs and larvae in the water column.

For sand eels, spawning areas have been identified in the area of the two development zones for CO_2 storage, Inez and Lisa (see Figure 4-17). It should be noted that spawning areas are not necessarily static and fixed areas but can vary in location and extent. Herring may also potentially spawn in the area.

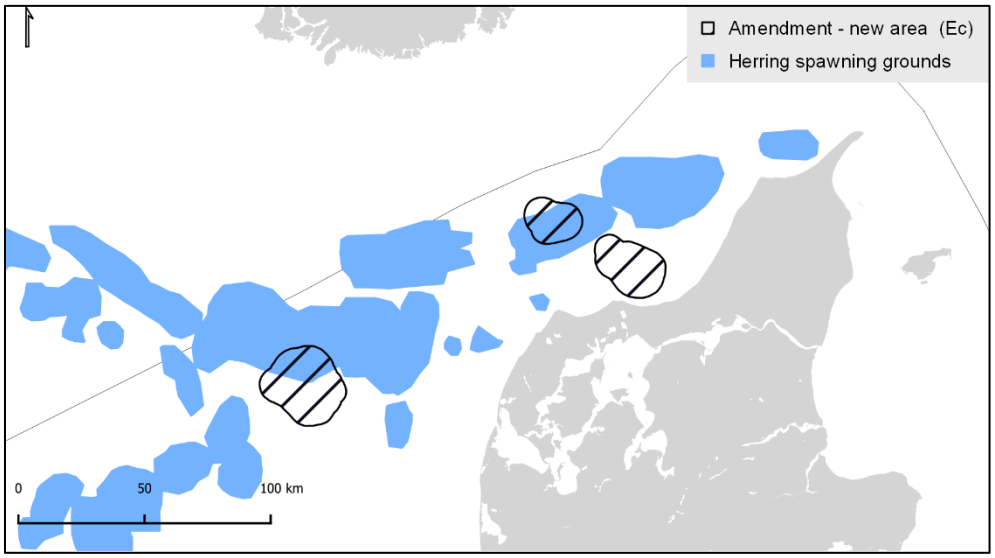

Figure 4-17 Spawning areas in the form of sandbanks for sand eels (Ammodytes spp.) in the North Sea (van Deurs 2019), and the location of the three development zones for CO_2 storage in the Skagerrak/North Sea.

The seabed, and hence spawning areas for demersal spawners, including sand eels, could potentially be affected by the establishment of transport infrastructure in the form of seabed disturbance from drilling and placement of water-based drilling mud, and pipeline laying. Loss of seabed, and therefore habitat, will occur directly under the footprint of transport infrastructure installations. It is expected that the bulk of the water-based drilling mud will settle in the vicinity of the bore, potentially within 1-2 kilometres. When pipelines are laid, there may be some physical disturbance of the seabed and some subsequent sedimentation, but this is expected to be within 50 metres of the pipeline.

Any seabed loss is expected to be localised in extent, so there is not expected to be any significant impact on fish spawning areas and the environmental impact is judged to be moderate.

The two development zones for CO_2 storage in the Inez and Lisa areas overlap with sandy areas that are spawning grounds for sand eels (Figure 4-17**Fejl! Henvisningskilde ikke fundet.**). In the unlikely event of a seepage of stored CO_2, acidification is expected to occur just below and above the surface of the sea, which could potentially affect the sand eels. The risk of stored CO_2 seeping out is rated as very low. Acidification, defined as a significant change in pH, will also be limited to approx. 200 metres from the source and 5 metres above the seabed (Rashidi et al., 2020). The impact will also be limited to smaller parts of the overall sand eel spawning grounds. Based on the above, only negligible impacts on sand eel spawning areas are expected from potential seepage of stored CO_2.

Potential impacts from sediment dispersal

Fish could potentially be affected by a deterioration in water quality due to increased sediment levels in the water. Dissolved sediment can potentially settle on the gills and affect oxygen uptake in fish. Fish eggs and larvae can also be affected by sediment settling on membranes and surfaces. Dissolved sediment can also affect fish digestion.

The increased sediment content in the water may be caused by the installation of structures or laying of pipelines. However, the increase in sediment content is expected to be relatively limited, over a relatively short distance and for a short period of time. The fish will be able to swim to an area of cleaner water, and as the increase in the sediment content in the water is expected to be limited, there will be no impact at the population level.

Potential impacts from underwater noise

Underwater noise can affect fish, fish eggs and larvae in different ways. Close to the source, the noise may be so loud that it can cause physical damage to tissues and internal organs, which in the worst case could cause the fish to die. Underwater noise is gradually attenuated through the water and, at greater distances, fish may be affected by behavioural changes such as flight.

The effects of underwater noise on fish have not been studied to the same extent as the effects on marine mammals, but in recent years several studies have been conducted to shed light on the problem.

In Sweden, based on the existing literature, the noise levels from pile driving that can be lethal or cause serious damage to internal organs in adult fish have been summarised, along with the levels that can cause damage to fish eggs and larvae (Andersson et al., 2017). These thresholds are considered to be applicable to seismic surveys using e.g. airguns, which, like pile driving, are classed as impulse noise (Table 4-1).

Table 4-1 Recommended underwater noise thresholds from pile driving for adult fish. The thresholds are presented as SPL, $SEL_{(SS)}$ and $SEL_{(CUM)}$ unweighted (Andersson et al., 2017).

	Fish	Eggs and larvae
Mortality and injury to internal organs	$SPL_{(peak)}$ 207 db re 1 µPa $SEL_{(ss)}$ 174 dB re 1 µPa²s $SEL_{(cum)}$ 204 dB re 1 µPa²s	$SPL_{(peak)}$ 217 dB re 1 µPa $SEL_{(ss)}$ 187 dB re 1 µPa²s $SEL_{(cum)}$ 207 dB re 1 µPa²s

It has been shown that fish behaviour can be affected by underwater noise, mainly in the form of flight behaviour. Laboratory studies have also shown that underwater noise can cause changes in swimming speed/direction, and also provoke a "freeze" reaction, where fish suddenly stop (Mueller-Blenke et al. 2010). Conversely, there are studies that suggest that fish exposed to high levels of underwater noise will remain in an area if it is an important foraging ground or is important for fish reproduction, for example (Wardle et al. 2001, Pena et al. 2013).

It can therefore be difficult to assess the extent to which fish will flee the area during seismic surveys. However, it is expected that flight reactions and other

behavioural disturbances in fish will occur, but that the fish will return to the area when the seismic surveys etc. are completed.

Potential impacts on fish from underwater noise generated by the use of airguns during seismic surveys in Jammerbugt have been modelled (COWI, 2023). With the specified threshold values for adult fish (Table 4-1), noise levels that can cause severe organ damage and/or death in adult fish were expected to occur only within a relatively small distance of a few hundred metres from the noise source for the seismic survey. This means that only fish at a short distance from the noise source are likely to be affected, and fish at a greater distance were expected to display flight behaviour to avoid organ damage and/or death in the adult fish.

The potential impacts on fish from utilising the development zones for CO2 storage are therefore expected to be negligible, with no measurable effects on the size of the fish population.

4.3 Land reclamation

It is proposed to include the Lynetteholm land reclamation project in the draft amendment to the Danish MSP. This will lead to an increase in the total area set aside for specific land reclamation projects of 3.1 km², to a total of 7.7 km². It is planned to establish Lynetteholm as an approx. 2.8 km² reclaimed area to the east of Trekroner sea fort between the North Harbour (Nordhavn) and Refshaleøen (Figure 4-18).

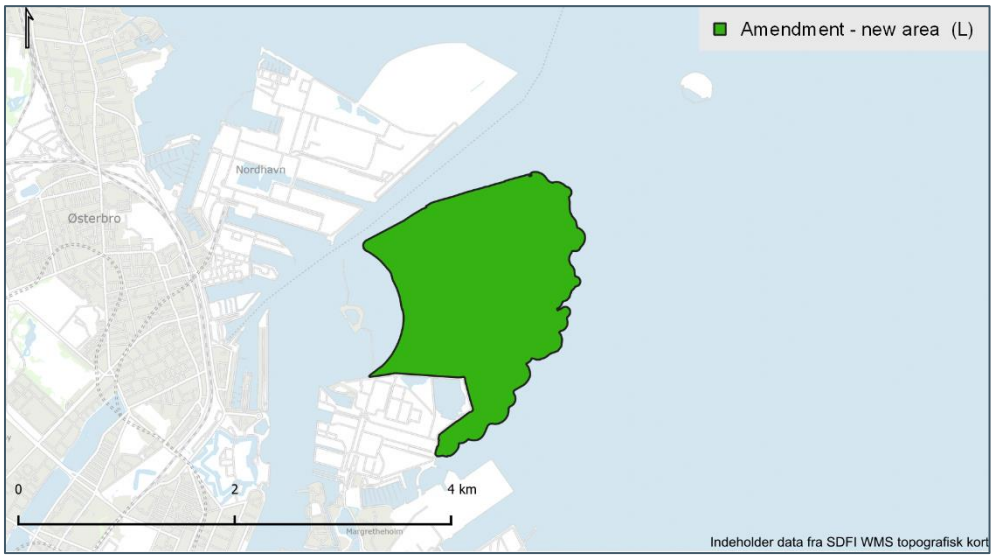

Figure 4-18 The Lynetteholm land reclamation project.

The utilisation of the proposed Lynetteholm site is already at a stage where a strategic assessment of the overall plan for development of the East Harbour and an environmental impact assessment of the reclamation project have been prepared. The construction work to establish the perimeter for land reclamation has also begun.

At the strategic level, the documents produced include:

- Plan for urban development and infrastructure for the East Harbour, including Lynetteholm. Environmental report - Strategic Environmental Assessment. Danish Ministry of Transport, August 2022.
- Natura 2000 materiality assessment of the plan for urban development and infrastructure for Copenhagen's East Harbour, including Lynetteholm. Danish Ministry of Transport, August 2022.
- Natura 2000 impact assessment of the plan for urban development and infrastructure for the East Harbour, including Lynetteholm. Danish Ministry of Transport, August 2022.

At the project-specific level, the documents produced include:

- Lynetteholm - Environmental impact report. By & Havn, November 2020.
- Lynetteholm - Natura 2000 materiality assessment. By & Havn, November 2020.

Impact on water quality

The Lynetteholm development may cause transboundary impacts on the marine environment in the Baltic Sea, as the flow of water through the Danish straits may be affected, causing changes in the exchange of water between the North Sea and the Baltic. This could in turn affect the flow of salty bottom water from the North Sea to the Baltic, for example. This is of crucial importance for the oxygen conditions in the deeper parts of the Baltic Sea such as the Arkona Basin, Bornholm Deep, Gotland Deep and Gdansk Deep, and could potentially affect cod spawning in these areas. The extent of the impact depends, among other things, on the size of the area being reclaimed, including the area set aside in the Kronløb basin along the Øresund coast.

Modelling studies relating to the construction of the Great Belt Link and the Øresund Link showed that their contribution to changes in salinity in the Baltic Sea was within natural variation, but applying the precautionary principle, it was decided to carry out compensatory excavations to achieve a so-called zero solution.

A report and model calculations have been prepared for the hydraulic impact of the reclamation works on the water exchange between the North Sea and the Baltic through the Øresund. It has been calculated from the models, which have been subjected to validatory modelling, that the reclamation works will have an impact on the exchange of water between the North Sea and the Baltic through the Øresund corresponding to 0.25% of the total water exchange through the Øresund.

It is currently not clear whether an effect of this magnitude will have any impact on the aquatic environment in the Baltic, in particular on the salinity of the Baltic Sea. The reports and modelling carried out are based on the assumption that the likelihood of an impact of this magnitude is negligible. The designation of the

development zone in the MSP does not in itself have any impact on the water exchange through the Øresund.

5 Assessment of impacts on environmental goals

The table below shows which environmental protection goals are judged to be relevant to the proposed amendment. These environmental protection goals may be set at an international or national level.

Table 5-1 includes the goals that are not already covered elsewhere in the SEA, and discusses whether and how the Danish MSP takes these goals and other environmental considerations into account.

Table 5-1 Assessment of environmental goals relevant to the draft plan.

Subject	Goals	Assessment
Directive 2014/89/EU of the European Parliament and the Council of 23 July 2014 establishing a framework for maritime spatial planning (Implemented by Danish Act no 615 of 8 June 2016 on maritime Spatial Planning, as amended)	1. To promote economic growth, development of marine areas and sustainable use of marine resources, by applying an ecosystem-based approach.	1. Maritime spatial planning is a tool for coherent management of marine areas, working across borders and sectors to ensure that human activities at sea are carried out in an efficient and sustainable manner. The environmental assessment of the proposed amendment to the Danish MSP has been prepared using an ecosystem-based approach, making it possible to identify possible conflicts between activities (pressure factors) and natural phenomena (ecosystem components). The zones allocated in the MSP are of a size that allows for growth in the respective sectors. However, the zones have been delimited to take account of the presence of particularly vulnerable habitats. The publication of a proposed amendment to the Danish MSP is therefore expected to contribute to attaining the goal set out in the Directive of promoting economic growth and the development of marine areas and sustainable use of marine resources, by applying an ecosystem-based approach.
	2. To promote the coexistence of different relevant activities and uses, taking account of the interaction between land and water.	2. With the proposed amendment to the MSP, areas are designated for use for multiple purposes/activity types. In these areas, the planning has determined that different interests can be accommodated and co-exist within the same area. In drafting the proposed amendment to the MSP, an assessment was made as to whether several different types of installation or activity could occupy the same area, and whether they could take place simultaneously or possibly staggered in time. In the proposed amendment to the MSP, coastal areas are to some extent excluded from zoning for new, larger facilities that could significantly prevent or impede e.g. maritime transport, fishing, tourism and recreational use of the sea. The relationship between construction and land-use of the marine areas on the one hand, and the land-based infrastructure on the other, was also taken into

		account in the preparation of the plan. However, a number of land uses cannot coexist with other land uses and activities. The proposed amendment to the Danish MSP is judged to promote coexistence for those activities that can coexist on a technical, functional, safely and environmental level.
	3. To strengthen cross-border cooperation, especially between EU Member States bordering on the same marine areas.	3. The proposed amendment to the Danish MSP entails allocating areas to provide sites to establish energy supply networks, shipping routes, pipelines, submarine cables and other activities between EU countries. The proposed amendment to the Danish MSP is therefore judged to maintain and expand cross-border cooperation. The process for the proposed changes to the MSP is also judged to have contributed to strengthening cross-border cooperation between Denmark and countries that wished to be part of the environmental assessment process in connection with the Espoo consultations.
UN Sustainable Development Goals	SDG 7: Affordable and clean energy, including target 7.3: By 2030, increase substantially the share of renewable energy in the global energy mix.	SDG 7: The proposed amendment to the MSP designates large areas for the development of renewable energy, which is why the proposed amendment to the MSP can contribute to a planning framework for an increased share of renewable energy in the global energy mix.
	SDG 9: Industry, innovation and infrastructure, including target 9.1 on developing good quality, reliable, sustainable and resilient infrastructure, including regional and cross-border infrastructure, to support economic development and human well-being, with a focus on meaningful and equitable access for all.	SDG 9: The proposed amendment to the MSP primarily allocates areas for future transit pipelines to ensure both national and regional security of supply. However, this is sourced from non-renewable natural resources in the form of natural gas. The proposed amendment to the MSP also includes areas for a new Fyn/Als link, but it is not yet known what type of connection this will be (bridge or tunnel). A fixed tunnel link is not affected by wind and weather in the same way as the existing ferry connection. Establishing a fixed link could also result in Fyn/Als traffic switching from hybrid ferry transport to mixed road and rail. The designation of land for a new Fyn/Als link is expected to contribute to attaining target 9.1 by reserving a corridor to provide for a new and robust infrastructure. However, the question whether the land-use designation is sustainable raises many project-specific elements which cannot be covered at the strategic level of maritime spatial planning but are better assessed at the project level.
	SDG 12: Responsible consumption and production, including target 12.2 to achieve sustainable management and efficient use of natural resources by 2030.	SDG 12: The proposed amendment to the MSP sets out the planning framework for land use and management and use of marine resources across sectors to ensure that human activity at sea is carried out in an efficient, safe and sustainable manner. However, areas are also set aside for the continued use of non-

		renewable natural resources and for the establishment of energy islands, which may require substantial resources during the construction phase.
	SDG 13: Climate Action, including target 13.2: Integrate climate change measures into national policies, strategies and planning.	SDG 13: The proposed amendment to the MSP allocates large areas for the development of renewable energy. The MSP provides the planning framework for the expansion of offshore wind power and CO_2 storage under the seabed as part of the green transition. The amendment to the MSP is therefore judged to have the potential to contribute positively to climate action.
	SDG 14: Life at sea, including target 14.c to enhance the protection and sustainable use of the oceans and their resources by implementing international law, as reflected in the United Nations Convention on the Law of the Sea (UNCLOS), which provides the legal framework for the conservation and sustainable use of the oceans and their resources, as stated in paragraph 158 of 'The future we want', which states, among other things, that the Parties "commit to protect, and restore, the health, productivity and resilience of oceans and marine ecosystems, to maintain their biodiversity, enabling their conservation and sustainable use for present and future generations, and to effectively apply an ecosystem approach and the precautionary approach in the management of activities".	SDG 14: The proposed amendment to the MSP designates a large contiguous area for nature and environmental protection. However, this is an area that is also designated under other legislation and may be protected under the basis for designation and by conservation concerns. However, maritime spatial planning can in itself be a tool for sustainable management of marine resources. The proposed amendment to the Danish MSP may therefore be expected to contribute to the goal of preserving and ensuring sustainable use of the world's oceans and its resources. However, this contribution is potentially neither significantly negative nor significantly positive, as maritime spatial planning only provides the physical framework for where a use or activity can take place, while the possibility of specific activities/uses actually taking place within the framework of the MSP is only assessed later, and the conditions for the use/activity are specified and assessed before a permit is granted under the relevant sectoral legislation.
Roadmap to a Resource Efficient Europe, EU/COM/2011/0571	To ensure efficient and sustainable utilisation of marine resources by all operators in the fisheries value chain.	Maritime spatial planning can in itself serve as a tool for sustainable management and effective use of natural resources. The proposed amendment to the MSP does not designate zones for fishing, and the zoning in the MSP does not in itself restrict the free use of the sea for e.g. fishing and sailing that exists today. It is only when an installation, such as an offshore wind farm or a bridge, is built that this free use may be restricted. The publication of proposed amendments to the MSP is not therefore judged to have any impact on the goal of ensuring efficient and sustainable utilisation of marine resources by all operators in the fisheries value chain.

6 Monitoring of the Danish MSP

According to Section 12(4) of the Environmental Assessment Act, the authority must monitor the significant environmental impacts from implementing the plan or programme. For example, monitoring may be carried out in order to identify unforeseen negative impacts and to take appropriate mitigation measures. Existing monitoring schemes may be used.

The SEA will help to determine whether a separate programme for monitoring the environmental impacts should be established or whether this can be done through existing monitoring activities.

It is not considered relevant to draw up a monitoring programme to cover impacts derived from the proposed amendment to the Danish MSP.