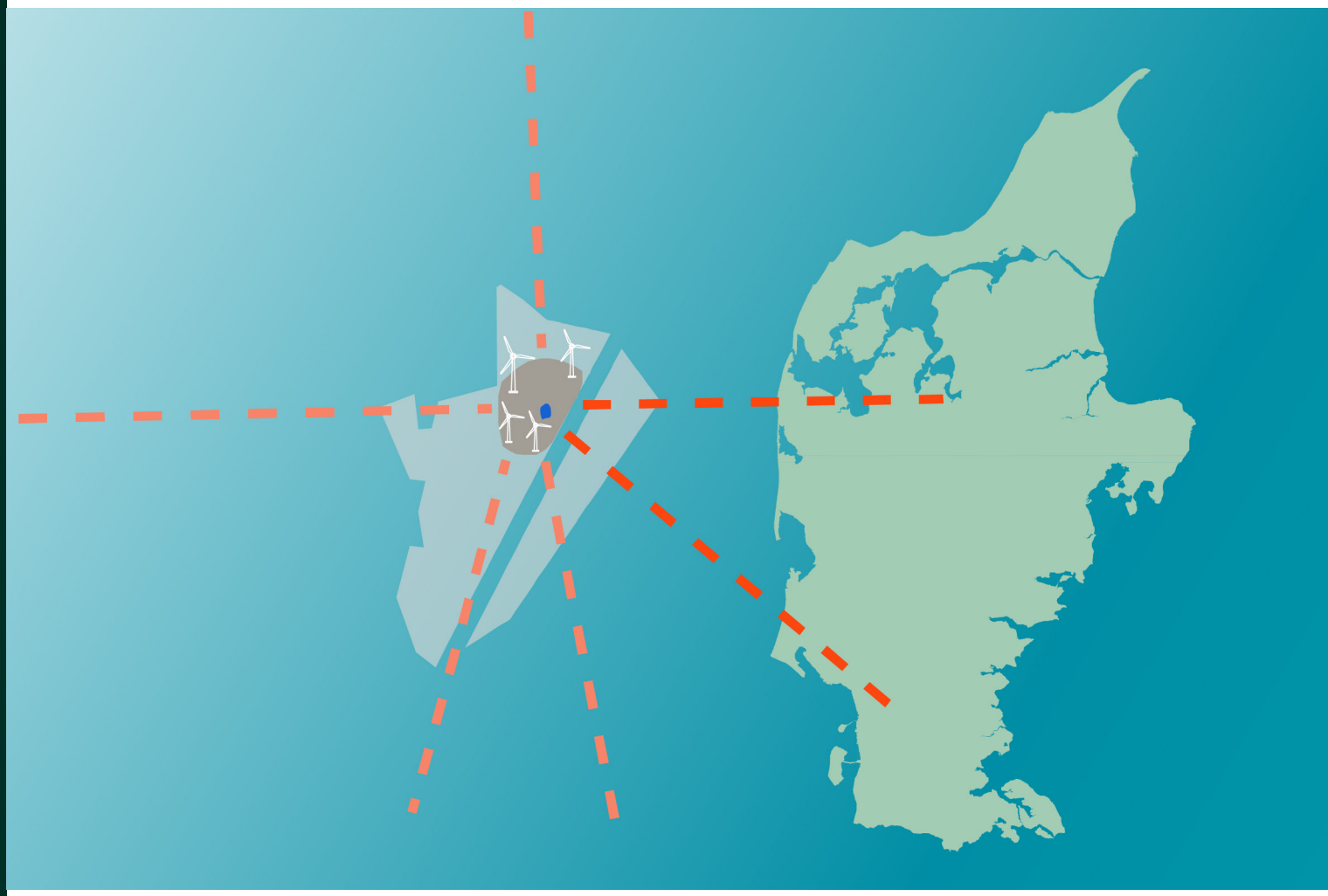
Outline proposal for the Plan for Programme North Sea Energy Island



Call for ideas and proposals to delimit the environmental impact assessment for the Plan for Programme North Sea Energy Island.

August 2022

Energistyrelsen

Content

Title

Outline proposal for the Plan Programme for North Sea Energy Island

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We want to hear your opinion

The Danish Energy Agency will soon initiate the environmental assessment of the Plan for Programme North Sea Energy Island.

The aim of this outline proposal is to invite you to submit ideas and proposals ahead of the upcoming environmental assessment of the Plan for Programme North Sea Energy Island and associated onshore facilities.

One of the aims of the consultation process is to give citizens and other interested parties the opportunity to ask questions and submit proposals and ideas for issues they want covered in the strategic environmental assessment that will serve as the foundation for the Plan for Programme North Sea Energy Island.

The purpose of the plan is to establish the framework for future plant permits. This covers offshore and onshore installations, to allow specific projects that make up the technical installations for the North Sea Energy Island to be later implemented. Later, the specific projects must be subject to an environmental impact assessment. Here the public will be heard and has the opportunity to submit comments to the project and the environmental impact assessment.

The North Sea Energy Island

The *2020 Climate agreement for energy and industry etc.* (22 June 2020), and later supplementary agreements, committed Denmark to building the world's first energy islands of their kind – one in the North Sea and one on Bornholm. The energy island in the North Sea is to be built in phases, as electricity consumption rises and the energy island is connected to other countries. It has been decided that the North Sea Energy Island must be realised with at least 3 GW of offshore wind power by 2033 (phase one), and to establish a total of at least 10 GW (phase one and two) of offshore wind power connected to the island as soon as possible thereafter, with 2040 as the aim (phase two), depending on the necessary international connections being in place.

In relation to the strategic environmental assessment of the North Sea Energy Island, it is assumed that it must include establishment in two phases:

- a first phase in which at least 3 GW of offshore wind power will be established, but with the possibility of up to 12 GW within the same area if the power per km^2 is increased.
- a second phase in which a total of at least 10 GW of offshore wind power (phase one and two) is established, but with the possibility of establishing a total of up to 40 GW (phase one and two) within the same area if the power per km^2 is increased.
- The North Sea Energy Island will thus comprise at least 3 GW of offshore wind power in 2033, and at least 10 GW (phase one and two) with 2040 as the target time frame, with the possibility of expanding total offshore wind power up to 40 GW (phase one and two) if the power per km^2 is increased

The environmental assessments will be done in a broader perspective than the politically agreed aims of 3 GW in 2033 and 10 GW in 2040, to ensure flexibility in the implementation of one of Denmark's largest ever construction projects. The planning for phase one and two will also leave room for Power-to-X (PtX) plants[1] and other innovation.

The North Sea Energy Island thus lays the stepping-stones for unprecedented expansion of offshore wind power, to electrify not only Denmark but also Europe in the future. A future where markedly greater power consumption must be based on renewable energy sources, and where innovative new green technologies, such as PtX production and green fuels, pave the way for a society free of fossil fuels. The energy islands also aim to consolidate Denmark's position as a global green pioneer, also in wind power.

The aim of the energy islands is to ensure that Denmark can electrify more areas of society in the coming years, and to help ensure that the electricity consumption of all Danish households and businesses is met by renewable electricity. Electricity from the energy islands will also be exported to neighbouring countries and contribute to the green transition across Europe. The North Sea Energy Island must also allow the connection of technologies, which can store or convert this green electricity, for example into green fuels using PtX. The energy island will contribute significantly to the green transition through the electrification of sectors primarily fuelled by fossil energy at present, and to realising the Danish government's goal of climate neutrality by 2050. Construction of the energy island is also expected to create a lot of employment.

The energy island in the North Sea will be located approx. 100 km off the west coast of Jutland, near Thorsminde. The connected offshore wind turbines can be placed at a distance of at least 50 km from the west coast of Jutland. The party responsible for constructing the island will be decided following the tender process for the Energy Island, and tenders will be invited for the construction of offshore wind farms separately after this.

It is intended that the North Sea Energy Island will consist of a flexible island concept[2], platforms, onshore facilities and landing cables, onshore facilities in Jutland (underground cables, possibly a switching station, high-voltage substations), any required grid expansions, offshore installations (offshore wind turbines with an internal cable grid and export cables to the artificial island), interconnector cables to other countries, any PtX plant and pipelines and/or other innovative plant.

Before permits can be granted for construction of the North Sea Energy Island, the plan must be extensively environmentally assessed, as must the specific projects following adoption of the plan. These processes are briefly summarised on the following pages.

In phase one of the North Sea Energy Island a range of preliminary studies will be conducted – seabed studies, meteorological studies, studies for birds, fish, marine mammals etc. One aim of these environmental studies is to ensure that the right permits can be obtained for construction of the plant *in line with applicable legislation and rules*. Other studies, such as the seabed and meteorological studies, will be conducted to provide data to ensure more cost-effective construction of the flexible island concept and offshore wind farms in the area. The plan area for the North Sea Energy Island is shown in Figures 1 and 2.

[1]Note that there is currently no legal framework for PtX plants, and that work is being done to establish the framework and jurisdiction for the field.
[2]In line with the press releases of 5 July 2022 regarding a flexible island concept which makes it possible to combine an artificial island with electricity transmission and energy conversion on platforms near the island, but without limiting the possibilities for innovative activities (e.g. PtX) and flexibility on the island, within the applicable regulatory and safety frameworks.

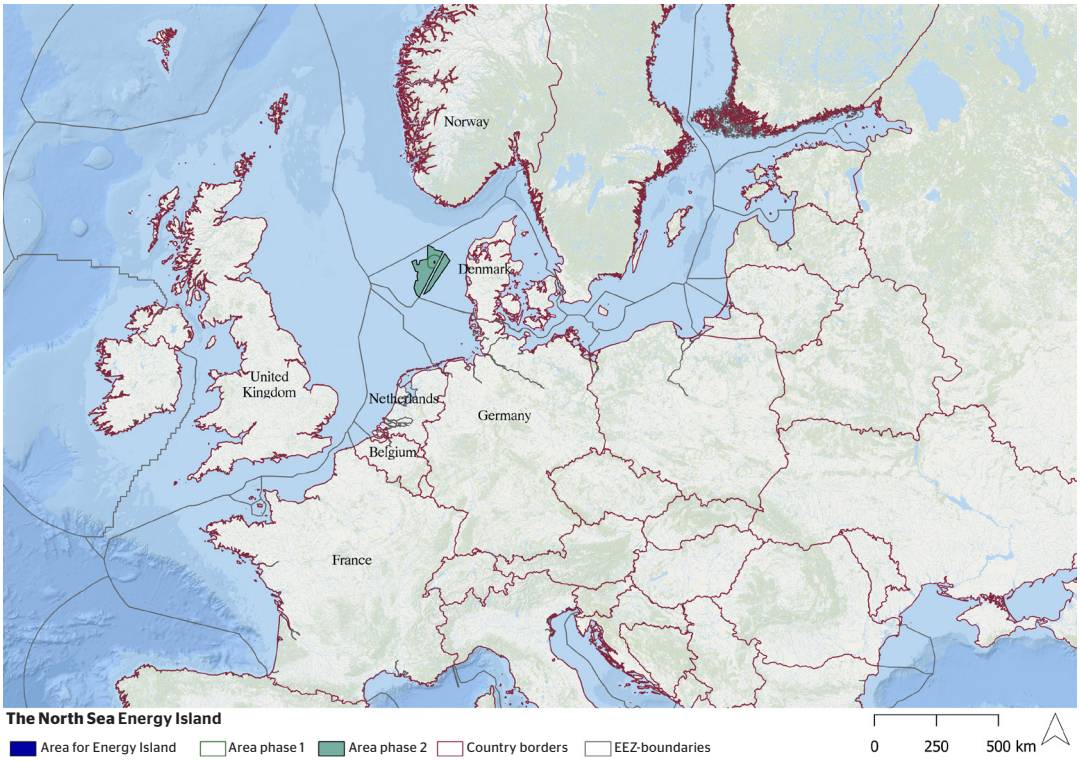


Figure 1

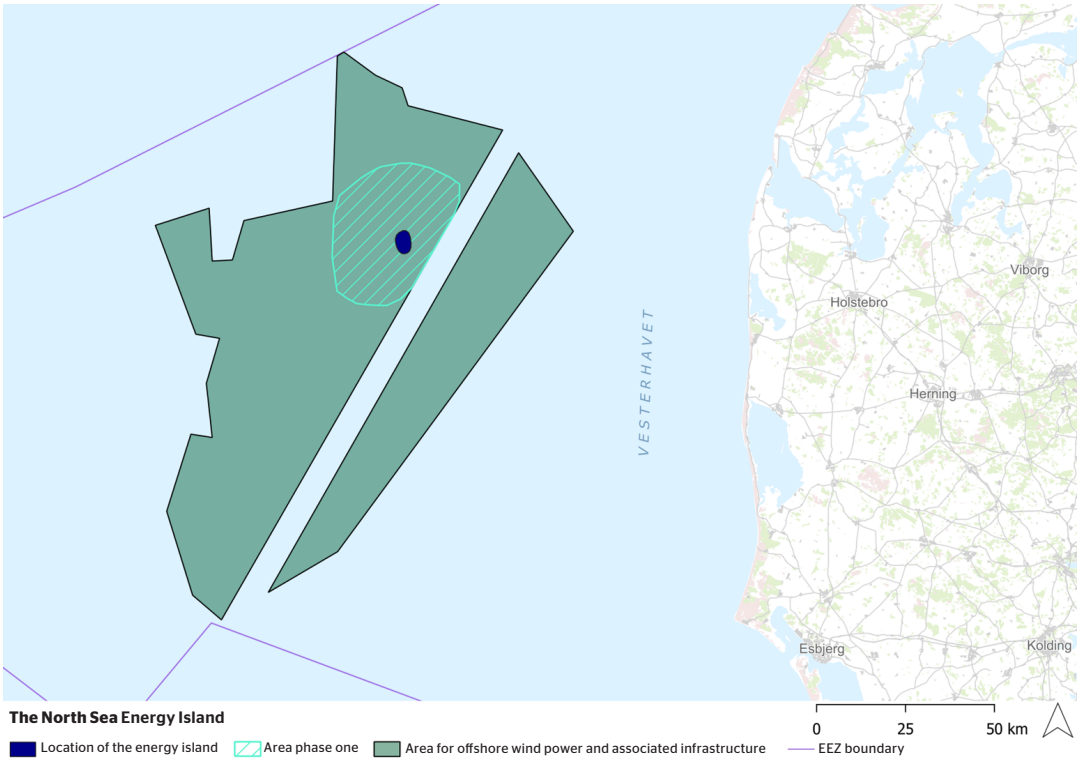


Figure 2

Environmental assessment processes for the North Sea Energy Island

A number of environmental assessments must be carried out, including a strategic environmental assessment (SEA) for the Plan for Programme North Sea Energy Island and environmental impact assessments (EIA) for the specific onshore and offshore projects. These are required in order for permits to be granted to establish the onshore and offshore plant. This idea phase only covers the environmental impact assessment for the Plan for Programme North Sea Energy Island

Environmental assessment of the Plan for Programme North Sea Energy Island

(this outline proposal, 2022-2023)

As one of the first steps in the process, the Danish Energy Agency will conduct a strategic environmental assessment (SEA) of the overall Plan for Programme North Sea Energy Island, which covers both offshore and onshore. The aim of the environmental assessment is to identify the environmental impacts of the plan, if the installations covered by the plan are realised. Page 7 further explains the environmental assessment.

Planning basis for onshore project

The planning basis (municipal plan supplement and local development plans) for onshore substations etc. will be prepared and environmentally assessed (SEA) under the provisions of the Danish Environmental Assessment Act.

Environmental impact assessment of the onshore project

Energinet will conduct an environmental impact assessment (EIA) of the onshore parts of the project in coordination with the process of preparing the planning basis.

Environmental impact assessment of the artificial island

Once the tender for the artificial island has been completed, the winner must conduct an EIA of the island.

Environmental impact assessment of offshore wind farms

When the tender for the offshore wind farms has been completed, the winner(s) must conduct an EIA of the specific project(s) for the installation of offshore wind turbines and the associated export cables to the artificial island's point of connection.

Construction permit for offshore wind farms

The Danish Energy Agency can only grant the final construction permit under the Renewable Energy Act for the offshore wind farms to the tender winner(s) after the environmental impact assessment of the specific offshore wind projects and public consultation have been completed.

What is a strategic environmental assessment of a plan?

The Plan for Programme North Sea Energy Island must undergo a strategic environmental assessment.

A strategic environmental assessment (SEA) is an overall assessment of a plan or programme's impacts on the environment, and is conducted in accordance with the *legislation on strategic environmental assessment of plans and programmes*. The aim is to analyse potential environmental problems and possible solutions to them as early as possible in the process. Environmental considerations are thereby integrated during the preparation or revision of plans and programmes[3].

The purpose of the SEA of the overall Plan for Programme North Sea Energy Island is to assess the likely environmental impacts of the plant covered by the plan.

A further aim is to determine whether a plan of this nature is feasible without significant negative environmental impacts. The environmental studies will be based on the existing environment and area use and the general impacts (noise, visual factors, nature areas, protected species, etc.), which can be expected from the realisation of the plan. The studies will be carried out without knowing the details of the project.

The SEA also entails that the derived environmental impacts of Plan for Programme North Sea Energy Island will be described and assessed from a broad environmental perspective, which includes impacts on human health and property, navigation and fishing, the landscape, nature and environmental conditions on land and at sea. The SEA must also report on the relationship to international environmental protection obligations, such as Natura 2000 sites, and cumulative impacts with other projects, i.e. the total impacts of the Plan for the North Sea Energy Island and other similar plans and projects in the vicinity.

The scope of the SEA is decided by the Danish Energy Agency. The delimitation takes into account information from the current consultation, and the environmental assessment will be presented in an environmental report in Danish with an English summary. The environmental report will be presented to the public and sent to relevant authorities and stakeholders, and countries where the plan may have cross-border environmental impacts.

The Danish Energy Agency is responsible for the SEA of the Plan for Programme North Sea Energy Island, with relevant authorities being involved as stated above.

[3]Applies to plans and programmes covered by Section 8 of the Danish Environmental Assessment Act and the associated executive order. The Danish Ministry of the Environment's Executive Order no. 973 of 25 June 2020 on Environmental Assessment of Plans and Programmes and Specific Projects (EIA).

Potential environmental impacts of the plan

On land

The electricity generated at the North Sea Energy Island will be brought ashore via one or more cables to the coast of Jutland, and then relayed to high-voltage substations in Jutland. All cables will be laid underground.

The environmental assessment of the Plan for Programme North Sea Energy Island will include descriptions of the expected environmental impacts of substations and cable installations. These might include impacts on visual and landscape conditions. Relevant natural and environmental interests in the area will also be described and assessed, including relevant Natura 2000 sites.

The environmental assessment will address all relevant environmental issues, which are known to be potentially affected by this type of onshore installations, and any relevant ideas for issues that come in during the consultation process which this information material forms part of.

Where relevant, the report will contain suggestions for preventive measures, such as measures to reduce noise and to minimise the visual impact that can be deployed to avoid, reduce or compensate for any significant negative environmental impacts.


Legend
Area phase 1
Area for the energy island
Area for offshore wind and associated infrastructure
Area for fiber cable
Illustration of area for cable corridor
400Kv network

Potential environmental impacts of the plan

At sea

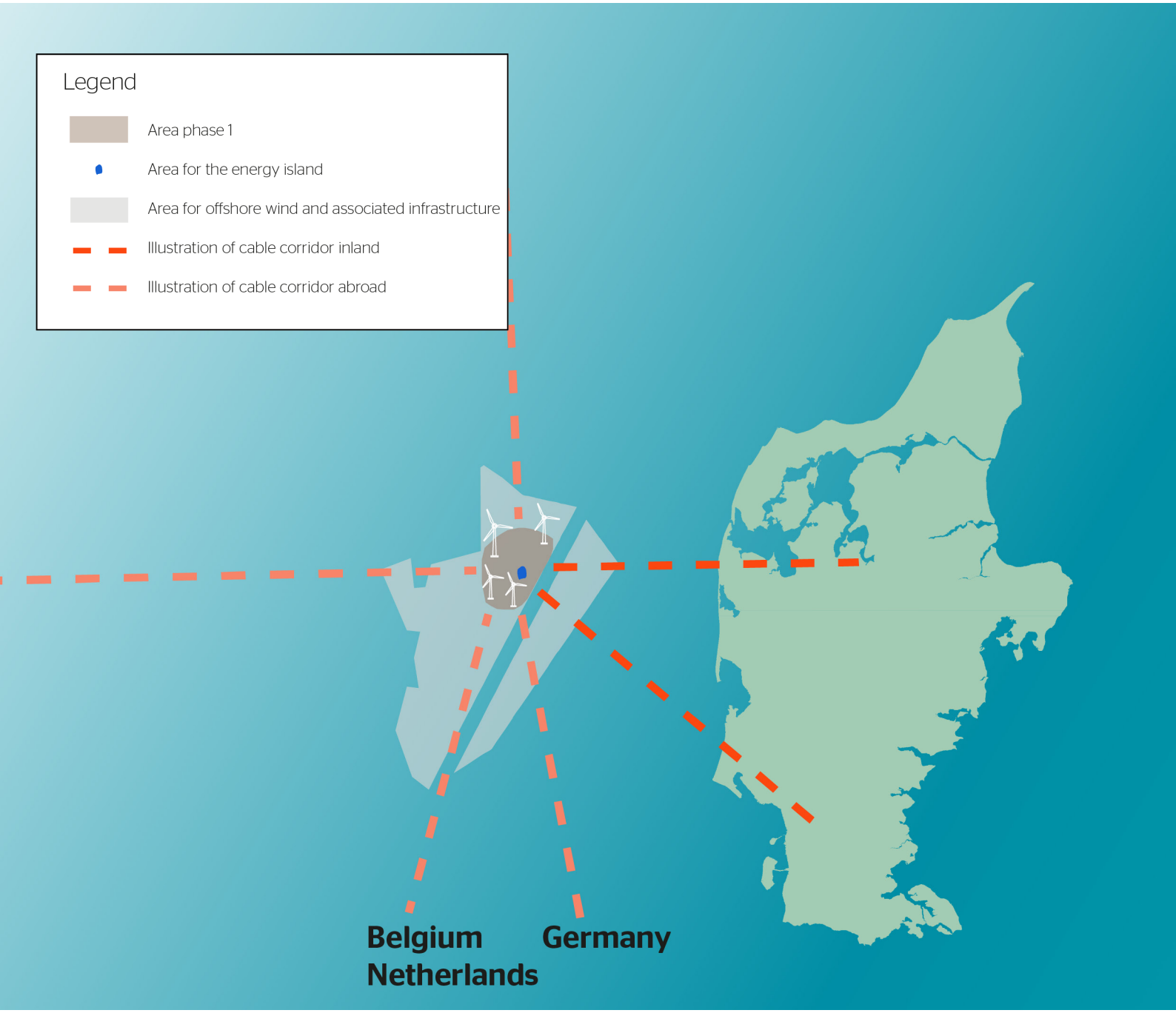
The construction of an artificial island, offshore wind farms, cables, platforms, PtX plants and pipelines within the area designated in the Danish marine spatial plan, and cables and pipelines from the area to the west coast of Jutland or to partner countries, may have both temporary and lasting environmental impacts. The construction work in the North Sea may cause inconvenience to maritime traffic due to the transport of materials to and from the project area. Noise during construction may also displace or directly impact fish and marine mammals. Various methods exist to prevent and minimise impacts, which will be used as far as possible.

Installations covered by the plan may impact flora and fauna in the area. Offshore wind turbines can potentially displace some birds from parts of their foraging and resting areas, or lead to a risk of collision for migrating birds. Seabed flora and fauna may also change in the area. For example, the structures created by the platforms, wind turbine foundations and outer elements on the island could, much like reefs, create hiding places for fish and large shellfish, helping to increase biodiversity in an area. The impacts on animal and plant species will be assessed based on the existing knowledge currently available.

Under particularly favourable conditions, offshore wind turbines covered by the plan will be just visible on the horizon from land in phase one and two, depending on the location of the offshore wind farms. The offshore wind farms can also affect radio and radar signals by reflecting these from turbines and blades. There may also be other factors affected by the project, including marine archaeology.

When the artificial island and offshore wind farms have been constructed, they will have an impact on navigation and thereby also on the fishing sector in this area in the North Sea. To enhance maritime safety, an analysis will be carried out of the risk of collisions with the wind turbines, so that the island and wind farms can be positioned with the greatest possible safety margin in relation to existing maritime traffic and navigation corridors for fishing vessels etc.

The SEA of the plan will include any expected cumulative impacts with other offshore wind farms and/or other projects and plans under construction or planned in the North Sea. Projects in both Danish and foreign waters will be considered.


Legend
Area phase 1
Area for the energy island
Area for offshore wind and associated infrastructure
Illustration of cable corridor inland
Illustration of cable corridor abroad
Belgium
Germany
Netherlands

How to influence the process

Concept consultation

The Danish Energy Agency would like to hear from you if you have suggestions or ideas for the environmental assessment process of the Plan for Programme North Sea Energy Island– particularly regarding the environmental issues that should be analysed and examined. We would also like to hear from you if you have knowledge of local environmental factors that should be taken into account.

The consultation process runs for five weeks from Monday 22 August to Monday 26 September 2022.

Based in part on the consultation responses, the Danish Energy Agency will then decide on the issues and environmental impacts to be examined in the environmental assessment of the plan.

Virtual meeting

The Danish Energy Agency and Energinet will hold a virtual public meeting in connection with the consultation. The meeting will take place on 6 September. More information is available on the Danish Energy Agency website:

https://ens.dk/ansvarsomraader/vindenergi/udbud-paa-havvindmoelleomraadet/danmarks-energioeer/miljoevurderinger-0

How to voice your opinion

We need your ideas and suggestions by 12.00 noon on Monday 26 September 2022. These must be emailed in writing to:
hoeringenergioe@ens.dk

Please note that the Danish Energy Agency handles issues with openness. Ideas and proposals received will be covered by rules on access to files. Any interested party may request a copy of the consultation responses received. Such requests will be processed in line with the provisions of the Danish Act on Public Access to Documents and the Danish Environmental Information Act. Comments received may also be presented to other authorities for input, where deemed necessary. When submitting consultation responses, please avoid including unnecessary sensitive personal data as much as possible.

Inspiration for questions for debate

- In your opinion, which factors should the Danish Energy Agency be aware of in the environmental assessment?
- Are there any issues that you believe should be given a special focus in the environmental assessment?
- What special considerations for the population, landscape and nature should be taken into account in the planning?

Acquisition of rights

Once an environmental impact report has been prepared for the land facility and a successful bidder has been found, expected at the end of 2024, the affected landowners will be contacted with a desire to negotiate a voluntary agreement on the right to place cables.

- Are there special circumstances surrounding your property that you believe may have an impact on the specific location of the facility?
- You can contact Energinet on an ongoing basis regarding conditions on your property.

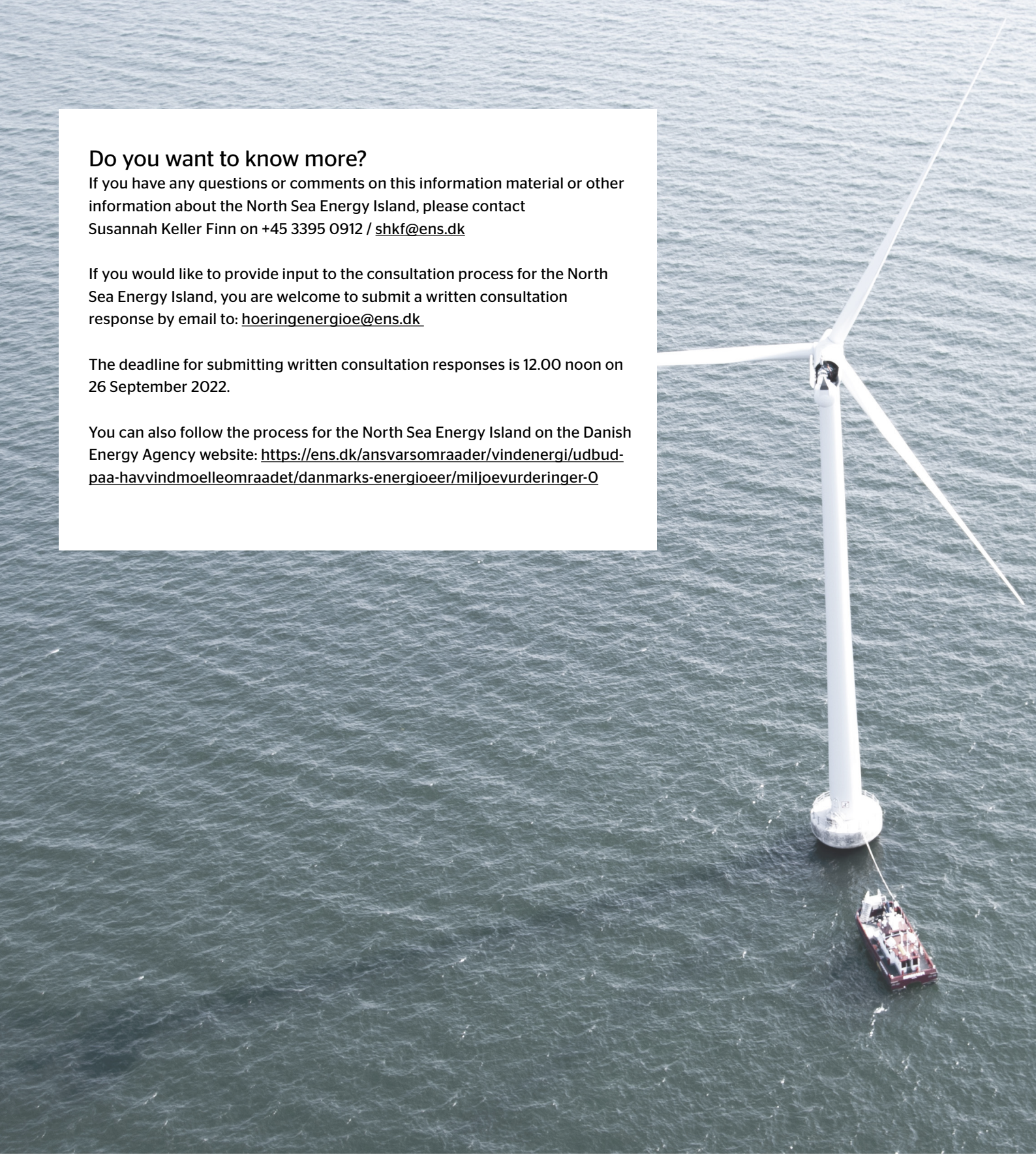
Do you want to know more?

If you have any questions or comments on this information material or other information about the North Sea Energy Island, please contact Susannah Keller Finn on +45 3395 0912 / shkf@ens.dk

If you would like to provide input to the consultation process for the North Sea Energy Island, you are welcome to submit a written consultation response by email to: hoeringenergioe@ens.dk

The deadline for submitting written consultation responses is 12.00 noon on 26 September 2022.

You can also follow the process for the North Sea Energy Island on the Danish Energy Agency website: https://ens.dk/ansvarsomraader/vindenergi/udbud-paa-havvindmoelleomraadet/danmarks-energioeer/miljoevurderinger-0



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