Energy Island North Sea

Scope Report – Fisheries

Energinet

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Contents

1 Project introduction and background

With the Climate Agreement for Energy and Industry of the 22nd of June 2020, the majority of the Danish Parliament decided that Denmark will become the first country in the world to develop two energy. One of the islands will be located in the North Sea ("Energioe Nordsoen") with a capacity of 3 GW offshore wind surrounding the island. This island can be further scaled up to allow for grid connection of up to 10 GW offshore wind on the island. It is expected that Energioe Nordsoen will be in full operation by 2033.

The Danish Energy Agency (DEA) has initiated the Strategical Environmental Assessment (SEA) and associated technical reports based on field studies including investigation of the commercial fisheries within and in the region of the investigation area for the planned energy island area and export cable as well as the area around the island. The desktop fishery studies will form the baseline descriptions indicating the presence and volume of the different forms of commercial fisheries and their target species, which in turn will form the background information to be used in relations to an impact assessment of a future EIA for Energioe Nordsoen.

This report includes a detailed description for the commercial fisheries within and in the region of the investigation areas, including cable corridors for the Energioe Nordsoen plan.

2 Expected commercial fishery interest in the project area for the Energy Island North Sea

A preliminary desktop study screening the fishery activities in the investigation area for the Energy Island North Sea indicated that bottom trawls, pelagic trawls and gill nets were the primary gear types used in the region, with the bottom trawl being the dominant gear type (Figure 1). Furthermore, a primary target species of the bottom trawl was the commercial species sandeel (BioApp, 2021).
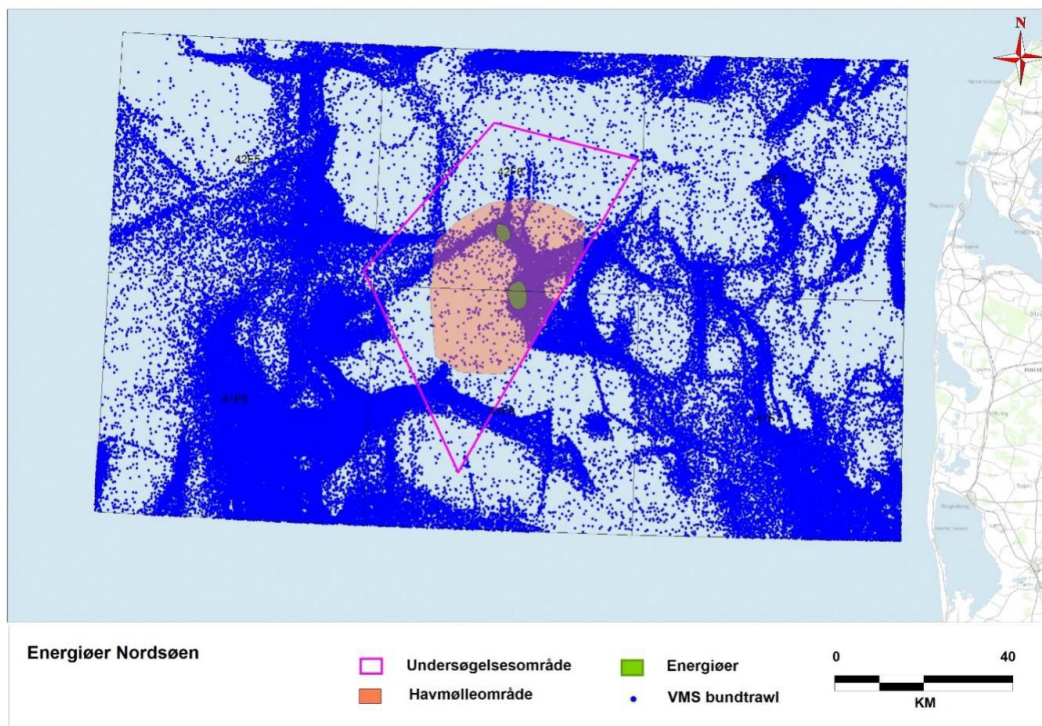
Figure 1: Fishery effort with bottom trawl (2013-2020) (BioApp, 2021) . pre-investigation report for Energy Island North Sea.

3   Data collation and analysis design - Fisheries

The following scope of work (SoW) is an outline of the activities to obtain baseline data for the commercial fishery activities in the investigation area and region of the Energy Islands North Sea.
This data will be used to undertake a sensitivity analysis of potential impacts on the commercial fisheries based on a set of assumptions and their potential impacts.

An overview of the SoW includes obtaining the following:
• Fishery landings data (logbook data – kilo and value) for a minimum of 10 years (2011-2021) and according to*:*
  - o   The relevant ICES rectangles (41F5, 42F5, 41F6, 42F6, 41F7, 42F7, 41F8 and 42F8) in and near the Energioe Nordsoen plan area.
  - o   All fish species caught/landed by weight and value.
  - o   Fishing gear types (bottom and pelagic trawls, beam trawls, gill nets, seine nets and other gear etc.).
  - o   Relevant vessel lengths to both match VMS data and vessel lengths that are required to submit logbooks in the North Sea (vessels >10 m).

o   Data linked to Landing ports and Basis (home) ports to determine their importance for the fisheries in the investigation area.

- VMS data for fishing vessels according to gear types (bottom and pelagic trawls, beam trawls, gill nets, seine nets and other gear etc., and by month for seasonal analysis for the years 2007-2021 for the following vessel lengths and time periods:
    o   Vessels > 27 m (2007-2021).
    o   Vessels > 15 m (2009-2021).
    o   Vessels > 12 m (2012-2021).

- Furthermore, VMS will be linked to logbook data and their associated fishing trips, which will allow for mapping the distribution of where individual species have been caught and seasonality, as well as making an analysis of the economic importance of the fisheries in relevant areas.

- Gathering AIS (Automatic Information System) data for fishing vessels (AIS is only required for vessels 15 meters or more in length) to supplement VMS and other distribution data.

- Fishermen interviews with relevant fisherman and local fisherman organizations (for example the Danish Fishermen PO) to supplement information on the distribution of fisheries with small vessels, and to validate the interpretation of official fisheries data and the distribution of fisheries based on for example VMS assumptions.

The baseline data will lead to the following results:
- Mapping the baseline distribution of the fisheries according to:

    o   Gear types (bottom and pelagic trawls, beam trawls, gill nets, seine nets and other gear etc.)
    o   The most important commercial species, particularly sandeel (tobis) as well as codfish: Atlantic cod, haddock and various flatfish species and pelagic species (sprat/herring) etc.
    o   The seasons (Q1, Q2, Q3 and Q4) of the year
    o   The distribution of the fisheries from smaller vessels (<10 m) that do not register their catches in logbooks according to weight and value

- Determining the importance of landing ports and basis (home) ports in relation to the fisheries in the investigation area.

- Making an economic analysis of potential economic loss in both the short and long term by undertaken an analysis of the distribution of the value of fisheries in fishing areas and linking this value with specific impacts.

- Conducting a sensitivity analysis on the potential impacts to the fisheries activities within and around the investigation area including potential cumulative and transboundary impacts (non-Danish Fisheries).

3.1   Detailed methods
The following is a more detailed summary of some methods to fulfill the scope of work.

3.1.1 Mapping of fisheries

VMS linked to fishery data (catch of species (weights and values), gear types, monthly data to indicate the seasonal fisheries etc.) will be used to map the distribution of the fisheries according to gear types, catch amounts and relevant commercial fish species in and around the Energy Island North Sea plan area. This will be used to indicate where fishing grounds are located, where particular fishery sectors (gear types) undertake their fisheries and where fishing grounds targeting particular species, such as the economical and ecologically important sandeel are located.

3.1.2 Landings data from ICES rectangles containing the project area

Official landings data from relevant ICES rectangles from 2011-2021 will be used to quantitatively and qualitatively describe the development and seasonal distribution of the commercial fisheries in relevant ICES rectangles near the investigation area over time. This information, together with VMS/AIS distribution data will be used to help determine the historical and short- and long-term value of the investigation area to the commercial fisheries. Furthermore, landings data linked to landing ports and where the fishing vessel have their home port (basis ports) helps determine the importance of the ports associated with the fisheries in the investigation area and, which ports are indirectly sensitive to potential impacts.

3.1.3 Fishermen Interviews

Official data from the Danish Fisheries Agency (Fiskeristyrelsen) and other sources will be complemented by data from interviews with relevant fishermen and representatives of the local Danish Fisheries Producer Organization departments (DFPO) in the relevant ports. Interviews with fishermen are an important supplemental source of information to include the fisheries of small vessels (<10m in the North Sea) not represented in the official data for ICES statistical rectangles. Interviews will also be used to gather fishery distribution data for small vessels (<12m) not represented in VMS data or AIS data. Information on the gear type and distribution of the fisheries of small vessels (both <10m and <12m) from interviews will help NIRAS map the less represented fisheries by small vessels in the investigation area and eventually the export cable corridor(s) to land.

Furthermore, interviews will be used to validate the distribution of fisheries based on for example VMS assumptions and the interpretation of official fisheries data. Interviews will be undertaken with fishermen from the relevant ports (Thorsminde, Thyborøn, Hantsholm and Hirtshals) and fishery sectors.

3.1.4 Economic analysis of the fisheries in and near the project area

An analysis of economic loss to the fisheries will be undertaken by using VMS data linked to logbook data. There are several ways an economic value of the fisheries can be given to an area depending on the quality of fishery data available. One method is to give a value representing a fraction of the logbook catch during a fishing trip, to each VMS point represented in the fishing trip. By summing the value weighted of VMS points in areas of interest one can get an estimate of the economic importance of these areas to the fisheries. This information can eventually help in assessing the potential economic losses in a fishing area that is significantly affected by a project impact. In this analysis it would be best to use VMS data from 2012 and later as it was first during this time that vessels down to 12 m in length had VMS equipment onboard and thus a much greater fraction of the fishing fleet is represented in the VMS data.

4 Technical report

The technical report on fisheries will comprise the following information:

• Non-technical summary
• A thorough method description including a description of all relevant plan assumptions.
• A description of baseline situation of fisheries in the North Sea based on literature and fishermen interviews conducted as described above.
• Sensitivity analysis of fisheries within the investigation area and possible cumulative and transboundary impacts on fisheries as a result of the collected data and analysis of economic loss to the fisheries.
• Proposals for measures to mitigate adverse impacts, as appropriate
• Identification of possible data and knowledge gaps of importance for the future environmental assessment to be conducted by the future concession holder
• Proposal for a monitoring programme, as appropriate.