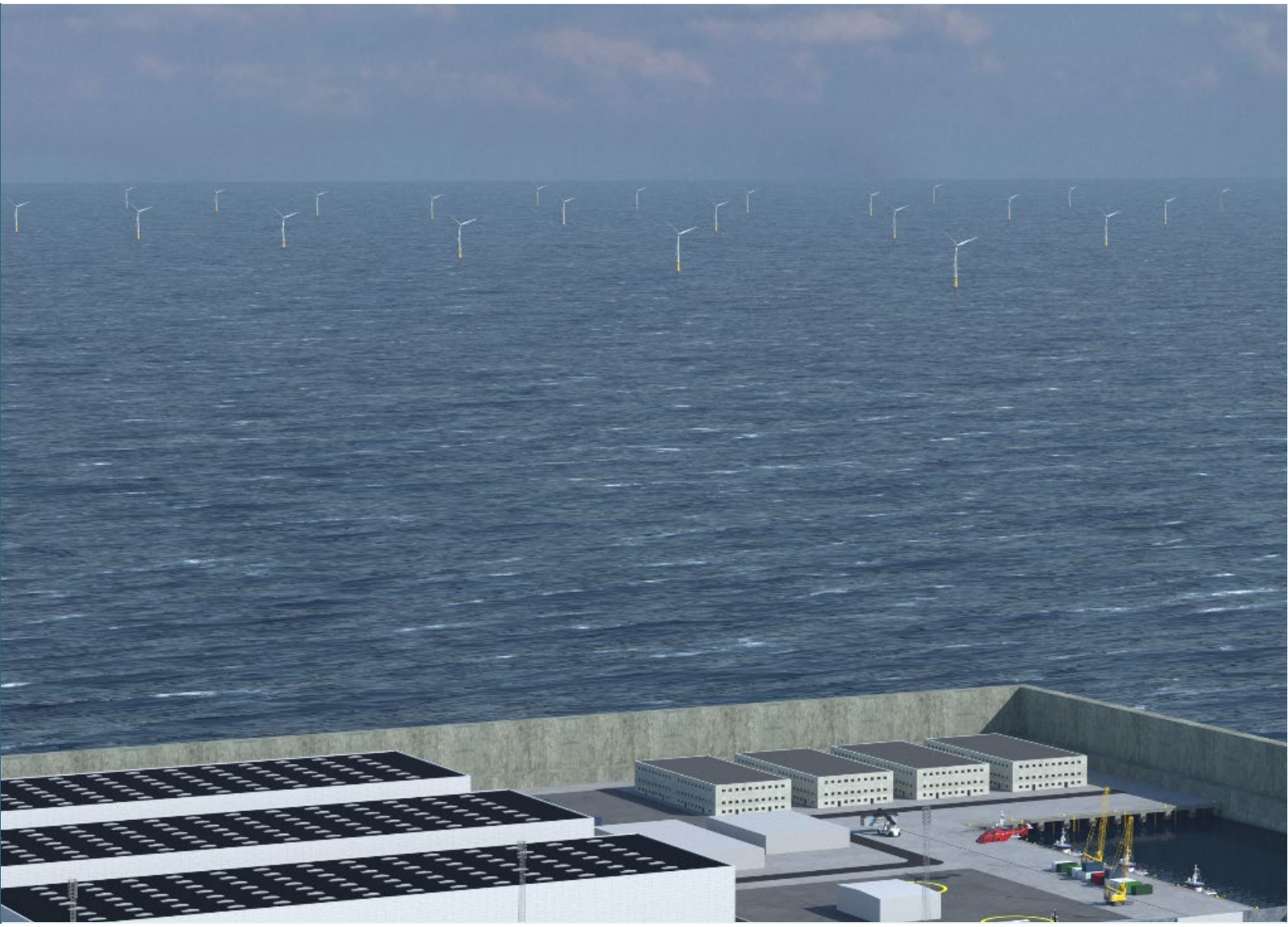


Energy Island North Sea

Scope Report – Benthic Flora and Fauna Field Surveys

Energinet

Date: 7 April 2022

Contents

1 Project introduction and background 3
2 Expected baseline conditions 3
3 Surveys, data collation and analysis design 3
3.1 Scope 3
3.2 Approach and Methods 6
3.2.1 Assumptions 6
3.2.2 Methods 6
3.2.2.1 Design Principles - Sampling Strategy 6
3.2.2.2 Field Survey, Including Planning 9
3.2.2.3 Data Delivery Output 9
3.2.2.4 Sampling Equipment – Soft Sediments 10
3.2.2.5 Design Principles for the Scoping Report 13
4 Technical Reporting 15
5 Time schedule 15

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 islands. 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 baseline reports based on field studies, including field studies of benthic flora and fauna, within the project area comprising the planned energy island and adjacent 3 GW wind farm areas. This project area constitutes the investigation area for benthic flora and fauna for which the planned field studies will be the foundation of baseline descriptions in the subsequent impact assessment during EIA for Energioe Nordsoen.

This scope report includes a detailed description of the planned benthic field survey within the investigation area for Energioe Nordsoen. The survey plan has been prepared based on information from project geophysical surveys. However, detailed information from e.g. multibeam and side-scan sonar and ground truthing, in the form of sediment samples, has not been available in the planning of the current survey design. We therefore expect to relocate some stations slightly when (if) these data are made available provided that this occurs in sufficient time before mobilisation of the benthic survey.

2 Expected baseline conditions

The large project area in the North Sea (1081 km^2) is according to the EU-Sea map characterized by very variable sediment types and depths between 20-50 m. This is also demonstrated in the mapping report from 2019-2020 with partial coverage of the area (Al-Hamdani et al, unpublished), and by geophysical surveys commissioned by Energinet and undertaken by Fugro and MMT which have been used here to develop the survey design.

Very few investigations have taken place in this part of the North Sea, and the sediment is expected to vary substantially even in the small scale from mixed sediment (substrate types 2 – 4 where there is hard bottom expected) to sandy bottom types.

3 Surveys, data collation and analysis design

3.1 Scope

The programme described covers all activities required to complete an assessment of the impacts on benthic flora and fauna. The seafloor conditions are expected to be variable, and difficult to sample. Therefore, several sampling equipment designs may potentially be required, as described below, in order to cover the various bottom types of the area. This will require additional ship time and impose necessary deviation from the national (NOVANA) guidelines for monitoring of soft bottom fauna. The quality standards and technical requirements of the existing North Sea benthic monitoring program and data series from the area have guided the methods and sampling design suggested here.

Since it is expected that at some locations it may not be possible to sample for infauna it is important to include photographic documentation of epifauna and the seabed surface. Furthermore, analysis of epifauna bycatch from the trawl surveys (Work Package I- Fish and Fish Populations) will be included in addition to the methods described here.

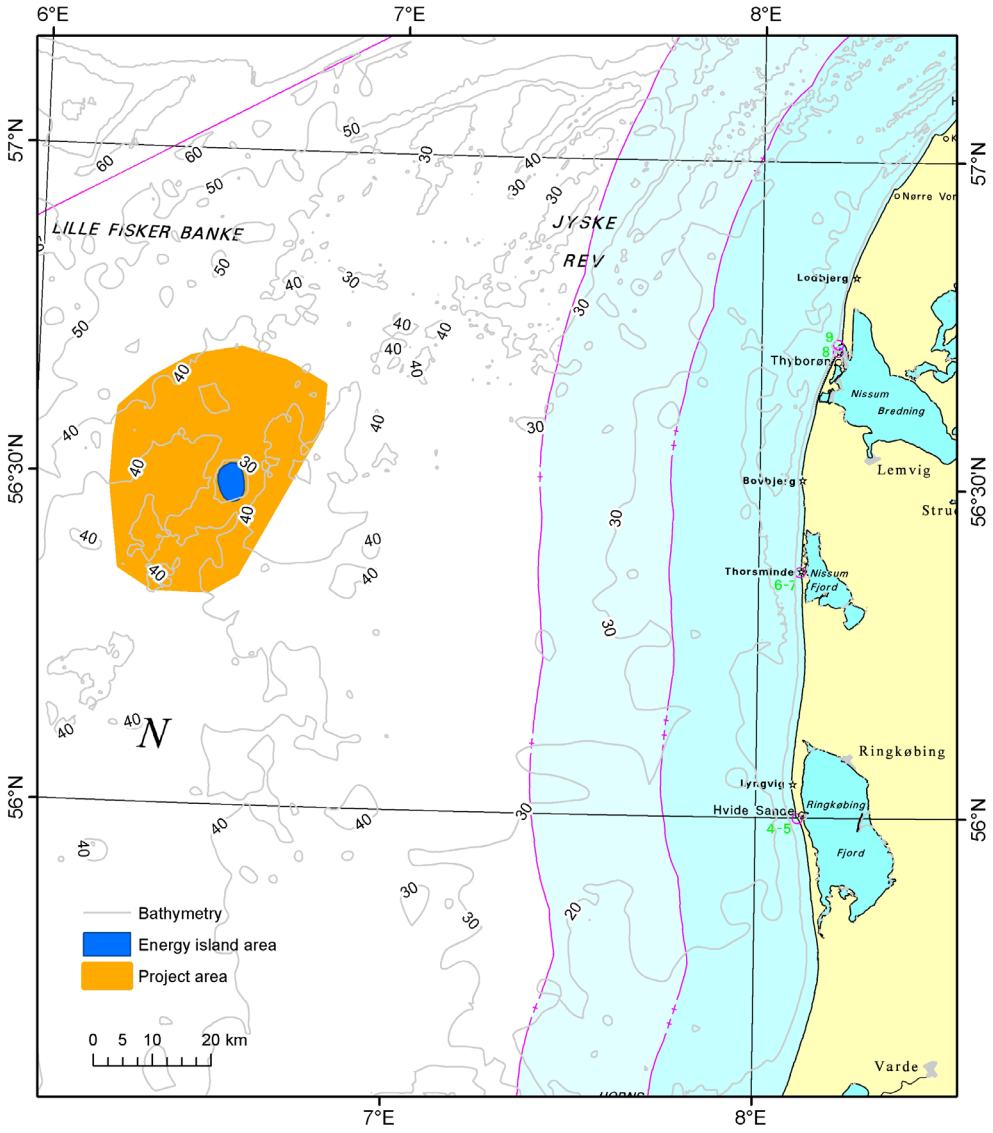
The proposed survey and other characterisation methods comprise:

1. Review of geophysical survey data of the Energioe Nordsoen investigation area and other relevant data sources from a desktop literature review.
2. Benthic seabed sampling with haps sampler or Day grab (modified Smith and McIntyre grab).
3. Visual seabed inspection e.g. underwater photography, drop-down video camera, ROV (Remotely Operated Vehicle).
4. Depth, CTDO-profiling at stations, representing the project area.
5. Analysis of benthic samples, including species identification and contaminants analyses on samples from a subset of stations.
6. Collection of relevant existing available data and information on benthic fauna and flora.
7. Sediment analysis, including dry weight and organic content by loss of ignition and grain size analysis from subsamples of the benthic fauna samples.
8. Conduction of a sensitivity analysis of potential project impacts on benthic fauna and flora to be presented in a technical report.
9. Reporting collected data into the official databases of the Danish Ministry of Environment (Miljøministeriet).

The official databases of the Danish Ministry of Environment are managed by DCE (Aarhus University).

We propose two different approaches in the North Sea Project Area with a relatively strong focus on the footprint area of the energy island compared to the adjacent wind farm area. This is because the impacts will be very different and the proposed energy island should be considered a habitat loss (*sensu* the Marine Strategy Framework Directive) and therefore, in principle should be mapped in detail to document the loss of habitats regionally. The energy island and wind farm areas will both be sampled and mapped following NOVANA protocols as appropriate to soft and hard bottom areas, but with a relatively intensive effort within the energy island area.

Figure 1. Project Area which is to contain the 3 GW wind farm and energy island.



Due to the water depths, we only expect to find limited flora such as crust forming algae in the North Sea project area and therefore survey methods are designed accordingly. It is expected that the most likely environmental effects in the project area on benthic ecology will be due to local changes in the sedimentation regime. In the case of a full or partial ban on trawl fishing after construction, community changes and increased biodiversity in response to decreasing physical disturbance of the seafloor are expected.

Regarding the potential changes in the sedimentation regime, organic content analysis is included in the program to be able to document such changes in the project area during the operational phase.

During benthic faunal taxonomic analyses any non-indigenous species (NIS) that are found will be highlighted. This will help support future investigation of any effect of the energy island in facilitating the spread of NIS.

3.2 Approach and Methods

3.2.1 Assumptions

In advance of high-resolution mapping of the seafloor of the area the choice of sampling equipment was guided by other data sources such as the NOVANA sampling stations, previous surveys by GEUS/VSP "Marin habitat kortlægning i Nordsøen" (Al-Hamdani *et al*, unpublished), and the experience of DCE Aarhus University from R/V AURORA in fauna sampling in parts of the North Sea. Taking into account the information available it is recognised that it may be necessary to allow for several attempts to sample the seabed with different equipment to obtain sufficient data on the infauna community to describe the biodiversity of the project area, including the energy island location.

We expect to establish 50 benthic sampling stations without replicates within the area destined for the energy island.

The sampling design described below is intended to be adaptive. Survey quantities necessary to satisfactorily characterize the survey area have been proposed. At the end of Section 3.2.2.1, below, we explain that it may be possible to reduce planned sample numbers analysed if conditions are more homogenous than expected. We also explain that a limit of 1200 hours (methods) for faunal sample processing has been assumed. However, a minimum of 60 % of the samples stated in the present proposal will be analysed even if this exceeds the 1200 h. This is expected to be adequate to complete the necessary analyses, any additional requirement would be discussed and agreed with the client if necessary.

The distribution of sample stations currently reflects expected gradients in depth (bathymetry) and seabed conditions to the extent possible based on data available. The distribution of demersal fishing activity which is expected to exert a substantial influence upon benthic communities has also been considered. Preliminary indications are that fishing pressure may be relatively high in the area of the energy island itself where proposed sample density has already been increased to improve data resolution in the area of expected habitat loss. Fishing pressure will be considered further in relation to survey design following review of project geophysical survey data. If appropriate it may be included as a factor within a stratified design; in either case fishing pressure will be considered in the data analysis work following survey completion.

3.2.2 Methods

The overarching objective of the survey is to undertake a baseline investigation of the benthos and sediment types of the project area. This will characterize the project area with respect to habitats and benthic communities and identify sensitivities of the faunal communities in the project area outside the physical energy island, and the loss of benthic communities associated with establishment of the physical island by using state of art analytical methods.

3.2.2.1 Design Principles - Sampling Strategy

Because of the high variability in seabed conditions we have designed a flexible program that takes this variability into account by applying an open design where several types of sampling equipment may be brought in play in a prioritized order at any given station. To cover the total investigation area, a grid of 100 sampling stations will be laid out covering the major sediment and habitat types as informed by available previous studies of the area, prioritising the most recent geophysical survey data provided by Energinet. Depending on the actual sediment type encountered at the stations, different types of sampling equipment's and methods will be used if necessary to get samples and the

number of replicates will be adjusted to give a balanced description of the various habitat types. The hypothesis is that benthic fauna sampling will be possible in areas with sand and perhaps some coarse substrate where suitable sampling equipment may be respectively a "Haps vibrocore" and a Day grab (modified Smith McIntyre grab). On the other hand, in areas with coarse substrate and mixed sediments (gravel, stones and boulders expected at or near the benthic surface) only photo and/or ROV will be possible. According to the available information of the seabed substrate composition (Al-Hamdani et al, unpublished) only a tiny fraction is mapped as suitable substrates for sampling of infauna with all the samplers such as fine sand (substrate type 1a, Table 1).

Upon arrival to a station, the epifauna and the seafloor will initially be sampled with online video recording, which will guide the choice of sampling equipment for infauna and sediment. Four methods may be used during the survey depending on the seabed sediment composition. If the seabed sediment composition allows sampling it will be done using a haps with a vibrocore. This will take a sample in line with the methods employed by the EPA in the Danish North Sea monitoring program. If sampling cannot be conducted by haps with a vibrocore a Day grab (modified Smith McIntyre grab) will be used.
If video recordings reveal hard bottoms, gravel or very coarse and mixed sediments at a location, a ROV (Remote Operated Vehicle) transect will be conducted with focus on a visual description of the seabed substrate and larger epibenthic fauna and flora.

Table 1 provides the distribution of substrate types in the project are and substrate type codes used in Figure 4.

Table 1. Distribution of substrate types in the project area and substrate type codes used in Figure 4.

Substrate type code	Substrate type name	Area (km^2)	Fraction	Number of Haps stations outside the energy island area	Number of Haps stations inside the energy island area
1a	Soft bottom sediment with silt or mud	478	45.03%	23	12
1b	Sand	210	19.79%	10	38
2a	Sand, gravel and small stones <10 cm	222	20.94%	10	0
2b	Sand, gravel and small stones <10 cm with <10% scattered stones >10 cm	35	3.33%	2	0
3	Sand, gravel and small stones <10 cm with 10–25% scattered stones >10 cm	112	10.57%	5	0
4	Stones >10 cm with >25% coverage with sand, gravel and scattered or small stones	4	< 0.33%	0	0

Taking in to account the size of the area, the bathymetry and the sea-bed composition, we propose 100 benthic sampling stations in the project area, with 50 stations outside the Energy Island and 50 stations inside the Energy Island. Based on the geophysical data, we assume that all 50 stations inside the Energy Island can be samples with either Haps or Day grab. The 50 stations are distributed evenly and will give a good description of the area. The 50 stations located outside the Energy Island is distributed evenly according to substrate types, to give a thorough description of all habitats (substrate types) (Table 1).

The survey will include a drop-down camera system comprising video camera with stills capability, as an addition to NOVANA technical guidelines for benthic fauna investigations. This video survey will guide the choice of haps, day grab or ROV in the project area whereas the 50 stations in the area designated for the actual energy Island consistently will be samples with the Vibro-haps as the first priority. We assume that it is impossible to get samples of the sediment from a number of stations. In the following, the total number of quantitative samples are therefore given as maximum and the distribution of samples among the different sampling equipment is therefore tentative (Table 2). The number of stations where ROV video transects for qualitative species identification of epifauna is the only option, key epibenthic organisms elements such as sea urchin, dead man's finger or sea pens will be quantified.

Where there is a hard bottom substrate type, the station will be monitored with ROV equipped with 4K + HD cameras and laser scale indicator as well as sufficient light. The use of a ROV will also serve as a habitat documentation which will be important in the area designated for the actual the energy Island where habitat loss will occur (see 'energy island', below, for further detail). We assume that ROV will be used at up to 211 stations outside the physical energy island.

For visual imagery of larger epibenthic fauna and benthic flora the final data format will be species specific (or taxonomic/functional groups) abundance or percent of coverage, depending on the lifeforms of the targeted groups. See Table 2 for suggested sample number based on existing seabed information.

Due to general strong hydrodynamics and a deep surface mixed layer in the North Sea, the project area is assumed to be well mixed and therefore it is assumed that it is sufficient to have three stations to cover the spatial variance of the hydrography in terms of CTD and oxygen profiling during the benthic survey. The temporal variance will be covered by corresponding sampling during the other work packages.

Project area (excluding the area for the Energy island)

In the project area outside the location of the energy island, the number of replicate samples will be adjusted such that the haps samples will be replicated five times while the larger grab samples will be replicated three times.
As a starting point, it is assumed that all replicate samples from the survey area outside the area designated for the actual energy Island will be processed. However, if it has been possible to retrieve sediment samples from almost all stations this will indicate more homogeneous bottoms than anticipated and therefore it may not be necessary to work up all samples to describe the area. It is furthermore assumed that if we obtain more samples than it is possible to analyse within the maximum of 1200 working hours, these 1200 h will be enough to fulfil the requirements. Thus, we will monitor time spent and complete an initial assessment and prioritization of all collected samples to ensure that the heterogeneity of the investigation area is represented in terms of sediment type, depth and number of replicates. We will then work through replicate samples in this prioritized order so that there will be representative information for all parts of the survey area.

Energy island (lost seabed feature)

Geophysical data indicate that all 50 stations at the area designated for the actual energy island can be sampled with either haps or day grab. To improve the knowledge about the seabed surface in the area designated for the physical energy island, up to 10 ROV stations will be placed within the area distributed at random in a mesh and 50 benthic infauna samples without replicates will be taken to maximise the spatial coverage of this area which will be lost as future habitat. If we discover vulnerable habitats in this survey, follow up investigations may be necessary, but this is not included in this program.

Within the area designated for the actual energy Island only one haps or Day grab will be taken at each of the 50 stations. However, within the area designated for the actual energy Island itself, it will be prioritised to use the haps at all stations to conform the dataset to the NOVANA program, which requires 42 individual samples on 42 individual positions. Only in the case where it is not possible to retrieve samples from 42 out of 50 stations, sampling will be supplemented with the Day grab or other equipment's. The reason for this sampling design at the physical island location, is to get the best basis for comparison of the data with the data obtained in the Danish NOVANA programme. All of the minimum 42 individual samples collected within the Energy island area will be analysed.

3.2.2.2 Field Survey, Including Planning

All sampling of benthic infauna with day grab or haps will be according to the national guidelines used in the Danish monitoring programs, technical guideline for soft bottom fauna (TA-19), so data can be stored in the national database. Using the national guideline will also enable comparison with existing data sets.

The ROV stations will provide data in accordance with the technical guideline for the NOVANA reef monitoring program (TA-14) with the difference that a ROV is used instead of a diver. The method is comparable at deep water although some minor organism might be overlooked.

The survey will be undertaken from the Aurora R/V in the period April-May 2022 (Figure 3). Alternative vessel(s) may be required. A comprehensive HSE evaluation will be completed before any vessel is used for survey work (see WP A, HSE Plan).

3.2.2.3 Data Delivery Output

Infauna data

According to the technical guideline for soft bottom fauna (TA-19) deliverables from haps and day grab samples will be assessed as follows:

- Species identification (biodiversity)
- Biomass (wet weight)
- Abundance on species level
- Sediment dry weight and organic content by loss of ignition
- Grain size analysis

Drop down video/photo

Sediment qualitative description according to the technical guideline for reef monitoring (TA-14) epifauna species where possible will be quantified as percent coverage.

ROV

Stations investigated using this method will provide data in accordance with the technical guideline for the NOVANA reef monitoring program (TA-14) with the difference that a ROV is used instead of a diver. The method is comparable at deep water although some minor organism might be overlooked.

- Sediment composition will be described according to sediment classes given in the TA
- Percentage cover of epibenthic fauna (and flora if present) associated to the hard substrate
- Percentage cover of epibenthic fauna associated to the "sediment bottom" in between stones and boulder if present.

Bycatch of epifauna from Work Package I - Fish and Fish Populations

Serve as help for species identification on photo/video and ROV.

The CTD-O instrument

A cluster of sensors that measure salinity, temperature, pressure (depth) and oxygen content in the water column will provide profiles of these parameters reported as data files and in the final reporting along with the biological data.

Contaminants

A total of seven subsamples, five outside the energy island foot print and two inside the energy island footprint, will be taken from the haps/day grab samples to be analysed for contaminants (Table 2). The analyses will follow the technical guideline from NOVANA TA-M24. Based on historical findings of contaminants in the North Sea, we suggest to investigate for the following:

1. Metals (22 in total)
2. PAH (22 in total)
3. Methyl PAHs
4. TBT
5. PCB

3.2.2.4 Sampling Equipment – Soft Sediments

Haps with vibrocore for benthic fauna sampling and sediment sampling. The Haps bottom corer (area 0.0143m^2 and up to 24 cm depth/3.4 l) is suitable for taking well-defined, undisturbed samples from hard as well as soft sediments. In order to stabilize the HAPS in sea swells, and to sample in sandy sediments, weights can be mounted. For sandy sediment and harder sediments as in the North Sea, a vibrocore (vibrator) is added (Figure 3). We can offer a backup of two haps corers where the vibrocore can be moved between the haps.

Day grab (modified Smith McIntyre grab) for benthic fauna sampling and sediment sampling. The sampler has an area of 0.1 m^2, it is very heavy and suitable in area with very hard sediment types. We can offer a backup of one Smith McIntyre grab.

Cylinder (~ 2 cm^2) for sediment subsampling of cores or day grab samples (dry weight and total organic content)
CTD for (oxygen) profiling at representative stations before benthic sampling is commenced.

A state-of-the-art ROV with HD and 4K camera with sufficient led light for seabed images and underwater video recording. It is equipped with two green laser fans as scaler for calibration of sample area (Figure 2) (SRV-8 Underwater Drone | RJE Oceanbotics Remotely Operated Vehicle). A Backup ROV Fifish PRO V6 is available for the survey (FIFISH PRO W6 - Industrial Grade Underwater ROV, OMNI · Duo 4K, Mid-Sized Underwater Robot (qysea.com).

The SRV-8 is navigated by eight dynamic vectored thrusters and can operate to 305 meters depth. It has a backup battery package making it possible to run non-stop for app. two*six hours (two days) in the field. It is very powerful and can operate in strong side current. The device is equipped with two forward-looking cameras having a HD and a 4K video resolution and sufficient beam and spotlight (4 adjustable LED lamps each on 1500 lumen). One camera can be set up taking high resolution photos at different time intervals. In addition, the ROV is supplied with two green laser fans as a scaler for measures. It is also equipped with a CTD sensor. As part of the navigation package, it has auto heading and depth control. The ROV is delivered with a Seatrack USBL positioning system. As an additional option we can offer ROV video tracks recorded and presented simultaneously with existing geo-referenced mapping data like bathymetry or seabed sediment maps along the track if requested -if not, the ROV survey will be within 15-20m of a fixed position. It is delivered with two cables (100m and 300m) providing a backup in case of accidents with the cable. It is also delivered with two spare thrusters.

Figure 2. Power state of the art ROV driven by eight vectored trustor's and equipped with HD and 4K camera for seabed images and underwater video recording.

Figure 3. Left, Aurora R/V; right, Haps with vibrocorer.

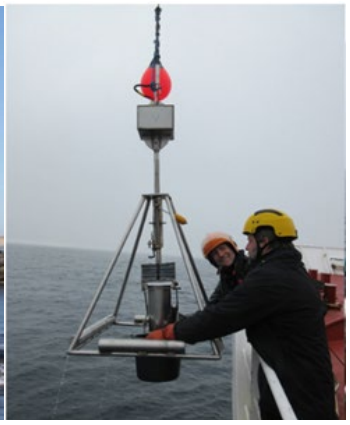



Table 2. Summary survey quantities. - Suggested sample number based on existing seabed information.

Survey type	Station no./type	Estimated total no. samples	Analysis
Project area outside the footprint of the energy island			
Fauna samples with grab or Haps corer	50 stations: Grab x 3 Haps corer x 5	150 Grab 250 Haps i.e., 400 samples total	Species identification (biodiversity), biomass (WW) and abundance on species level or species identification and habitat type identification
Drop down video/Still photo	50 stations	50	Qualitative species identification (biodiversity) of epifauna and flora, habitat type documentation
ROV	Up to 21 transects	Up to 21	Qualitative species identification (biodiversity) of epifauna and flora, habitat type documentation
Bycatch larger epifauna (Work package I - Fish and Fish Populations)	10 samples (obtained as described in the scope report for Work package I - Fish and Fish Populations)	10	Qualitative species identification (biodiversity) of epifauna
Sediment sample, grain size distribution	50 stations	50	Grain size
Sediment sub sample, organic content	50 stations	50	Sediment dry weight and organic content by loss of ignition (LOI)
CTDO	2	2	Depths, temperature, salinity and oxygen measurement in the water Column
Contaminants	5	5	Subsample from Haps or grab

Survey type	Station no./type	Estimated total no. samples	Analysis
Physical energy island Area, North Sea			
Fauna samples with grab or Haps corer	50 stations: Haps corer x 1 (Grab x 1)	50	Species identification (biodiversity), biomass (WW) and abundance on species level or species identification and habitat type identification
ROV	Up to 10 transects	Up to 10	Qualitative species identification (biodiversity) of epifauna and flora, habitat type documentation
Drop down video/Still photo	50 Stations	50	Qualitative species identification (biodiversity) of epifauna and flora, habitat type documentation
CTDO	1	1	Depths, temperature, salinity and oxygen measurement in the water Colum
Contaminants	2	2	Additional haps on two fauna stations

3.2.2.5 Design Principles for the Scoping Report

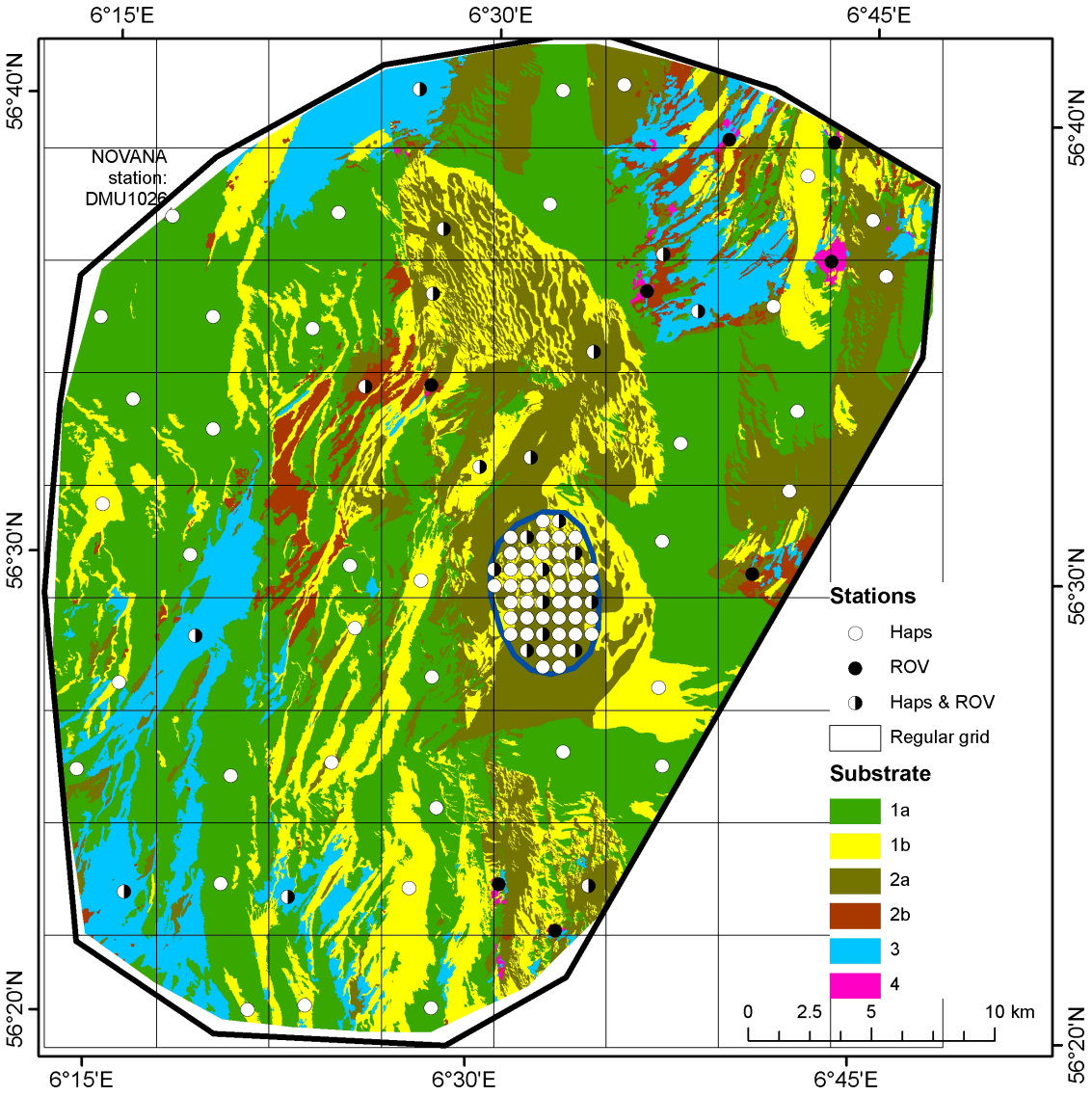
The final sampling design (adjusted according to new knowledge from the recently completed geophysical survey) considers the following conditions:

- The distribution of habitats based on existing information and data from the geological survey
- The bathymetry
- Existing benthos data and sediment from the project area
- The number of sampling stations and the final ratio between ROV and sediment sampling has been distributed proportionally between areal extents of major habitat types.

These procedures and the described survey design will use 100 sample stations to cover all major habitat types within the total area of investigation, and at the same time cover the heterogeneity within the dominant habitats with respect to diversity and sensitivity of the fauna community toward disturbances (
Figure 4, Table 1).

This strategy to obtain baseline data stratified at two levels (sediment composition/habitat and depth), will provide a robust description of the sensitivity of the benthic habitats and epi- and infauna communities. However, as the different sediment types encountered in the area may be sampled with different equipment (as describe above), the distribution of sample types and the areal coverage of encountered sediment types may not be balanced and not completely comparable. This will as far as possible be compensated through adjustment of the number of replicated sampled at each station where sampling of the infauna is possible. Furthermore, during the subsequent data analysis process we will choose analytical methods that are less sensitive to different sampling equipment. Sampling of sediment will allow identifying important ecological processes and it may even be possible to document local effects within the wind park area. By including VMS data, it will furthermore be possible to evaluate consequences of a trawl ban in the area.

Figure 4. Benthic sampling design for the project area.



Outline analysis requirements are as follows:

- Infauna (identification to species level where possible. Colonial and epifauna/-flora recorded qualitatively). Additional wet weight biomass to meet National reporting requirements.
- Epifauna cover based on visual judgement of images (ROV video and Drop-down camera), following the principles of the diver collected data in technical guideline from NOVANA TA-14.
- Identification of invertebrate bycatch from the fish survey will provide qualitative data on invertebrate epifauna.
- Sediment (dry weight and total organic carbon content), grain size.
- Sediment composition based on visual judgement on ROV video in accordance with the technical guideline TA-14 from the NOVANA program.

Analysis of infauna will include all major taxa retained in the sample to lowest possible taxonomic level following the recommendation in the Danish guidelines and consistent with NMBAQC scheme requirements. Biomass is required for inclusion with Danish monitoring data. This must be determined by wet weight calculation after storage in ethanol for between 3 and 12 months, according to the technical guideline for soft bottom fauna (TA-19).

Sediment analysis include dry weight and total organic carbon determined as loss on ignition (LOI) and grain size analyses

The remains of all sample residues as well as the identified animals will be stored for a minimum of 3 years.

Infauna data will be stored in the National Danish Database "ODA" following required quality assurance procedure.

4 Technical Reporting

The technical report will present the results of all collected data, including all other relevant available data. All data will be included in a sensitivity analysis of the potential impact on benthic fauna of the projected plans of the windfarm and energy island. The data will be interpreted using methods such as biotope mapping (EUNIS habitat classifications) to describe the existing environment along with commentary on potential sensitivity to offshore wind farm development.

Based on the results of the field survey and the baseline descriptions the sensitivity of the benthos including potential direct and indirect impacts on the benthic fauna in the project area outside the physical island. Within the area of the energy island the reporting will describe the loss of habitats and benthic community.

The technical report will also address:

- Proposals for measures to mitigate adverse impacts, as appropriate.
- Identification of possible data gaps and insufficiencies, as relevant.
- Proposal for a monitoring programme, as appropriate.

5 Time schedule

- Start November 2021 Collation of relevant background information (incorporated into current version)
- September 2021 Initial scoping report
- April 2022 Final scoping (following receipt of geophysical survey data)
- April 2022 Offshore survey (11 survey days + 11 standby days)
- May 2022 Laboratory analyses commenced
- End October 2022 Laboratory analyses completed
- November 2022 Data analyses completed
- 15. December 2022 First draft version of the technical report
- 31. December 2022 Final draft version of the technical report
- Medio March 2023 Final version of the technical report