

Examples to Accommodate Biodiversity in Nordic Offshore Wind Projects

Presentation of DNV's project proposal, Kick-off meeting with NER

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Understanding of the assignment

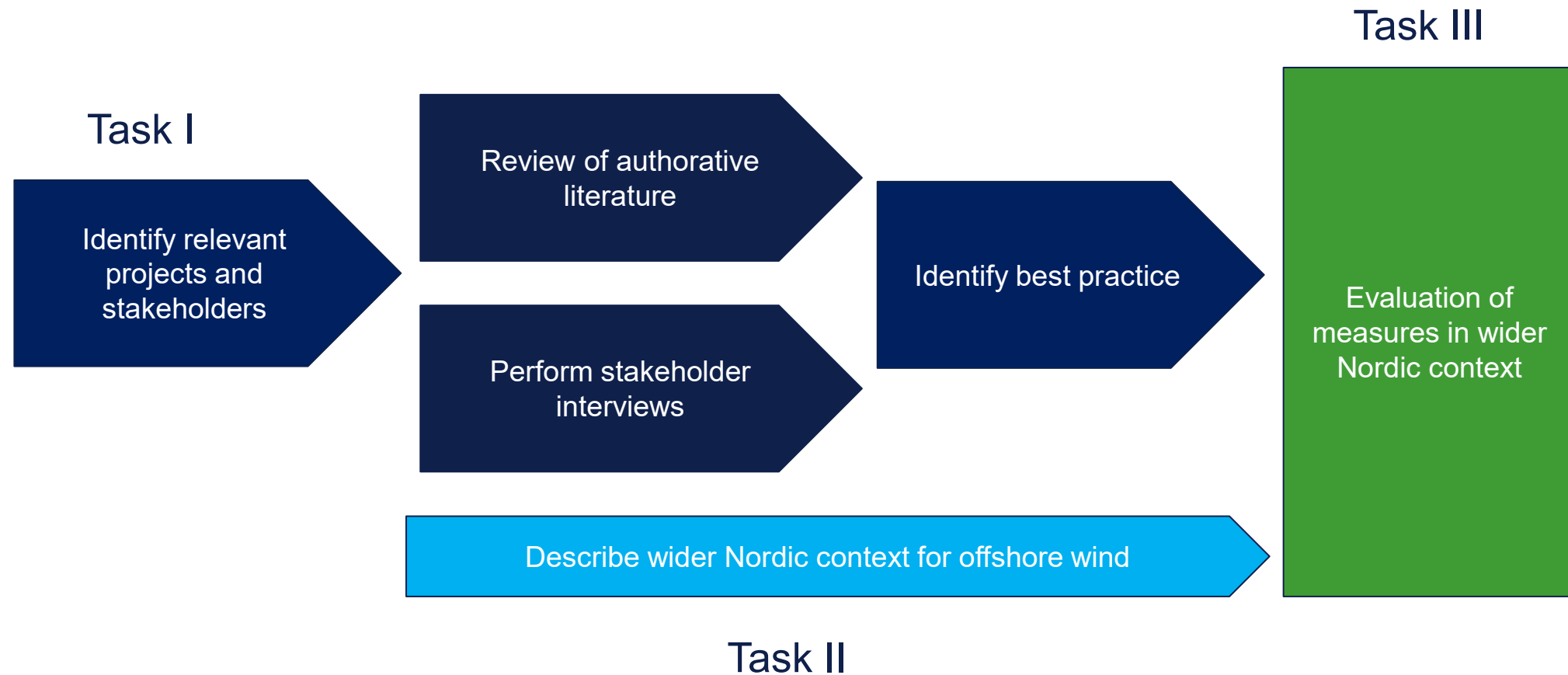
- To perform a comprehensive study to identify how Nordic offshore wind projects can avoid, mitigate or compensate for negative impacts on biodiversity and also how offshore wind projects can be beneficial for biodiversity.
- Provide examples of good stakeholder engagement-processes.

The deliverables of the project will serve as key input to the September 2021 ministerial meeting and final report published

Specific objectives

1. Identify good examples of coexistence between offshore wind projects and biodiversity in the Nordic region and/or neighbour countries, such as Germany, the Netherlands, or the Baltics.
2. Assess the feasibility of specific mitigation measures in a wider Nordic context, in terms of practical, technical, economic, and ecological considerations.

Approach



Case studies

Documented by performing 5 case studies reflecting different project phases :

Site characterisation and design

Construction

Operation

End of life

Both floating and fixed-foundation-turbine projects will be covered

Task I. Case studies:

a) Identification of relevant projects

Initial screening



DRAFT OUTLINE FOR PRE-SCREEN OF PROJECTS

| Project | Location | Owner | Size | Commissioning date | Conflict with vulnerable environmental resource (Yes or No) | Accessibility of relevant authoritative information | Regulatory regimes |
|---------|----------|-------|------|--------------------|---|---|--------------------|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| ... | | | | | | | |

Selection



- ✓ Project phase
- ✓ Type of installation
- ✓ Environmental factors
- ✓ Regulatory regimes
- ✓ Accessibility of documentation

Result: 5 cases

Task I. Case studies:

b) Identification of stakeholders

Initial screening



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| Project | Location | Owner | Size | Commissioning date | Conflict with vulnerable environmental resource (Yes or No) | Accessibility of relevant authoritative information | Regulatory regimes |
|---------|----------|-------|------|--------------------|---|---|--------------------|
| 1 | | | | | | | |
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| 6 | | | | | | | |
| ... | | | | | | | |

Selection



- ✓ Project phase
- ✓ Type of installation
- ✓ Environmental factors
- ✓ Regulatory regimes
- ✓ Accessibility of documentation

Result: 5 cases

Stakeholders (case specific)

E.g: Site owners, operators, O&M contractors, regulators, scientific experts, related fisheries, nature conservation bodies

Task I. Case studies:

c) Documentation of cases

DRAFT OUTLINE FOR DOCUMENTING CASE STUDIES

| | |
|---|--|
| CASE: (Name) | |
| Project phases: | |
| SUMMARY: | |
| Sources of information | |
| Scientific literature: | |
| Other sources of scientific information: | |
| Stakeholders interviewed: | |
| Evaluation of the extent and accessibility of relevant information sources: | |
| Description of installation | |
| Name: | |
| Operator: | |
| Date of commissioning: | |
| Current phase: | |
| Capacity (MW): | |
| Major components such as: Turbines, sub-structures, foundations, scour protections, (mooring lines and anchors for floating structures), offshore substations, inter-array cables and export cables | |
| Number and types of turbines: | |
| Governance | |
| Relevant regulatory regimes: | |
| Physical and biological environment | |
| Water depth: | |
| Hydrography: | |
| Wave exposure: | |
| Distance from shore: | |
| Known occurrence of endangered/ OTC species: | |
| Spawning grounds for fish: | |

| | | |
|--|--|---------------------------|
| Seabird populations, feeding areas: | | |
| Landbird or shorebirds migratory routes: | | |
| Offshore and coastal habitats, such as sandbanks, seagrasses, marshes, oyster beds and wetlands: | | |
| Biodiversity impacts | | |
| Anticipated direct impacts on: | Degree (positive, none, mild, severe) | Mitigation measure |
| seabed habitats | | |
| birds | | |
| mammals | | |
| fish | | |
| introduction of species | | |
| biodiversity in general | | |
| species adaptation over time | | |
| other | | |
| Anticipated indirect impacts on: | Degree (positive, none, mild, severe) | Mitigation measure |
| seabed habitats | | |
| birds | | |
| mammals | | |
| fish | | |
| introduction of species | | |
| biodiversity in general | | |
| species adaptation over time | | |
| other | | |
| Evaluation of mitigation measures | | |
| Measure 1: | Evaluation | |
| Biodiversity | | |
| Practical feasibility | | |
| Economic feasibility | | |
| Measure 2: | | |
| ... | | |
| Description of stakeholder process and key learnings from this process | | |

Task I. Case studies:

c) Documentation of cases : stakeholder interviews

| CASE: Date: Name of interviewer: | | | | | | | |
|--|---|--|---|-------------------------|---|---|-------------------------|
| Biodiversity impacts | | | | Engagement process | | | |
| Stakeholder name /affiliation | What are your main concerns regarding this <u>project ?</u> | What are the main benefits of the <u>project ?</u> | How do you evaluate the effectiveness of implemented/planned mitigating measures? | What could be improved? | When in the project phases were you involved / and <u>how ?</u> | How satisfied are you with the process? | What could be improved? |
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Task II. Describe wider Nordic context

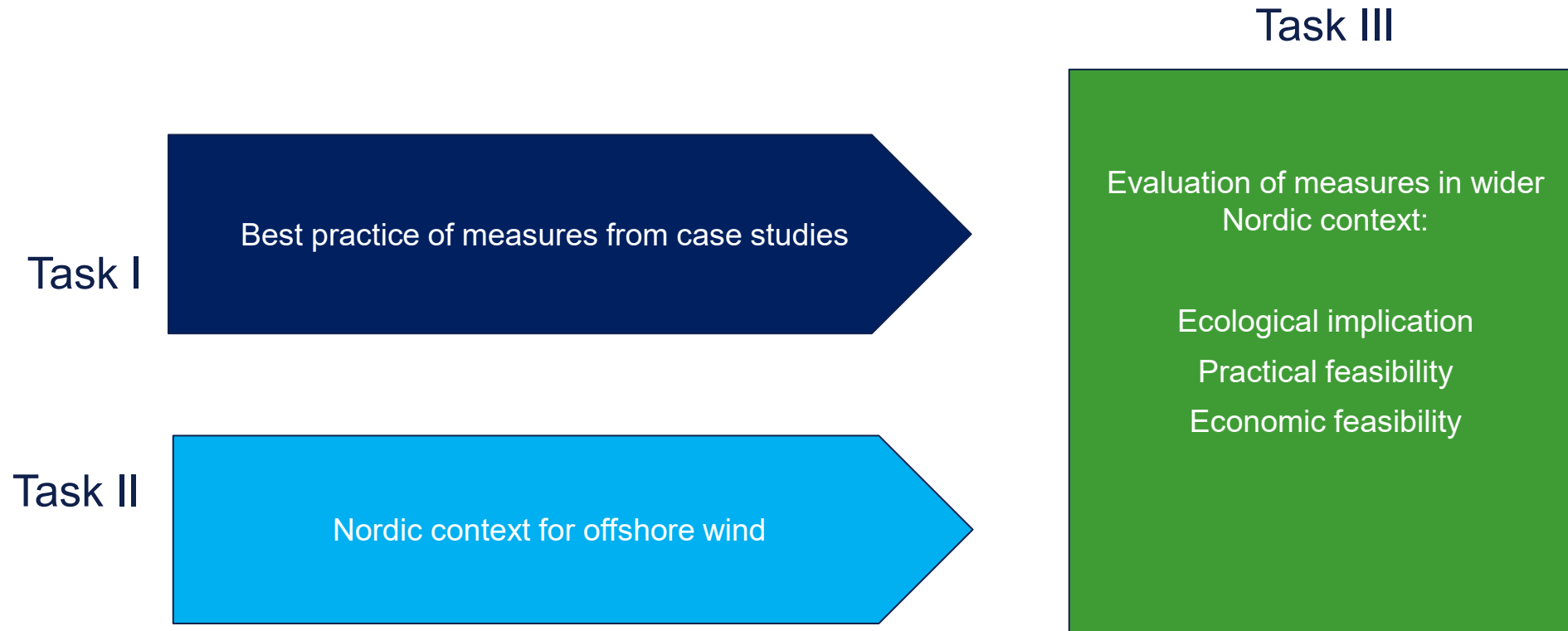
A high-level description of the main characteristics of the natural environment, economy, governance, practical / technical considerations relevant for the development of offshore wind projects (fixed and floating) in the Nordic areas (North Sea and Baltic) will be performed.

The focus will be on areas where an increased activity within offshore wind development is expected in the coming years.

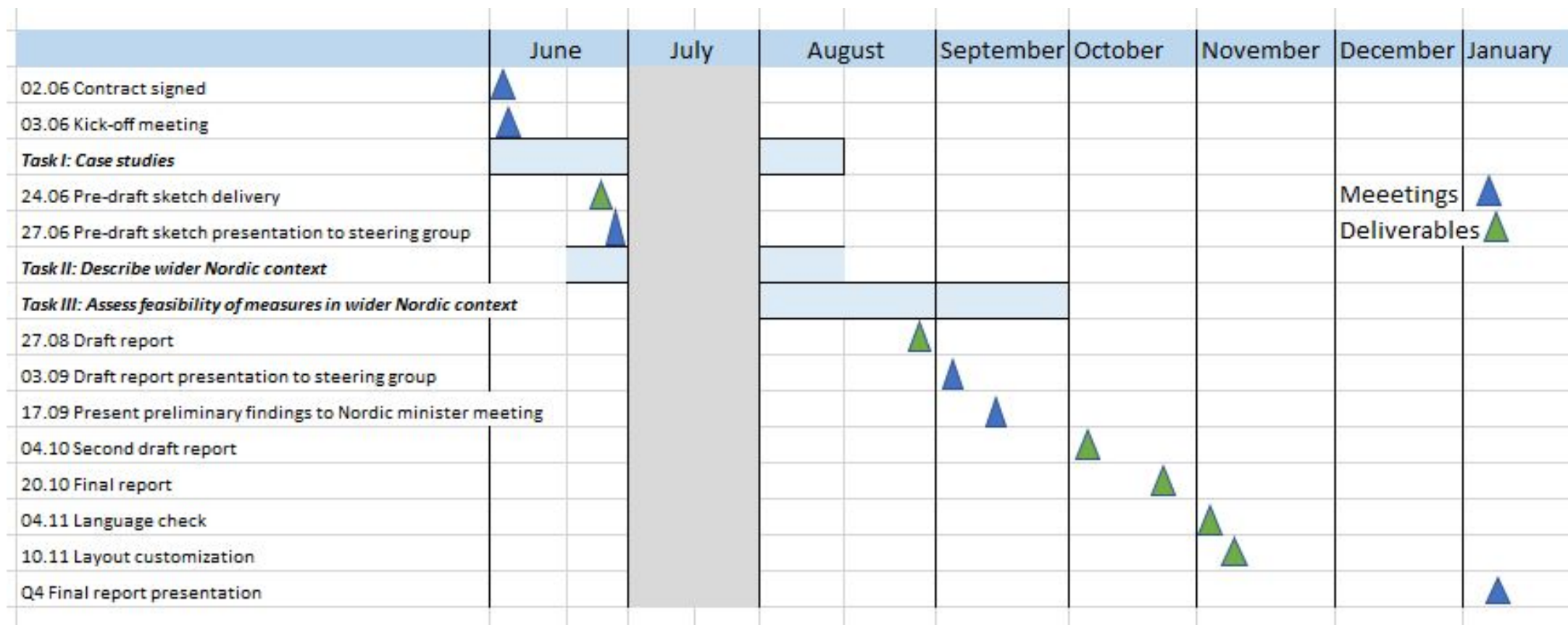
To describe the natural environment we will be using visualizing maps and public domains such as Natura 2000, OSPAR-ODIMS, European Environment Information and Observation Network (Eionet), Barentswatch and more..



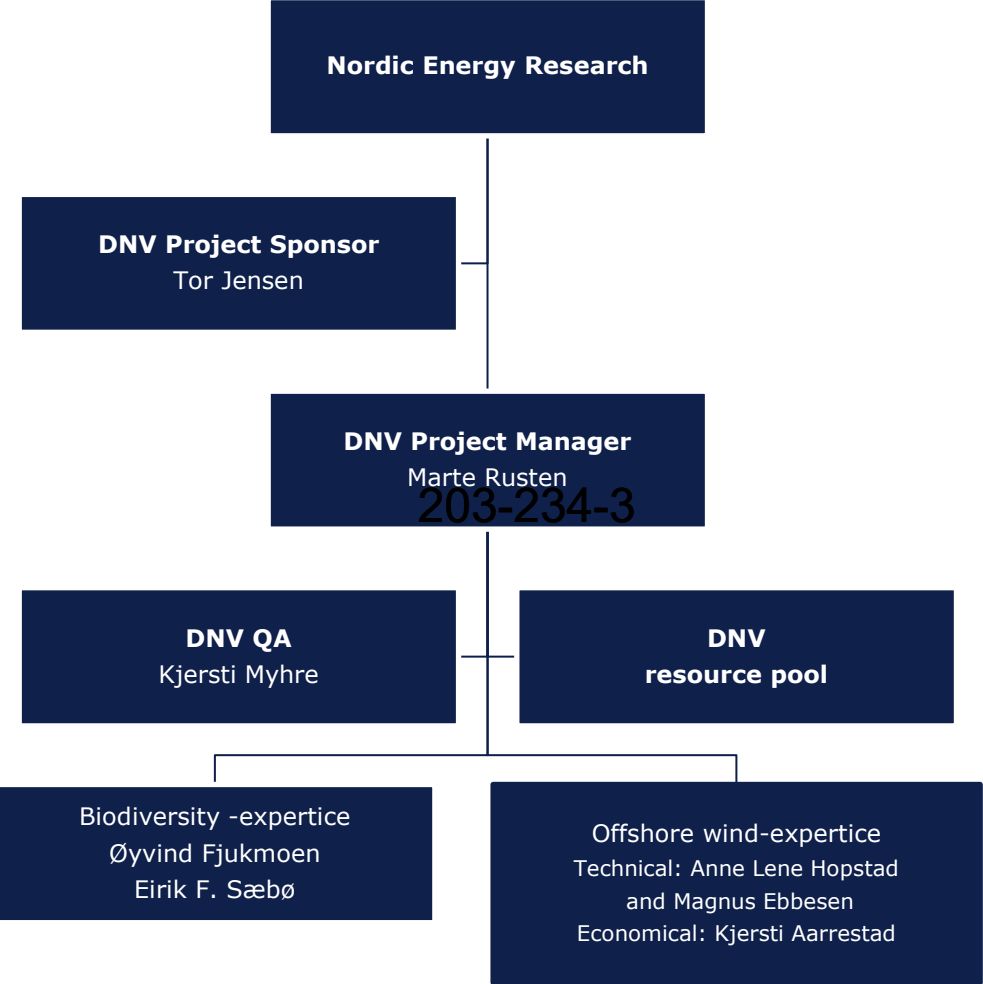
Task III. Assess feasibility in wider Nordic context



Timeline



Project team





WHEN TRUST MATTERS

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