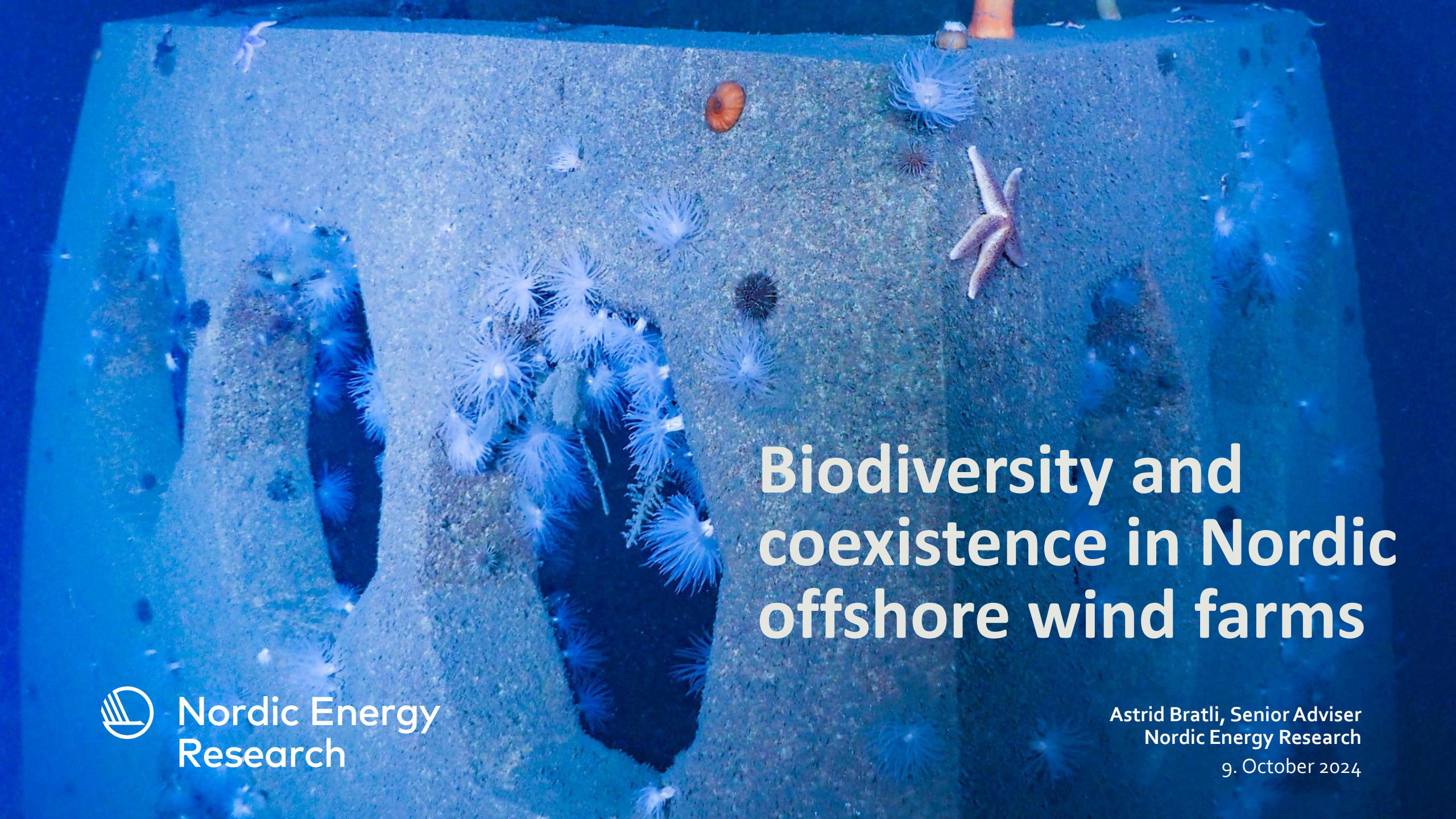


Biodiversity and coexistence in Nordic offshore wind farms

Nordic Energy Research

Astrid Bratli, Senior Adviser
Nordic Energy Research

9. October 2024

Nordic Council of Ministers

Nordic Energy Research

Vision 2030: making the Nordic Region the most integrated and sustainable region in the world»

Our mandate

To **finance** Nordic energy research initiatives

To create a **knowledge** base and analyses for policy makers and the energy sector

To **disseminate** research about Nordic energy

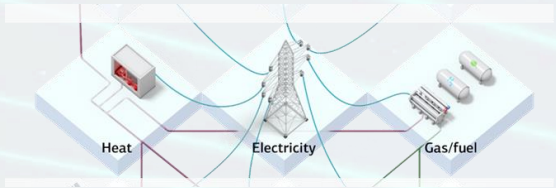
To **build bridges** between industries, politicians and research institutions

Initiatives within six main areas:

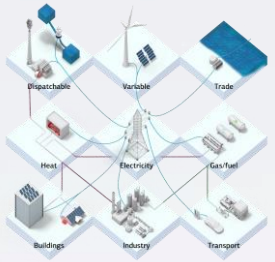
Energy and society

EU-Nordic cooperation

Energy markets

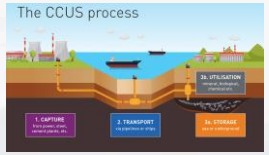


Smart energy systems



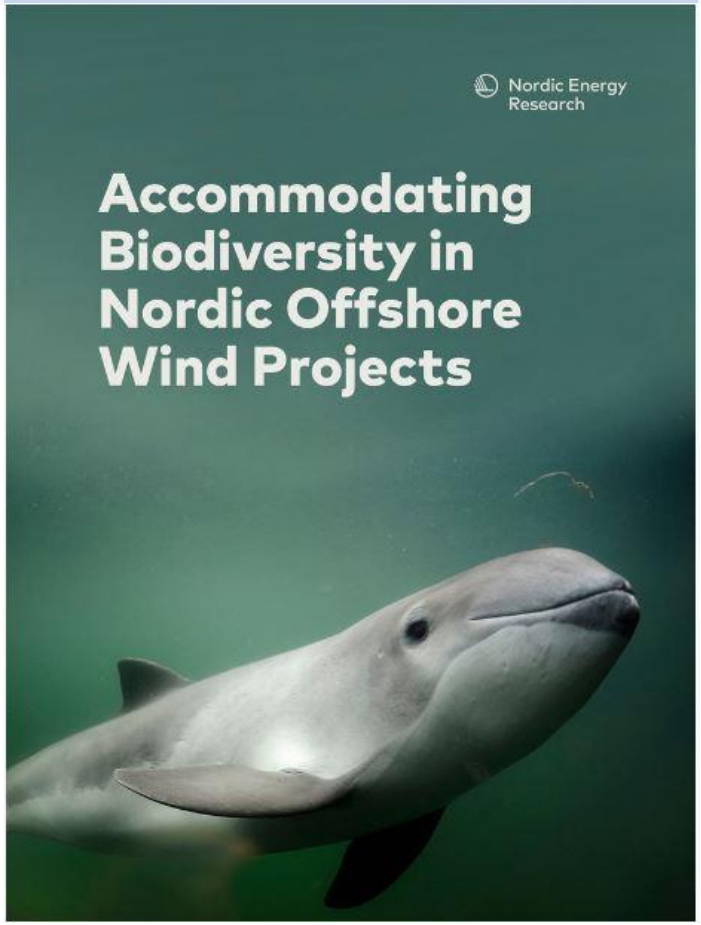
Green transport

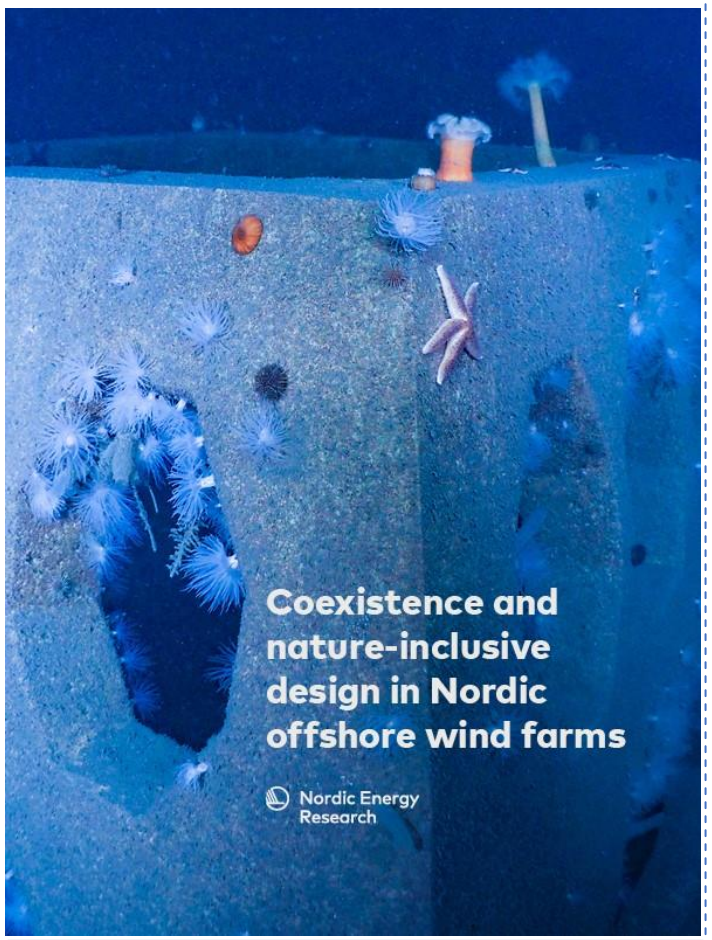
Sustainable energy



Nordic Energy Research

Two recent reports





What is the deal with offshore wind?

Possible key factor for green transition

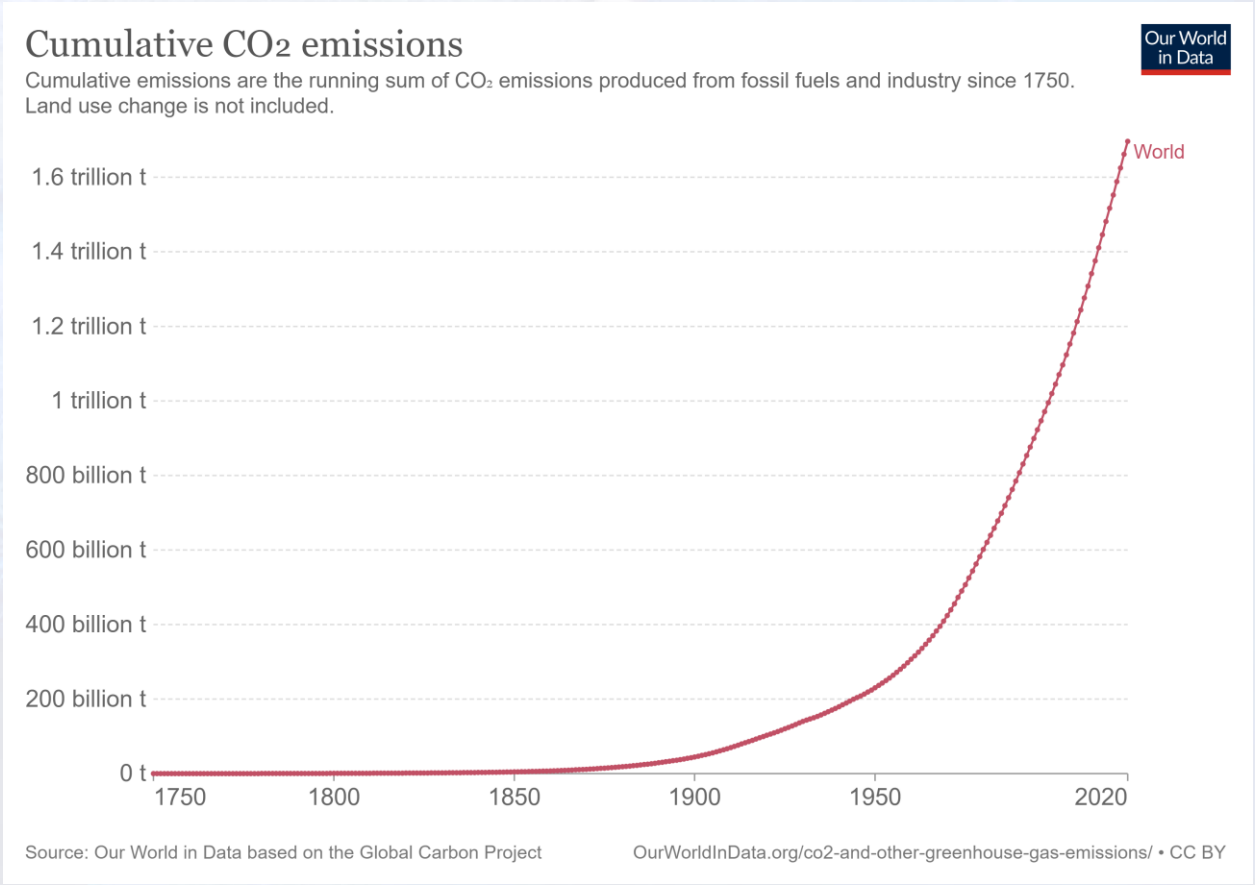
Must reduce emissions

+

Increased energy demands

=

Need sustainable solutions



Renewable + Enormous potential

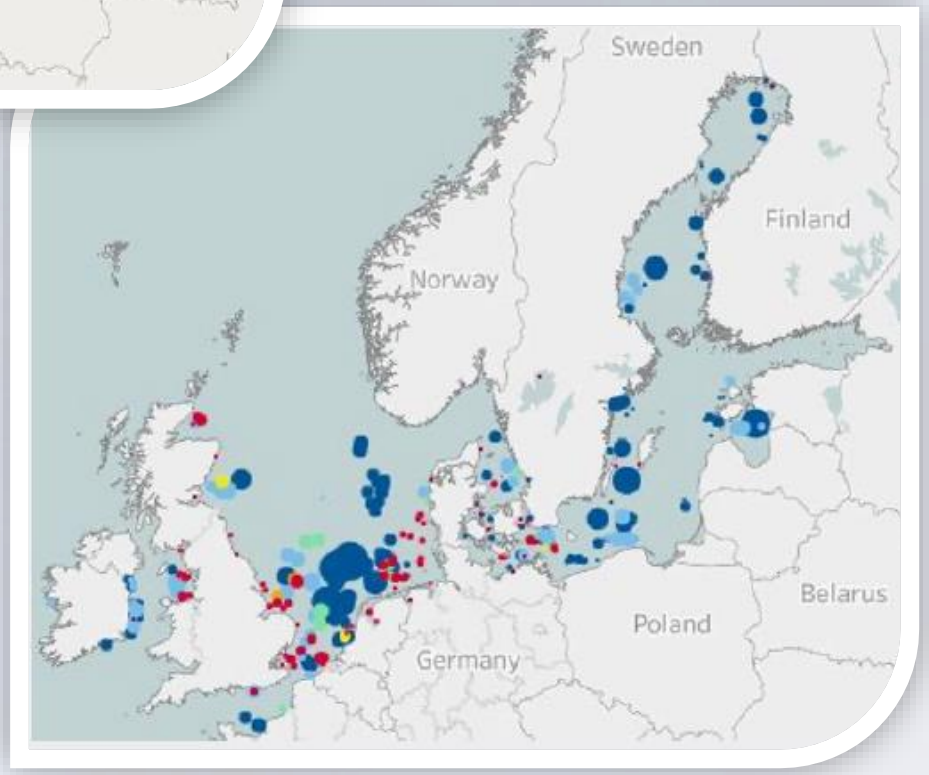
2050-vision:

North Sea 300 GW

Baltic Sea 93 GW

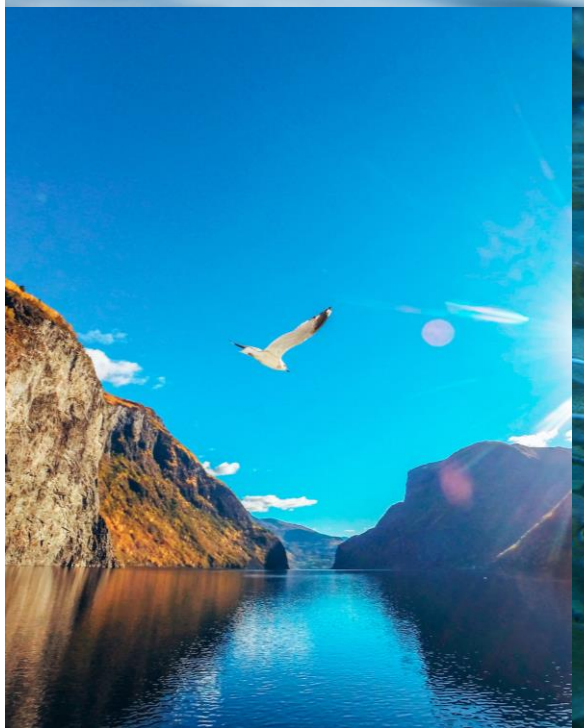
Floating

Bottom-fixed



Risk of biodiversity loss

- Seabirds
- Fish
- Mammals
- Aquaculture

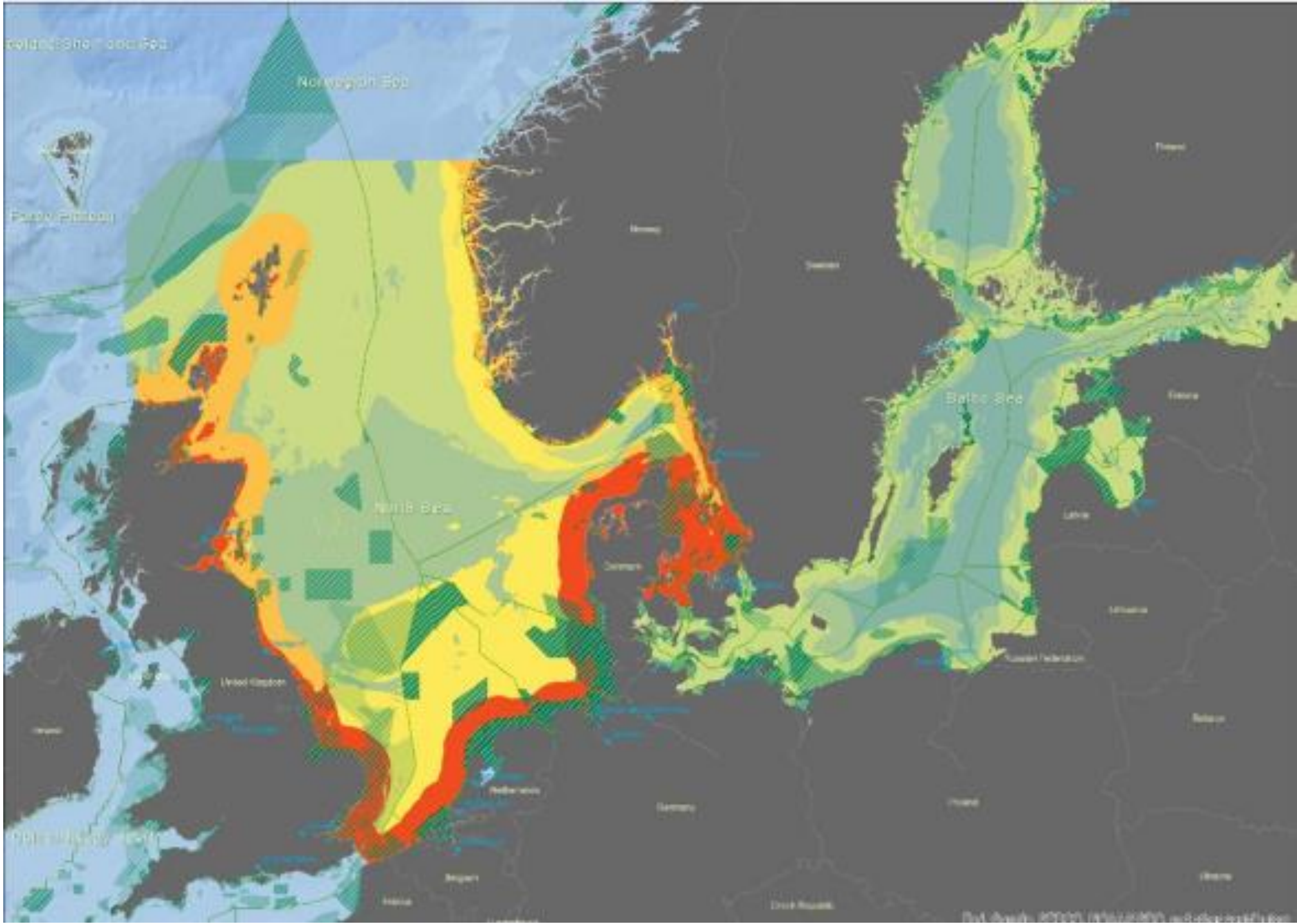


Ongoing activities

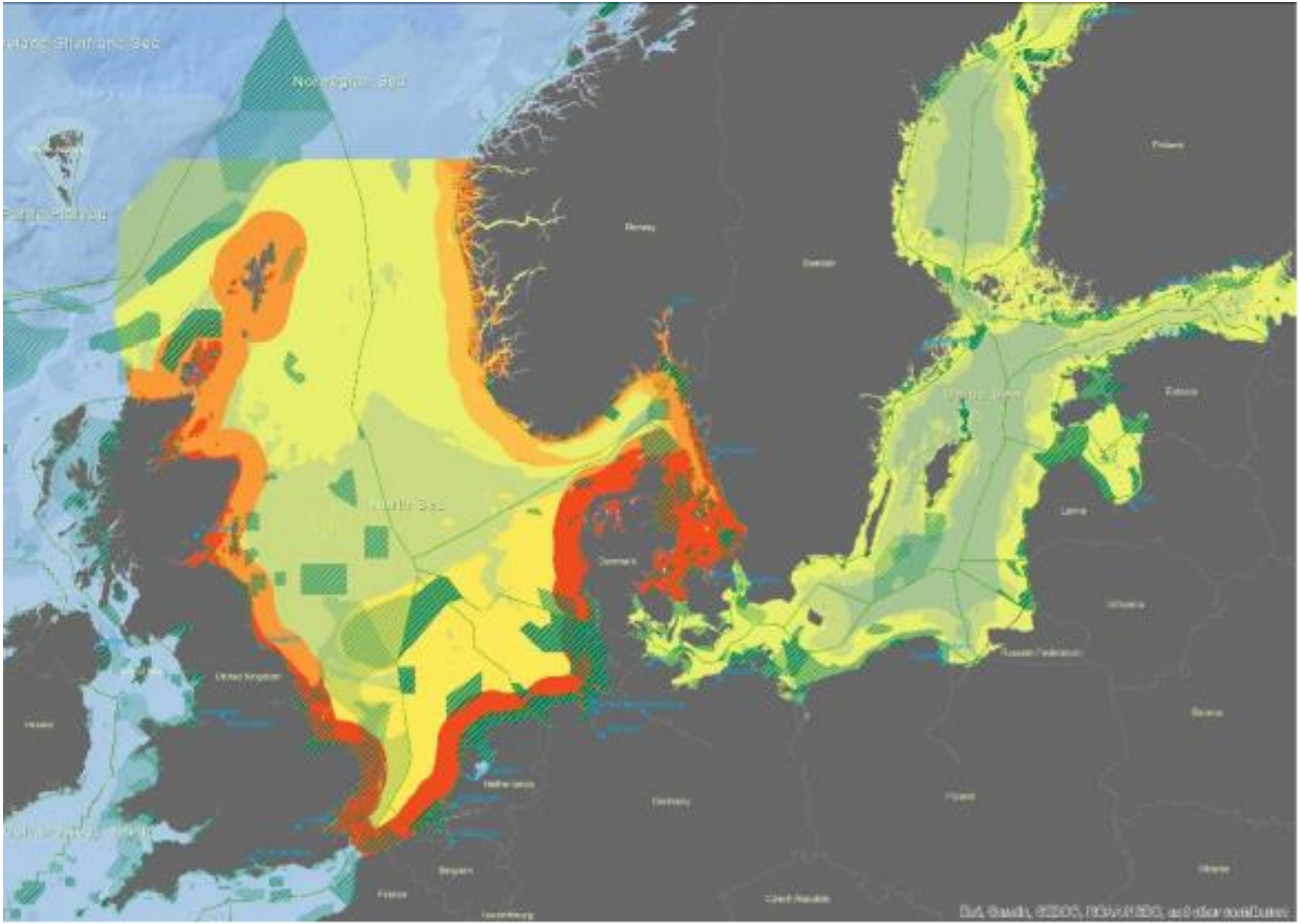
- Fishing
- Shipping
- Military activities
- Aquaculture (fish/shellfish farming, algae, etc.)
- Tourism
- Existing industry

Spatial competition

2030



2050

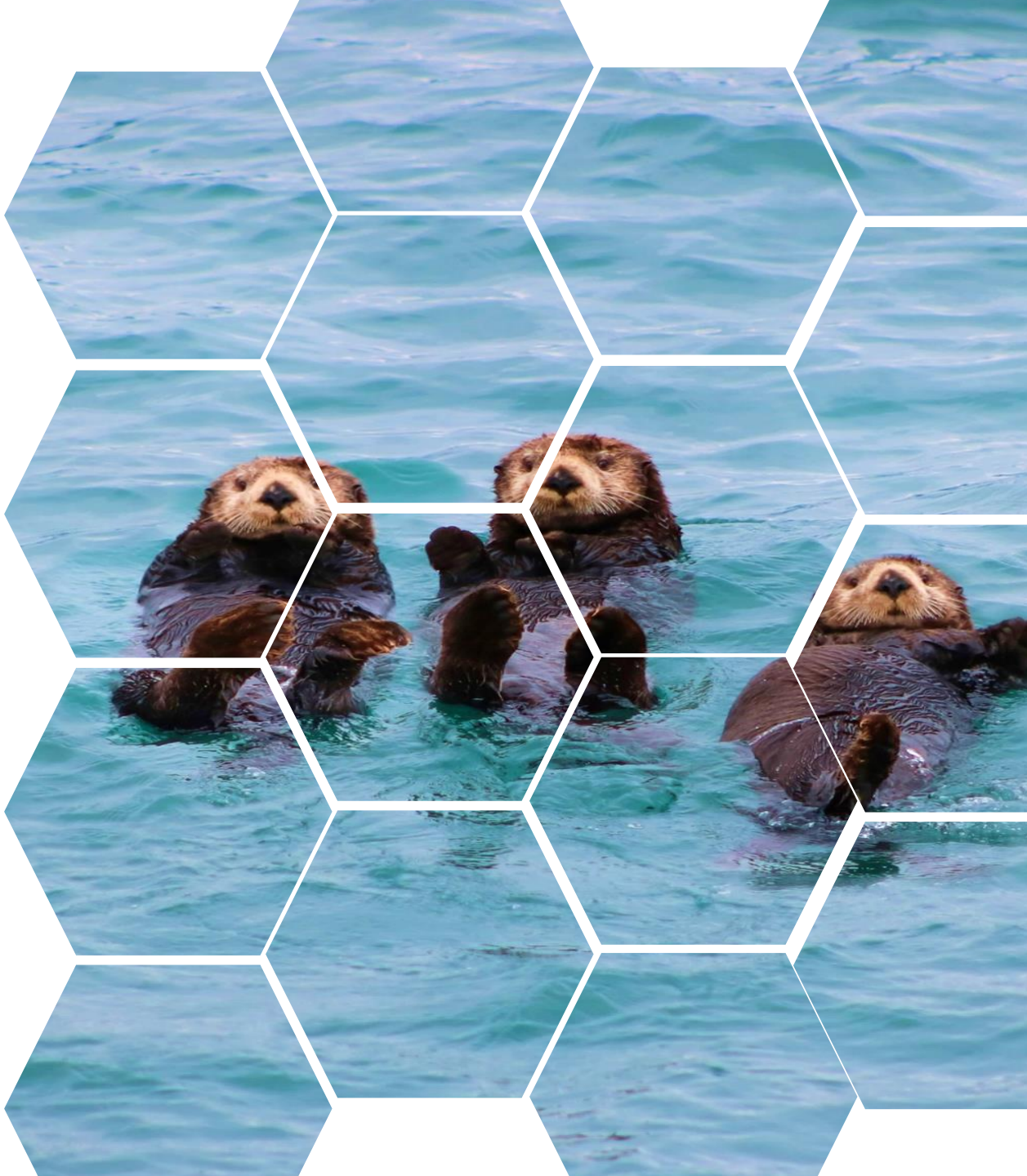


2 workshops – 70+ participants

- Authorities
- Aquaculture
- Energy companies
- Finance
- Aquaculture
- Research
- Technology suppliers
- Environmental organizations/NGOs

Goals for discussions

- Identify **barriers**
- Map out **needs**
- **Tools** for coexistence at every stage of the tender processes

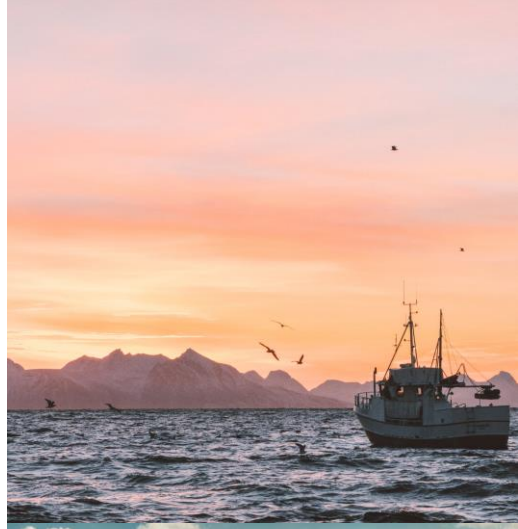


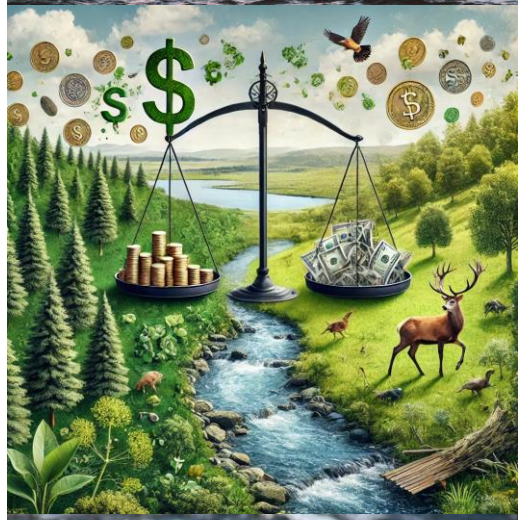
Questions

- What are the best practices for balancing the interests of different stakeholders, including local communities, industries, and environmental groups?

- How can we integrate biodiversity enhancement measures into the design and operation of offshore wind farms?

- What regulatory frameworks and incentives are needed to promote coexistence and nature-inclusive design in offshore wind projects?





Results

Compiled list of 22 tools that authorities can use to:

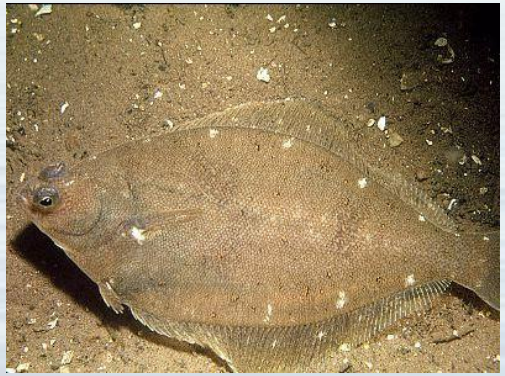
- Integrate coexistence at every stage of the process
- Facilitate dialogue across sectors and countries

Governmental instruments for successful coexistence	General	Opening	Prequal	Tender award	Licence award
Apply a defined process to clarify what coexistence topics need handling. Explore the problem and do not focus on the solutions early.	x	x	x	x	x
Follow a clear and defined process to quantify coexistence and deliverables on coexistence, including agreed and communicated goals, basis and processes.	x	x	x	x	x
Apply transparent platforms and roundtables for processes and sharing information to secure transparent processes and trustworthy flow of data/information by using reliable third parties.	x	x	x	x	x
Make environmental monitoring programmes a "backbone" in a long-term strategy for OWFs to allow for knowledge-based adaptive management.	x	x	x	x	x
Stimulate and support strategic research and joint industry programmes and ensure knowledge transfer between programmes and towards society.	x	x	x	x	x
Consider cross-regulatory legislation and facilitate coordination between countries and between national agencies, as is the case with HELCOM or OSPAR.	x	x	x	x	x
Potential opportunities for coexistence should be a part of the process of opening areas and be integrated in Marine Spatial Planning (MSP). MSP should include mapping of stakeholders and need for coexistence in an area.	x	x			
Apply consenting criteria/solutions that enforce coexistence solutions on the developer before they construct.			x	x	x
Set non-price criteria with transparent and robust evaluation criteria to be evaluated (e.g. by expert committee) in the tender process to be fulfilled before award.			x	x	x
Utilise market (and potentially public) dialogue as an instrument to design tender criteria and to facilitate coexistence approaches in the industry at large.			x	x	x
Consider combining requirements for energy production with production of food or other products to ensure collaboration in the design phase.			x	x	x
Apply a permit requirement that operators should accept new stakeholders in the licencing area if public authorities can balance operators' interests against					x

Finding 1: Value of nature

- How do you measure **value at sea**?
  - Fish vs. Tesla

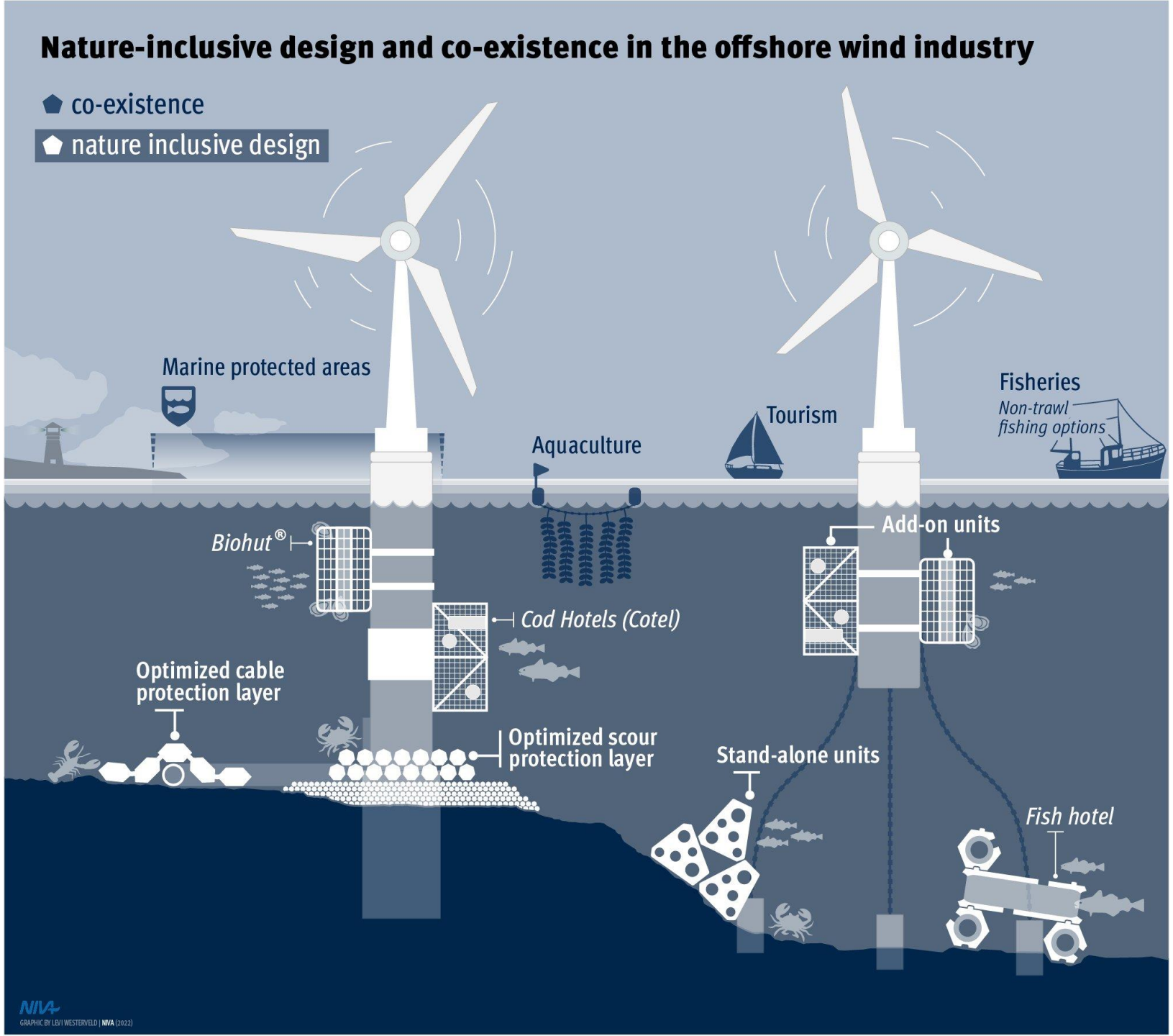
- How do you measure the value of **one species versus another**.



Finding 1: Value of nature

- AND: How do you measure the 'value' of **failing** to preserve biodiversity and natural resources?

- Must take precautions - set clear goals for **facilitating biodiversity**

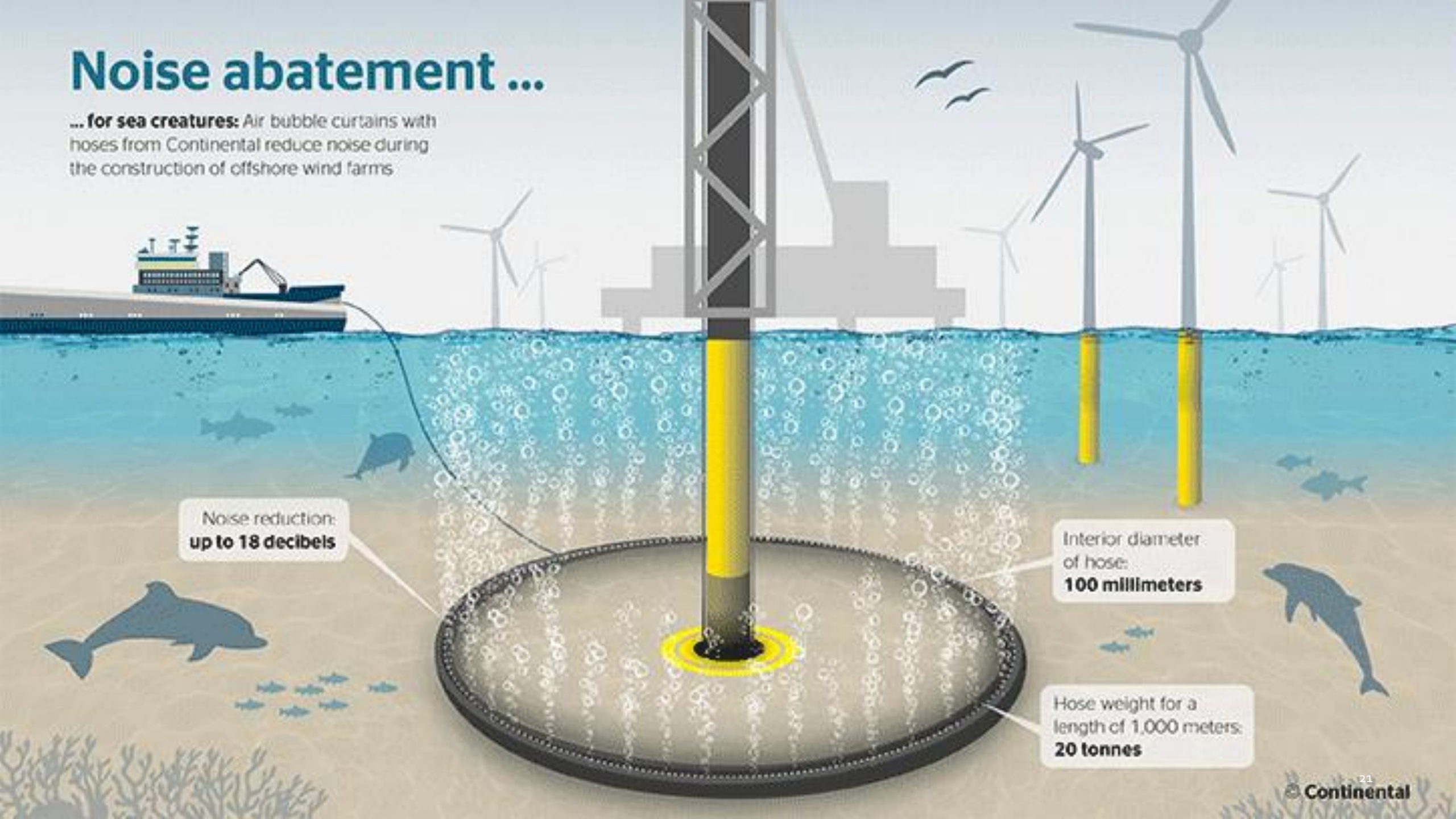


Finding 2:

Nature-inclusive design

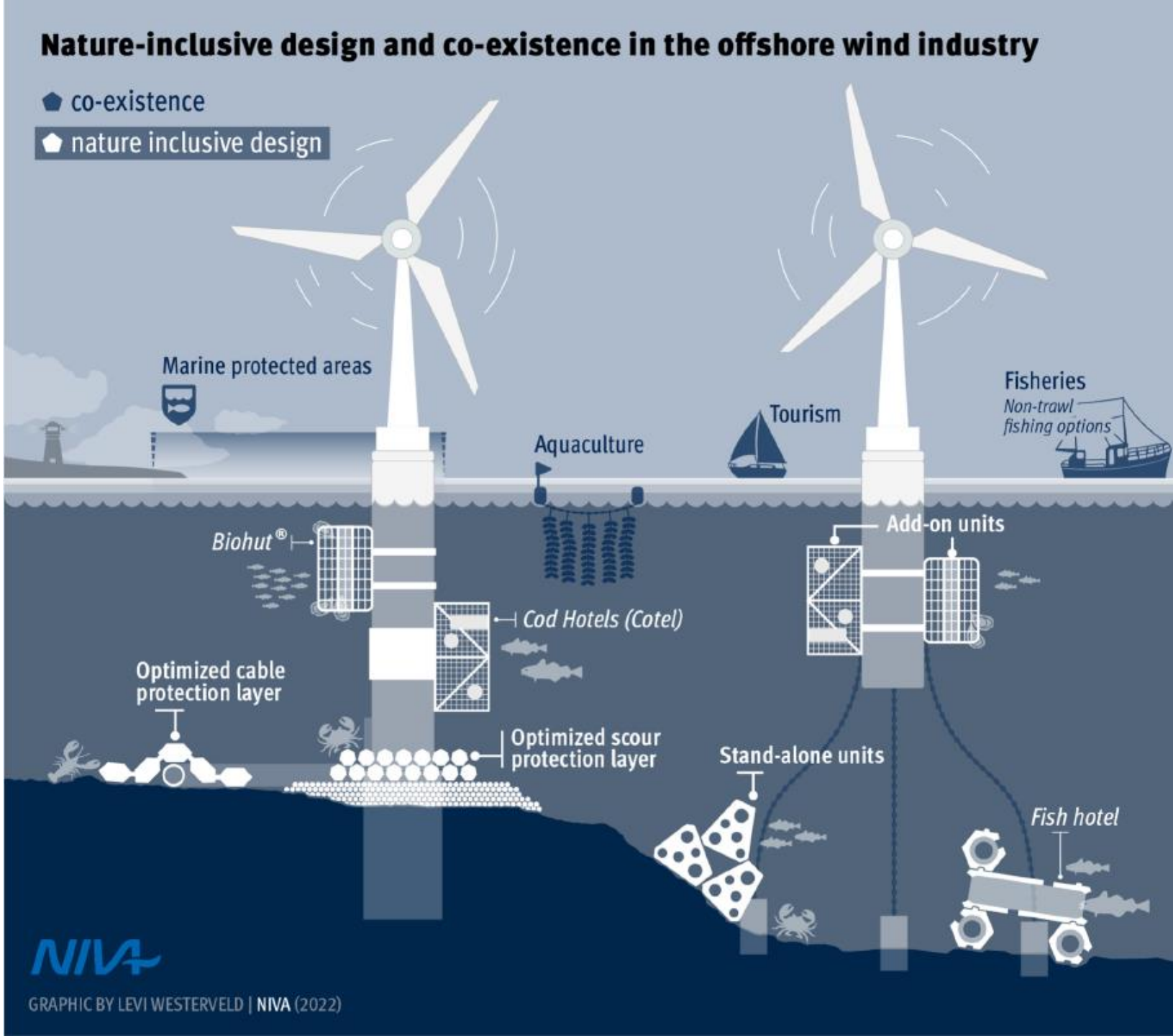
Noise abatement ...

... for sea creatures: Air bubble curtains with hoses from Continental reduce noise during the construction of offshore wind farms



Nature-inclusive design

- Cod hotels
- Protective layers over cables
- Biohuts

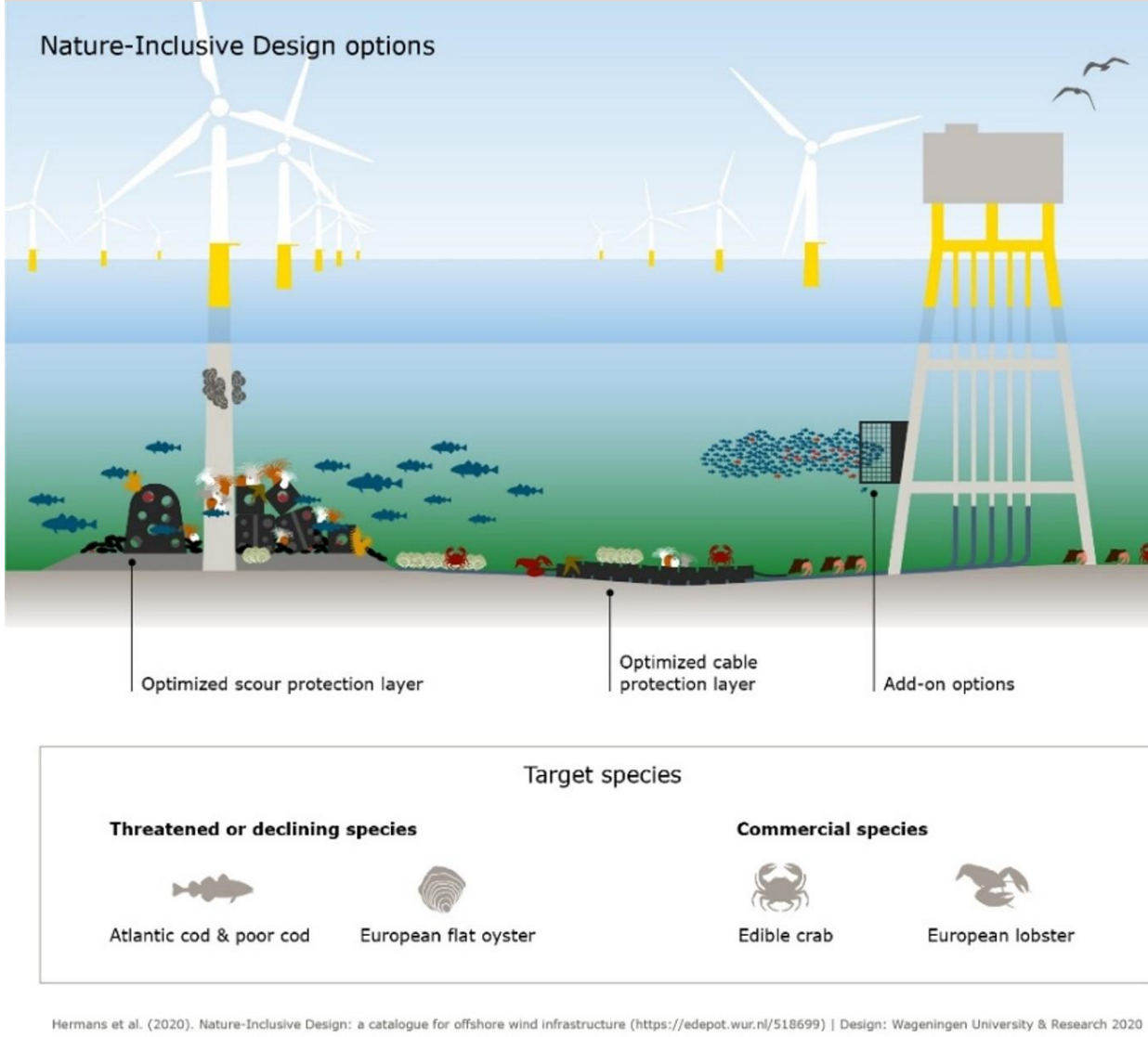


Challenges:

- Lack of research
- Cost and Technical Feasibility
- Takes time to measure results
- Requires stakeholder coordination

Recommendation:

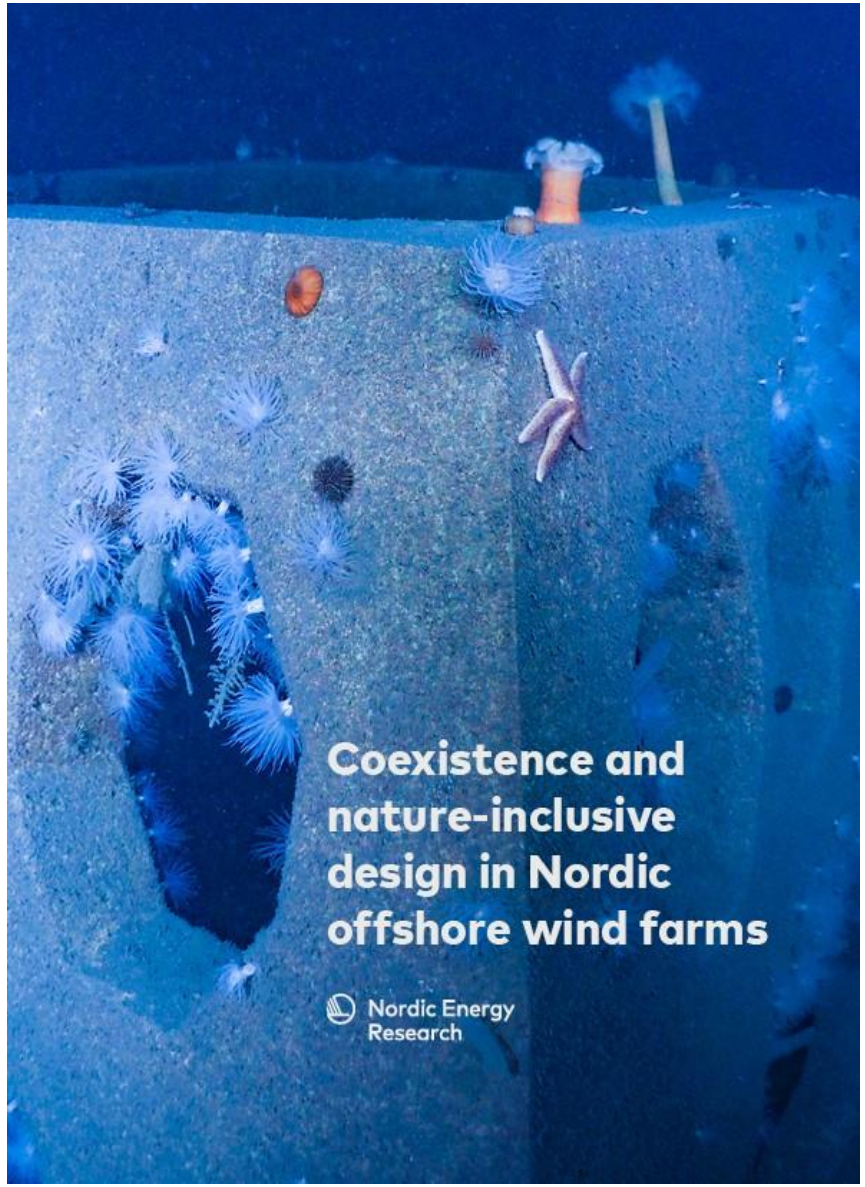
Nature-inclusive design must be part of the bidding process from the **very beginning**



Hermans et al. (2020). Nature-Inclusive Design: a catalogue for offshore wind infrastructure (https://edepot.wur.nl/518699) | Design: Wageningen University & Research 2020

Finding 3: Coexistence requires cooperation

- Plans for coexistence must be a **mandatory criterion** in the tendering processes.
- Ensure collaboration as **early** as possible.
- Establish knowledge exchange **platforms** – across sectors and across countries



Read the report here:

Finish?

New project

- **Buyer:**
  Nordic Energy Research
- **Deadline:**
  17 October
- **Contract value:**
  NOK 1 360 000, ex. VAT
- **Contact:**
  Astrid.Bratli
  @nordicenergy.org

Tasks and Goals

- **Mapping Processes:** Comprehensive mapping of permit processes and potential barriers at local, national, and EU levels

- **Barrier and Opportunity Analysis**: Identify and assess barriers, opportunities, and best practices for accelerating offshore wind energy expansion

- **Data and Knowledge Exchange:** Investigate the current status of data exchange and knowledge sharing. Encourage dialogue and knowledge sharing across Nordic countries.

Tasks and Goals

- **Knowledge Sharing**:
  Create knowledge that can be shared with government officials, energy companies, industry actors, academia, and civil society

- Develop a **catalog of best practices and recommendations** to expedite the deployment of offshore wind energy in the region.

- **Actionable Recommendations:** Deliver recommendations to decision-makers at the Nordic level.

Finish

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