The Blue Consequences of the Green Transition

17 september – 18 September at *The North Atlantic House, Strandgade 91, 1401 København K*

VELUX FONDEN Ocean INSTITUTE Ministry of Environment of Denmark Ørsted Danish Ministry of Climate, Energy and Utilities

Conference Outcome Paper

The conference, The Blue Consequences of the Green Transition: Navigating Cumulative Effects, Knowledge Gaps, and Risks and Opportunities in Large-Scale Offshore Wind Farming in the North Sea, was held from 17 September to 18 September, at The North Atlantic House, Strandgade 91, in Copenhagen.

The event brought together key stakeholders and experts from across Europe to discuss the combined, long-term implications of multisectoral pressures considering the planned large-scale offshore wind turbines in the North Sea. The North Sea, being a central hub for economic activities, is one of the most heavily utilized sea basins in the world. With the projection of up to 300 GW of power generation from offshore wind, the conference emphasized the ambitious goals set by the EU, Norway, and the UK in support of climate objectives for 2050. Discussions focused on the challenge of balancing the need for a resilient, fossil-free energy supply, alongside other uses of the North Sea such as shipping, fishing and dredging, with the imperative to protect marine ecosystems and maintain healthy ocean processes.

72 participants representing 42 different organizations across 9 countries actively engaged in the conference and the workshops convened. The event was supported by the VELUX FONDEN and organized in partnership with The Ocean Institute, alongside key stakeholders such as the Danish Ministry for the Environment, Ørsted, and the Danish Ministry for Climate, Energy & Utilities. The primary goal of the conference was to advance discussions on how offshore wind energy can be safely and effectively deployed in the North Sea, taking into consideration the cumulative effects of other marine activities.

The discussions highlighted gaps in current approaches to assessing the combined environmental effects of offshore wind farms in combination with other pressures and identified ways to bridge them. They also focused on the knowledge required to do so. The conference output highlighted the urgency for North Sea countries to address a pressing need for more cohesive approaches to informing, understanding and communicating the combined, long-term effects of multisectoral pressures. A significant part of the discussions centered around the challenge of offshore wind having to operate within the narrow remaining space for effects without risking the failure to meet renewable energy targets. This will involve a better understanding of cumulative effects and potentially reducing pressures from other activities.

The event concluded with a set of 10 key outcomes distilled from the workshop discussions:

1.Harmonization of cumulative effects assessments across jurisdictions is needed
Pressures from all users and uses of the North Sea must be considered in the assessment of cumulative effects. Standardizing data products and improving data access through better collaboration between regional conventions such as OSPAR and HELCOM, can enhance consistency. A common set of values underpinning cumulative effects assessments could accommodate variations between individual methods and approaches, while maintaining common purpose. The Greater North Sea Basin Initiative could play a key role in driving this.

2. Ecosystem-based marine spatial planning must consider cumulative multi-sector pressures
Challenges exist as to whether climate change pressures can be disaggregated from sector pressures, including those that relate to ocean-based activities such as fisheries and shipping and those that have land-based sources such as nutrient pollution. Political will and collaboration are crucial to ensure that pressures related to all human activities in the marine environment stay within the ecosystem's ecological limits.

3. Early and inclusive stakeholder engagement is crucial
Engaging stakeholders early in project lifecycles improves the knowledge base for cumulative effects assessments and promotes community ownership, leading to more informed decisions.

4. Overcoming barriers to data access is crucial for effective cumulative effects assessments
Restricted data access and perceived data sensitivities are significant barriers to cumulative impact assessments. A shift towards open-source data and mandatory sharing across sectors is needed to improve transparency and adaptability. Public frameworks to counterbalance or compensate any competitive disadvantages to disclosure should be in place. Government-led initiatives for basin-wide monitoring and modelling could further support adaptive management.

5. A mechanism for balancing environmental and socio-economic impacts is required
While environmental and socio-economic impacts are interconnected, directly integrating socio-economic factors into cumulative effects assessments may not be optimal. Instead, these assessments could inform broader socio-economic policies. Long-term monitoring throughout the project lifecycle, including decommissioning, of environmental and social impacts are critical for a just transition.

6. Improved data coordination and curation is essential for informed decision-making
While platforms like Emodnet and ICES provide some data availability, more harmonization of data hubs and standardized protocols for data collection and quality assurance are needed. Expanding access to private and unpublished scientific data will further strengthen our knowledge base. Leveraging AI technologies can enhance data quality and help fill critical gaps in coverage, enabling more comprehensive and reliable ocean management.

7. Regional focus in cumulative effects assessments is key to capture ecosystem-wide effects
Current methodologies for impact assessments of offshore wind projects often emphasize local impacts, neglecting broader ecosystem effects. To support fully informed decision-making, we need more comprehensive ecosystem modelling to complement existing data and prioritize future data collection. Implementing adaptive management practices will be crucial to balancing project development with evolving risks as new information becomes available.

8. Regulatory coherence is essential to achieve ecosystem-based management
A key opportunity for advancing ecosystem-based management lies in cohesive, integrated regulatory frameworks across sea basins. Current marine protected areas exemplify the result of this issue, as fragmented regulation has resulted in the designation of disconnected protected areas without coherent management plans. Additionally, ecosystem-based management is unevenly recognized across EU regulations, limiting its effective application.

9. Government-led leadership is vital for effective nature enhancement trade-offs
Collaboration between industry and NGOs has made valuable progress in developing actions for enhancing marine ecosystems through offshore wind projects. However, to achieve more consistent and impactful results, mandatory public-led initiatives are needed and should be applied equally to all sectors impacting the marine environment. Offshore wind tenders and other marine project tenders should require contributions to marine nature enhancement from the outset. Strong public leadership is essential not only for delivering widespread environmental benefits but also for creating a stable, attractive business environment for developers and investors.

10.Trade-offs in implementation should be transparent in the decision-making process
Not all trade-offs of large-scale offshore wind projects or other users of marine space can be solved but they should be transparent for all stakeholders in the decision-making process. Critical trade-offs between expanding renewable energy and marine environmental impacts, include space constraints and cumulative human activities across sectors. Cross-sectoral governance is needed to balance activities within the North Sea's ecological limits. Globally, stricter EU environmental standards may risk displacing harmful practices outside of EU waters.