

Aligning offshore wind and grid expansion with nature conservation through integrated and strategic planning

Wind resources and marine ecosystems transcend national borders, yet their management remains largely at the national and project level. **Integrated spatial planning** at the sea-basin level can benefit both offshore wind deployment and nature conservation. It enables more efficient use of seabed space, reduces infrastructure needs (e.g., through cross-border projects), decreases energy losses (i.e. through wake effects), and lowers associated risks and costs. At the same time, integrated spatial planning helps ensure that development zones avoid, wherever possible, highly vulnerable ecosystems and that **strategic conservation measures** are planned at sea basin level. This includes coordinating ecological monitoring and mitigation measures, addressing cumulative environmental pressures at the sea-basin scale, and promoting restoration efforts to enhance ecological connectivity across the region.

The North Seas Energy Cooperation (NSEC) is the right forum to make this happen. Having fostered cross-border coordination for over 15 years, NSEC can ensure that offshore wind and grid expansion becomes not only a driver of climate security, but also a nature-friendly and resilient source of energy for generations to come.

To achieve this, Members of the [Offshore Coalition for Energy and Nature – North and Baltic Seas \(OCEaN\)](#) recommend that **NSEC and represented Member States** take action across the following four pillars:

1 Data and Environmental Monitoring

Periodic monitoring and data collection are essential for assessing the ecological impacts of offshore wind and grids, and for guiding decisions to prevent and reduce potential damage. By strengthening transboundary collaboration and improving data availability, we can close knowledge gaps on baseline environmental conditions and better assess the impacts of infrastructure. Therefore, it is essential to:

- Align pre-development investigations, Environmental Impact Assessments (EIA), and monitoring requirements to ensure comparable datasets at the sea basin level. Streamlined and consolidated datasets will enable faster, more effective planning and deployment of infrastructure.
- Ensure results are made available via open-access platforms improving transparency and shared knowledge.

Benefits: Speed up permitting and deployment; enhance understanding of environmental interactions, and improve transparency.

2 Cumulative Impacts

Addressing the cumulative impacts of offshore wind and grids on biodiversity at the sea-basin level requires aligning methodologies across countries. This will



enable the application of an ecosystem-based approach and support the achievement of a good environmental status. Therefore, it is essential to:

Agree on a harmonised Cumulative Impact Assessment (CIA) methodology that can be applied at sea basin level, building on the good work of [NSEC SG2 with Wageningen University](#). This should inform national planning for offshore wind development areas.

Benefits: Improve environmental management and gain better understanding of cross-border interactions.

3 Mitigation

Developers and operators are already implementing and designing measures to avoid and mitigate the impacts of offshore wind and grid infrastructure across all phases of development. Building on this progress, sea-basin-level guidance on best practices and stronger cross-border collaboration offer an opportunity to preserve the North Sea's ecological integrity. Therefore, it is essential to:

- Agree on common guidelines for mitigating environmental impacts at sea basin level. These would inform the design of project-specific measures (for EIA and non-price criteria in auctions) and thus enhance synergies and effectiveness.
- Ensure that mitigation measures are based on the most advanced and proven techniques. NSEC could develop a comprehensive collection of mitigating practices, building on OCEaN's mitigation report and database which includes [80 measures for offshore wind and grids](#), to be considered on a project-by-project basis.
- Foster innovative mitigation measures by supporting joint research and pilot projects and facilitating knowledge-sharing opportunities among the offshore wind industry and other marine sectors.

Benefits: Provide greater clarity on project requirements, streamline permitting processes and increase effectiveness of measures implemented.

4 Restoration

Restoration efforts are underway but often remain localised. A strategic, sea-basin-level approach can enhance ecological outcomes, increase effectiveness, and improve cost efficiency.

- Adopt pooled and/or coordinate sea basin level approaches, enhancing ecological connectivity and resilience of habitats, e.g., by aligning ecological non-price criteria in auctions and coordinating maritime restoration funds.
- Foster innovative restoration practices, building upon existing pilot projects. [OCEaN's Energy & Nature Database](#) includes several concrete examples that can be replicated and scaled up.

Benefits: Enhance ecosystem services, strengthen research and deployment of restoration measures, and improve their cost-efficiency.