



Supply chain and sustainability in global offshore wind markets

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Designing an effective offshore wind market



A strong supply chain backed by local capacity is identified as **one of six policy pillars** for a successful offshore wind market, and can be effectively reinforced via a robust policy environment:

Market scale and visibility

Clarity and certainty around a government's long-term commitment to offshore wind is vital for industry confidence.

Site development

Effective marine spatial planning and site allocation processes are crucial for reducing risk and delay.

Grid connection

Inadequate grid infrastructure prevents countries from using and transporting the renewable electricity they produce.

Incentive mechanisms

Incentives help to stimulate offshore wind markets by reducing risks and costs for developers and investors, but must be tailored to current government priorities.

Supply chain development

Supply chain support can include investing in local port infrastructure, reducing barriers to entry for companies or developing skills and workforces.

Innovation support

Policy can ensure that early-stage technologies carrying higher short-term risks and costs are nurtured, for long-term benefit of the industry.

Supply chain for offshore wind

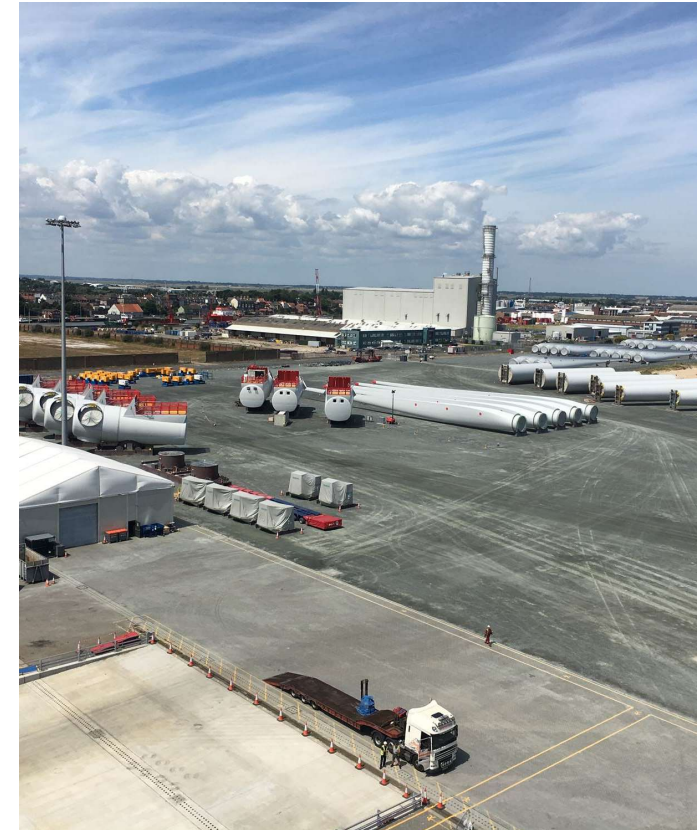


Supply chain for offshore wind



Key considerations

- Although emissions of OSW farms are lower than those of fossil-fuel plants, OSW as a renewable energy source is not emission-free.
- There are many carbon-intense elements in the OSW supply chain.
- A significant amount of greenhouse gas (GHG) emissions are produced particularly throughout the design and construction stage of offshore wind farms, as well as during decommissioning of the wind farm.
- Those emissions need to be accounted for to reach net zero targets and to realise global ambitions of **up to 2,000GW of OSW by 2050** which will require more than 200,000 turbines.*
- Holding the supply chain accountable to decarbonising their activities as much as possible while realising these figures is of high importance to facilitate **sustainable growth**.



*Global Offshore Wind Report, 2023; Source: [link](#)



SUPPLY CHAIN AND SUSTAINABILITY

- How have developers and governments approached sustainability to date?

Sustainability in offshore wind



Developers push increasingly for emission reductions in the supply chain, such as the use of low-emission steel in turbine components.*

They also expand on successful local initiatives that enable job creation, promote stakeholder engagement, and incentivise ecologically-minded project design to **facilitate sustainable growth** moving forward.



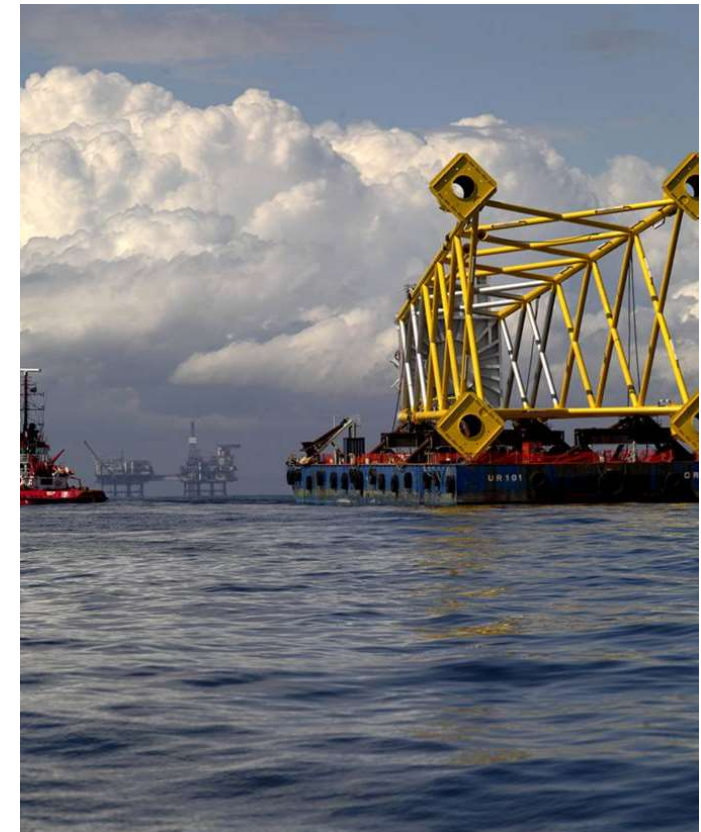
Restructuring and development of coastal communities

Ørsted's investments in Grimsby, UK include GBP 10 million in the development of an Operations and Maintenance Centre which has created new jobs.



Collaboration with fisheries

SSE Renewables in the UK enlists fishing liaison officers to maintain communication, collaboration and co-existence between OSW farms and fisheries.



*Vestas, Vestas introduces low-emission steel offering for wind turbines, 2024; Source: [link](#)

Sustainability in offshore wind



Governments have been responding to sustainability challenges by re-shifting from a major focus on price criteria to **non-price criteria** in offshore wind leasing auctions to include sustainability aspects.



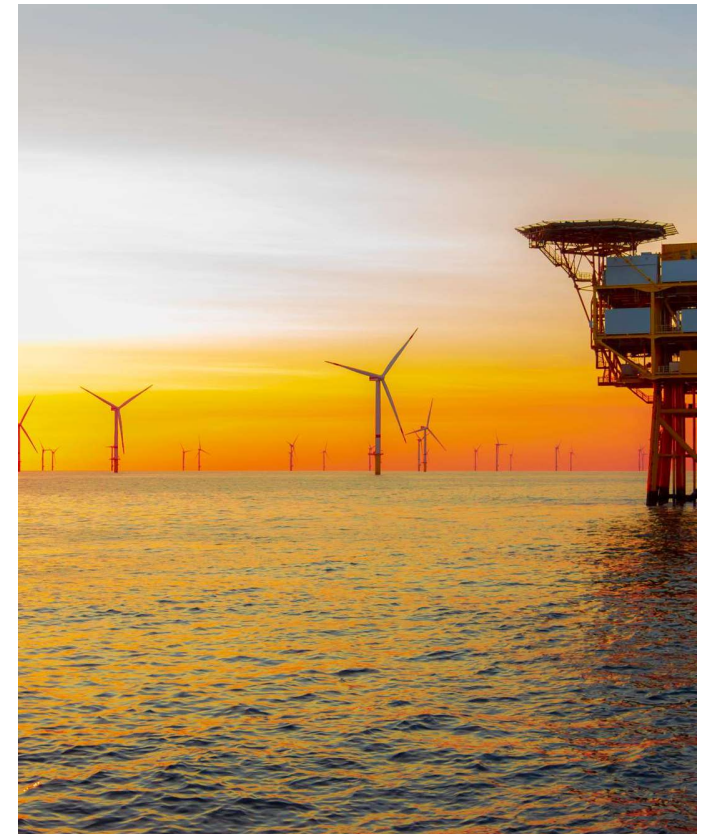
Nature-inclusive tenders

The **Netherlands** has run 2 auctions where bidders must demonstrate that they can minimise impacts on marine habitats.



Environmental compensation

The **UK** often requires OSW developers to compensate for any negative impacts of their projects.





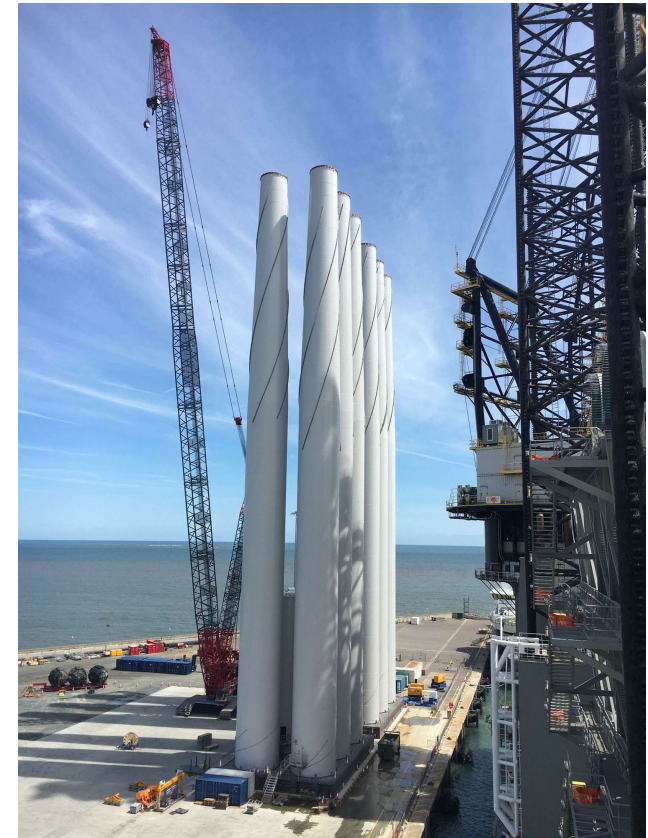
SUPPLY CHAIN AND SUSTAINABILITY

- What do we need to consider moving forward?
- What are potential challenges?

Challenges



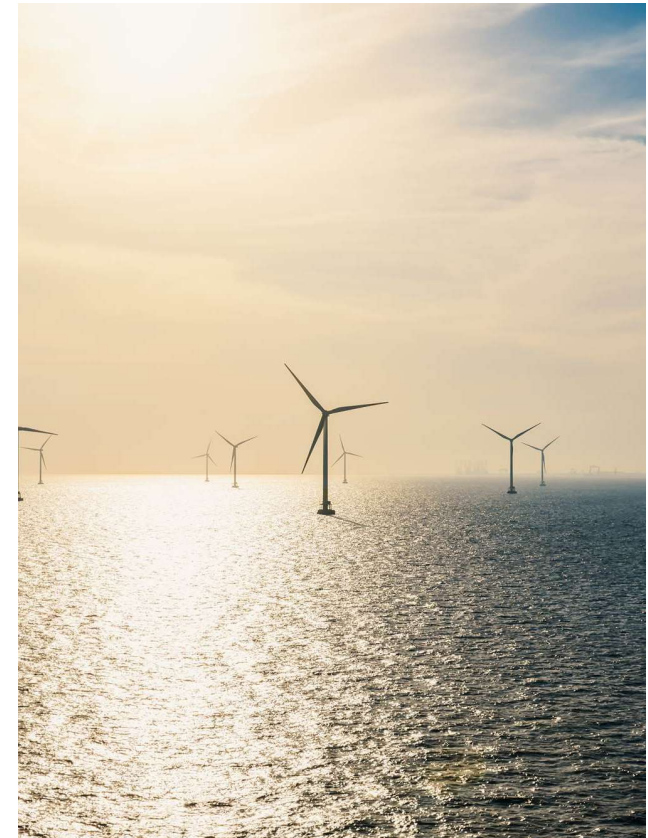
- There has been a considerable shift towards addressing sustainability criteria in OSW development and progress has been made over the last few years.
- However, an increased pipeline for OSW will lead to an increase in emissions that need to be accounted for.
- There is still uncertainty around data collection and reliable measurement tools to capture the emissions appropriately across different parts of the supply chain, different technology types as well across different markets.
- There is a need for collaborative R&D activities, such as Carbon Trust's Sustainability Joint Industry Programme (SUSJIP), to make progress in decarbonising the sector.



Future supply chain considerations



- The successful development of an OSW market hinges on the presence of robust industrial capabilities, essential infrastructure, suppliers, skills and expertise.
- As the OSW sector advances into more challenging territories, such as larger turbines, deeper waters, and floating platforms, the demands become even more intricate and specialised.
- The appropriate solutions to address supply chain challenges with respect to sustainability will depend on many factors including:
 - Market maturity
 - Existing policies
 - Level of government OSW support
 - Local OSW support
 - Existing infrastructure
 - International relationships





THANKS FOR LISTENING. ANY QUESTIONS?



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