Pathways to Commercial Liftoff
Offshore Wind

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Pathway to Commercial Liftoff

Offshore wind can deliver tens of GW of clean power to East Coast load centers, with approximately 250 MW operational, ~6 GW under construction, and over 15 GW total approved for construction. An additional 5-10 GW of projects have a path to reach Final Investment Decision (FID) and begin construction in the next few years but are earlier-stage projects and thus face some project development uncertainties. Early mover investments in enabling infrastructure, continued procurement commitments, and experience gained deploying projects will demonstrate and foster deployment of offshore wind domestically. In the long term, there is a clear path to full commercial liftoff, with over 50 GW-worth of U.S. seabed already leased to developers and additional lease areas planned for auction (as of March 2024). By 2050, the industry could deliver over 100 GW of clean power.

The sector is adapting to challenging market conditions and improved risk mitigation is being built into industry planning. The primary driver of recent offtake cancellations—macroeconomic headwinds—will be de-risked going forward through new offtake solicitations. Moreover, global increases in offshore wind cost inputs and interest rates have begun to stabilize. Finally, states and developers are making significant progress to refine best practices for project procurement, coordinated transmission upgrades, and early supply chain development investments.

Offshore wind has a compelling and distinctive value proposition that complements other clean resources. It supports grid reliability and resource diversity, has average capacity factors higher than typical onshore wind and solar projects, and is particularly suited to meet winter load growth. Offshore wind helps relieve siting pressure for land-based clean power and transmission infrastructure, connecting directly to coastal population centers with high electricity demand. It can also drive economic development, providing sustainable jobs, manufacturing, and revitalized legacy maritime and grid infrastructure.

Early mover projects faced a “perfect storm” of challenges and have provided valuable lessons on how to sequence and structure investments for a sustainable offshore wind industry. Lessons learned from recent challenges will shape the market moving forward. LCOEs below $100/MWh ($2024) are possible for fixed-bottom projects by FID 2030, enabled by project deployment and associated supply chain and infrastructure development. Costs are dependent on macroeconomic conditions, state and federal offshore wind policy, offtake design, and the number of early movers that reach FID and begin construction in the near term.

Market Status

Metric	Value	Near-term Target
Offshore Wind Generation Capacity Source: EIA Power Monthly July 2024	171 MW	10-15 GW of projects operational or under construction
Announced Offtake Awards Source: Wood Mackenzie September 2024	14,895 MW	
Capacity of Offshore Wind Projects Under Construction Source: DOE 2024 Q3	~6,000 MW	

Possible Near-term Actions

Challenges	Solutions Underway
Recent offtake cancellations, driven by macroeconomic conditions, create timing uncertainty and funding gaps for sector buildout.	• Competitive re-bids for 2020s projects that secured offtake pre-2023 • Revised projects that are deliverable under current market conditions and that reaffirm commitments to fund long-term enabling infrastructure needs (vessels, ports, etc.)
Current market structures expose the sector to exogenous risks and require early mover projects to carry the costs and execution complexity of long-term industry buildout needs.	• Improved sequencing of offtake with permitting & project FID • Offtake refinements to incorporate risk mitigation & prioritize deliverability • Targeted investments in enabling infrastructure
Industry lacks market visibility to plan long-term investment cases, especially for supply chain needs.	• Procurement schedules providing demand visibility & consistency • Collaboration on regional supply chain & transmission buildout • Industry consensus on tech specs & standards for supply chain
Transmission risks development bottlenecks and grid inefficiencies via onshore interconnection, offshore project design, and wider network buildout.	• Coordinated point of interconnection (POI) identification and solicitations for onshore upgrades across multiple OSW projects • OSW project sizes and standards tailored to low-cost offshore transmission and efficient interconnection • Mobilization of interregional transmission planning