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The Offshore Wind Industry: The Role Of Insurance

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This is Part II of a two-part article series on the nascent offshore wind industry and how insurance applies. Part I covers the equipment and current status of the offshore wind industry, and Part II covers the role of insurance in the industry.

To understand the fundamental role insurance plays in offshore wind, it is necessary to understand the risks, risk mitigation, claims, and insurance coverage regarding each stage in the lifespan of an offshore wind farm.

The life of a wind farm occurs in four stages, and each stage requires insurance as a partner to ensure success. The stages are project development, construction, operations (production, maintenance, and repair), and decommissioning.

THE PROJECT DEVELOPMENT PHASE

Offshore wind farm development is a lengthy process, spanning five to nine years of project development and preconstruction. This process involves securing financing, obtaining permits, and negotiating contracts. Insurance is needed six to 12 months prior to this process, allowing for adequate lead time to perform a thorough risk assessment.

Large players in the offshore construction industry utilize engineering, procurement, and construction (EPC) contracts to consolidate and manage insurance risks. EPC is a project delivery model where contractors oversee the entire project, from initial design and engineering to construction and completion of the final product. EPC projects are often called "lump sum turnkey" projects due to their comprehensive nature.

An alternative is a Federation Internationale des Ingénieurs-Conseils (FIDIC) contract. A FIDIC contract is an international engineering contract that governs the construction of large, complex engineering projects. The contract is designed

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to minimize disputes and ensure a fair risk distribution. One issue with offshore wind contracts is that one party often retains a greater risk profile than its counterparty.

Large projects often employ liability wrap-up insurance to consolidate collective liability. While engineers, contractors, and subcontractors maintain their own general and liability coverage, project developers can offer a policy that bundles all participants' liability into one, streamlining the risk management process and reducing costs for everyone involved.

THE CONSTRUCTION PHASE

Offshore wind projects have unique insurance needs tied to location, layout, installers, and suppliers, with location-specific risks including port proximity, navigation challenges, weather, tides, and currents. Shared port facilities among multiple projects create cumulative exposure, potentially leading to business interruption and delayed start-up (DSU) claims from a single event.

Natural disasters in specific locations pose challenges in risk assessment due to limited data. Insurance companies employ the Accidental Limit State (ALS) method, which initially forecasts significant occurrences taking place every half-century. Nevertheless, the swift progression of climate change has resulted in a more frequent recurrence of events that were traditionally anticipated to happen once every 50 years. In light of the unavailability of an adjusted rate for a 50-year event, the ALS approach is now recommended to predict events with the intensity that occurs once every 500 years. A single natural catastrophe, like a large hurricane, can affect multiple farms simultaneously, causing heightened resource demand with limited supply for repairs and extended business interruption periods.

Damage to subsea cabling systems is another concern arising from natural disasters. These cables are costly, requiring expensive, high-tech elements and specialized repair resources that take time to mobilize and assemble, leading to extended downtime and business interruption. Earthquakes, tsunamis, and lightning strikes pose remote risks, impacting onshore infrastructure and port facilities that support the wind farms.

Floating farms face unique challenges, as untethered turbines can trigger chain reactions affecting multiple turbines. U.S. projects have higher predevelopment costs and risks due to permit delays and limited domestic production of essential components. Supply chain issues and scarcity of proper assets drive up costs and trigger delayed start-up coverages. Other catastrophic events include earthquakes, tsunamis, and lightning strikes.

Basic insurance for turbine construction includes builder's risk, delayed start-up, general liability, property, and ocean marine coverage. Some construction insurance programs cover cable installation, transport risks, spoil removal, damage to third parties, pollution, and certain civil liabilities. Additional coverage may include Design-Bid-Build (DBB) for construction damages and one year of operations.

THE OPERATIONAL PHASE AND OPERATIONAL RISKS

Wind farms face risks from natural catastrophes, including mechanical failure, fire from lightning, and collisions. Due to their remote locations, mechanical failure in components like bearings, gears, generators, and transformers is challenging to address. The balance between maintenance and managing high costs is tricky, as frequent maintenance will reduce mechanical failure. However, the costs of support vessels and personnel to perform routine maintenance can outweigh the value of reduced downtime. Remote equipment monitors can help detect issues before mechanical failure and ensuing downtime.

Fire from lightning is a common risk. Removing flammable materials from in and around the turbine nacelle can reduce fire risk. In addition, onboard suppression systems

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automatically triggered by heat or smoke or remotely on shore by alarms will also minimize damage to critical parts. Collisions with vessels can be mitigated by locating wind farms away from regular shipping lanes and using warning systems that combine light, sound, and radar.

Mooring integrity is also crucial for floating farms to mitigate concerns like natural catastrophes and collisions. Leveraging technology and expertise from the oil and gas industry, such as synthetic lines and anchor systems, is a valuable way to maintain mooring integrity. Tension and motion monitoring, regular inspections, and vessel inspection by certified classification societies like Det Norske Veritas (DNV) or the American Bureau of Shipping (ABS) are essential for mooring integrity.

Insurers can influence and shape rules adopted by international safety organizations and classification societies by providing data and recommendations acquired through claims and claims analysis.

THE DECOMMISSION PHASE

As the lifespan of an offshore turbine is relatively short (typically about 20 years), decommissioning requires following specific procedures to mitigate risks and avoid claims. Environmental risks must be analyzed to minimize environmental damage, as deconstructing the turbine mast and removing the tower from the seabed is challenging. Finally, shoreside disposal of wind turbines is complex, as many of the components cannot be recycled or repurposed.

CURRENT COMPREHENSIVE COVERAGE

A select few insurance companies offer comprehensive coverage for offshore wind farms throughout their lifecycle, including planning, construction, energy distribution, and demolition. Consolidating coverage

with a single insurer offers multiple benefits, boosting lender confidence and potentially lowering interest rates.

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In addition to "standard" offshore coverage such as construction all risk, delay in start-up (DSU), operational all risk, business interruption, third-party liability, and terrorism, specialized coverage is often necessary.

Owners and charterers can access comprehensive packages to address liability exposure and losses related to installation and support vessels. Extended contractual liability coverage expands protection for third-party personal injury, property damage, and wreck removal and waives subrogation. Given the widespread exposure to the offshore wind industry, insurance clubs have established expert teams to provide loss prevention advice, especially for highly specialized vessels. This support also extends to critical but high-risk operations such as personal transport, cargo transport, and diving support.

THE LEGAL BATTLE PHASE

In any emerging industry, some opposition is to be expected. Despite the environmental benefits of offshore wind and its potential for renewable energy production, opposition has come from several disparate groups in the form of lawsuits.

In New Jersey, Orsted's Ocean Wind I project (a 98-turbine project) has obtained all the major approvals but is currently hindered from construction by local government delay, leading to lawsuits against Cape May County and various citizen groups. Orsted is also suing citizen groups attempting to shut down the project. Similar delays due to citizen pressure have resulted in litigation in Ocean City.

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Local groups like Save Long Beach Island, Defend Brigantine Beach, and Protect Our Coast NJ have challenged New Jersey's determination that the project complies with coastal management rules. Despite opposition, Governor Phil Murphy gave Orsted a tax break, allowing the project to retain federal tax credits supported by local legislators and the federal government.

CONCLUSION

Insurers play a critical role in these capital-intensive offshore wind projects, supporting owners, developers, contractors, suppliers, and vessel owners. The insurance industry must commit substantial resources to understand diverse risks, offer sufficient coverage, and provide expertise to prevent losses in challenging offshore environments.

Contact an experienced insurance broker for further information regarding West Coast floating wind insurance requirements.

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