INFRA & CAPITAL PROJECTS BY ALVAREZ & MARSAL

US Offshore Wind's Strategic Reset

From Fragmented Models to Integrated Infrastructure

The Model, Not the Market, Is Broken

Offshore wind, once hailed by many as America's next generation clean energy frontier, is now in distress. It's a story of ambition colliding with a delivery model built for a different era of traditional utility scale development.

The inconsistent performance of projects across states, developers, policies and contracts is not incidental. The wave of distressed projects we have seen in the last few months alone is not a symptom of market weakness, but a reflection of a delivery model that no longer fits the scale or complexity of offshore wind demands. Current projects are being developed under legacy utility-era assumptions: rigid contracts, siloed procurement, narrow risk-sharing and fragmented infrastructure. Over the last two years and before the current administration, in the United States we have been experiencing the unraveling of this model under the weight of real-world challenges, which have been further exacerbated by a radically shifting energy policy that is not in favor of this sector. Even with more favorable conditions, this reality might improve slightly but not significantly. The issue lies in nature rather than nurture.

Offshore wind is a large-scale complex infrastructure, but the current delivery and procurement models adopted in the United States are not commensurate with the capital intensity, complexity and the execution risk that such projects demand. Across the board, developers are absorbing disproportionate levels of risk for successful delivery: from permitting timelines to cost shocks.[1] Meanwhile, fragmented planning among states, absence of shared assets, and inadequate federal, state and local coordination are contributing to dragging timelines and driving up costs.

This paper unpacks how the current model is structurally misaligned with offshore wind realities, draws lessons from today's distressed projects, and offers tactical actions for the near term alongside strategic resets needed to move forward.

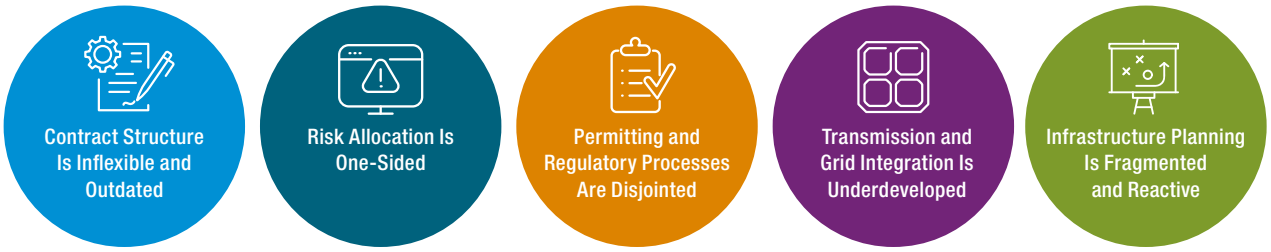
Diagnosis of the Model Flaws

The current U.S. offshore wind delivery model is misaligned with the asset class it is trying to build.

This current model was never designed to administer and/or manage a marine-based, capital-intensive, multi-jurisdictional infrastructure buildout. Projects are governed by rigid procurement schedules, fixed-price or inadequately indexed power purchase agreements (PPAs), and insufficient offshore wind renewable energy credits (ORECs). Additionally, these ORECS are negotiated at very early stages of the development, which puts more weight on domestic content and additional investment in core infrastructure. The contracts, which play a key role in underwriting the projects, now sit below breakeven in many cases. Furthermore, fragmented permitting regimes, rate volatility and capital cost escalation are derailing project economics with no clear path to cost recovery.

Between 2021 and 2023, publicly reported levelized costs of offshore wind rose by nearly 50 percent, mostly blamed on inflation, supply chain bottlenecks and rising interest rates.[2] These shifts outpaced the contractual assumptions embedded in most pre-2021 PPAs and ORECs, leaving developers exposed to unhedged risk. Another possible consideration is that developers, even experienced ones, underestimated the cost of delivering those large projects in the United States.

The current model is illustrated in its *five dimensions of failure*:



Contract Structure Is Inflexible and Outdated

Most PPAs and ORECs were inked before the 2021–23 inflation-and-rate shock. Even after New York's 2024 "reset" and rebid RFP and Massachusetts' indexing adjustment mechanism in its 2024 83C solicitation, contracts still need enhancement to reflect the prolonged project development timelines and complexities that formulate today's supply chain realities and financing costs. Developers remain stuck with uneconomic strike prices, forcing write-downs ($300 million impairment recorded by Equinor on its U.S. offshore wind portfolio in 2023[3]), a wave of exits (Ørsted's exit from Ocean Wind 1 and 2[4]), and rebids with no major improvement in project economics. Additionally, the absence of any form of predictable fixed payments — despite offshore wind contributions to grid reliability — further weakens the underlying business case of those projects.

Risk Allocation Is One-Sided

The risk stack — permitting slippage, turbine recall costs (e.g., Siemens Gamesa 2024 blade fixes[5] and GE Vernova failed blades on Vineyard Wind[6]), cable factory bottlenecks, and High-Voltage Direct Current (HVDC) converter scarcity, interconnection cost and timeline uncertainty — weighs almost entirely on the developer. Few states in the Northeast have adopted a limited shared-risk approach, such as NYSERDA's interconnection cost sharing mechanism and the New Jersey Prebuild Infrastructure (PBI) project, and these resulted in no direct and tangible improvement in risk allocation. Even balance-sheet players have paused bid activity to avoid open-ended exposure (BP's pause on all new offshore wind and Shell's withdrawal from the Atlantic Shores offshore wind project in New Jersey[7]).

Permitting and Regulatory Processes Are Disjointed

Permitting spans local, state and federal levels, often in conflicting or redundant processes. Timelines are long, opaque and susceptible to litigation. There is still no milestone-linked federal-state dashboard tying lease-area studies to onshore grid upgrades, leaving projects hostage to a single-county level injunction. A delay in one asset class, a substation, a port or a transmission bottleneck, can stall an entire project for years. The BOEM's 2024 "Modernization Rule"[8] was an attempt to trim some review steps, none of which demonstrated a real tangible streamlining of the process.

Transmission and Grid Integration Is Underdeveloped

There is still no coordinated offshore transmission backbone in the United States, leaving developers responsible for their own radial interconnections. This asset-by-asset approach leads to inefficient grid builds, point-of-interconnection congestion and escalating upgrade costs. While states in the Northeast have begun exploring joint planning, including the July 2024 Northeastern States Collaborative on Interregional Transmission,[9] these efforts remain nascent and largely aspirational. NYSERDA's 2023 solicitation attempted a "grid-ready" HVDC approach but raised serious concerns regarding its scalability, interoperability and the lack of integrated transmission ownership models.[10] The Biden administration's 2025 Atlantic Offshore Transmission Action Plan offered a blueprint for a shared backbone,[11] but its future is uncertain amid shifting political winds. Until the United States adopts regional, multi-state solicitations with coordinated hubs, shared corridors and a 30-year transmission planning horizon, offshore wind integration is likely to remain fragmented, and grid congestion and interconnection costs will continue to rise.

Infrastructure Planning Is Fragmented and Reactive

Port marshalling capacity, Jones Act-compliant vessels, domestic monopile fabrication yards, and cable manufacturing are all lagging. States are trying to help, but the efforts remain individual or unsuccessful and lacking a regional asset strategy. At the same time, state-by-state "buy-local" rules drive bespoke solutions — New Jersey's distressed monopile plant at Paulsboro, New York's ambitious nacelle and blade manufacturing plans, Virginia's cancelled blade facility — without a coordinated Gulf-to-Northeast build-out plan. The result is parallel, underutilized assets and bid premiums that feed straight back into PPA and OREC renegotiations, driving up cost and wasting valuable time.

Tactical Moves Developers Can Take Now

While the challenges facing U.S. offshore wind are significant and systemic, they are not insurmountable.

For developers already invested in lease areas, permitting or early-stage infrastructure, the goal now is survival, but survival with caution. Even in a distressed environment, there are practical, low-capital steps that can preserve optionality, maintain regulatory momentum and enhance future project value. With capital already deployed and stakeholder commitments in motion, the task is to contain losses without closing the door on future delivery.

These moves are not about unlocking growth. They are about holding ground: protecting balance sheets and maintaining regulatory credibility. The next 12–18 months represent a critical window where tactical moves under constraint will determine whether projects remain viable or slip beyond recovery. These are not model reforms; they are operational levers to survive the reset and avoid irreversible setbacks.

1 Preserve Permitting Momentum

Permits are hard-won, yet easy to lose. Developers should avoid expiration or regulatory backsliding by maintaining minor amendments or extensions to keep permits active, even during capital or contracting pauses. Losing permitting traction can set a project back years.

2 Rescope and Modularize

Break large-scale delivery into executable stages. Modularizing procurement and construction can align project phasing with capital availability and supply chain constraints. scaling down and phasing delivery can be a reasonable alternative allowing flexibility instead of cancelling projects. This is especially relevant in markets with paused PPAs or uncertain procurement schedules.

3 Renegotiate Contract Structures

Developers should revisit legacy ORECs and PPAs, even if those were opened and revisited in the past, to introduce a more comprehensive indexed pricing, escalators or reopener clauses. In some cases, developers may need to pursue contractual resets rather than incremental amendments, particularly where force majeure or regulatory changes create the legal basis for termination or resolicitation. Negotiations should be grounded in solid cost data, market benchmarks, and transparent engagement with off-takers or procurement authorities. In parallel, supply chain contracts need to be revisited. Developers should work with OEM and suppliers to explore frameworks like indexed procurement, multi-stage contracting and collaborative risk-sharing models.

4 Pursue Partial Monetization

In some cases, procuring states may be willing to pay for enabling infrastructure, e.g., port upgrades or interconnection before full offtake is re-secured. An advised tactic is treating this interim phase not as dead time, but time when value-creating groundwork can be monetized with the right structure, especially in infrastructure that is directly correlated to projects that can create value add or even future optionality.

5 Sustain Stakeholder Relationships

Communication with regulators, supply chain partners and communities must not go dark during project delays. A paused project doesn't need to look like a failed one. Transparency and consistent engagement can preserve credibility and reduce friction when timelines resume. Keep in mind that silence creates uncertainty, which in turn can undermine trust and create opposition. In contrast, active engagement, even during a pause, can build goodwill that becomes a crucial steppingstone when projects restart.

6 Manage Liquidity

In a distressed environment, survival hinges on preserving cash at the project company level. Developers should reassess cash outflows tied to long-lead items, standby contracts or noncritical engineering scopes. Cut or defer spending on optional front-end studies, early fabrication and speculative supply chain commitments until commercial visibility improves. Focus capital on regulatory-critical activities and grid-tied infrastructure. Disciplined spend and developing a lean plan with forecasts out at least 12 to 18 months, along with value created by the development team sends a positive signal to investors.

The Strategic Reset: Plan and Deliver Like Complex Infrastructure

While tactical moves can help stabilize projects in the near term, they will not unlock the full potential or resolve the flaws of the current model.

A more fundamental shift is required — one that rethinks how these assets are planned, procured and delivered. Offshore wind represents a large-scale, multi-jurisdictional infrastructure undertaking with interdependencies across generation, transmission, ports, supply chain infrastructure and environmental permitting.

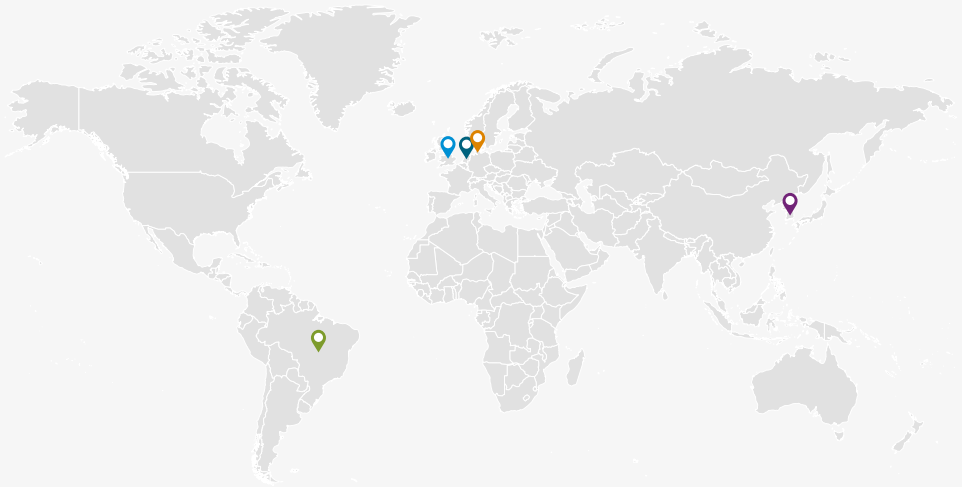
Yet today offshore wind projects are often governed by procurement models designed for standalone, dispatchable power assets. This misalignment has led to inefficiencies, risk imbalances and stranded investments.

To succeed, offshore wind must be treated more like a complex infrastructure with integrated delivery, phased contracting, shared infrastructure and policy stability that matches its complexity: a move from a siloed procurement mindset to a fully coordinated infrastructure delivery model.

Around the world, governments have adopted delivery models that treat offshore wind as critical infrastructure, not just merchant generation.

While these models may have worked to shift the burden of early-stage uncertainty away from developers and encourage economies of scale, greater public-private alignm ent, and lower cost of capital, these models remain insufficient to be adopted as-is in the United States due to the nature of governance through decentralized multiple governments/states with competing and misaligned goals.

Accordingly, it is worthwhile to review the thought processes that led to the implementations of these models and understand how they can be applied to tailor a set of recommendations applicable to the U.S. offshore wind sector. Thus, we have identified four strategic levers for a U.S. offshore wind reset.



United Kingdom – OFTO Regime

The UK decouples offshore generation from transmission by competitively procuring Offshore Transmission Owners (OFTOs) through a regulated asset base model. This mechanism de-risks interconnection for developers, standardizes infrastructure and lowers financing costs for complex transmission infrastructure through predictable revenue streams from the generation asset.

Brazil – Coordinated Auction and Delivery Model

Brazil reduces delivery risk through a centrally coordinated model that staggers generation and transmission auctions under the oversight of national planning and regulatory agencies. These agencies work in tandem to ensure transmission is procured and delivered ahead of new generation capacity. Transmission concessions are awarded to private operators using availability-style payments, creating predictable revenue streams and reducing exposure to volume risk.

Denmark – State-Led Seabed and Permitting Preparation

Danish authorities pre-develop lease areas, conducting environmental studies, securing permits and planning transmission, before auctioning sites. Developers focus on delivery, not early-stage uncertainty, thus accelerating timelines and reducing risk premiums.

Netherlands – Centralized Offshore Grid

The national transmission system operator, TenneT, leads offshore grid planning and development. A standardized approach to grid connection enables predictable points of interest (POIs) access and integrates long-term system planning with offshore wind buildout.

South Korea – Clustered Offshore Wind Zones

South Korea is piloting offshore wind “clusters,” where multiple projects share transmission, port infrastructure and supply chains. Public agencies coordinate permitting and interface with local stakeholders to de-risk engagement.

THE STRATEGIC LEVER	WHAT'S HOLDING US BACK	THE STRATEGIC SHIFT WE NEED	HOW IT WORKED ELSEWHERE
Develop Regional Shared Infrastructure 	Offshore wind cannot scale through isolated investments. Developers need access to shared, regionally planned infrastructure, such as ports, fabrication yards, utility corridors and transmission, that are designed to support multiple projects across states and procurement cycles. Additionally, cost recovery and standardization for shared assets are lacking. States like Massachusetts (New Bedford Marine Commerce Terminal) and New Jersey (Wind Port in Salem County) have taken steps, but infrastructure remains fragmented and at risk of underutilization due to project delays or cancellations.	Build and finance regional and multi-use infrastructure, such as ports, fabrication yards, vessels and offshore transmission corridors, with standardized cost recovery mechanisms and long-term planning frameworks. Multi-state procurement agreements and shared infrastructure corridors should be institutionalized. The United States can adopt regional coordination, long-term planning and regulatory mechanisms for cost allocation. Those are the same infrastructure delivery principles the U.S. has used in the past and are common in transit and utility corridors.	U.S. Northeast Corridor rail infrastructure has long required coordinated investment across multiple states and agencies. Successful examples, such as the Gateway Program, show the importance of federal-state alignment, pooled funding mechanisms and governance structures that manage shared-use assets at scale.
Adopt Milestone-Based Planning, Not Megawatts 	U.S. offshore wind development often centers on meeting abstract capacity targets without aligning permitting, procurement and infrastructure readiness. Offshore wind, by contrast, often launches with optimistic one-phase timelines, underestimating environmental, permitting and supply chain complexities. This has led to stalled projects, cost overruns and mismatched sequencing across interdependent assets.	Implement milestone-based planning frameworks tied to specific delivery phases, such as permitting completion, infrastructure readiness or financial close, to de-risk timelines and improve project maturity before major capital is committed.	The Chesapeake Bay Bridge Tunnel, delivered in phases over decades with revenue-backed bonds and staged construction, exemplifies how marine megaprojects can succeed through long-horizon, sequenced execution. Each phase was tied to physical and financial milestones, not abstract demand projections.
Structuring for Delivery: Levers From Public-Private Partnership (P3) Frameworks 	Offshore wind projects face fragmented governance, unclear risk allocation, and exposure to permitting, interconnection and infrastructure bottlenecks. Developers often bear risks they are poorly positioned to manage, deterring long-term investment.	Long used to deliver complex infrastructure globally, offer a strategic delivery architecture that extends beyond financing models: They embed regulatory and governance structures that allocate risk intentionally, coordinate delivery across assets and agencies, and create long-term accountability from responsible parties. Adapt P3 delivery tools to offshore wind: separate generation from transmission risk, introduce milestone-based payments or guarantees, and establish coordinating bodies to manage shared infrastructure and permitting.	The UK's OFTO regime and Brazil's staggered transmission and generation auctions show how decoupling risk and using clear regulatory frameworks attract capital while preserving delivery discipline. These models allocate risk to the party best equipped to manage it, reducing delays and enabling scalable infrastructure delivery.
Solve the Workforce Gap Early 	The U.S. offshore wind sector faces a growing labor shortfall, not because of insufficient interest, but due to misalignment between training programs and actual project timelines. Without clear line of sight into when jobs will materialize, workforce development remains fragmented and underprepared.	Establish early and transparent project scheduling, tied to permitting and procurement phases, to allow unions, training institutions and labor departments to align capacity-building programs. Integrate workforce planning into early project development and regional infrastructure investment strategies.	Germany's Energy Transition (Energiewende) included early workforce planning as part of its national policy, funding vocational training centers tied to regional energy clusters. This forward coordination ensured skilled labor was ready as new assets were brought online.

Conclusion

The U.S. offshore wind sector is at a challenging juncture.

Tactical adjustments can buy time but a durable market requires a strategic reset: one grounded in shared infrastructure, phased execution, deliberate risk allocation and institutional delivery capacity. This reset is not about minor policy adjustments or selective PPA renegotiations. It's about shifting the delivery model. Treating offshore wind like the complex infrastructure it truly is will determine whether this decade becomes a lost opportunity or the foundation for long-term energy leadership.

The developers and governments that act decisively in the next 12 months will shape the next 20 years of offshore wind.

At Alvarez & Marsal Infrastructure and Capital Projects, we bring expertise and hands-on experience in helping governments, developers and investors navigate complexity. From resetting delivery models to optimizing portfolios under distress, we bring deep experience in infrastructure governance, capital project execution and public-private delivery strategy. Partner with a team that knows how to turn complexity into opportunity and deliver results that matter.

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We acknowledge the significant contributions of Iman Aziz, SPURS/ Hubert H. Humphrey Research Fellow at MIT Department of Urban Studies and Planning

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