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Learning from the Experts Webinar Series

Offshore Wind Financing Structures



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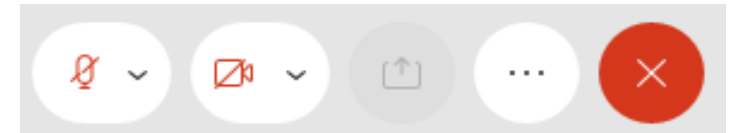
October 25, 2023

Meeting Procedures

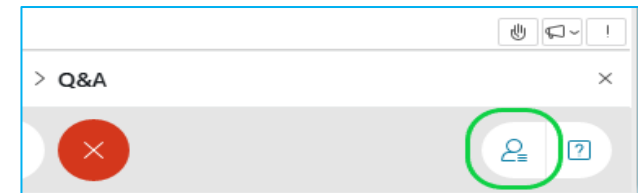
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Learning from the Experts

This webinar series is hosted by NYSERDA's offshore wind team and features experts in offshore wind technologies, development practices, and related research.

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Offshore Wind Project Finance

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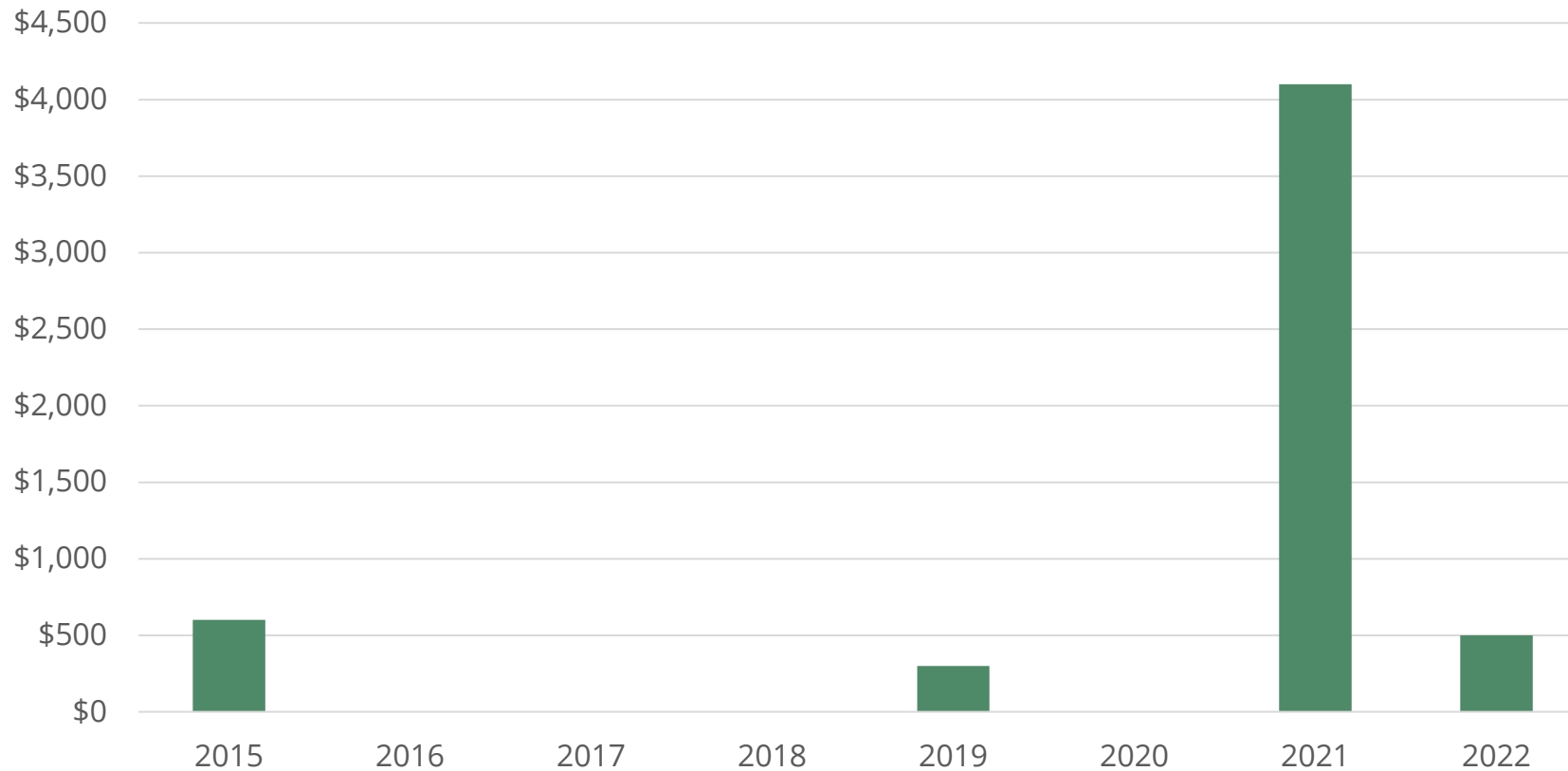


About ACORE

We are a national nonprofit that unites finance, policy and technology to accelerate the transition to a renewable energy economy.

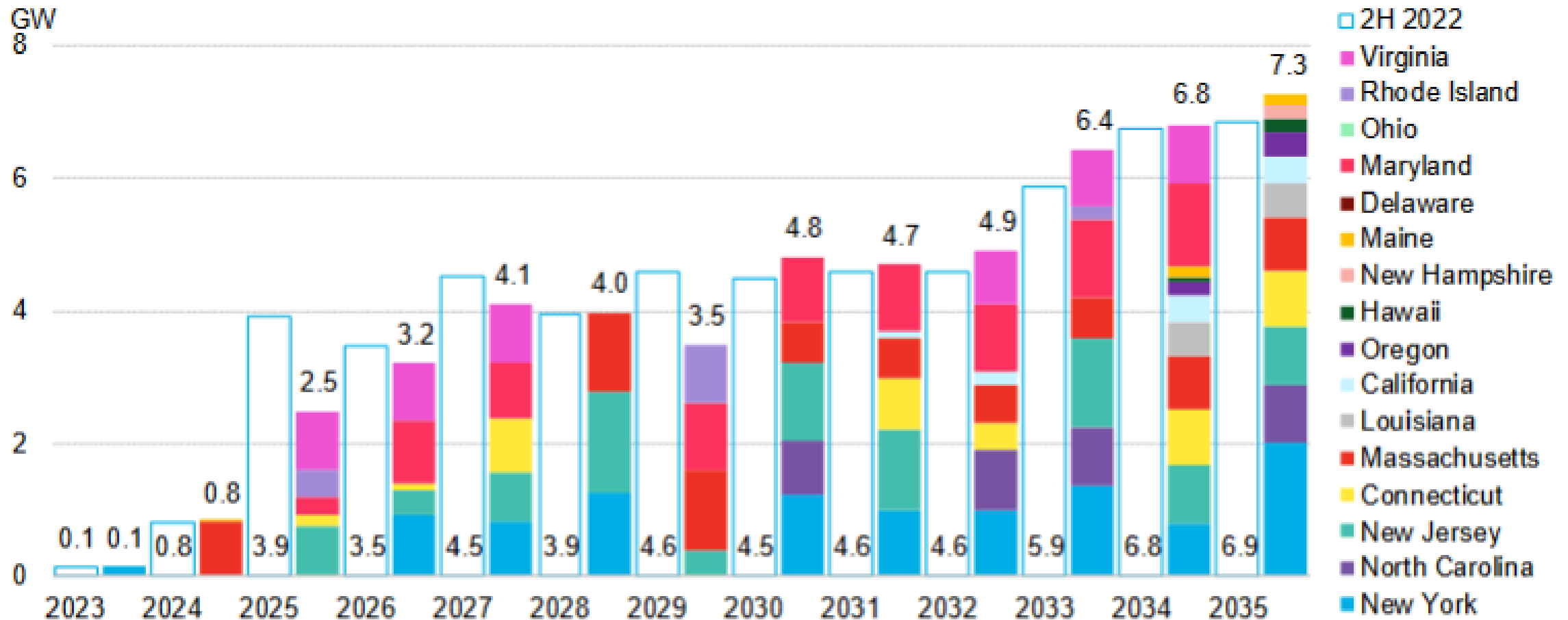
Historical Investment

Annual U.S. Offshore Wind Investment, 2019-2022 (in millions)



Source: BloombergNEF, accessed October 2023.

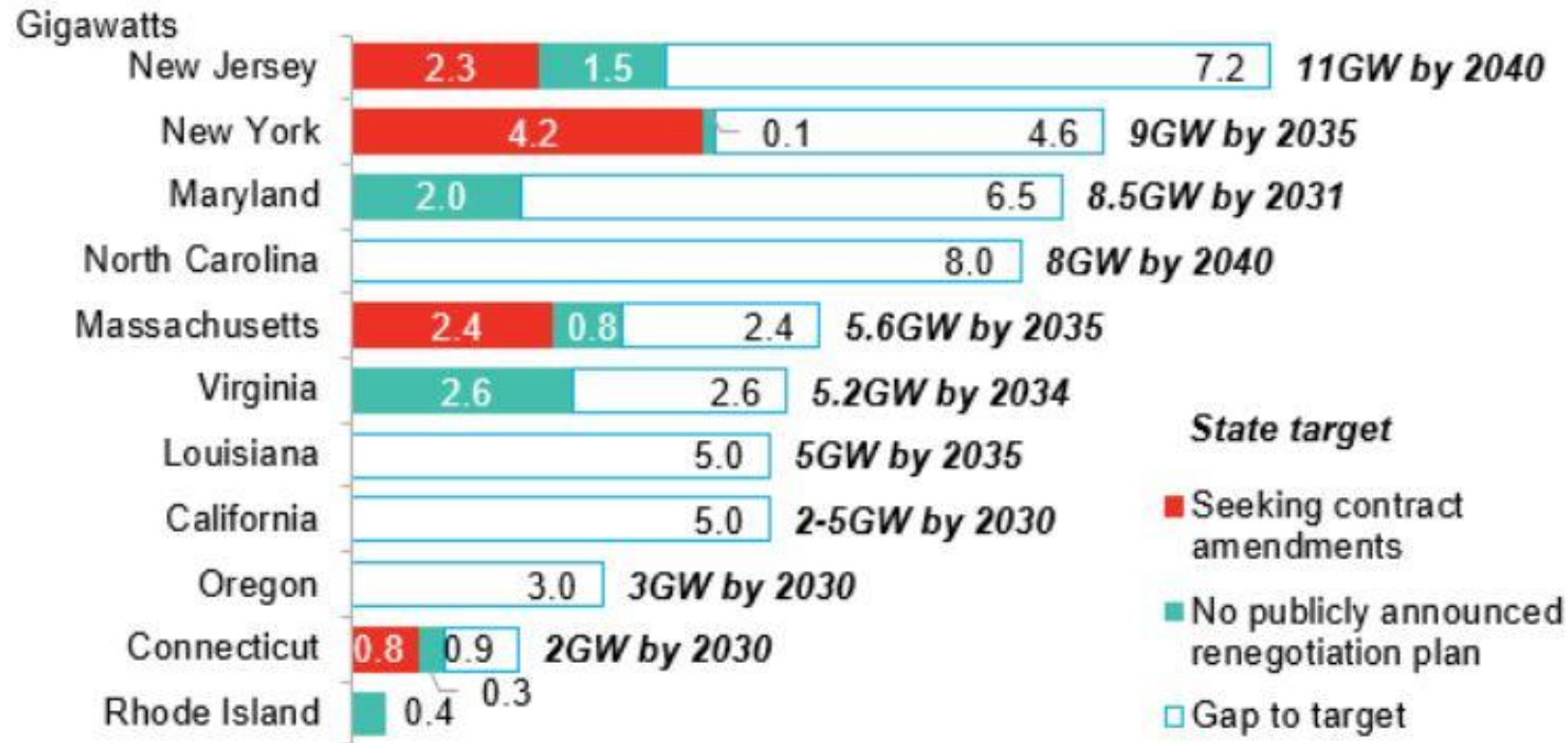
Annual Offshore Wind Forecast



Source: BloombergNEF

Federal and State Targets

Status of contracted offshore wind capacity and targets across US states



Offshore Wind Ranks as the 5th Most Attractive Sector for Future Investment

Ranking of Sectors Most Attractive for Investment in 2023-2026



Developers expect tax equity to be the most available financing source over the next three years, while investors rank it fourth

Both expect transferability to play a sizable role

Ranking of the Expected Availability of Project Financing Sources in the Market in 2023-2026

	Investors	Developers
1	Project-level debt	Tax equity
2	Cash equity	Transferability
3	Transferability	Project-level debt
4	Tax equity	M&A
5	Direct pay	Cash equity
6	M&A	Direct pay

IRA Tax Incentives

Full value ITC (30%) and PTC (2.6c/kWh) for wind and solar

Prevailing wage & apprenticeship requirements (for full credit)

Low-income bonus credit (ITC)

Energy community bonus credit (ITC/PTC)

Domestic content bonus (10%)

Credits for advanced manufacturing

Direct pay and transferability

Sector Headwinds

Challenges impeding the pace of offshore wind growth



Supply chain issues and trade policy



Increasing LCOE



Transmission constraints



Siting and permitting obstacles



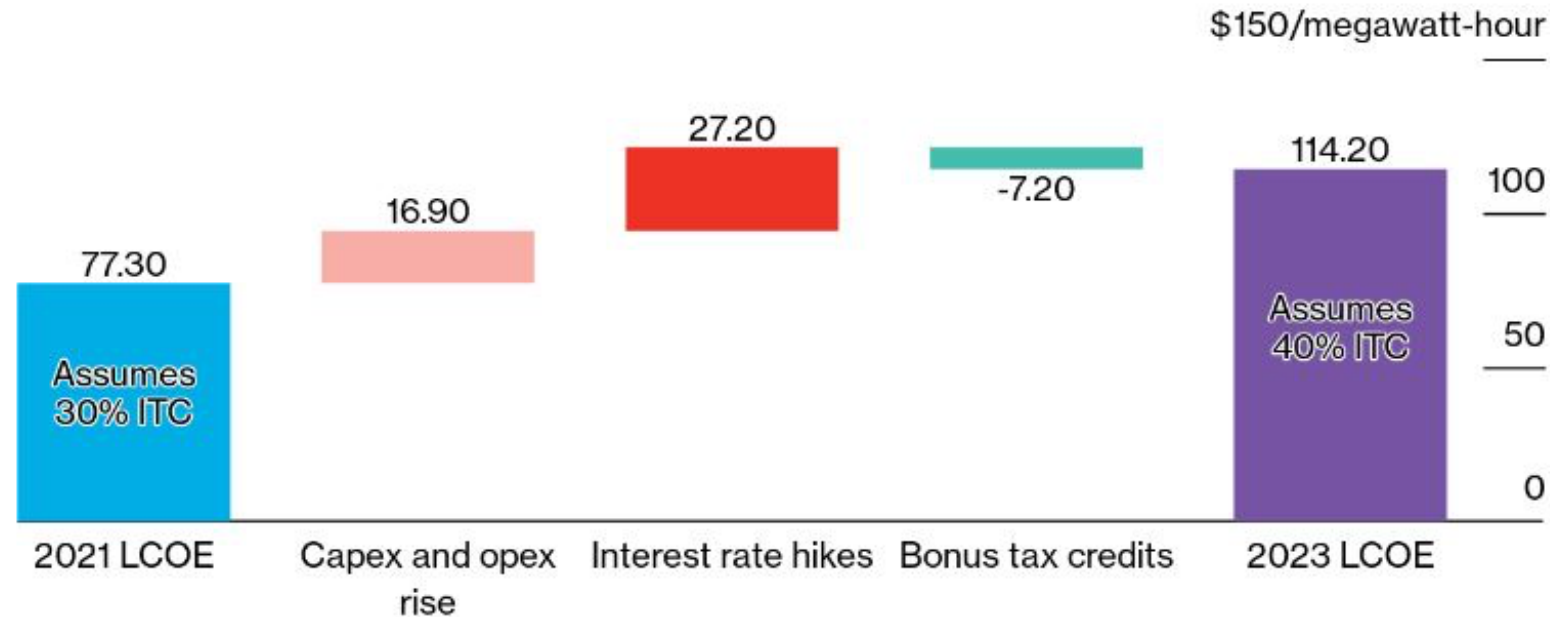
Workforce limitations



Tax credit monetization uncertainty

The Levelized Cost of Energy has Increased from 2021

Impact of inflation, interest rates and tax credits on US offshore wind LCOEs



Source: BloombergNEF

Note: Assumes projects meet either the domestic content bonus or the energy community bonus to qualify for 40% investment tax credit (ITC). LCOE is levelized cost of electricity. Prices are nominal.

Challenges for Tax Equity

- IRA will fuel demand for **>\$50 billion** annually to monetize tax credits (up from \$18bn in 2022)
- **Basel III** challenging tax equity investments
- **Pillar Two** could limit non-bank participation
- **Transferability** and **Direct Pay** will attract new investors, but uncertainty remains



With Thanks

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INTRODUCTION TO OFFSHORE WIND PROJECT FINANCE



Presented by

Chris Gladbach, Partner, Washington, D.C.

October 25, 2023

[mwe.com](https://www.mwe.com)

**McDermott
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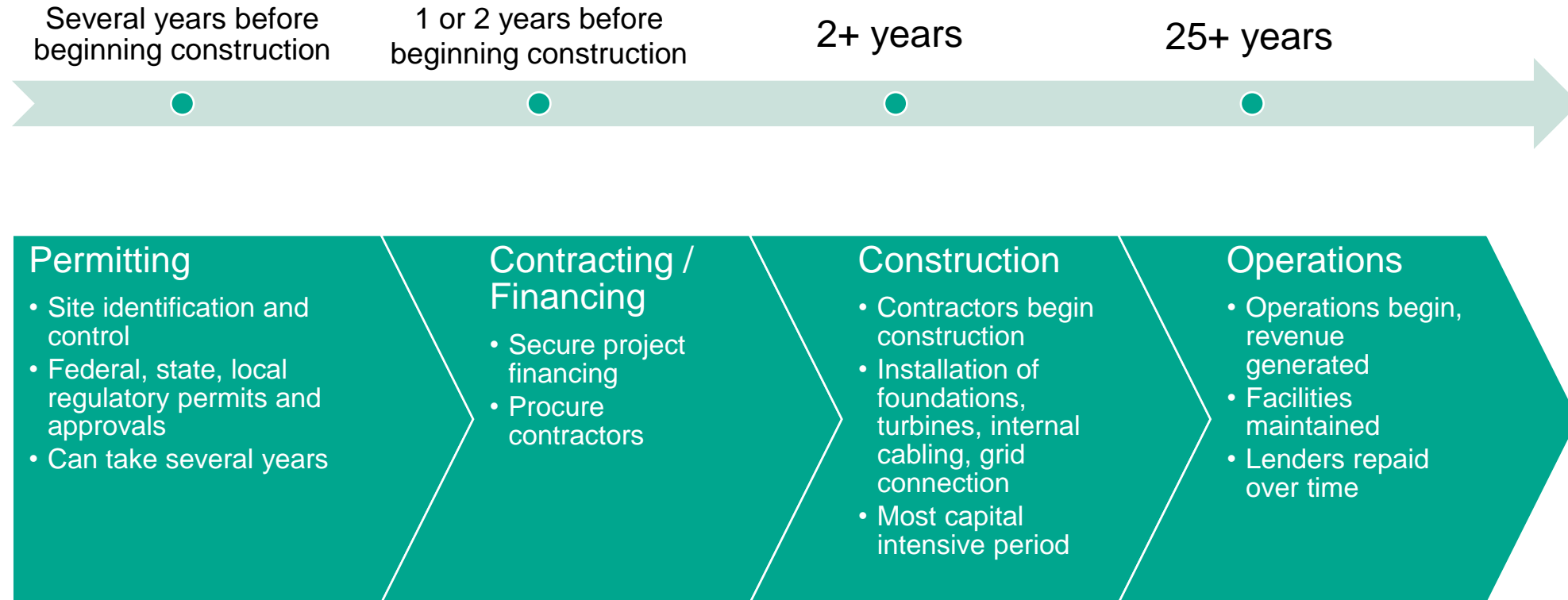
TODAY'S DISCUSSION

1. Basics of offshore wind project finance
2. Current market conditions in the US
3. Questions?

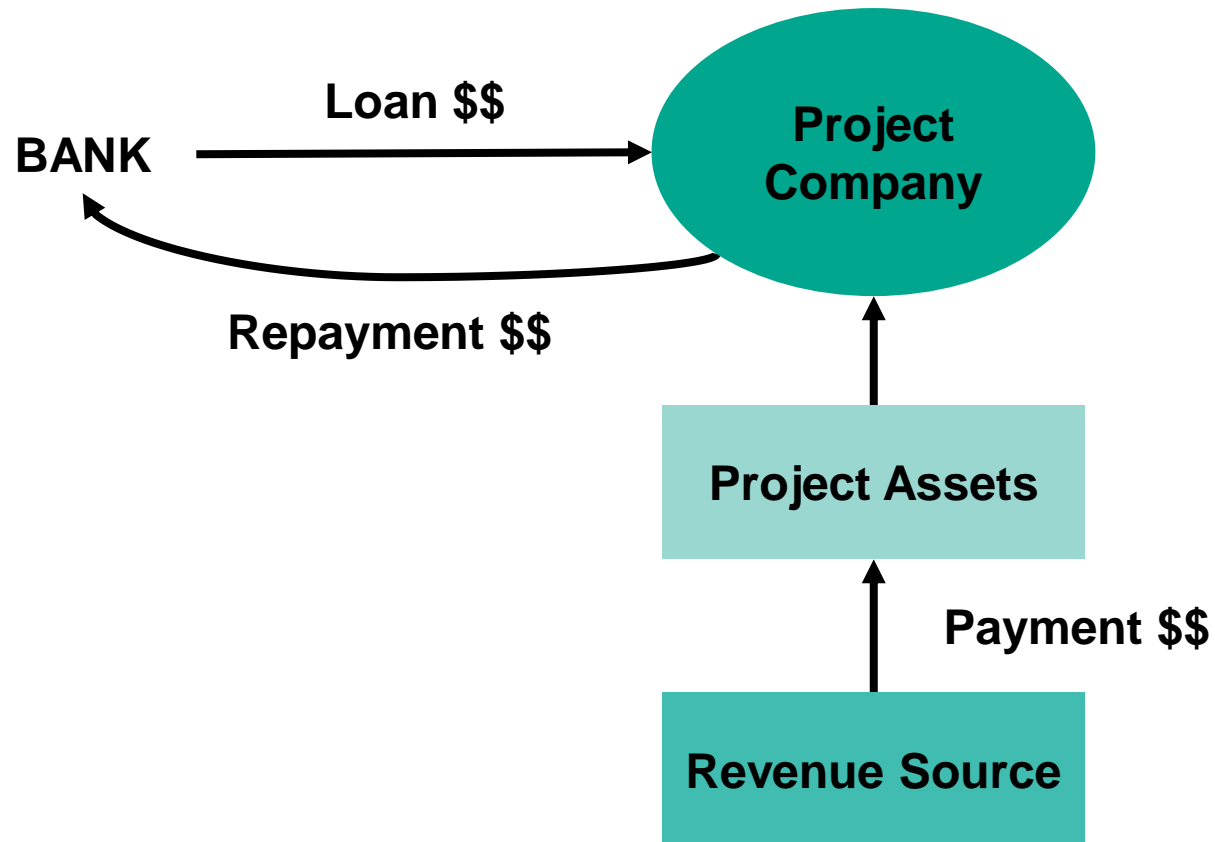
1. BASICS OF OFFSHORE WIND PROJECT FINANCE



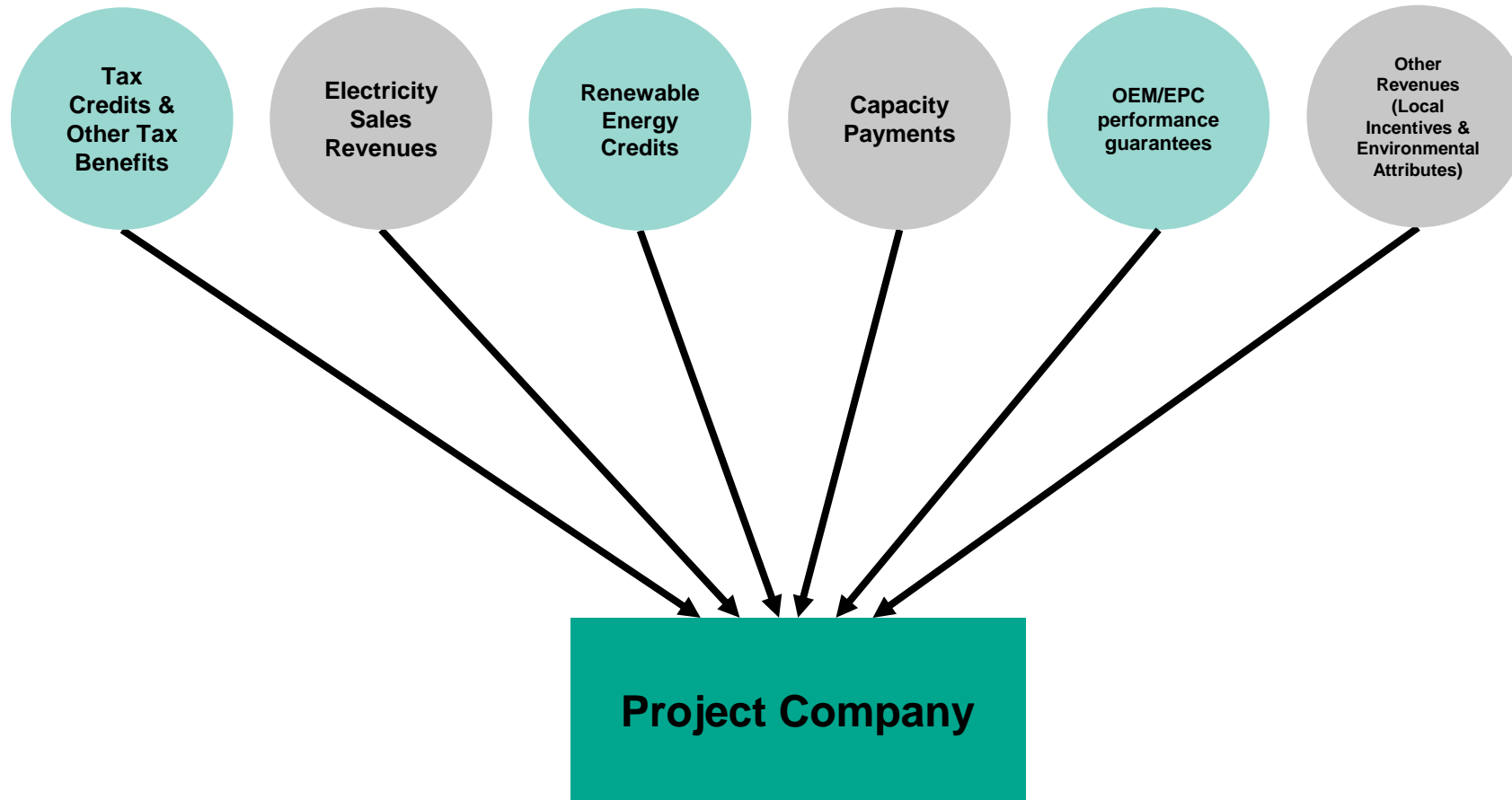
OFFSHORE WIND PROJECT DEVELOPMENT CYCLE



BASICS OF PROJECT FINANCE



POTENTIAL REVENUE SOURCES FROM OFFSHORE WIND PROJECTS



FEATURES OF PROJECT FINANCE – FINANCEABILITY

- Financeable project
 - Robust contractual structure
 - Full EPC is unusual for wind projects and various stages are handled “back to back”
 - Strong sponsors and contractors
 - Strong credit profile for sponsor or sponsor parent
 - Strong contractors with market presence
 - Stable and predictable cash flow
 - Review of revenue streams and / or tax credit eligibility
 - Proven technology / track record



FEATURES OF PROJECT FINANCE - RISKS

- Risk allocation
 - Political Risk
 - Risk of change in law or regulatory framework resulting in delays, cost overruns, etc.
 - Commodity price (merchant) risk
 - Steel and copper prices (for construction), interest rates, electricity price
 - Counterparty risk
 - Construction contractors, suppliers, offtakers



FEATURES OF PROJECT FINANCE - RISKS

- Risk allocation
 - Wind estimates
 - Electricity production estimates; seasonality and variability of production
 - Wind turbine technology
 - Turbine design, testing procedures and expected performance
 - Construction risk
 - Contractor management - turbine suppliers, marine contractors, suppliers of foundations, cables, and other equipment, etc.
 - Operation Risk
 - Actual electricity production or maintenance issues
 - Environmental risk
 - Environmental and social risks (birds, fisheries, etc.)



TAX EQUITY FINANCING: OVERVIEW

- **Overview:** The U.S. subsidizes investment in renewable energy projects largely through its tax system, providing significant tax benefits to owners of such projects.
- **Primary Tax Benefits of Renewable Energy Projects:**
 - Tax credits reduce income tax payable.
 - Accelerated depreciation results in a tax loss that can offset other income of a tax equity investor.
- **Two Primary Types of Federal Tax Credits for Renewable Energy Projects:**
 - Production tax credit (“PTC”), based on production.
 - More valuable for projects with a higher capacity factor.
 - Only available for wind projects.
 - Investment tax credit (“ITC”), based on capital cost.
 - Most commonly used for solar projects.
 - Wind projects can elect to use either the PTC or the ITC but not both.



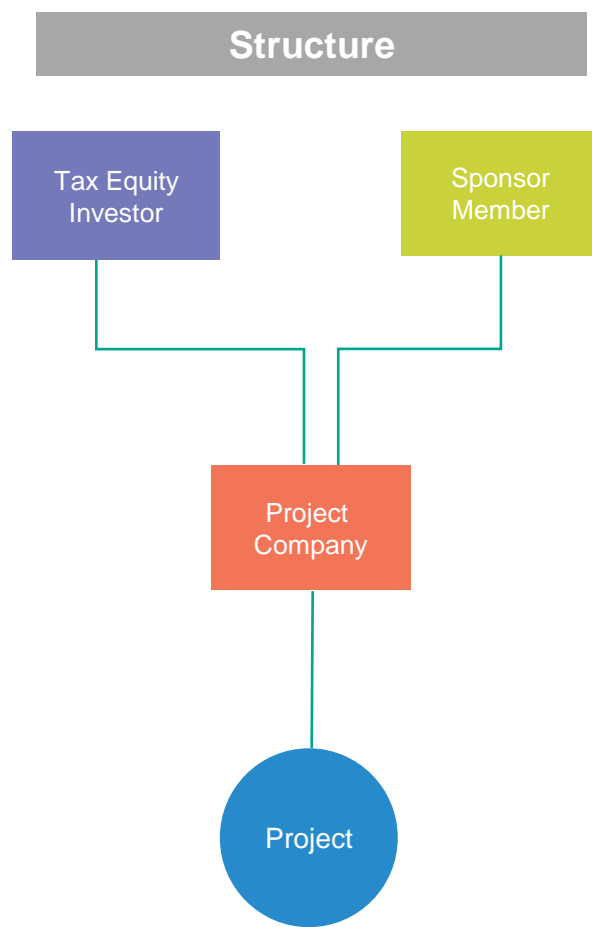
PARTNERSHIP FLIP STRUCTURE

- The project is owned by a Delaware limited liability company, which is treated as a partnership for tax purposes, and has two classes of members:
 - Class A Members (typically the tax equity investors)
 - Class B Members (typically the sponsor or developer)
- The percentage of tax benefits allocated to the tax equity members (usually 99% up front) will be much higher than their percentage of contributed capital and cash distributions; the Class B/sponsor gets a disproportionately high percentage of cash distributions, resulting in a classic arbitrage trade of tax and cash benefits from the project.
- At the “Flip Date” (the date on which the tax equity investor achieves its target after-tax IRR), the percentage of tax benefits and cash distributions to the tax equity investor will be significantly reduced (often to 5%), leaving the tax equity investor with a minority interest in the project.



TAX EQUITY TYPICAL PARTNERSHIP FLIP STRUCTURE

Partnership Flip Structure



Features

- Allocates tax benefits to the Tax Equity Investor (who can use the tax benefits to reduce its own tax liability) through its equity ownership interest in the Project Company.
- Allocations to the Tax Equity Investor:

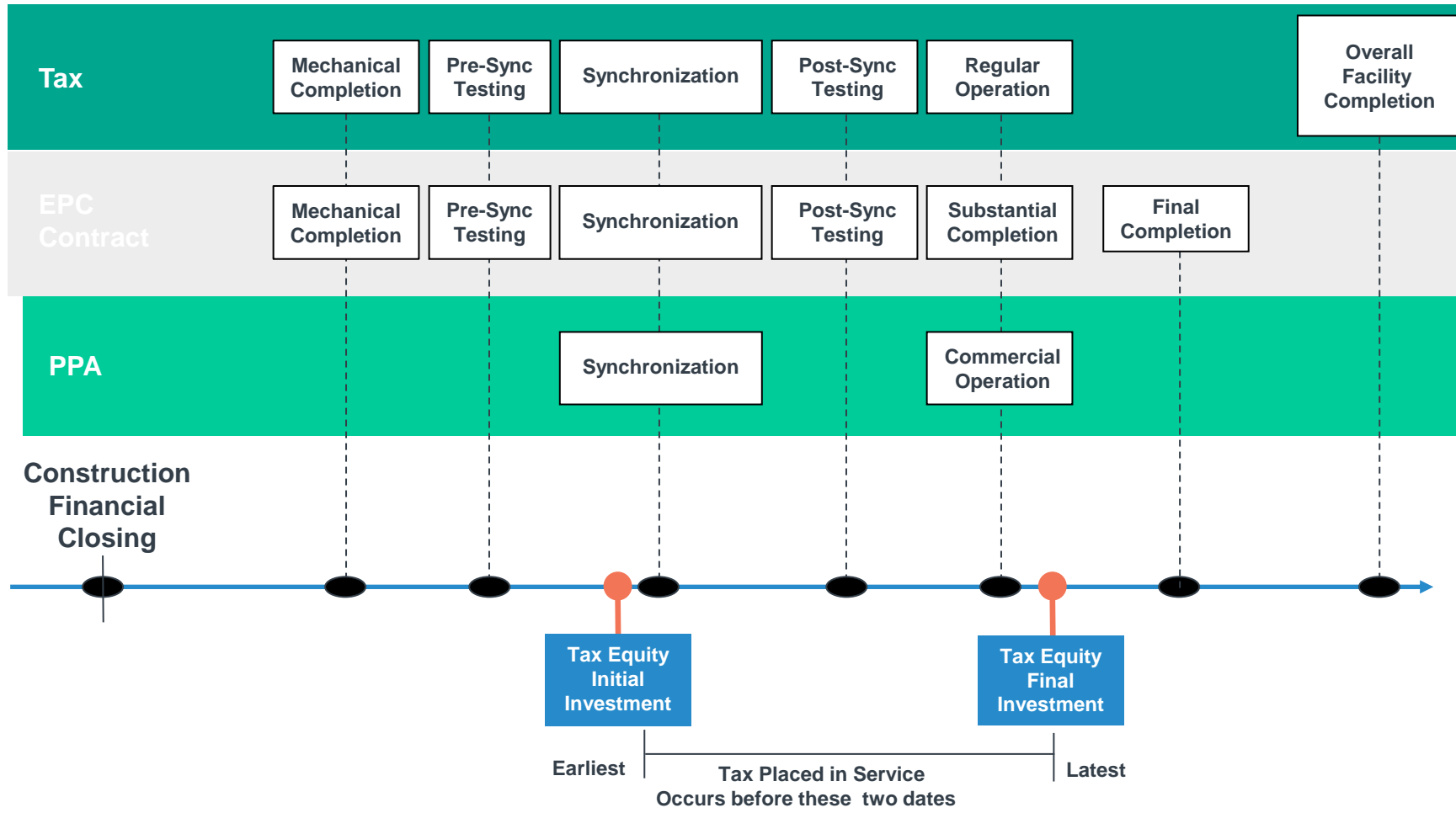
	<u>Taxable Income/Credits</u>	<u>Cash</u>
Pre-flip	99%	Varies
Post-flip	5%	5%

- Sponsor Member has an option to buy out the Tax Equity Investor at FMV (subject to a floor to protect the Tax Equity Investor's investment) of its remaining interest after the flip, when the Tax Equity Investor has only a 5% interest.



TAX EQUITY INVESTOR ADMISSION TIMING

Solar Project Investment Timeline – Flip Structure



Other Requirements:
 (1) Permits Received
 (2) Passage of Title, Risk of Loss and Control



TAX EQUITY STRUCTURES

Key Structuring Issues

- **Investor Forward Commitment:** Sponsors try to obtain as firm a commitment as possible from the tax equity investor at the start of construction to fully fund at COD, including to support the willingness of construction lenders to make their loans.
- **Sponsor Indemnities/Guarantees:** Tax equity investors usually require a sponsor guarantee of obligations of the sponsor member under the various tax equity documents, including representations and covenants.
- **Tax Risk Allocation:** The tax equity agreements allocate basis risk, and “structural” risk of the intended tax treatment not being respected, between the sponsor and the investor.
- **Sponsor Monetization:** Sponsors are increasingly looking for flexibility in monetizing their positions, particularly in light of the entry of fund investors bringing lower-cost capital into the sector.
- **Lender Forbearance:** In a levered deal which are not common, the tax equity investors and lenders have historically negotiated forbearance arrangements (“special rights agreements”) whereby the lender agrees not to foreclose, even if a non-monetary default occurs, until the tax benefits vest, in order to avoid ITC recapture. In recent years Lenders have only been willing to provide limited cure rights.



2. CURRENT MARKET CONDITIONS IN THE US



OFFSHORE WIND IN THE US

- First offshore wind farm, Block Island wind farm (30 MW) began operational in Rhode Island in 2016, which cost \$290 million
 - For reference, 1 MW capacity can power 400 to 1000 homes
- First utility scale wind farm, Vineyard wind farm (804 MW) began construction in 2021, with expected cost of \$2.8 billion and expected to be completed in 2024
- Offshore wind pipeline grew 15% from 2022 in 2023, from 45.8 GW to 52.7 GW
- Biden administration announced a target of 30 GW of offshore wind production by 2030



OFFSHORE WIND IN NEW YORK

- New York has five offshore wind projects, largest in the US
 - Offshore wind pipeline in New York is 4.3 GW, with target to reaching 9 GW by 2035
- Bight Wind project
 - BOEM lease auction in February 2022
 - \$4.37 billion project with 1.38 GW capacity
- Empire Wind project
 - 147 wind turbines
 - 2 offshore substations with two cable routes
 - Expected to generate 2GW
- Due to increasing project costs, some projects are renegotiating their offtake arrangements



OFFSHORE WIND IN NEW YORK

- Proposed port facilities and interconnection points in various parts of New York
 - The waterfront facilities support O&M, manufacturing, marshalling and staging, interconnection, substation support, etc.
 - New York has committed to investing \$700 million in offshore wind
 - Nation's first offshore wind tower manufacturing facility to be built in the Port of Albany



CHALLENGES

- Permitting process
 - Developers must first secure lease from federal government (Bureau of Ocean Energy Management (BOEM)). After winning, the environmental and construction review by BOEM can take up to 8 years.
 - Environmental impact statements to be issued by BOEM has notably delayed the construction for Vineyard Wind, but after the first approval there appears to be a roadmap for completion.
 - Each phase of development requires different federal and state permits and environmental reviews, which creates delay, the imposition of conditions or mitigation measures that require project modifications, and litigation. Vineyard project is already subject to several litigations.
- Interconnection process (i.e. connection to the “grid”) can also be lengthy and costly, with both state and federal regulators



CHALLENGES

- Offshore wind projects require a lot of capital up front and developers will need various financing sources
 - Inflation and rising interest rates have made many projects become economically unviable (in some cases offtake arrangements were renegotiated)
- Legal frameworks will need to be developed and reach maturity
 - Mortgaging BOEM lease
- Additional infrastructure will be necessary (e.g. ports are not large enough to handle heavy loads and height requirements of turbines, and local supply chain issues and material shortages increase cost of projects)
- Jones Act
 - 1920 law that requires cargoes transported between US ports must be carried on vessels that are built, owned, and crewed by US citizens
 - Ships installing offshore wind turbines must be made in the US



CHALLENGES FOR TAX EQUITY FINANCING

- Limited supply of tax equity
 - Tax equity investors need sufficient taxable income for tax breaks and therefore only a few major players are in the market
- Tax equity financing and Basel III
 - Proposed new rules could increase the capital requirement of banks (which are the main tax equity investors)
- Tax credit direct transfers
 - Permitted under the IRA, tax credit transfers could crowd out tax equity investment



PATH FORWARD

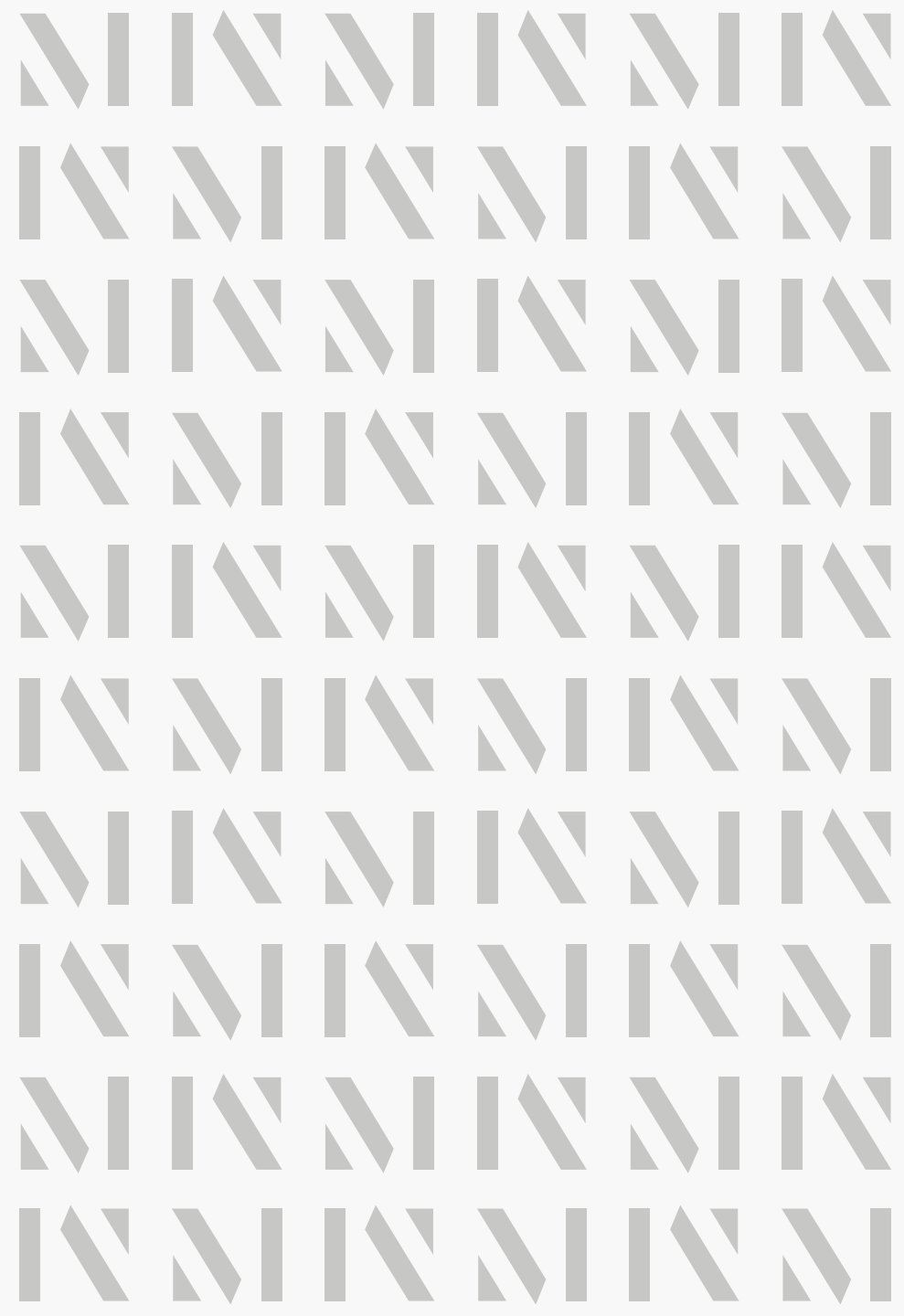
- Inflation Reduction Act, effective as of August 2022, extends the eligibility of offshore wind farms for investment tax credits of 30% by at least a decade, with more tax credits under certain other circumstances.
- State policies aim to expand their offtake earmarked for offshore wind capacity to procure 42.7 GW of offshore wind capacity by 2040
- Additional investment of around \$8.1 billion in 2022 on offshore infrastructure, supply chain and early project capital
- Emerging technology, such as floating wind turbines can decrease the associated cost
- New manufacturing facilities, vessels and ports are planned to build out regional supply chain
- Permitting process and interconnection process can be streamlined as industry matures



QUESTIONS?

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