

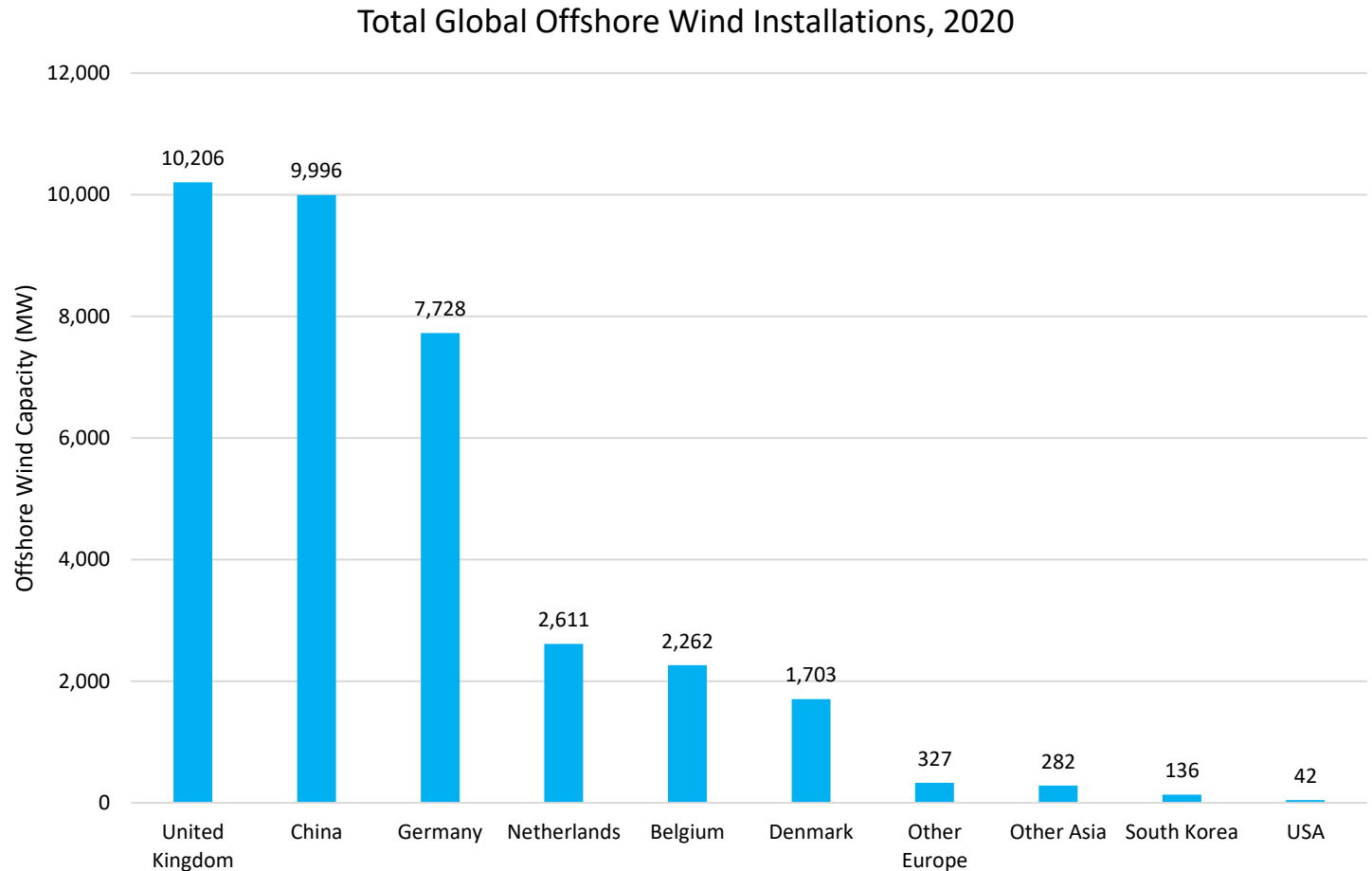
An aerial view of an offshore wind farm under construction. In the foreground, a large white wind turbine is being assembled on a yellow and red platform. A large red and white crane is positioned on a barge next to the turbine. In the background, several other wind turbines are visible, some already installed on their yellow foundations. The ocean is a deep blue, and the sky is clear.

State of the American Offshore Wind Industry

Global Offshore Wind Installations

U.S. lags the rest of the world in offshore wind

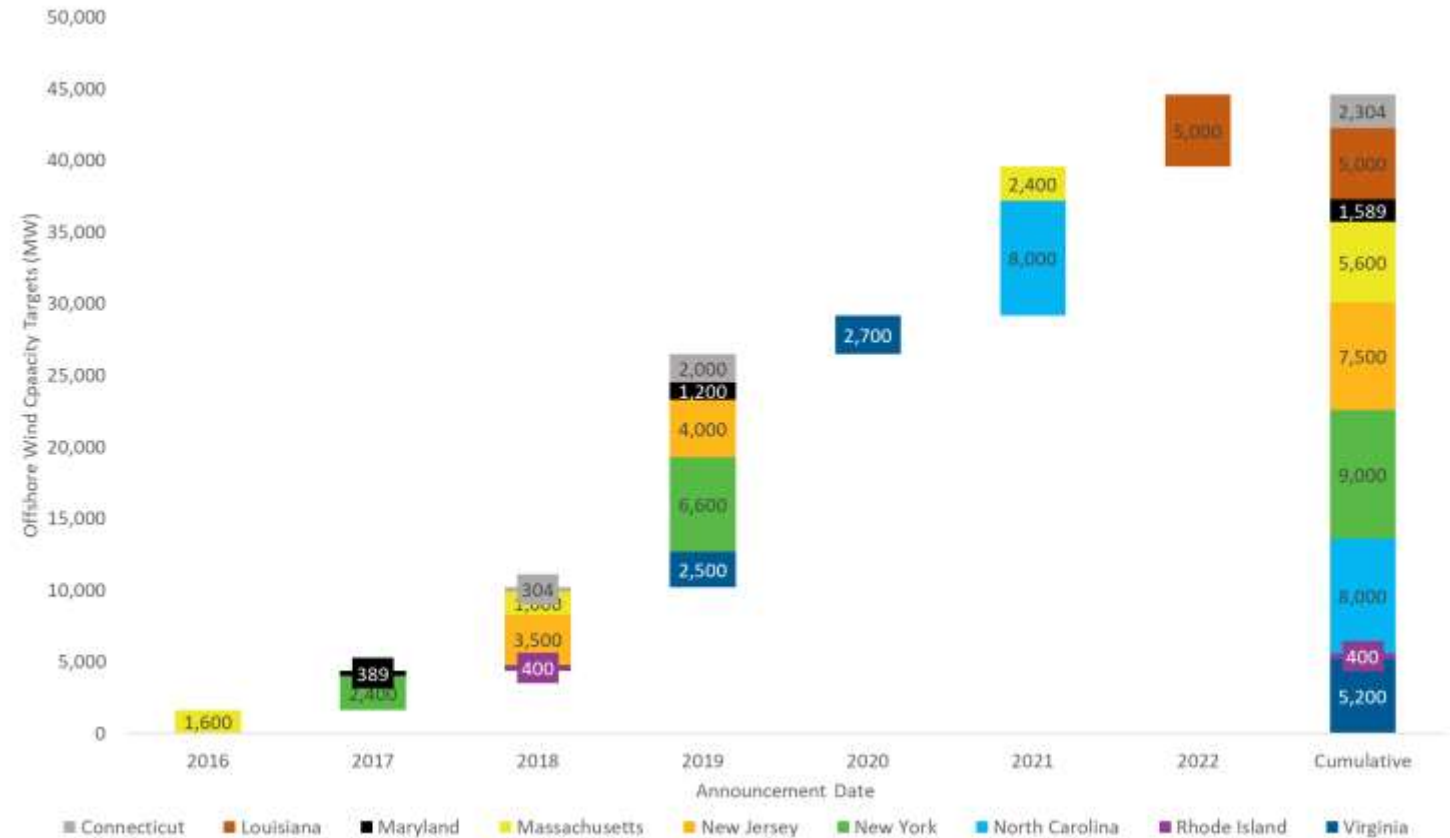
- **35,293 MW of global installations at end of 2020**
 - 24,837 MW in Europe
 - 10,414 MW in Asia-Pacific
 - **42 MW in U.S.**
- **2020 Additions**
 - 3,060 MW in China
 - 1,493 MW in Netherlands
 - 706 MW in Belgium
 - **12 MW installed in U.S.**



States are Driving Demand

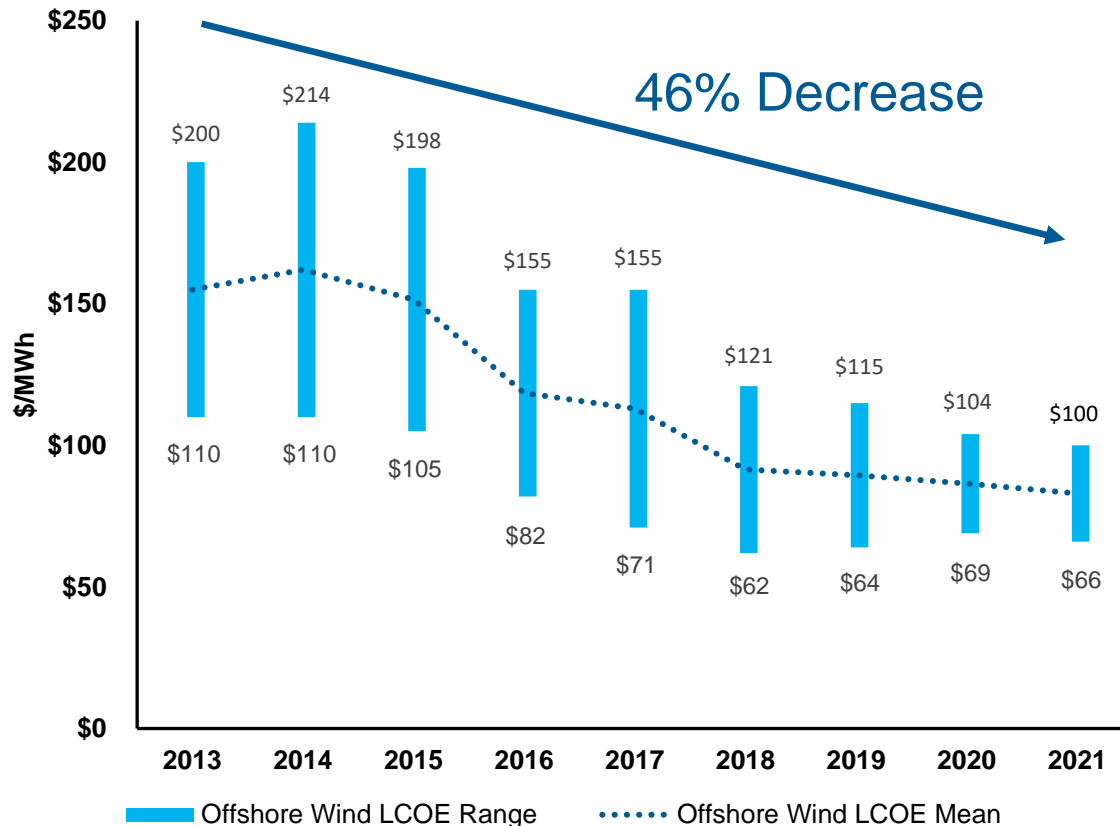
States have established nearly 45 GW of offshore wind procurement targets through legislation, conditional targets, or executive orders

- New York: 9,000 MW by 2035
- New Jersey: 7,500 MW by 2035
- Virginia: 5,200 MW by 2034
- Massachusetts: 1,600 MW by 2027
 - Authorized additional 4,000 MW by 2035
- Connecticut: 2,000 MW by 2030, plus 304 MW purchased in 2018
- Maryland: 1,200 MW by 2030, plus 389 MW purchased in 2017
- Rhode Island: 400 MW purchased in 2018
- North Carolina: 8,000 MW by 2040 (2,800 MW by 2030)
- Louisiana: 5,000 MW by 2035

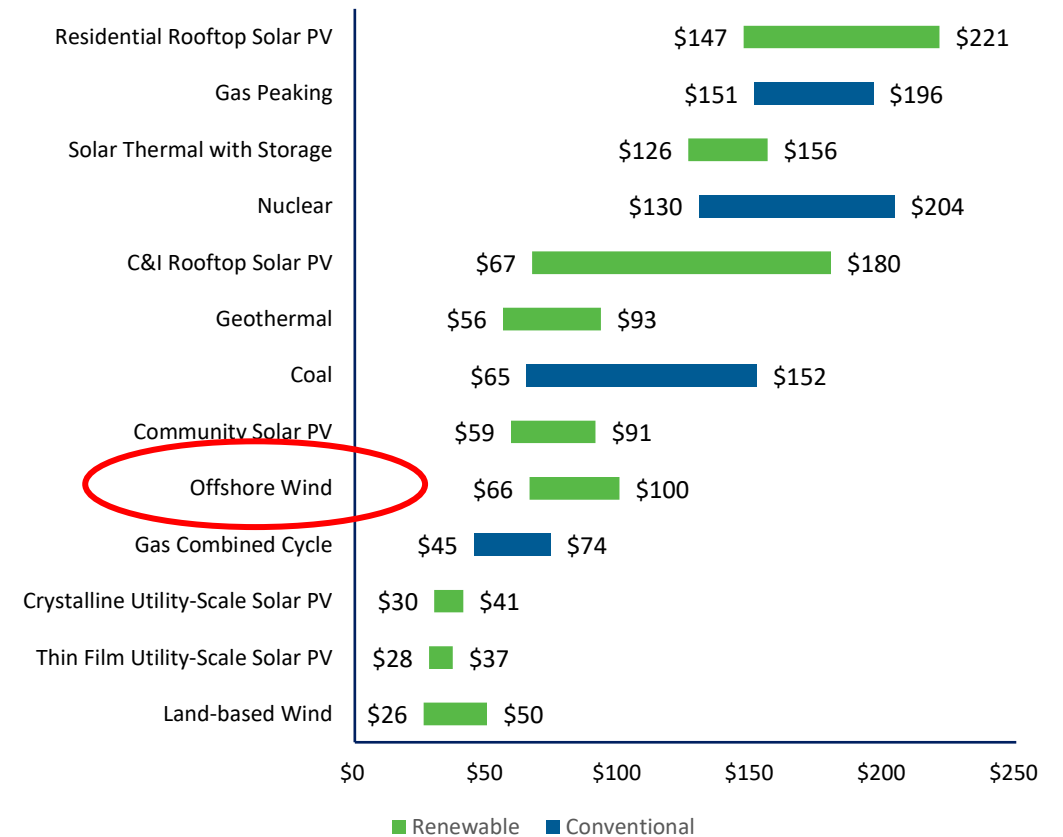


Market Forces: Increasingly Cost-Competitive

Unsubsidized Offshore Wind LCOE



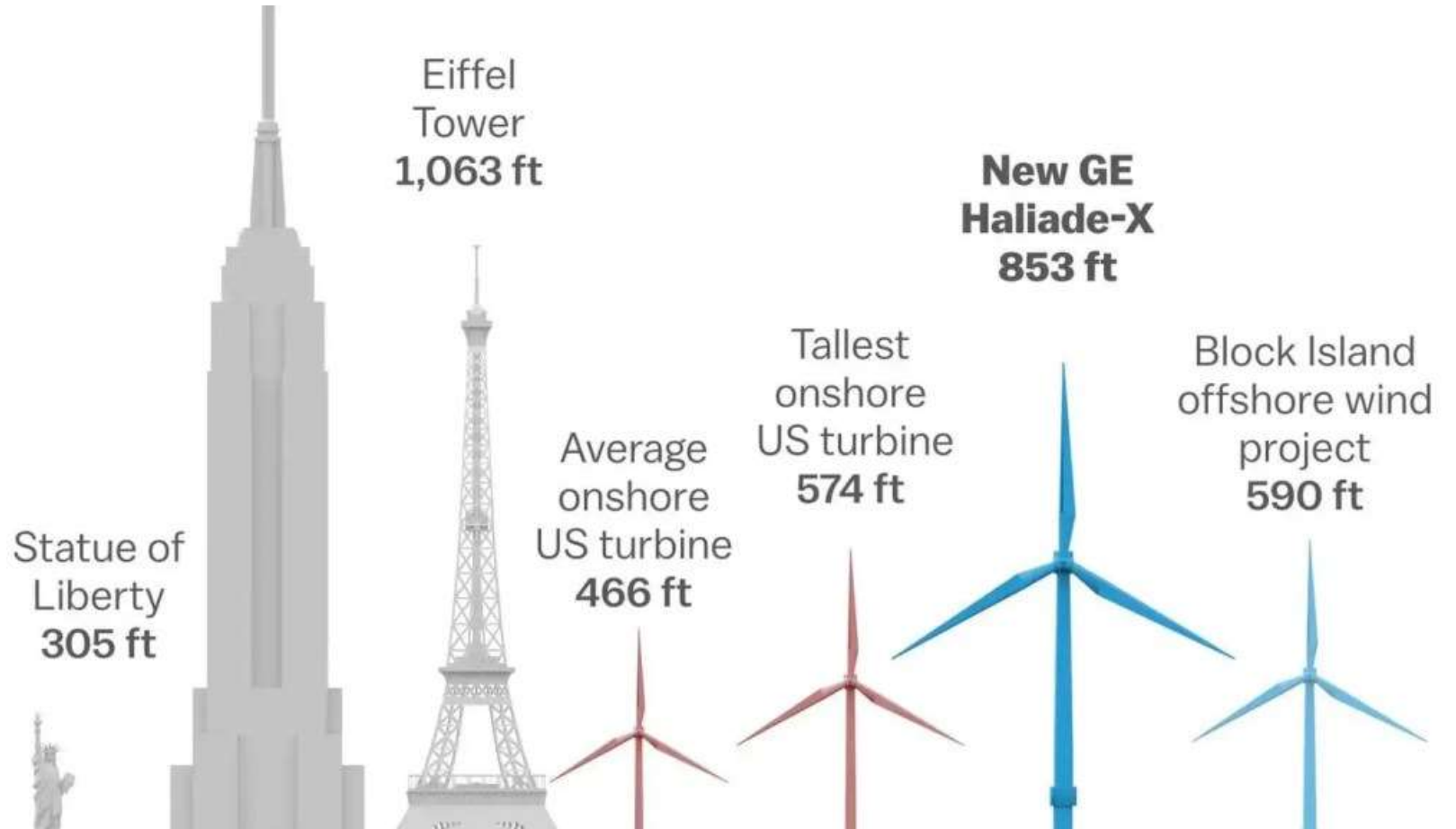
Unsubsidized LCOE Comparison Across Technologies



Source: Lazard, Levelized Cost of Energy Analysis Version 15.0, 2021

Offshore Wind Technology

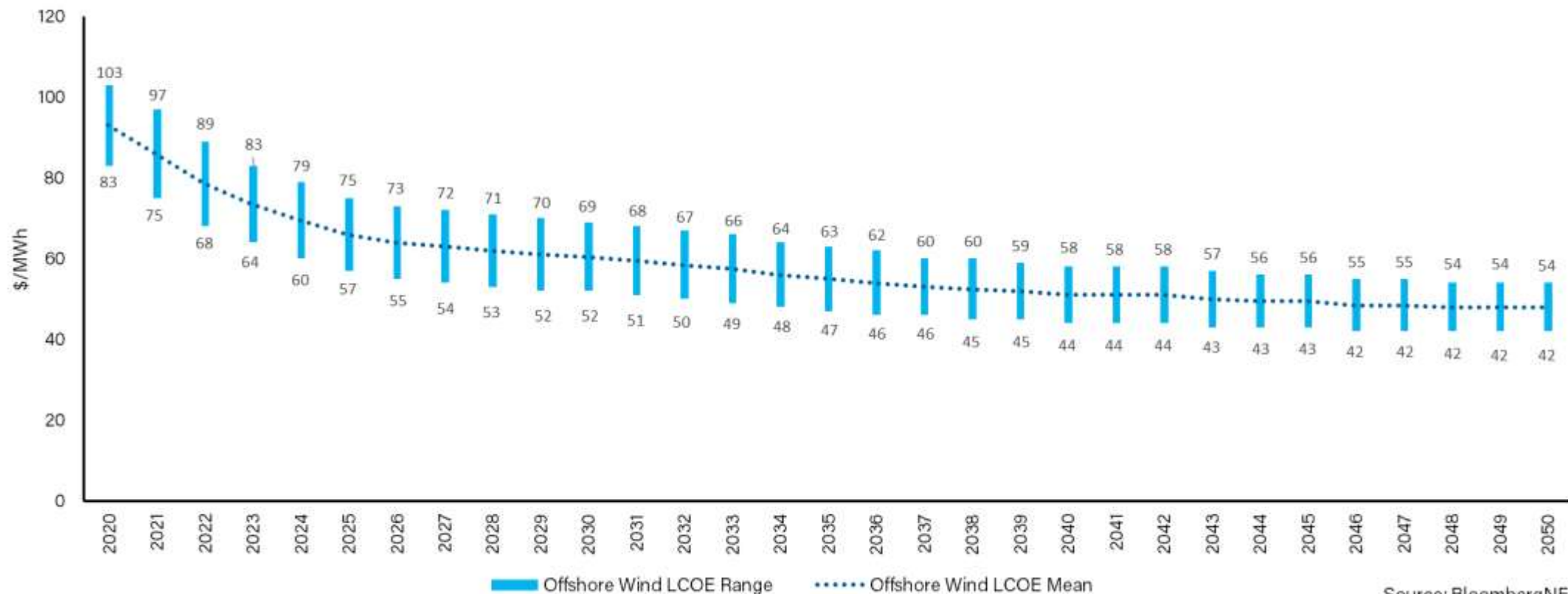
Offshore Wind turbine technology keeps improving, creating larger turbines



Costs Expected to Decline

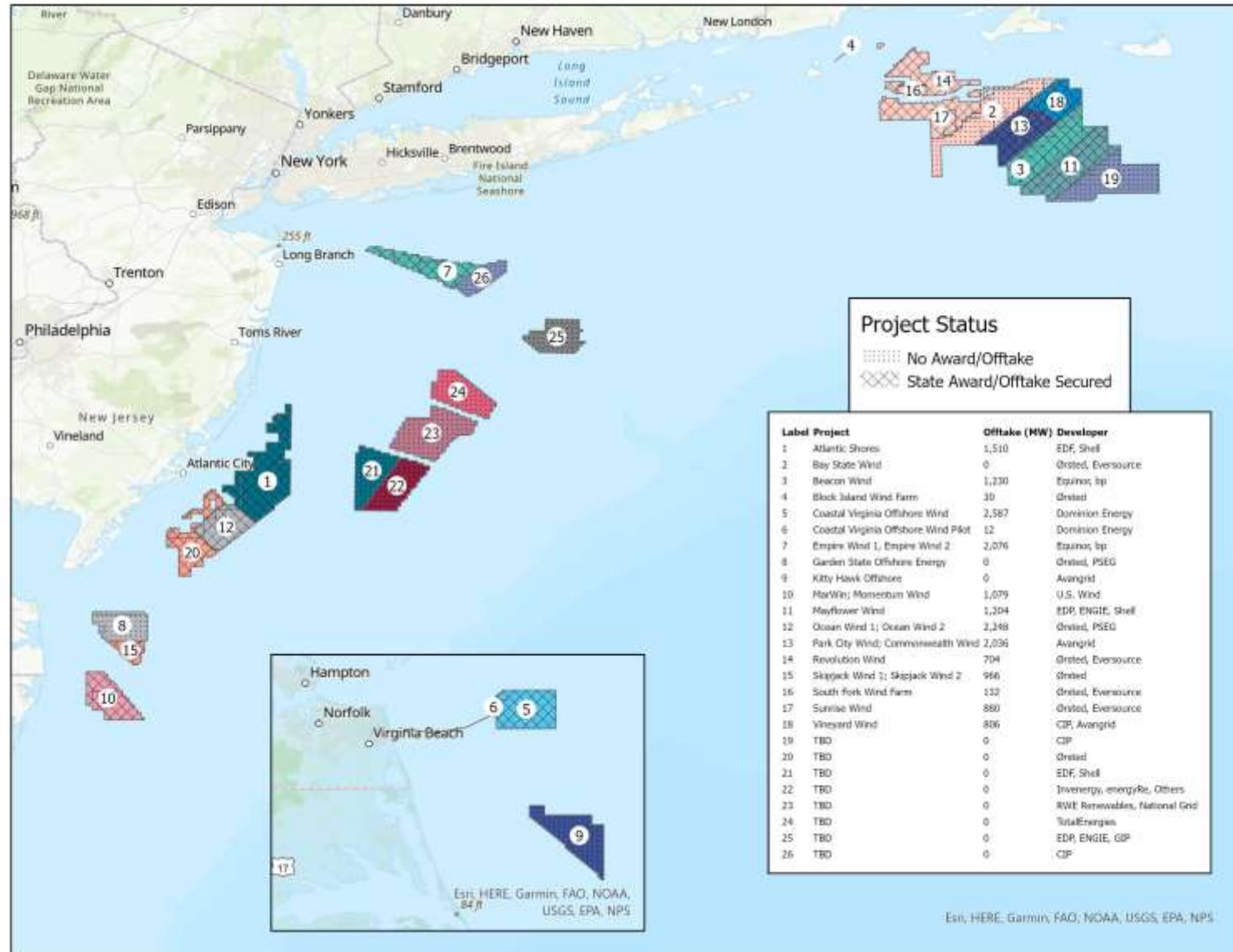
Offshore Wind LCOE Forecasted to Fall
Nearly 50% by 2050

Offshore Wind LCOE Forecast



Source: BloombergNEF

U.S. Pipeline



Federal leases and projects currently in development

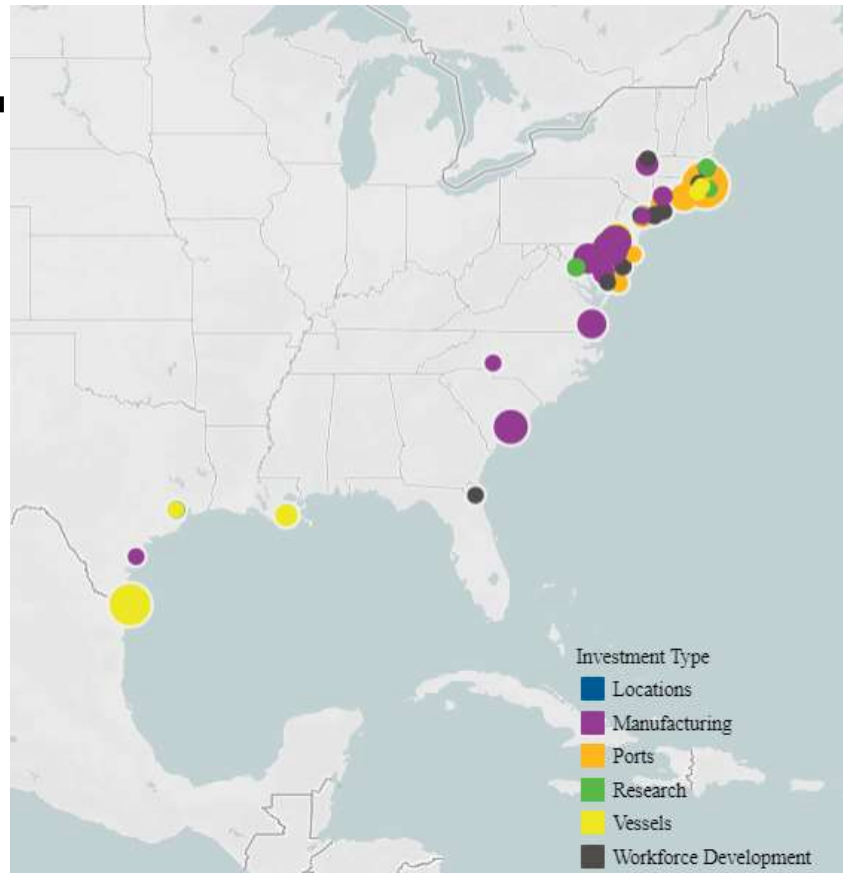
- Two operating projects in the U.S.
 - Block Island Wind Farm (30 MW)
 - Coastal Virginia Offshore Wind Pilot Project (12 MW)
- 18 additional projects totaling over 17.5 GW have secured a buyer, primarily through state solicitations
- February 2022 lease sales in the NY Bight have over 7 GW of potential

Projects with Offtake

Project Name	Project Capacity (MW)	Project Developer(s)	Project Location (BOEM Lease Area)	Offtake	Estimated Start of Construction	Estimated Year Online
Coastal Virginia Offshore Wind Pilot	12	Dominion Energy; Ørsted US Offshore Wind	Virginia	Direct use: Dominion Energy	2019	2020
New England Aqua Ventus	12	University of Maine	Maine	PPA with Central Maine Power	TBD	TBD
Vineyard Wind	806	Copenhagen Infrastructure Partners; Avangrid Renewables	Massachusetts	PPA with Eversource Energy, National Grid, and Unitil Corp	2022	2023
Skipjack Wind Farm	120	Ørsted US Offshore Wind	Delaware	Maryland OREC award	TBD	2026
South Fork Wind Farm	132	Ørsted US Offshore Wind; Eversource Energy	Rhode Island/ Massachusetts	PPA with Long Island Power Authority	2022	2023
Revolution Wind	704	Ørsted US Offshore Wind; Eversource Energy	Rhode Island/ Massachusetts	PPAs with National Grid (400 MW); Eversource Energy & United Illuminating Co (304 MW)	2022	2025
MarWin	270	U.S. Wind Inc	Maryland	Maryland OREC award	2022	2025
Ocean Wind 1	1,100	Ørsted US Offshore Wind	New Jersey	New Jersey OREC award	2022	2024
Empire Wind	816	Equinor; BP	New York	NYSERDA OREC contract	2022	2026
Sunrise Wind	880	Ørsted US Offshore Wind; Eversource Energy	Rhode Island/ Massachusetts	NYSERDA OREC contract	2022	2025
Coastal Virginia Offshore Wind	2,587	Dominion Energy	Virginia	Direct use: Dominion Energy	2022	2024-2026
Mayflower Wind	1,204	Shell; EDP Renewables	Massachusetts	PPAs with Eversource Energy, National Grid, and Unitil Corp, TBD	TBD	2025
Park City Wind	804	Avangrid Renewables	Massachusetts	PPAs with Eversource Energy and United Illuminating	TBD	2026
Empire Wind 2	1,260	Equinor; BP	New York	TBD	TBD	2026
Beacon Wind	1,230	Equinor; BP	Rhode Island/Massachusetts	TBD	TBD	2028
Atlantic Shores	1,510	EDF Renewables; Shell	New Jersey	New Jersey OREC award	TBD	2027-2028
Ocean Wind 2	1,148	Ørsted US Offshore Wind	New Jersey	New Jersey OREC award	TBD	2028-2029
Momentum Wind	808.5	U.S. Wind Inc	Maryland	Maryland OREC award	TBD	TBD
Commonwealth Wind	1,232	Vineyard Wind	Massachusetts	PPA TBD	TBD	TBD
Skipjack Wind 2	846	Ørsted US Offshore Wind	Maryland	Maryland OREC award	TBD	TBD

Infrastructure and Investment

U.S. offshore wind means U.S. jobs, manufacturing, and infrastructure



Industry committing billions of dollars to U.S. jobs, manufacturing, and infrastructure. For example:

- Ørsted standalone investments and commitments made jointly with its utility partners total over \$215 million in ports in VA, MD, NJ, NY, CT and RI.
- Equinor and NY state investing a total of \$644 million in port upgrades for three NY ports.
- EEW to build turbine tower manufacturing facility in South Jersey.
- Vineyard Wind partnering with Marmon Utility to establish capabilities at CT facility for manufacturing Kerite cables for inter-array cable cores and investing \$10 million toward MA supply chain development.
- One U.S.-flagged crew transfer vessel in service; two additional U.S.-built CTVs under construction and two more under contract.
- Consortium led by Dominion investing up to \$500 million to build the first U.S. offshore wind installation vessel in a Texas shipyard to be used in several offshore wind projects. Keel laying announced December 16, 2020.
- Nexans to manufacture the first U.S. subsea high voltage export cables in Goose Creek, S.C. to be used at several East Coast projects. Nexans is investing \$310 million in this project.
- Ørsted and Eversource signed Charter Agreement with Edison Chouest Offshore for U.S. flagged Jones Act-compliant service operation vessel.
- US Wind facilitating the investment of an incremental \$150 million in a new monopile fabrication factory at Sparrows Point, MD.

Offshore Wind Vessel Needs

- Offshore Wind Projects will rely on at least 27 different vessels per project

Offshore Wind Vessel Stages

Surveying



at least 2 vessels
per project*

Seabed Preparation



at least 2 vessels
per project*

Component Transfer:
Manufacturing to
Marshalling Port



at least 3 vessels
per project*

Cable Laying



at least 6 vessels
per project*

Development,
Construction, &
Commissioning



at least 10 vessels
per project*

Operations &
Maintenance



at least 4 vessels
per project*

U.S. Offshore Wind Creates U.S. Jobs

Deploying 30 GW of offshore wind by 2030 will support 83,000 jobs

U.S. Offshore Wind Power Economic Impact Assessment.
AWEA, March 2020

- Offshore wind developers have already invested in training programs for welders, divers, and electricians, among others.
- Offshore wind provides diversified job opportunities for experienced Gulf Coast builders and mariners.
 - LA-based Falcon Global used its **experienced crews and feeder vessels** to serve the Block Island project.
 - **Foundations** for this project were made in LA by Gulf Island Fabrication.
 - The crew transfer vessel this project is owned and operated by a RI-based wind farm support company that has a long-term contract to provide services for operations and maintenance.
 - **Houma, LA-based Offshore Survey Vessels** currently at work conducting geophysical surveys for a 2,640 MW project to be built in 2024
 - An April 2020 BOEM [study](#) on **offshore wind in the Gulf of Mexico** has found that a single 600 MW offshore wind project in **Port Arthur, LA** could support **approximately 4,470 jobs and \$445 million in U.S. GDP during construction, plus an ongoing 150 jobs and \$14 million in U.S. GDP annually from O&M labor, materials, and services.**



M/V Sarah Bordelon survey vessel



Heavy lift installation vessel

Industry Dedicated to Providing Good Jobs

“This is an opportunity to develop good union jobs in an emerging industry. With the announcement of finalized contracts, we have taken another historic step on the journey to creating good union jobs, growing our economy, and continuing the necessary fight against climate change.”

- John R. Durso, President of the Long Island Federation of Labor, AFL-CIO

Offshore Industry has committed to partner with labor unions. Agreements have already been signed with (sampling):

- North America’s Building Trades Unions
- Rhode Island Building and Construction Trades Council
- New London Building and Construction Trades Council
- Southeastern Massachusetts, Cape Cod and Islands Building Trades Council
- Nassau Suffolk Building and Construction Trades Council
- South Jersey Building and Construction Trades Council
- Massachusetts Building Trades Council
- Virginia State Building and Construction Trades Council
- Fairfield Building Trades Council
- Utility Workers of America
- International Association of Bridge, Structural, Ornamental and Reinforcing Iron Workers
- International Brotherhood of Electrical Workers
- Laborer’s International Union of North America (LIUNA!) Mid-Atlantic Region
- Eastern Atlantic States Regional Council of Carpenters
- International Union of Operating Engineers Local 825,
- Ironworkers International
- Baltimore-D.C. Building Trades (BDCBT)
- United Steelworkers

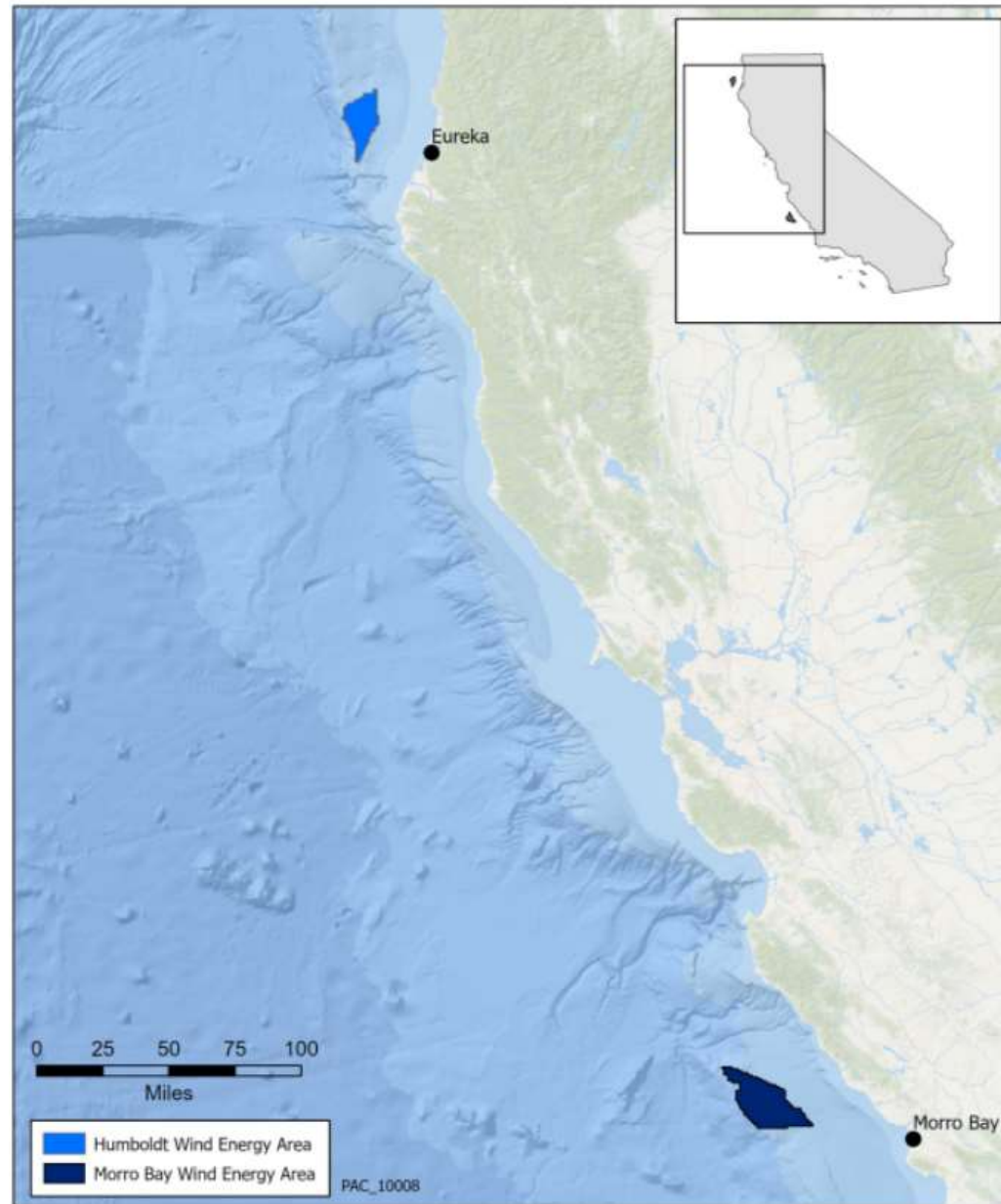
In the construction of the Block Island Wind Farm in 2016 (5 turbines), 300 unionized construction and electrical workers were used.

- There are **2,000 turbines in the current pipeline** of projects



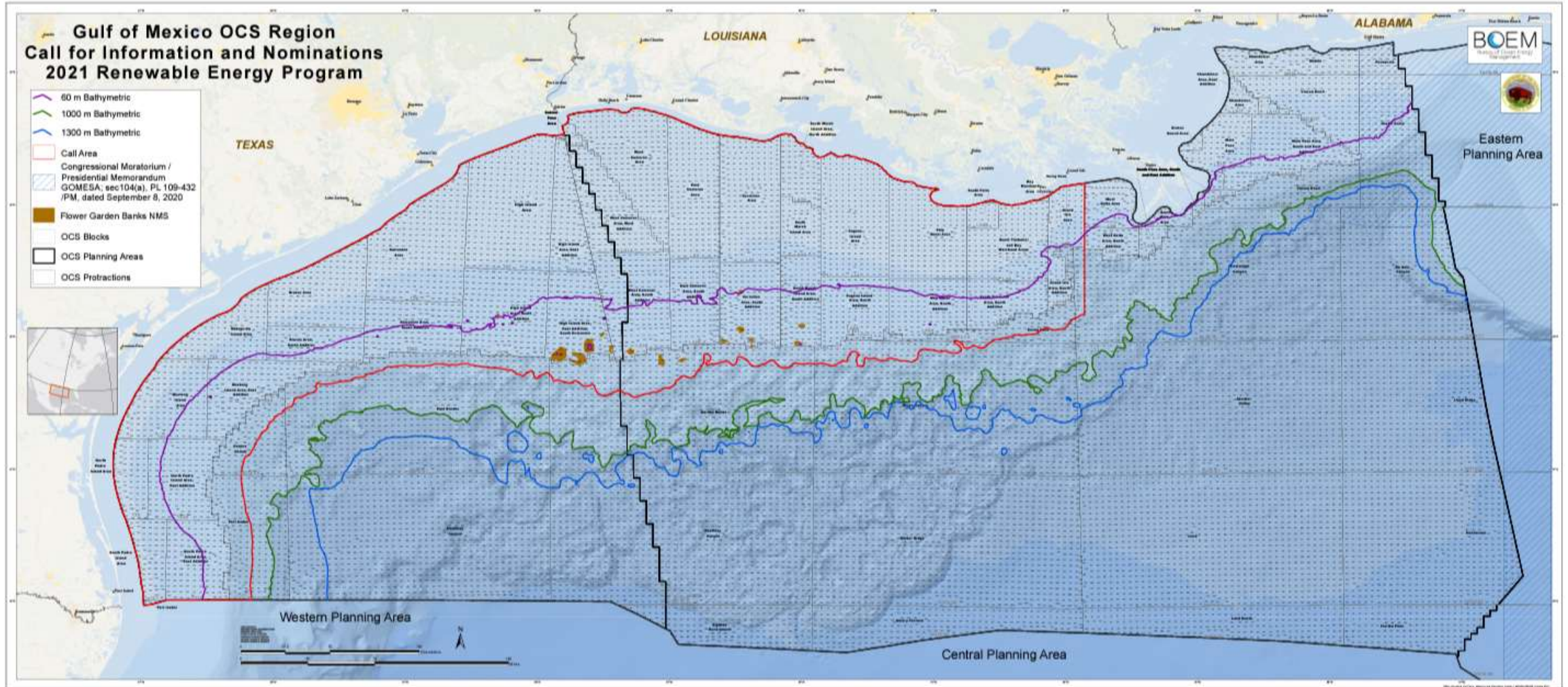
Future Lease Areas

California



Future Lease Areas

Gulf of Mexico



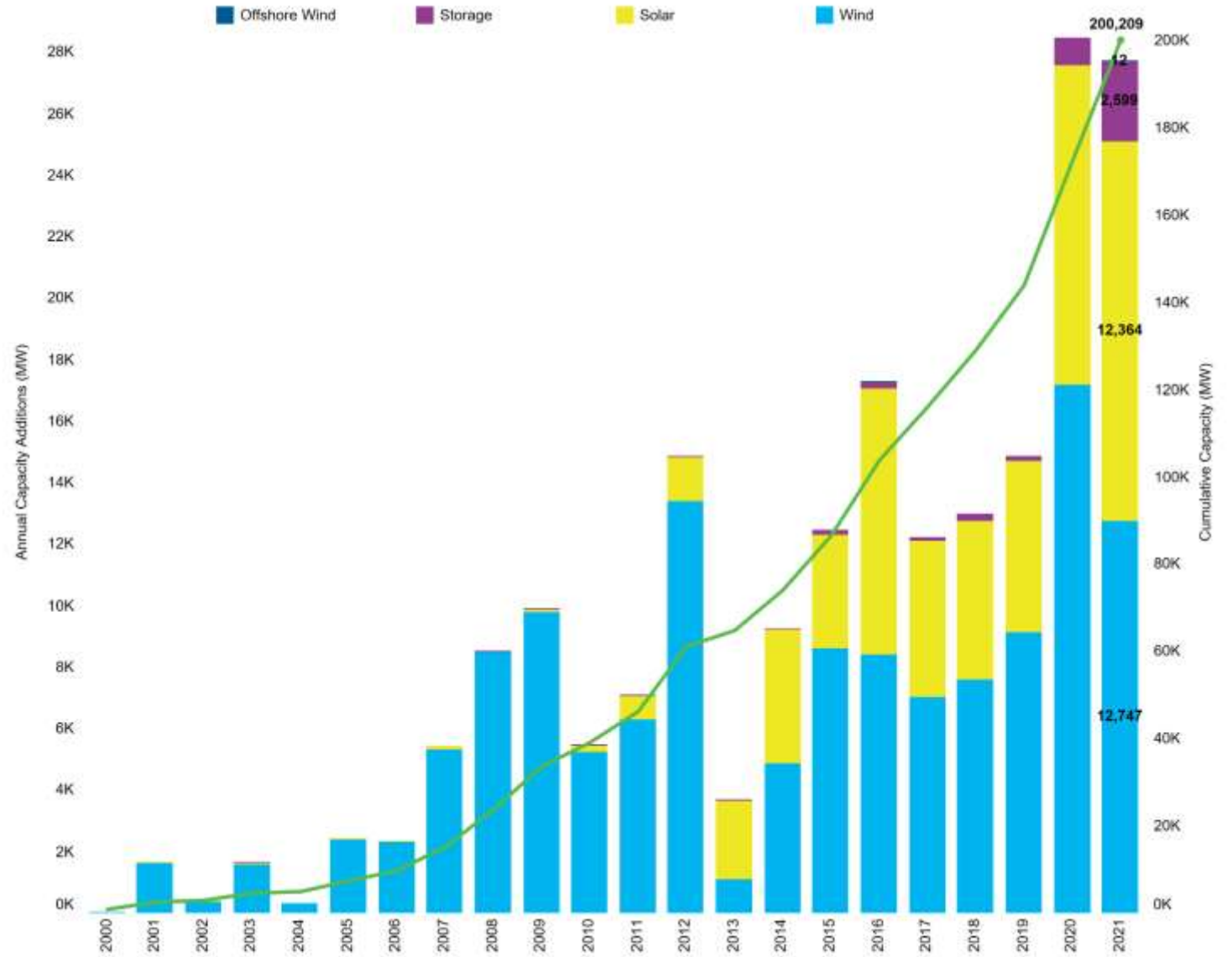


Thank you

Over 200 GW of Clean Power now operating in U.S.

2021 additions push total clean power installations to 200,209 MW

- Over 27.7 GW of clean power capacity was installed in 2021
 - 12,747 MW of wind
 - 12,364 MW of solar
 - 2,599 MW of battery storage
 - 12 MW of offshore wind
- Installations fell by roughly 3% compared to 2020



Clean Power Under Development

Over 82 GW of wind utility-scale solar, and battery storage is in advanced development across the U.S.

- Nearly 17.5 GW of capacity in advanced development is offshore wind located in the Northeast
- Over 5 GW of capacity is in advanced development in four states (CA, NY, TX, VA)
- 18 other states have more than 1 GW of clean power capacity in the advanced development phase

