2025 Q2

CLEAN POWER QUARTERLY

Market Report

Photo Credit: AES

Definitions

Advanced development: Projects not under construction, but with a PPA, firm equipment order, or moving forward with plans to be placed under utility ownership as of the end of the most recent quarter. For offshore wind, advanced development consists of projects that have secured offtake or have had successful bids in response to a state solicitation even if final offtake negotiations have not concluded.

Capacity: Project nameplate capacity. Unless otherwise stated, ACP reports capacity in MW-ac.

Clean power: For the purposes of this report, clean power includes land-based wind, offshore wind, utility-scale solar, and battery storage technology.

Decommissioned: Project is offline and is no longer delivering power to the grid on a permanent basis. Physical removal of equipment is not a requirement.

Duration: The amount of time, in hours, a battery can discharge its power capacity before depleting its energy capacity. For example, a 2 MW battery that has 4 MWh of energy capacity has a duration of 2 hours.

Full repowering: Full decommissioning of a utility-scale project. The original equipment is physically removed from the project site and replaced with new utility-scale equipment.

Inverter Loading Ratio (ILR): The ratio of installed DC capacity to the inverter's AC power rating. Also known as the DC-to-AC ratio.

Online: Project has reached commercial operation and is delivering electricity to the ultimate point of delivery.

Partial repowering, nacelle replacement: Complete replacement of a utility-scale wind turbine's nacelle, rotor, and blades. The tower and foundation are retained.

Partial repowering, major retrofit: Complete replacement of a utility-scale wind turbine's rotor and blades, along with the replacement of at least one major component within the nacelle, typically the gearbox or the generator.

Pipeline: Projects either under construction or in advanced development.

Repowered: Full or partial equipment replacement. Currently only wind repowering activity is tracked, but ACP will expand repowering activity tracked as the market progresses.

Under construction: Construction team has begun work on the ground at the project site. For offshore wind, under construction is defined as in-ocean construction.

Acronyms

AC	Alternating Current
C&I	Commercial & Industrial
CAISO	California ISO
DC	Direct Current
ERCOT	Electric Reliability Council of Texas
GW	Gigawatts
GWh	Gigawatt hours
ILR	Inverter Loading Ratio
IOU	Investor-Owned Utility
ISO	Independent System Operator
MISO	Midcontinent Independent System Operator
MW	Megawatts
MWh	Megawatt hours
NE-ISO	New England ISO
NYISO	New York ISO
OEM	Original Equipment Manufacturer
PJM	Pennsylvania-New Jersey-Maryland Interconnection
PPA	Power Purchase Agreement
RTO	Regional Transmission Organizations
SPP	Southwest Power Pool

2025 Q2 Highlights

2025 Q2 Highlights

U.S. developers deployed 11.6 GW of clean power in Q2 2025

- Developers brought 11,623 MW of utility-scale solar, wind, and energy storage projects online in the second quarter of 2025, up 1% from the 11,491 MW installed in the same quarter in 2024.
- As of June 30, 2025, the U.S. had 332,517 MW of clean power capacity in operation, enough to power more than 81 million homes.

H1 2025 installations trail H1 2024

- Clean power capacity additions during the first half of 2025 totaled 19,099, 2.5% lower than H1 2024's 19,580 MW.
- Storage installations were 63% higher in the first half of 2025 compared with the same time in 2024, with developers adding 6,510 MW in H1 2025. The pace of utility-scale solar deployments slowed year-over-year, 23% lower in H1 2025, while wind deployments ticked up 12%.

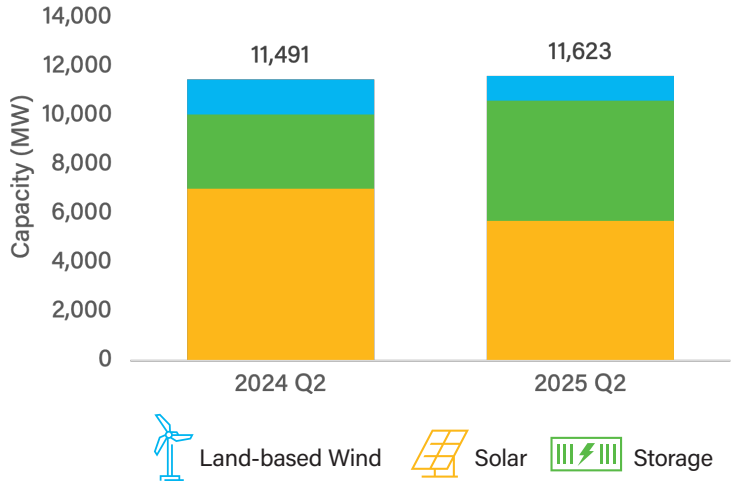
Arizona reaches 10+ GW of clean power capacity

- Arizona became the latest state to reach 10+ GW of clean power installed in Q2, after adding 1,220 MW of new solar capacity and 1,369 MW of new storage capacity in the quarter.
- The Grand Canyon State now hosts the third-largest storage fleet and fifth-largest utility-scale solar capacity in the country, as well as the second-largest clean power pipeline after Texas.

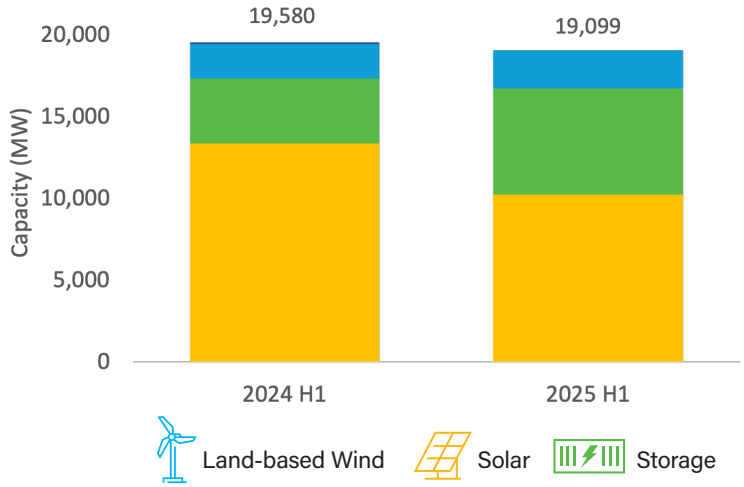
Clean power pipeline stalls at 184.5 GW

- The clean power pipeline sat at 184,500 MW at the end of the second quarter, largely unchanged from 184,403 MW at the end of Q1 2025.
- Nearly 14 GW of projects started construction during Q2, bringing the total volume of under construction projects up to 83.4 GW.

Q2 Clean Power Capacity Installations, 2024 vs. 2025



H1 Clean Power Capacity Installations, 2024 vs. 2025



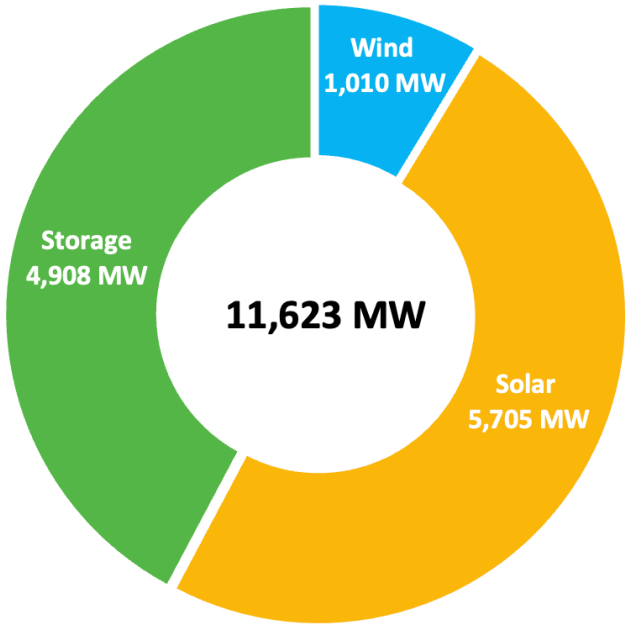
Solar capacity is reported in MWac

CLEAN POWER CAPACITY GROWTH

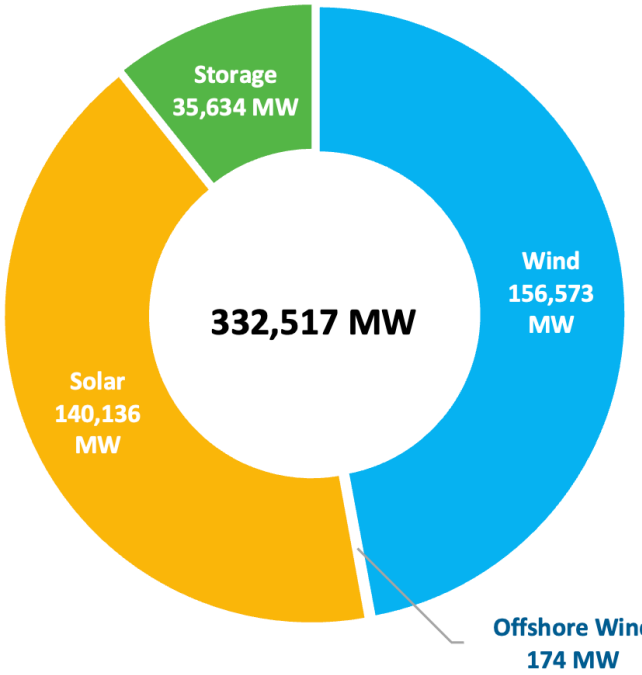
U.S. Clean Power Deployments Reach 332.5 GW

- Project developers commissioned 138 utility-scale solar, battery storage, and wind projects in the second quarter of 2025, adding 11,623 MW of clean power capacity to the grid.
- Clean power additions in Q2 2025 were just 1% higher year-over-year from the 11,491 MW installed in Q2 2024. Deployments during the second quarter of the year are typically larger than the first quarter, a trend that continued in Q2 2025.
- The industry brought online 5.7 GW of new utility-scale solar capacity in Q2, representing 49% of quarterly clean power additions. Energy storage capacity additions soared to 42% of quarterly additions at 4.9 GW, up from 21% in Q1, while land-based wind provided 9% of new clean power capacity added.
- As of mid-year 2025, the U.S. had 332,517 MW of clean power capacity in operation, enough to power more than 81 million American homes.

Q2 2025 Clean Power Installs by Technology



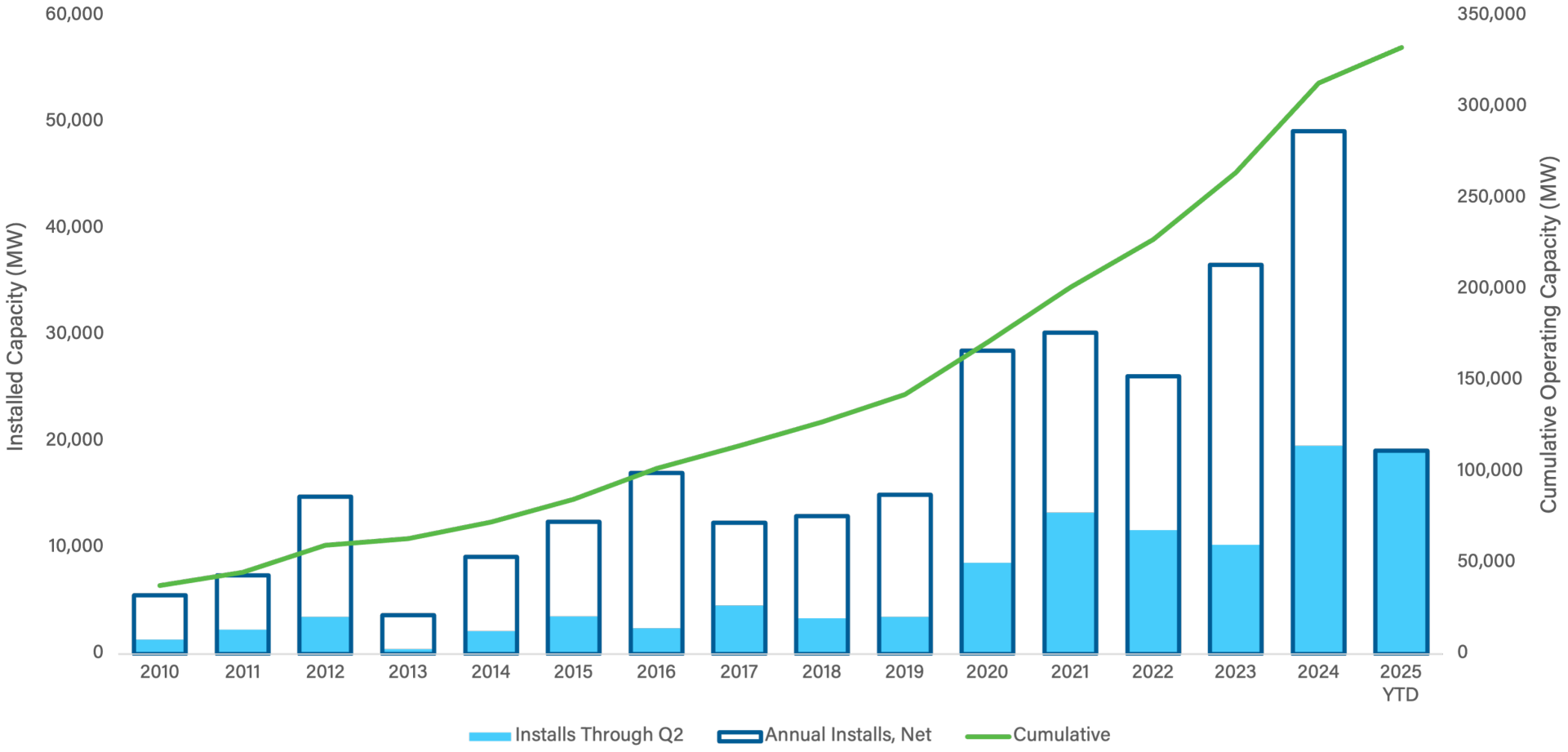
Total Operating Clean Power Capacity by Technology



CLEAN POWER CAPACITY GROWTH

U.S. Clean Power Deployments Reach 332.5 GW

U.S. Annual and Cumulative Clean Power Capacity Growth

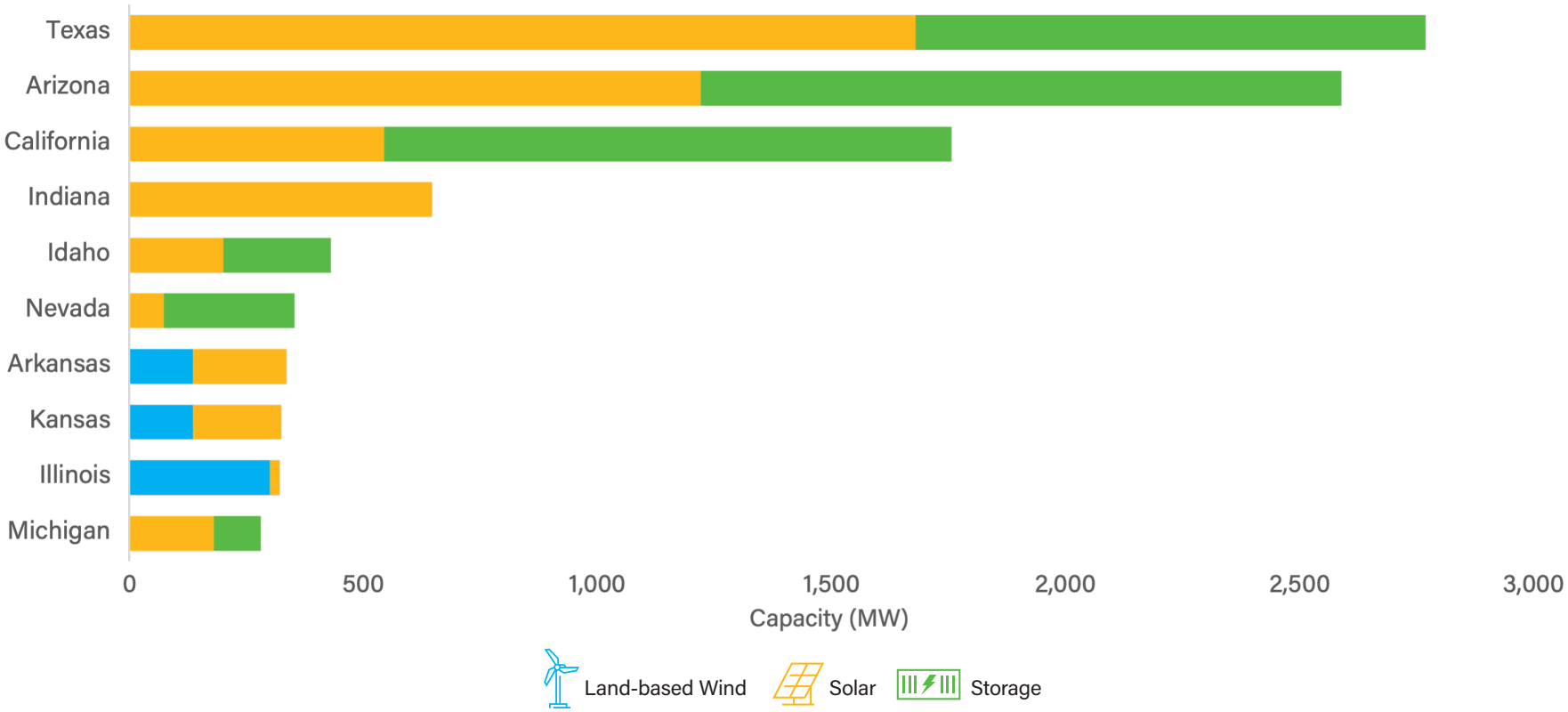


CLEAN POWER CAPACITY GROWTH

Top States for Q2 2025 Clean Power Capacity Additions

- While Texas remained the top state for clean power additions in Q2, a strong quarter for storage installations helped shake up the rest of the top ten list.
- Four states -Arizona, California, Idaho, and Nevada- added mostly new storage capacity in Q2, up from just one state (California) in Q1.
- Texas, Indiana, Arkansas, Kansas, and Michigan added mostly new solar, while Illinois was the only state in the quarterly top ten to add mostly wind capacity.
- Four states newly joined or rejoined the top ten in Q2 after not being on the Q1 2025 list: Arkansas, Michigan, Nevada, and Idaho.
- Indiana earned a spot in the Top 5 for a second quarter in a row in Q2, after adding nearly 650 MW of new utility-scale solar capacity.
- Eight of the top ten states for Q2 clean power additions voted Republican in the most recent presidential election.

Top Ten States for Q2 2025 Clean Power Installations

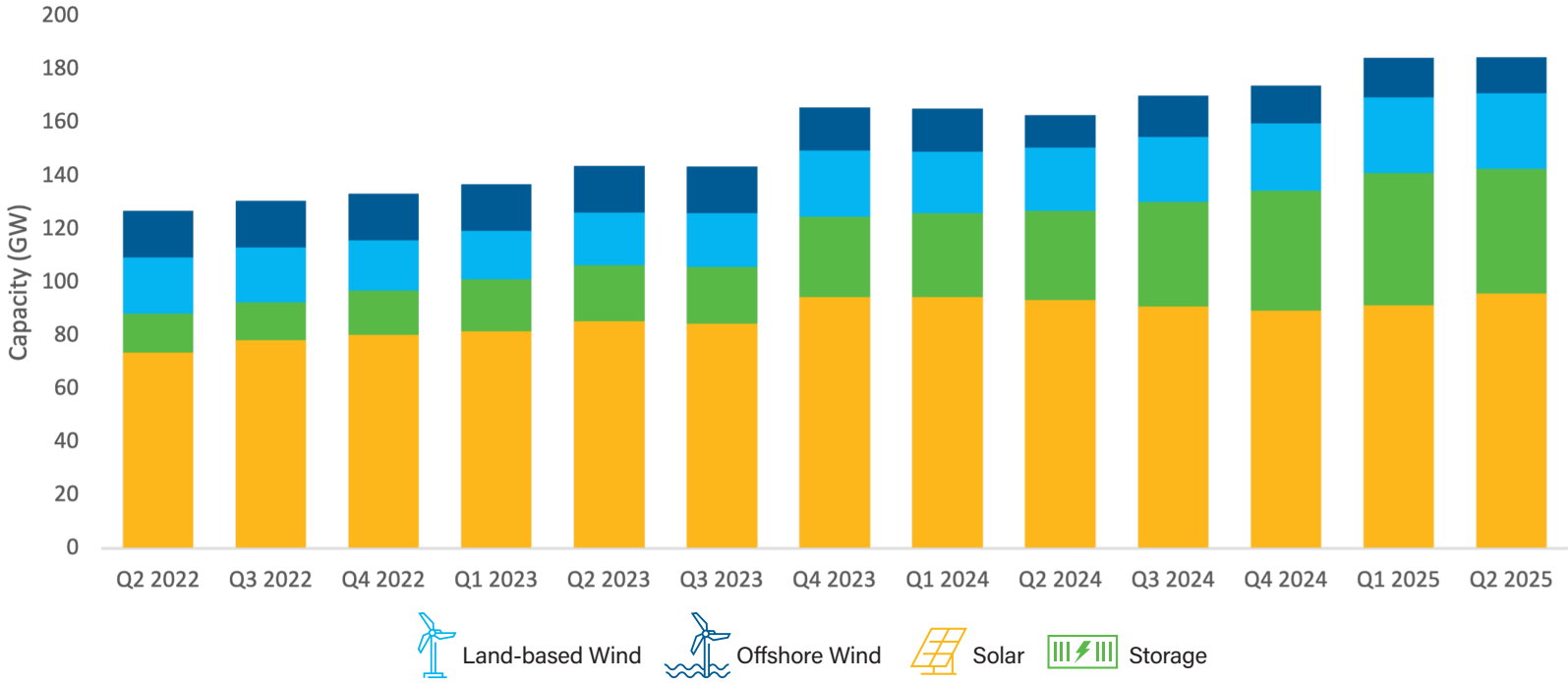


CLEAN POWER CAPACITY GROWTH

Clean Power Pipeline Over Time

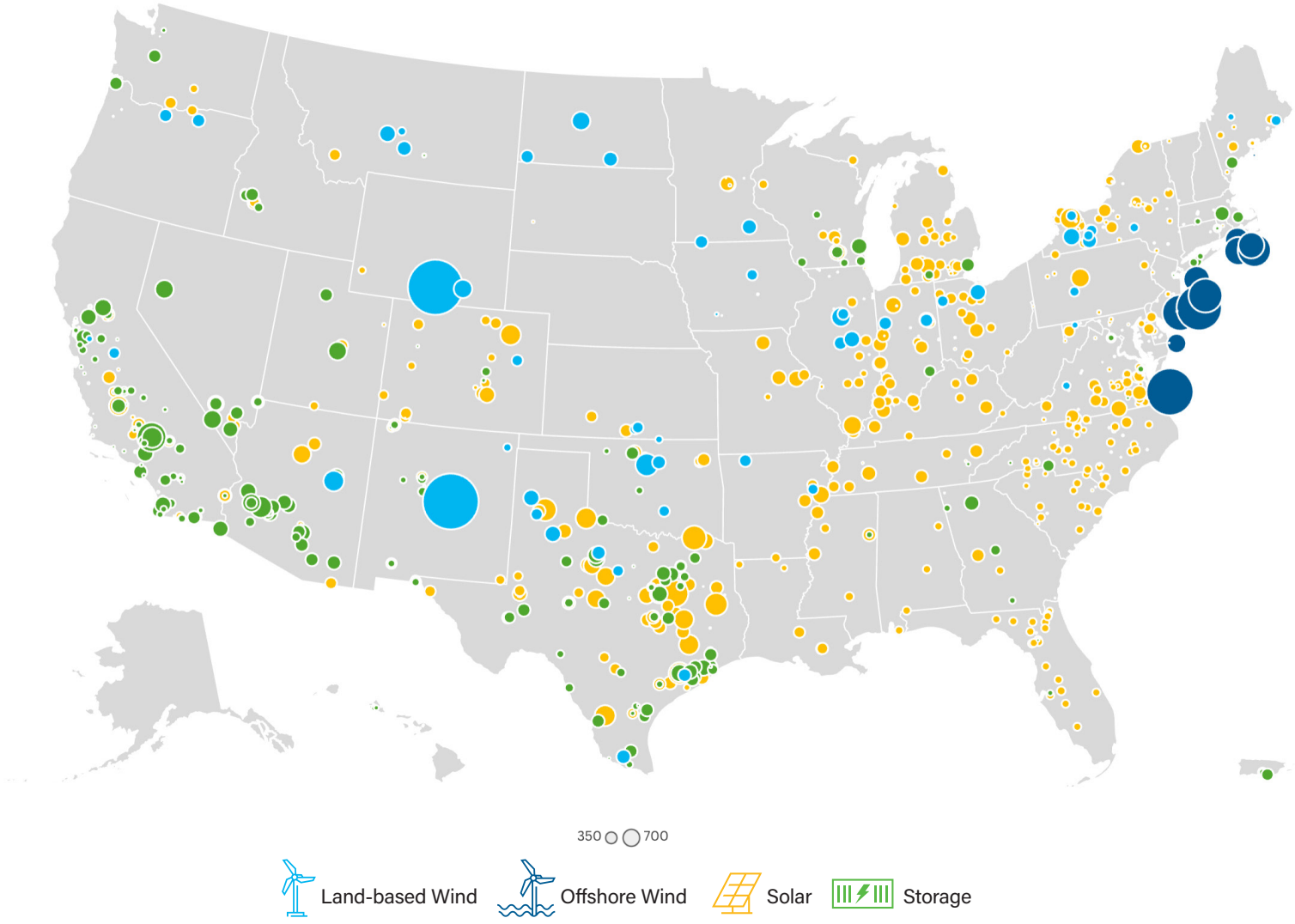
- The pipeline for clean power projects reached 184,500 MW at the end of Q2 2025, rising by less than 1% from the previous quarter. Year-over-year, the pipeline has expanded by 13% since Q2 2024.
- On average, the clean power pipeline has experienced a quarterly growth rate of 3% during the last eight quarters. Battery storage and solar have been the main drivers of the growing pipeline, with the backlog of projects climbing by 32 GW and 22 GW, respectively, since Q2 2022. During the same period, land-based wind also grew by a relatively modest 7 GW.
- By technology, solar projects continue to make up the bulk of the pipeline, with almost 96 GW of capacity under construction or in advanced development. The solar pipeline continues to grow at a steady pace of 2% each quarter over the last two years.
- Having exceeded land-based wind to become the number two technology in the pipeline since Q1 2023, battery storage continues to grow at a healthy pace. Despite contracting by 6% this quarter, a first in almost three years, the battery storage pipeline has experienced an average quarterly growth rate of 11% over the last two years.
- Similarly, the land-based wind project pipeline has also grown considerably over the past two years, at an average of 5% each quarter. At 28 GW, the pipeline for land-based wind capacity has recovered from hitting a low-point in Q1 2023.
- Finally, offshore wind is the only technology to experience negative growth, having contracted by an average of 2% each quarter over the last two years, as the industry weathers contract cancellations and unsuccessful solicitations.

Clean Power in Development, Q2 2022 – Q2 2025



CLEAN POWER CAPACITY GROWTH

Projects in the Pipeline



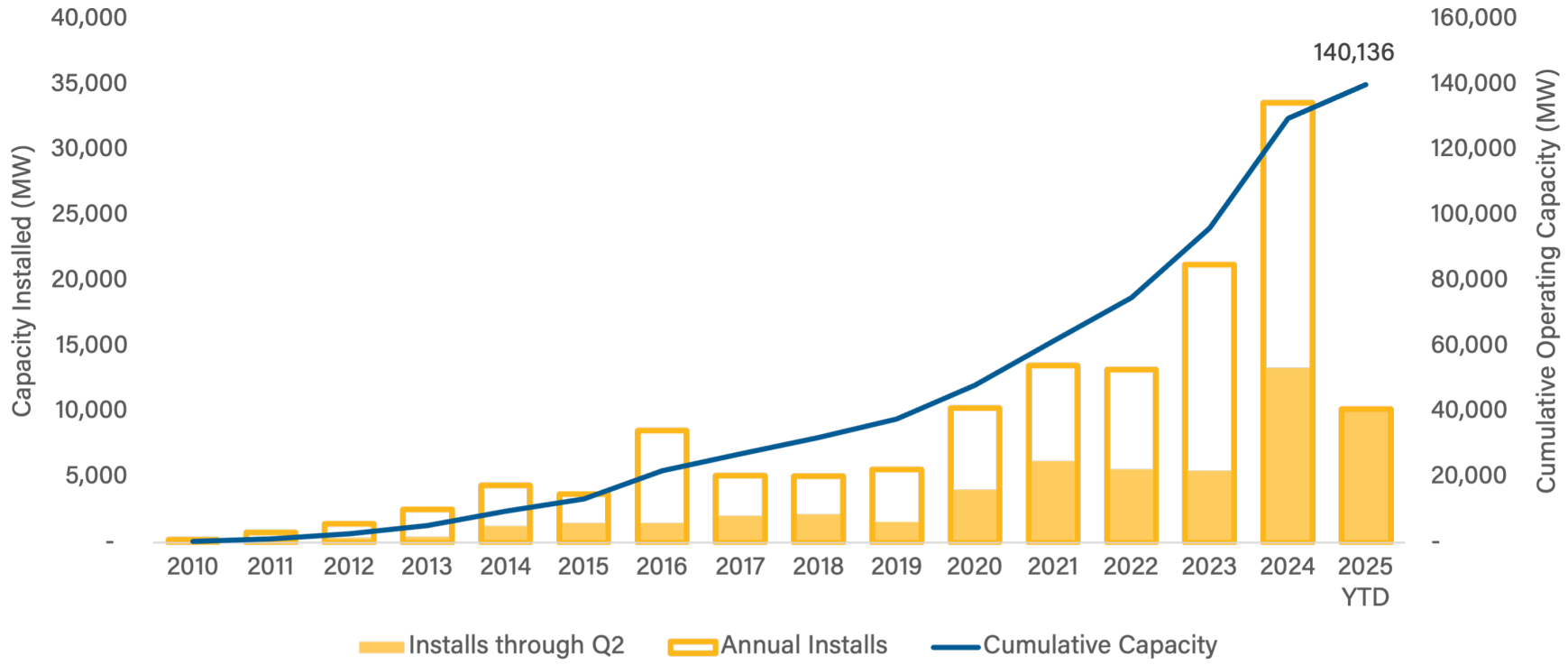
Map details projects only where exact location information (latitude and longitude) is known.

UTILITY-SCALE SOLAR

Q2 2025 Utility-Scale Solar Deployments

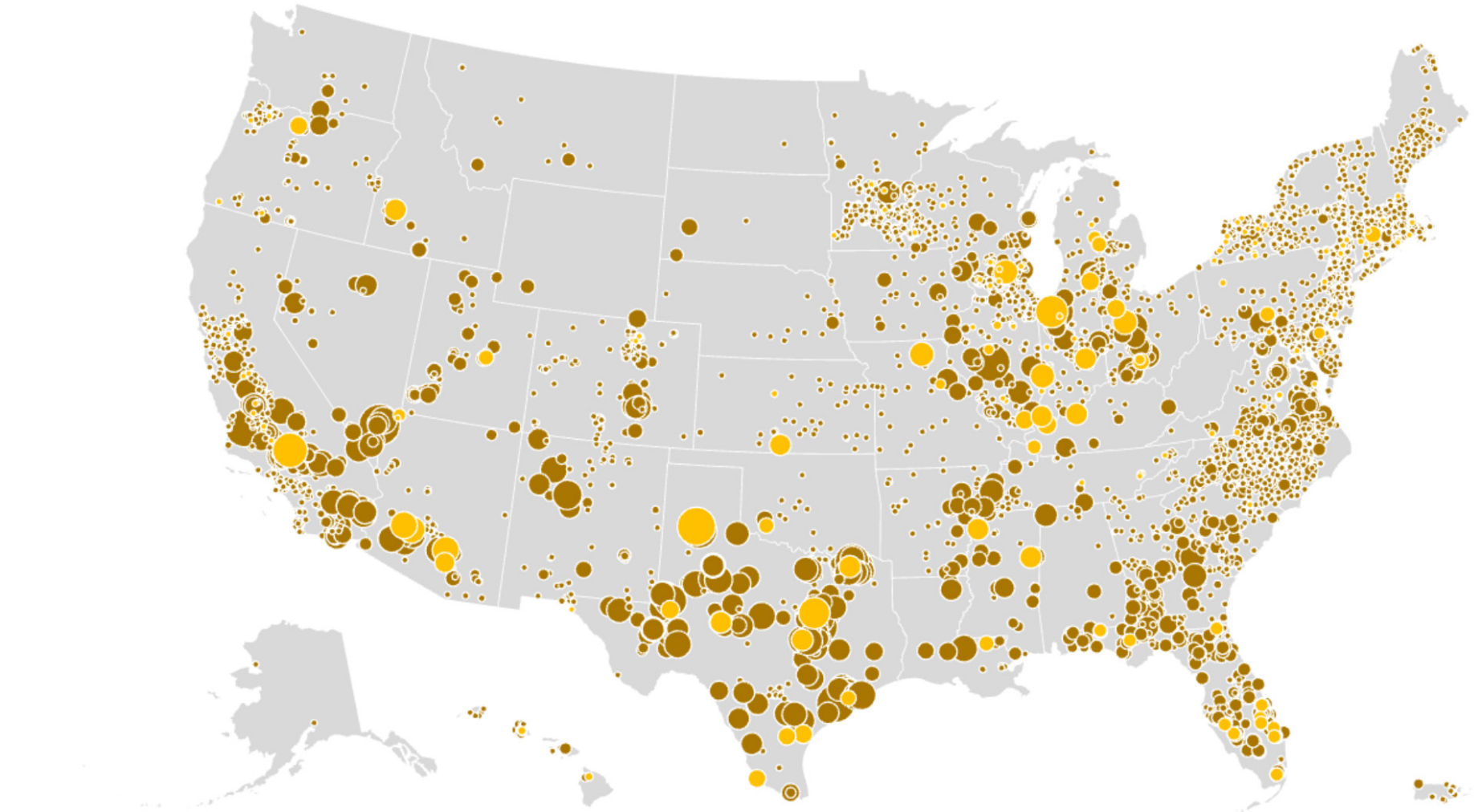
- Developers added 5,705 MW of utility-scale solar capacity to the grid in the second quarter of 2025. Quarterly solar capacity additions came in 25% higher than in previous quarter, but 19% lower than the same quarter in 2024.
- Vesper Energy's Hornet Solar in Swisher County, TX was the largest utility-scale solar project phase to come online in Q2 2025. The 600 MW project features 1.36 million solar panels and will bring the county more than $100 million in new tax revenue, according to Vesper Energy.
- At the end of Q2 2025, the cumulative operational solar capacity in the U.S. reached 140,136 MW, delivering clean electricity to all 50 states, the District of Columbia, and Puerto Rico.
- Utility-scale solar has proven one of the most reliable options available to bring new electricity generation online at speed in recent years, with developers connecting more than 65 GW of new capacity since the start of 2023.

U.S. Annual and Cumulative Utility-Scale Solar Capacity Growth



UTILITY-SCALE SOLAR

Geography of Utility-Scale Solar



50 MW
100 MW
Online before 2025
Online in 2025

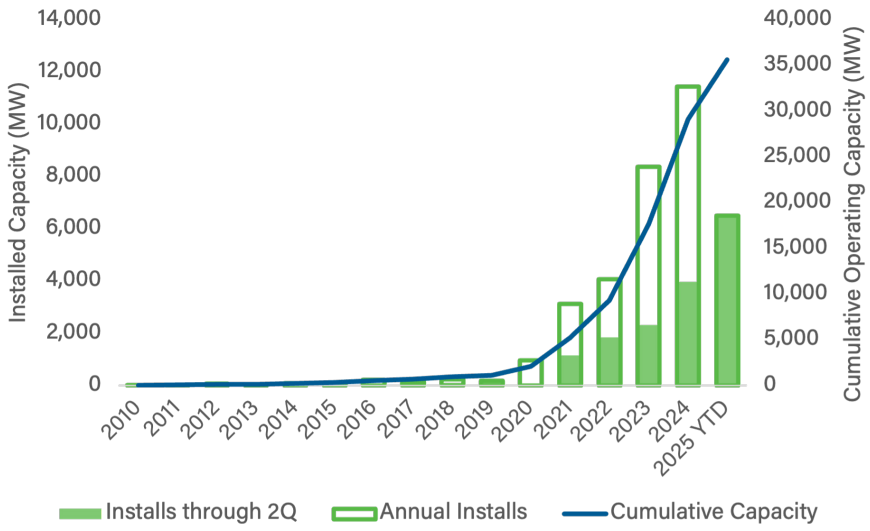
Map details projects only where exact location information (latitude and longitude) is known

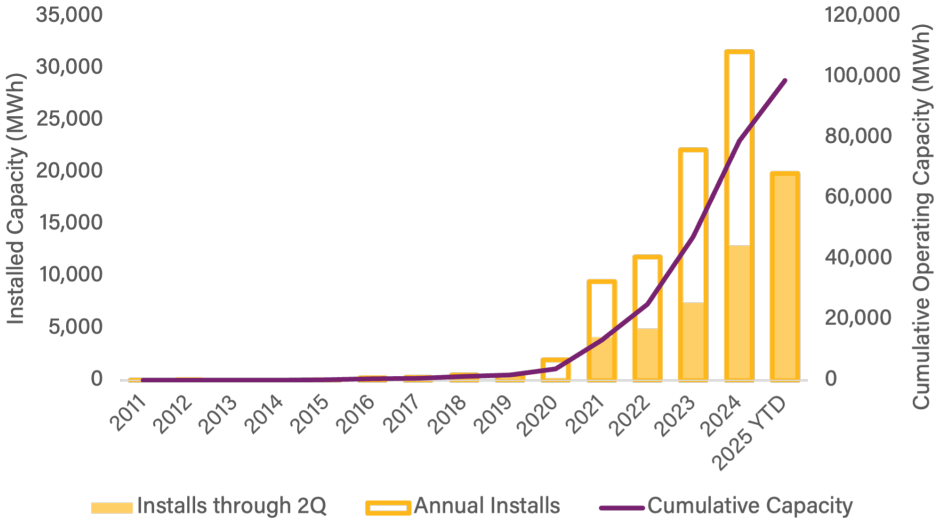
UTILITY-SCALE ENERGY STORAGE

Q2 2025 Energy Storage Installations

- Battery storage capacity is tracked in terms of rated power capacity (MW), the maximum possible instantaneous discharge, and energy capacity (MWh), the maximum amount of stored energy.
- Battery storage capacity hit another milestone in the second quarter, passing 35 GW of operational capacity to end the quarter at 35,634 MW/99,031 MWh.
- Developers added 4,908 MW of battery storage capacity in the second quarter, marking Q2 2025 as the highest quarter for storage installations to date. Quarter-over-quarter, storage additions more than tripled, as Q1 installed just 1.6 GW of new capacity.
- Year-over-year, Q2 2025 saw a 63% increase in installations compared to Q2 2024. The first half of 2025 brought online 2.5 GW more than the first half of 2024, setting 2025 up to be a strong year for battery storage additions.
- The nearly 5 GW of quarterly additions came from 46 projects across 13 states, including 35 standalone projects and 11 phases paired with wind or solar capacity.
- The largest battery storage project to come online in Q2 was the storage phase of AES Clean Energy's Bellefield 1 solar + storage project in Kern County, California. The storage phase had 500 MW of capacity with a four-hour duration.

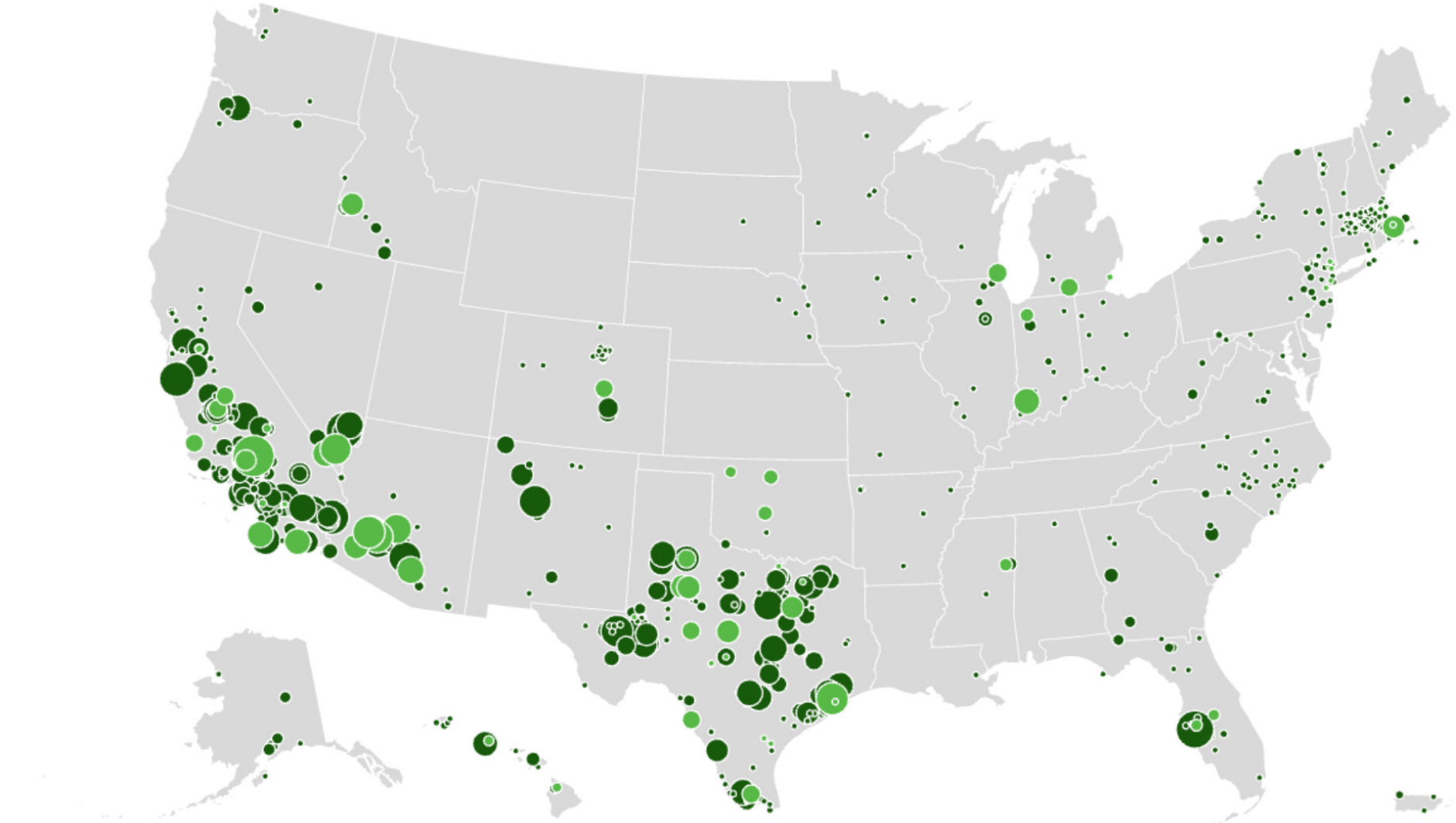
U.S. Annual and Cumulative Battery Storage Capacity Growth





UTILITY-SCALE ENERGY STORAGE

Geography of Energy Storage



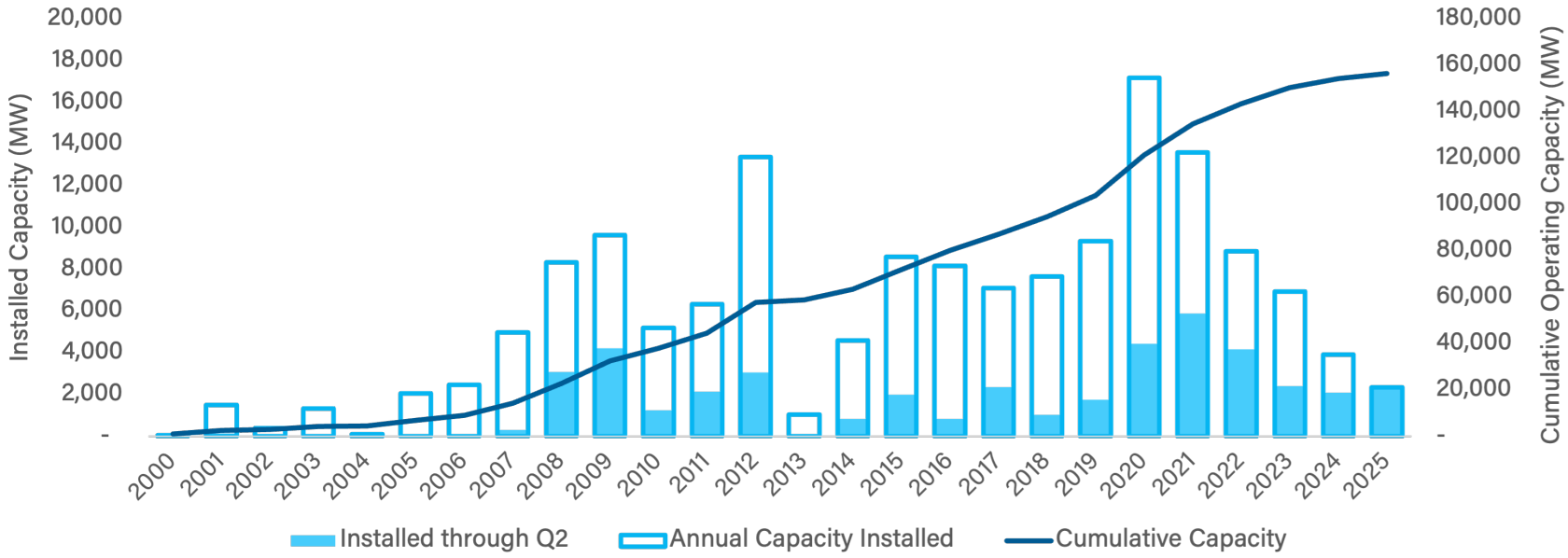
Map details projects only where exact location information (latitude and longitude) is known

LAND-BASED WIND

Q2 2025 Land-Based Wind Installations

- Seven land-based wind projects were brought online during Q2 2025, adding 1,010 MW of new capacity to the grid. Cumulatively, the operational fleet of land-based wind projects reached 156,573 MW.
- Land-based wind installations in Q2 2025 were down 30% from Q2 2024 and 24% from Q1 2025; however, the 2,337 MW of new capacity installed during the first half of 2025 was 12% higher than the first half of 2024.
- Apex Clean Energy developed the largest land-based wind project to come online in Q2. At 300 MW, Apex's Prosperity Wind is located in Piatt County, Illinois. Prosperity Wind utilizes Vestas wind turbines and was supported by White Construction.
- Compared to Q1 2025, the land-based wind projects completed during Q2 were smaller on average. The weighted average size of a wind project in Q2 was 187 MW, down from 303 MW in the first quarter. Year-to-date, the weighted average size of wind projects was 253 MW, larger than projects installed in 2024 (196 MW) as well as 2023 (233 MW).
- The land-based wind industry continues to face challenges with lengthy interconnection queues, transmission congestion, and siting & permitting obstacles, contributing to a slower pace for project deployments in recent years.

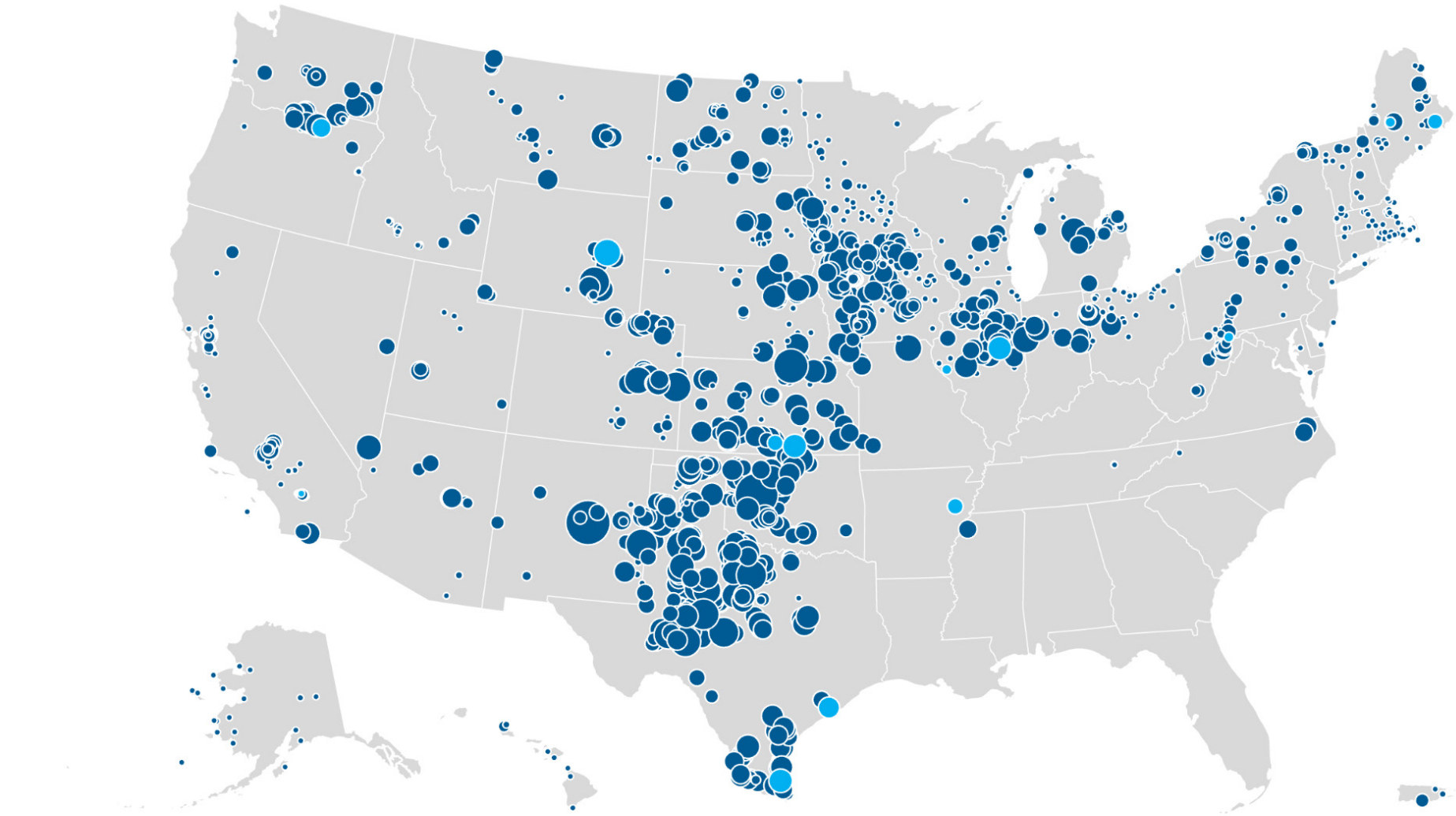
U.S. Annual and Cumulative Land-Based Wind Capacity Growth



Note: ACP is aware of approximately 550 MW of additional repowering project activity in H1 2025. Because project details could not be confirmed, these projects are excluded from report data.

LAND-BASED WIND

Geography of Land-Based Wind

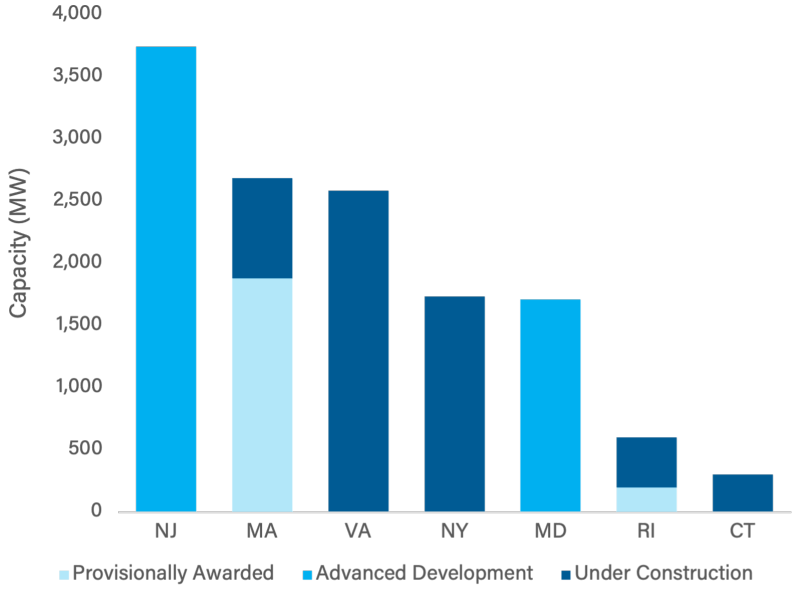


OFFSHORE WIND

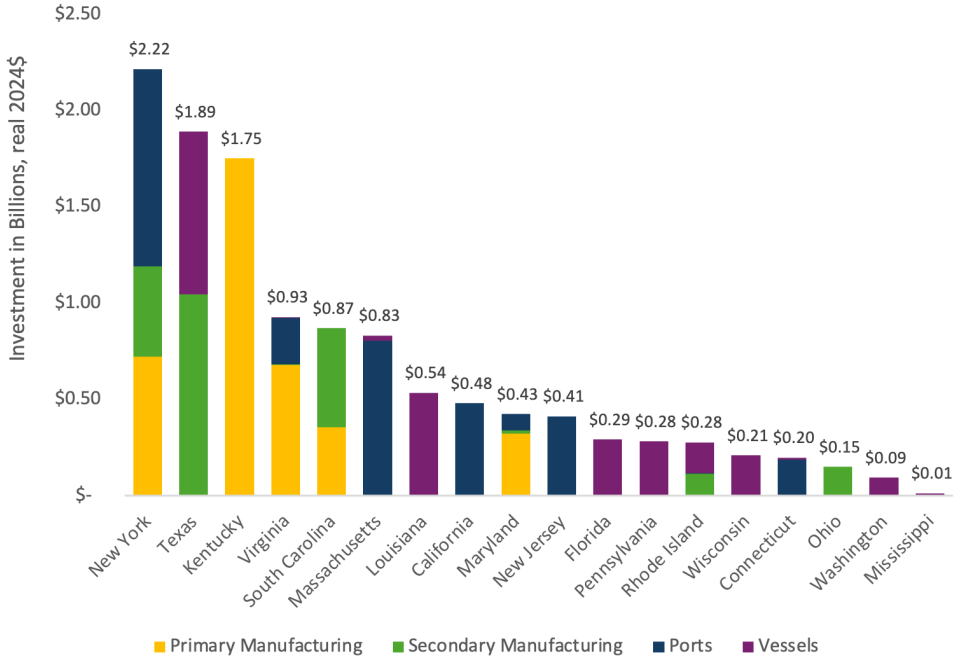
Development Progress

- The U.S. hosts 174 MW of operational offshore wind capacity across three projects along the East Coast. Five offshore wind projects are under active in-ocean construction, totaling 5,831 MW of capacity.
- There is nearly 68 GW of additional potential offshore wind capacity in earlier stages of development, across 35 federal lease areas.
- Seven states have contracted offshore wind capacity, totaling 11.3 GW. Two of those states, Massachusetts and Rhode Island, have also provisionally awarded contracts for 2.1 GW of offshore wind capacity.
- The U.S. offshore wind industry supports 25,000 jobs, including direct, indirect and induced roles. ACP estimates 6,000 direct jobs are created by U.S. offshore wind.
- Beyond the capital investment in the projects themselves, an additional $12.8 billion* has been invested in the U.S. offshore wind supply chain through primary and secondary manufacturing, vessel manufacturing, and port infrastructure. The primary driver of investment is component manufacturing, at $6.8 billion*.
- All new-build or retrofit offshore wind vessel manufacturing has netted $3.2 billion* as of Q2 2025. Notably, Republican-held states hold nearly 80% of all vessel manufacturing investments.

Contracted Offshore Wind Capacity by State



Offshore Wind Manufacturing, Vessel, and Port Investments by State

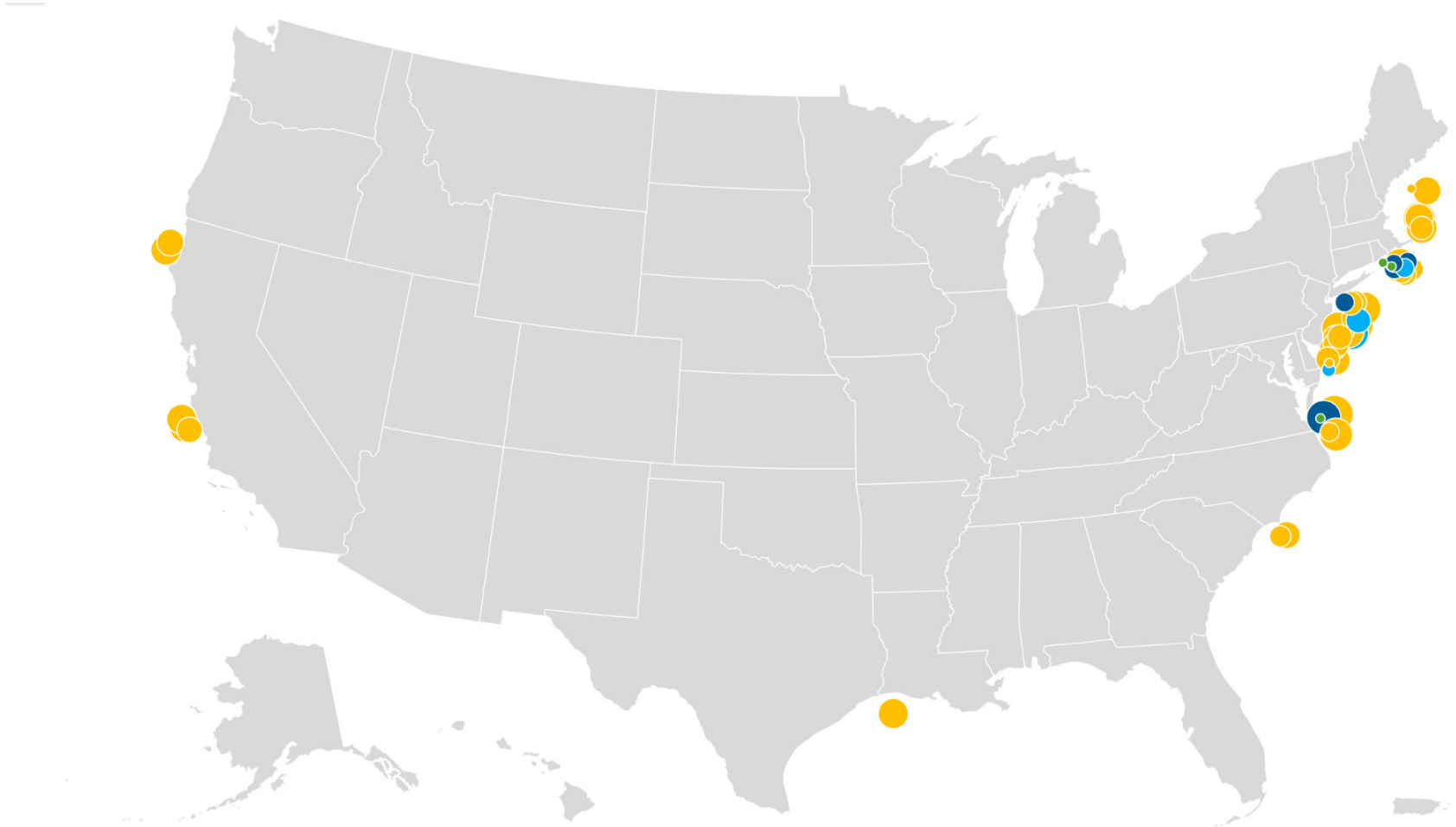


*Values in real 2024$

OFFSHORE WIND

Geography of Offshore Wind

Offshore Wind Projects in Development



50 MW
100 MW

Early Development
Under Construction

Advanced Development
Online

The American Clean Power Association (ACP) is the leading voice of today's multi-tech clean energy industry, representing energy storage, wind, utility-scale solar, clean hydrogen, and transmission companies. ACP is committed to meeting America's energy and national security goals and building our economy with fast-growing, low-cost, and reliable domestic power.

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