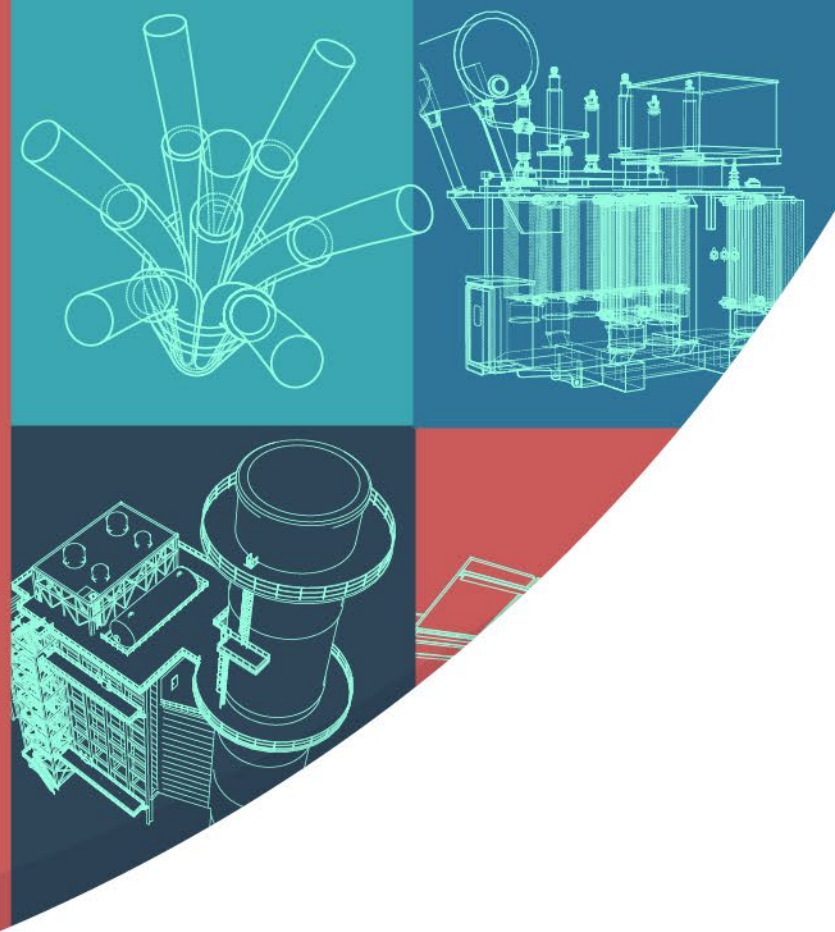
APPA ACADEMY

National Conference

JUNE 6 – 11, 2025 | NEW ORLEANS, LOUISIANA



The Future of Wind and Solar

June 10, 2025

John Hensley, SVP, Markets & Policy Analysis, American Clean Power Association

AMERICAN PUBLIC POWER ASSOCIATION

Powering Strong Communities

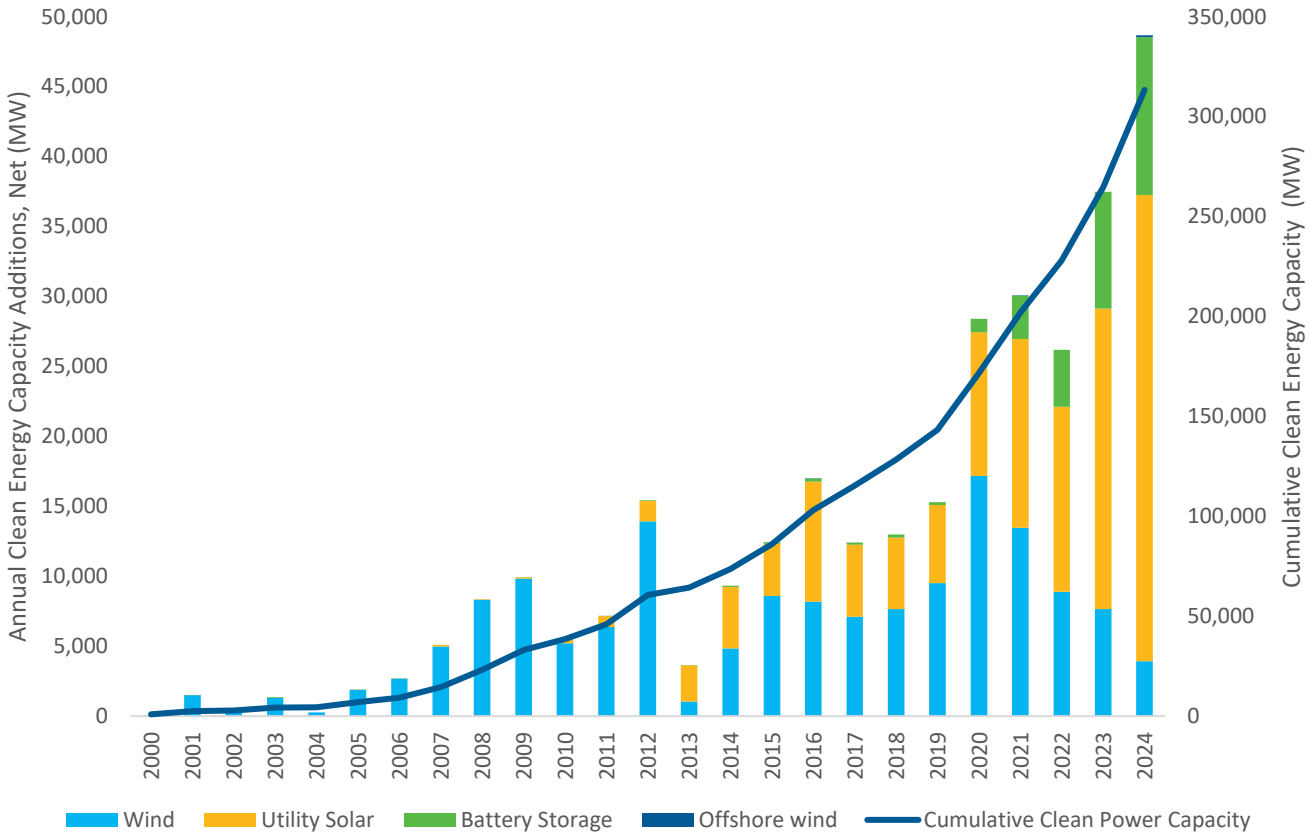
America Builds Power: The Future of Clean Energy

June 10, 2025

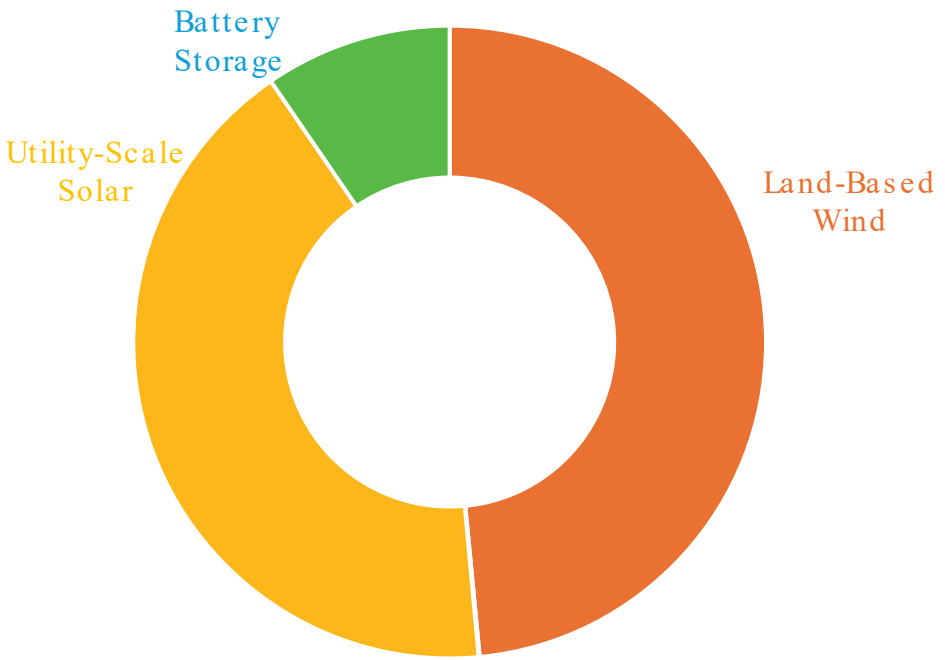


U.S. Clean Power Capacity

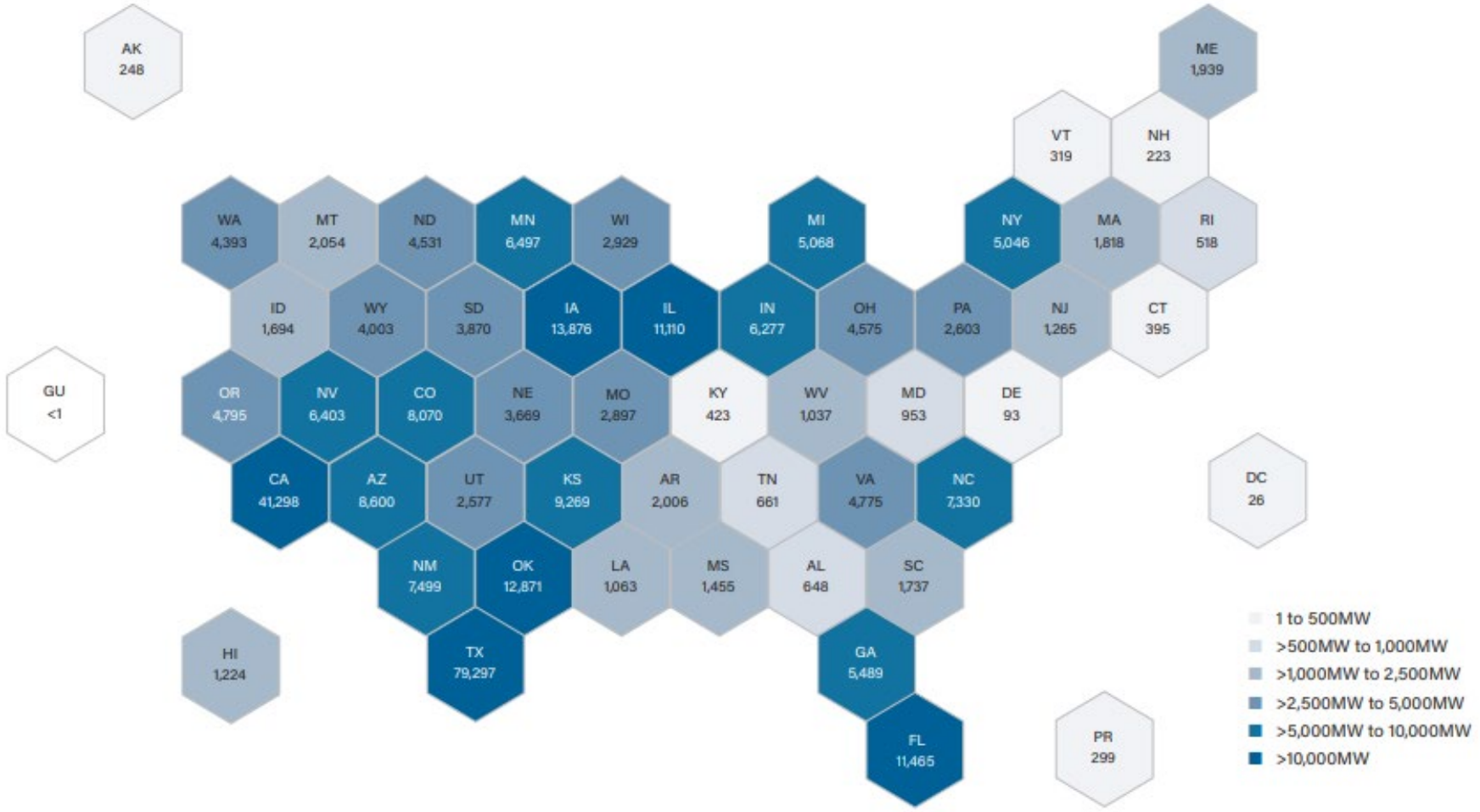
Annual and Cumulative Utility-Scale Clean Power Capacity Growth



U.S. Installed Clean Power by Technology

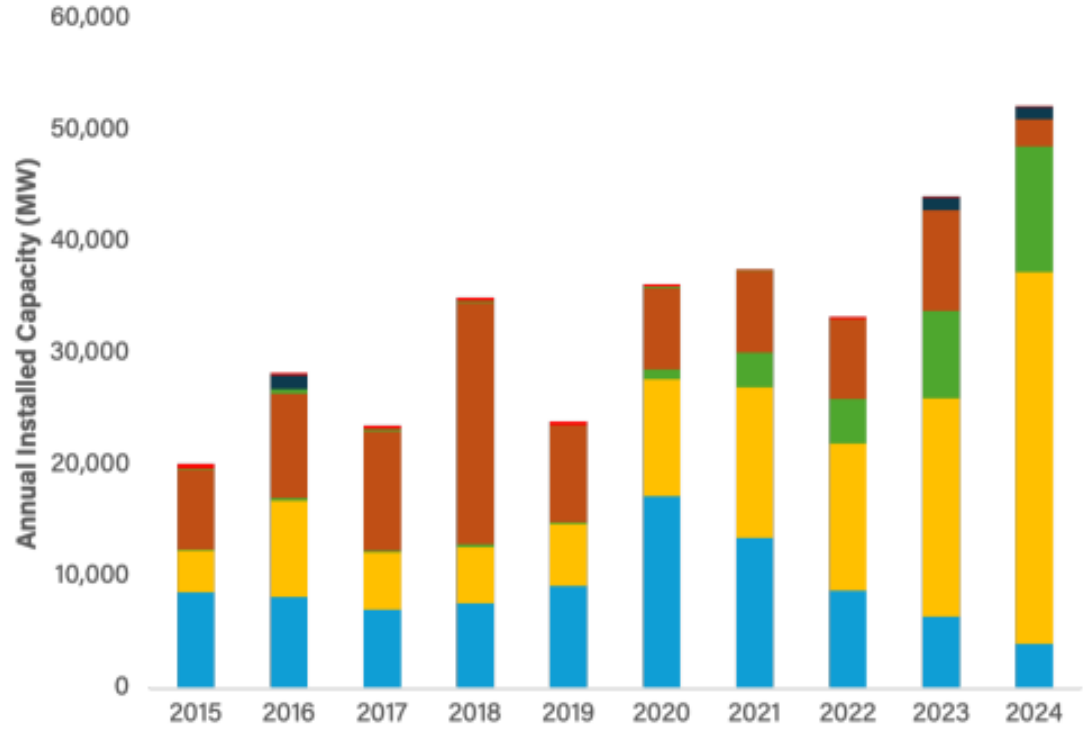


U.S. Clean Power Capacity by State



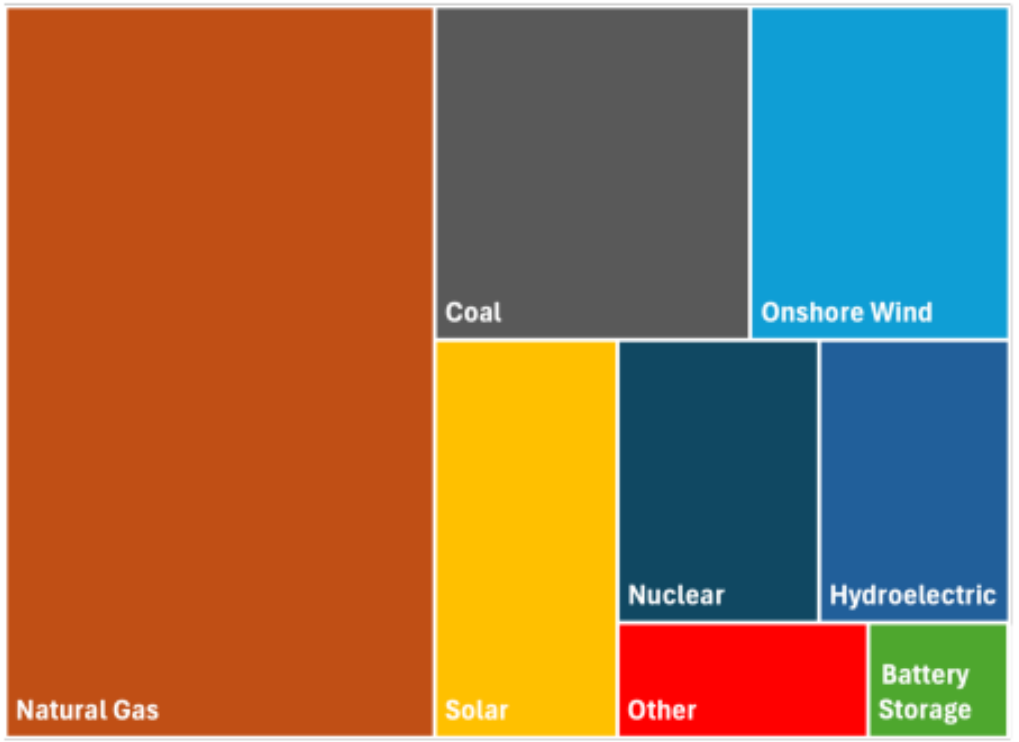
U.S. Power Capacity Additions

Annual Capacity Additions by Technology

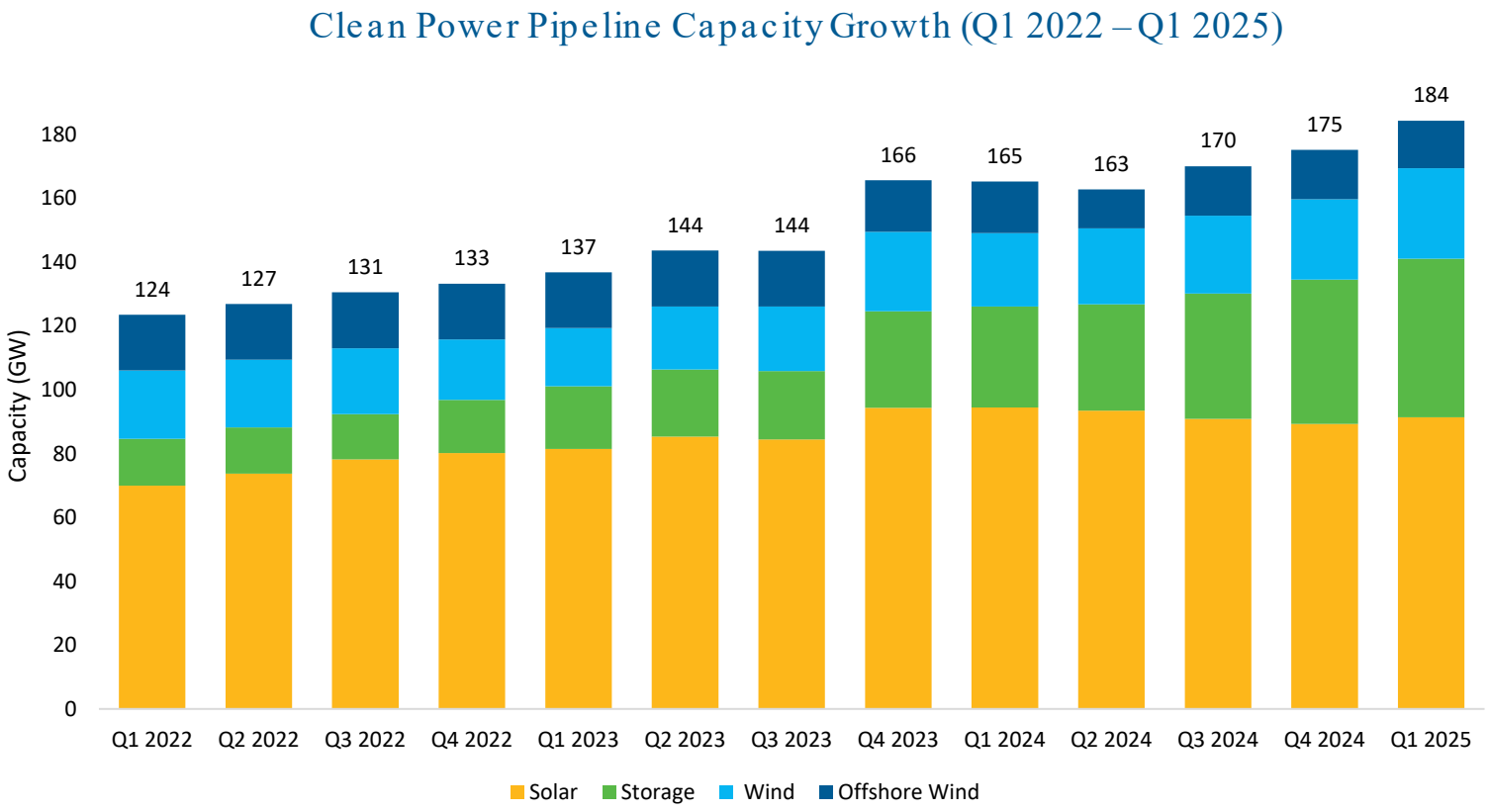


Source: ACP, EIA

U.S. Operational Power Capacity by Technology



U.S. Clean Power Pipeline Continues to Grow



12% growth year-over-year

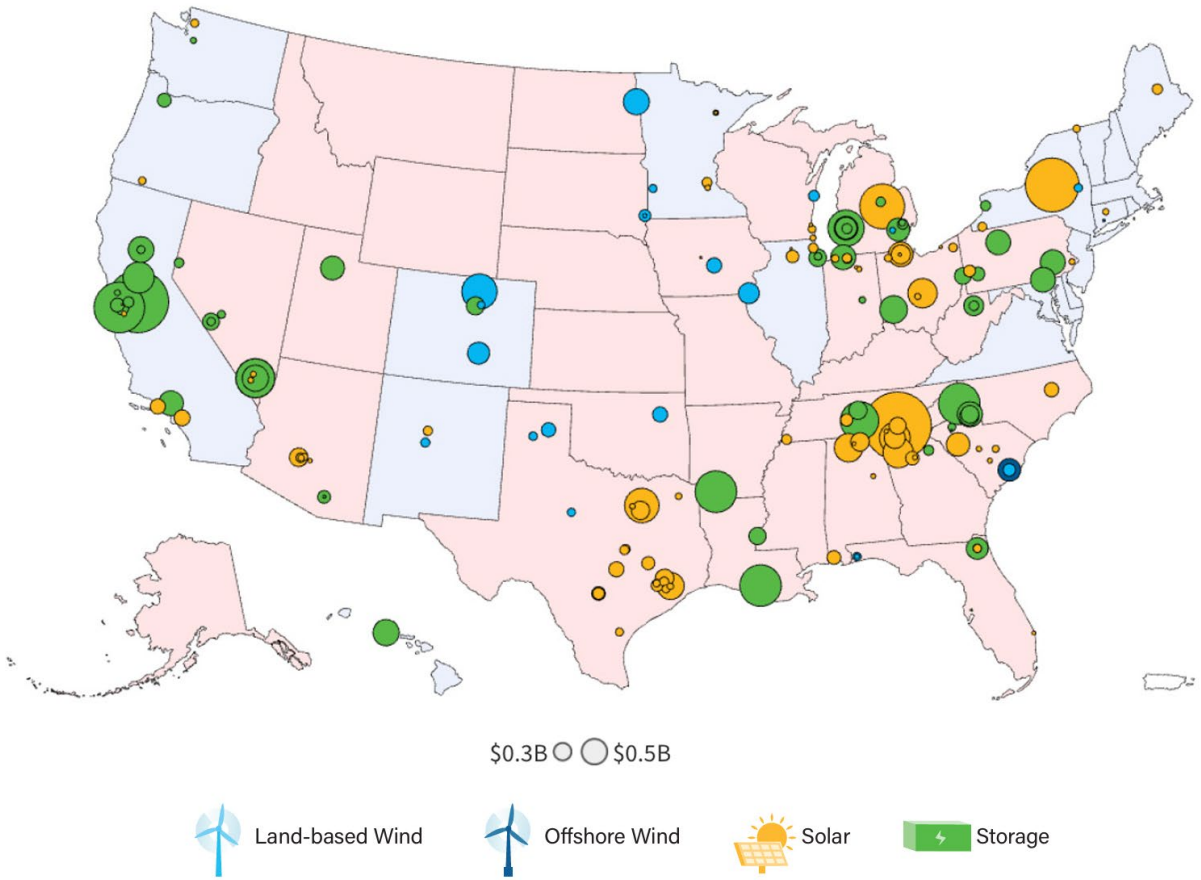
6% growth quarter-over-quarter

Manufacturing across the country

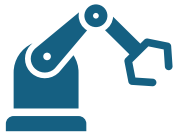
38 states have primary clean energy manufacturing activity

73% located in Red states

Clusters in Texas, Southeast, and Midwest



Clean Energy Manufacturing Impact



200
Active primary component manufacturing facilities

155
Additional manufacturing facilities under construction or

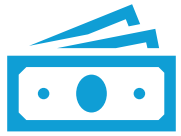
800
Manufacturing facilities supporting clean energy industry



122,000
American jobs supported by clean energy manufacturing

500,000
Jobs supports if all announced facilities come online

$118,000
Average annual earnings for clean energy manufacturing workers



$33 Billion
Annual domestic economic output generated by active

$164 Billion
Annual domestic output if all announced facilities come online

$114 Billion
Private capital investment spurred by manufacturing construction

- Other
- Solar
- Wind
- Coal
- Nuclear
- Natural Gas



TODAY'S GRID

4,300 TWH of generation

- New Demand
- Other
- Solar
- Wind
- Coal
- Nuclear
- Natural Gas



GROWTH

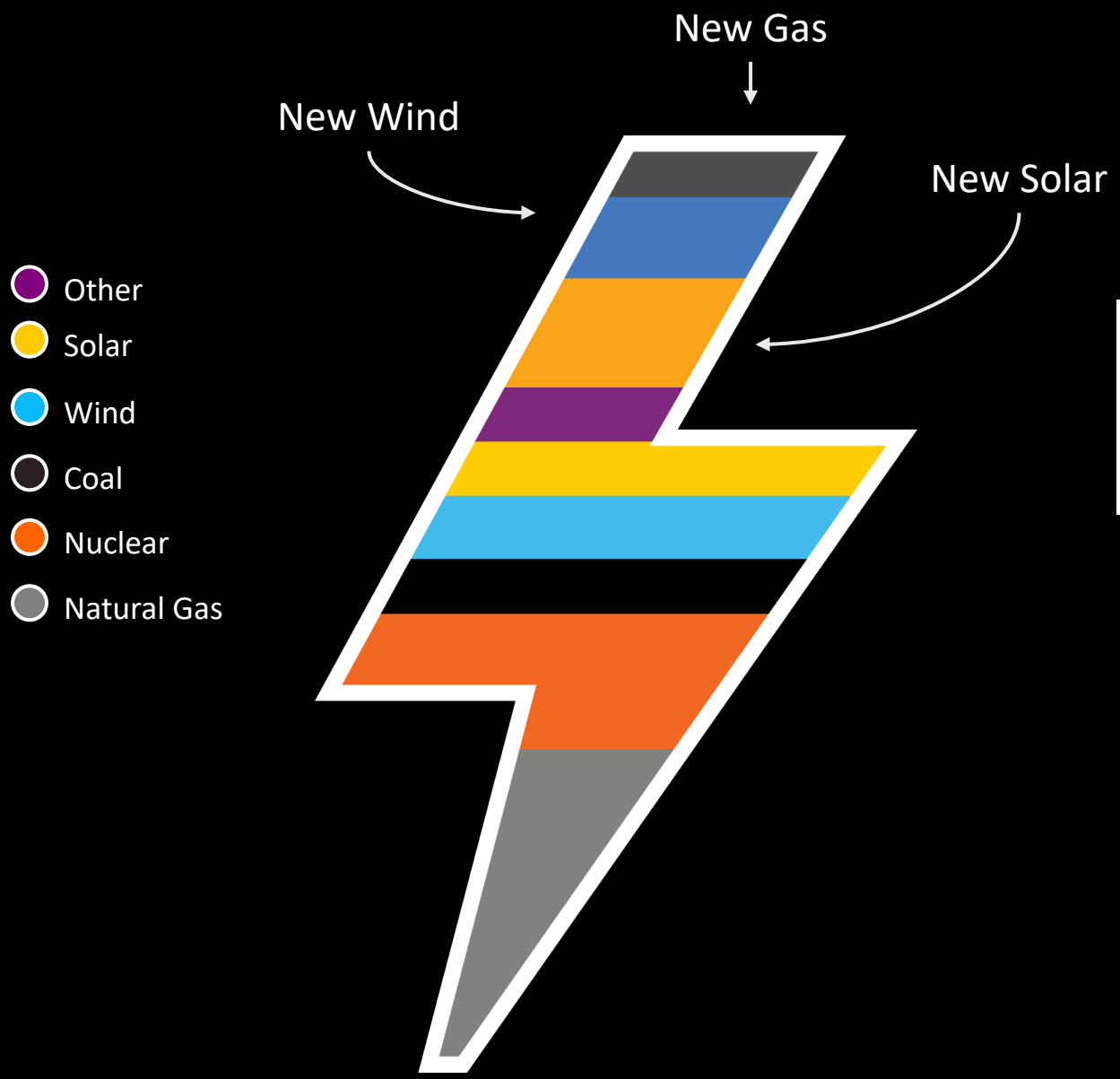
900 TWH increase
in demand by **2035**

- Needed Energy
- Other
- Solar
- Wind
- Coal
- Nuclear
- Natural Gas



SYSTEM NEEDS LOTS OF ENERGY

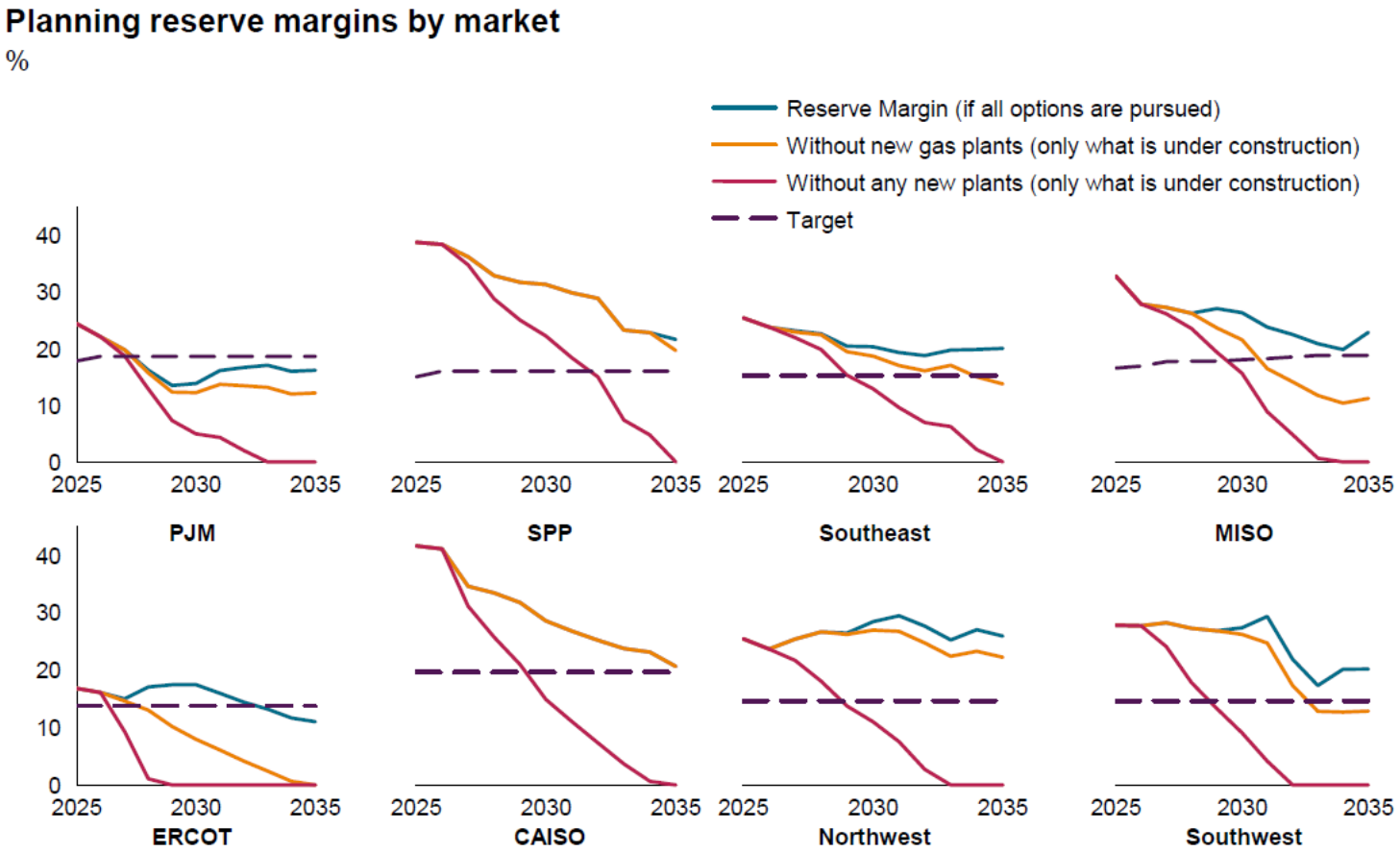
1,300 TWH increase
in demand by **2035**



SOLAR, WIND, BATTERIES, & GAS

850+ GW needed

What is at risk? Grid Reliability



Source: S&P Global

- Markets cannot keep pace with reserve margins without significant new power capacity
- NERC is already sounding the alarm bell
- Interconnection processes and transmission buildout are lagging

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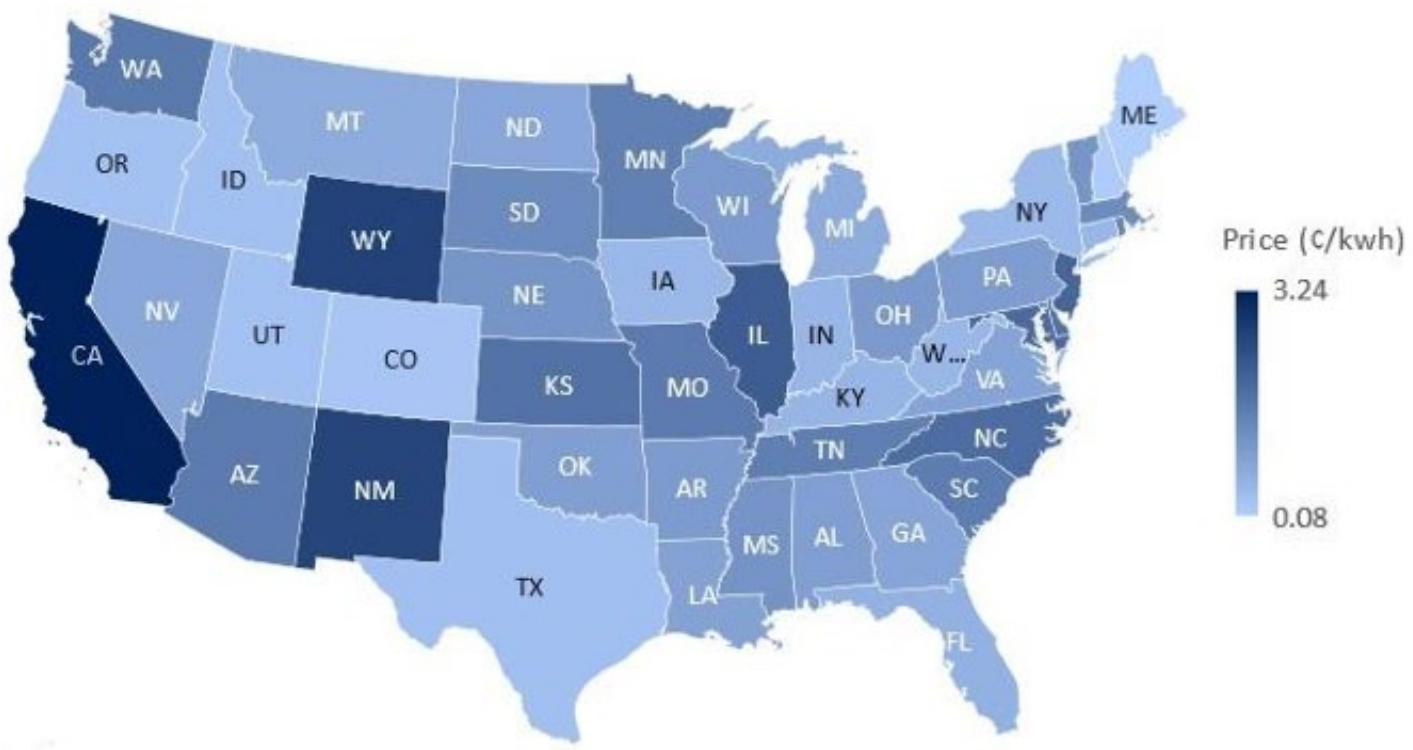
What is at risk? Power Affordability

Change in Average Residential Electricity Price, 2029



Source: NERA/CEBA

Power bills up to 29% higher for residential customers

Up 21% for C&I customers

Higher fuel prices, increased capital costs, more expensive technology choices

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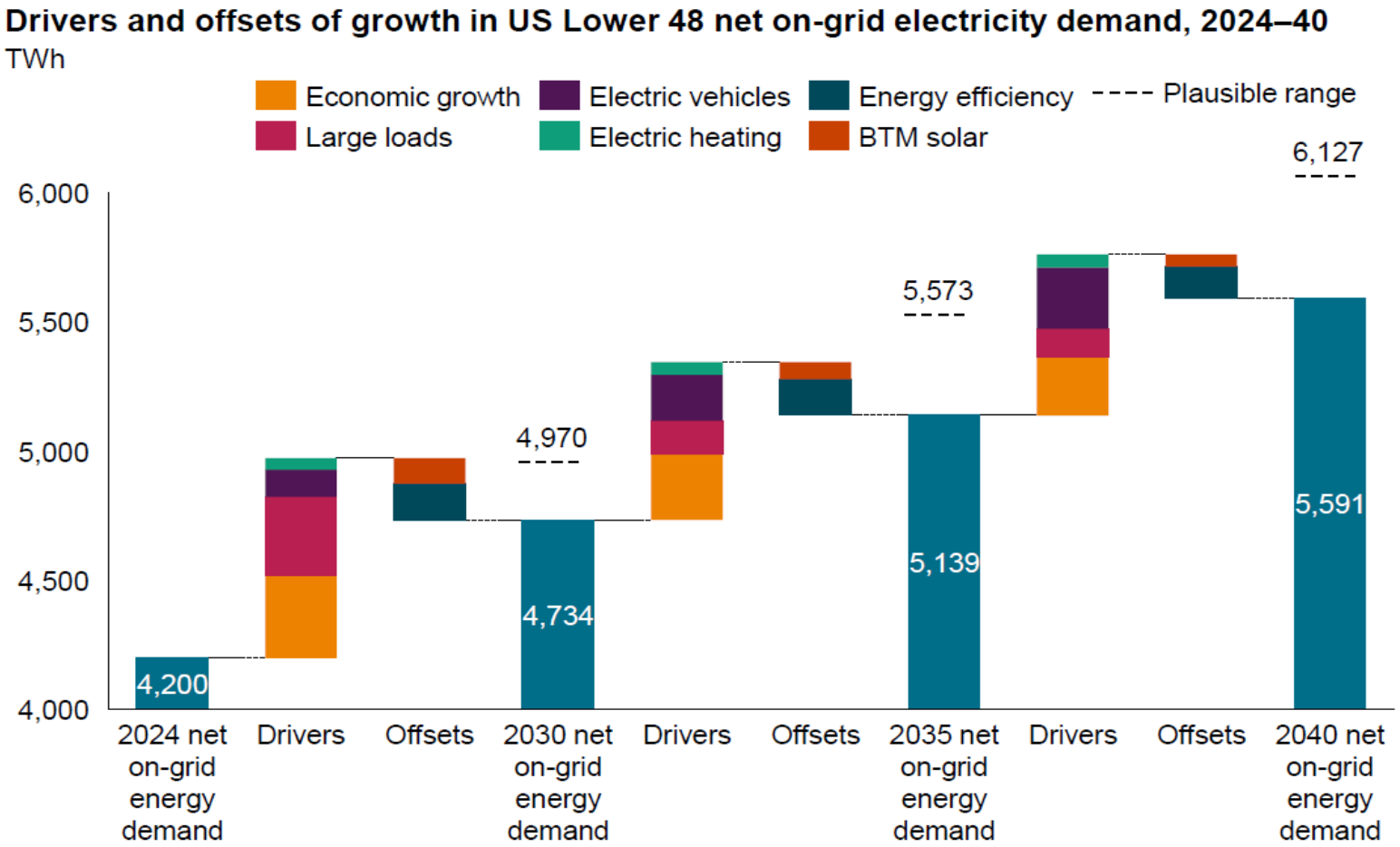
What is at risk? Economic Growth



Source: S&P Global

AI & Automation

Domestic manufacturing

Energy dominance

Infrastructure investment

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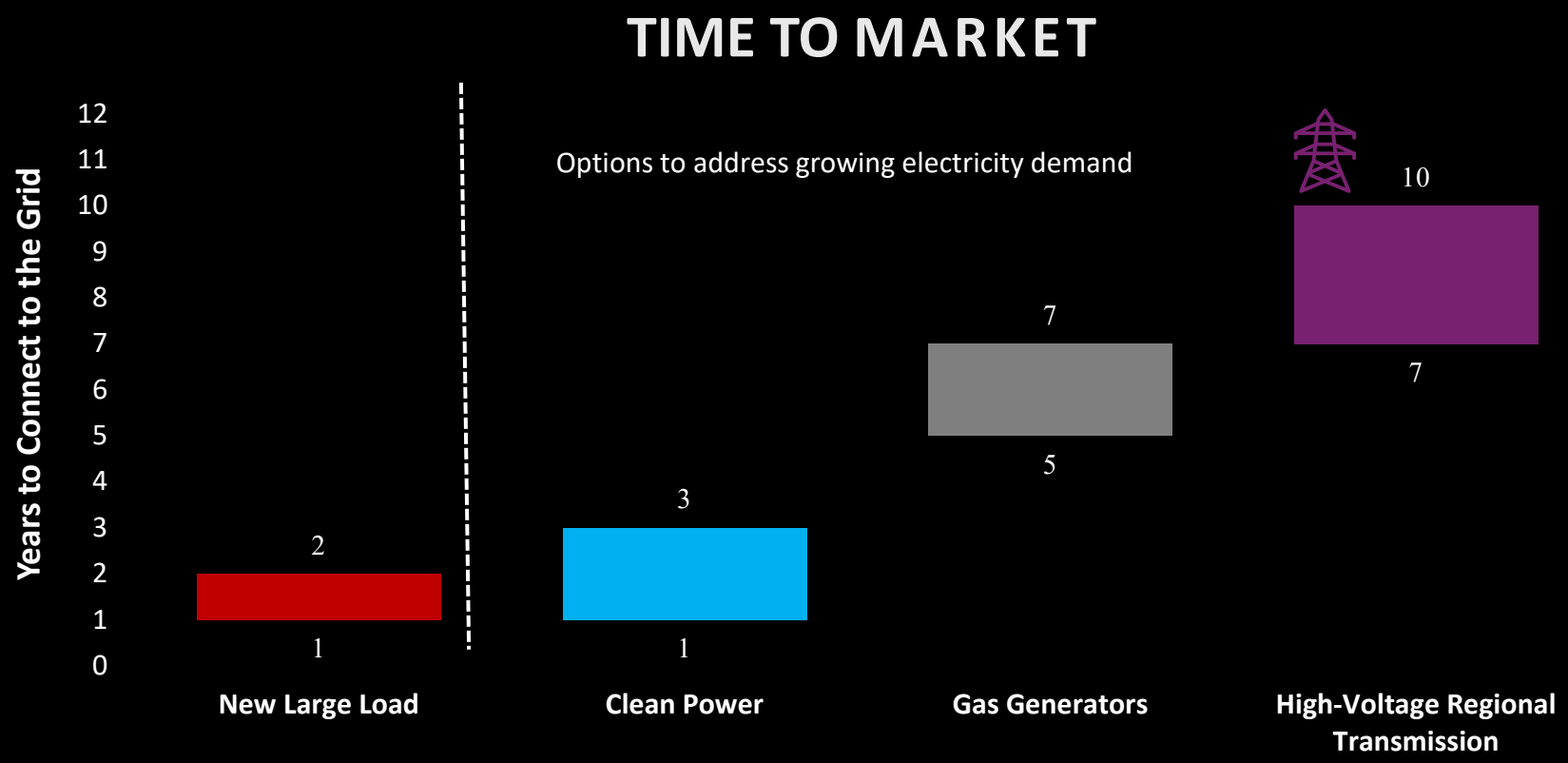
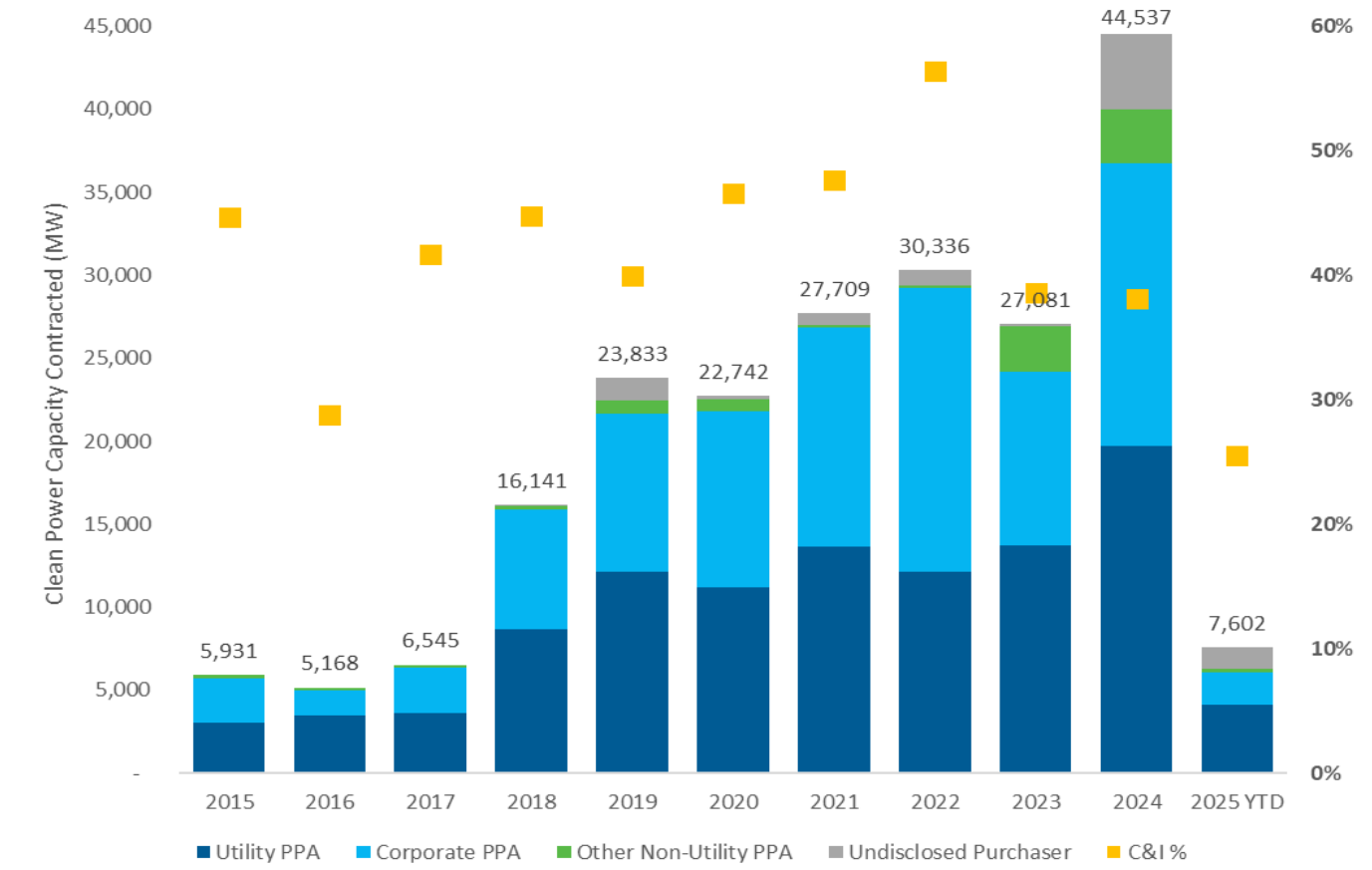
Clean power is ready to go



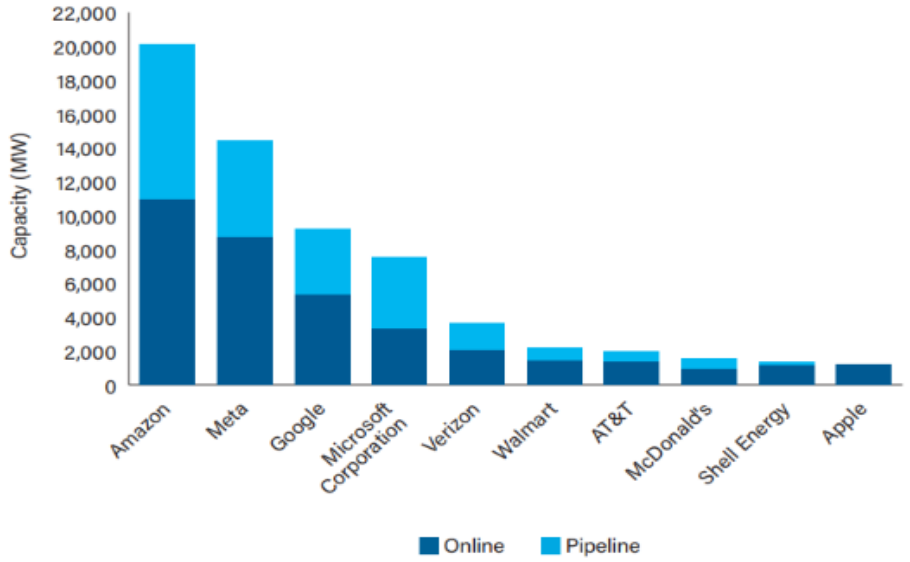
Clean energy is top choice

U.S. Clean Power PPA Announcements, 2015-2025



C&I buyers signed 16,986 MW of new clean power purchase agreements in 2024 - 38% of the year's record-setting total.

Top C&I Purchasers of Clean Power, as of EOY 2024

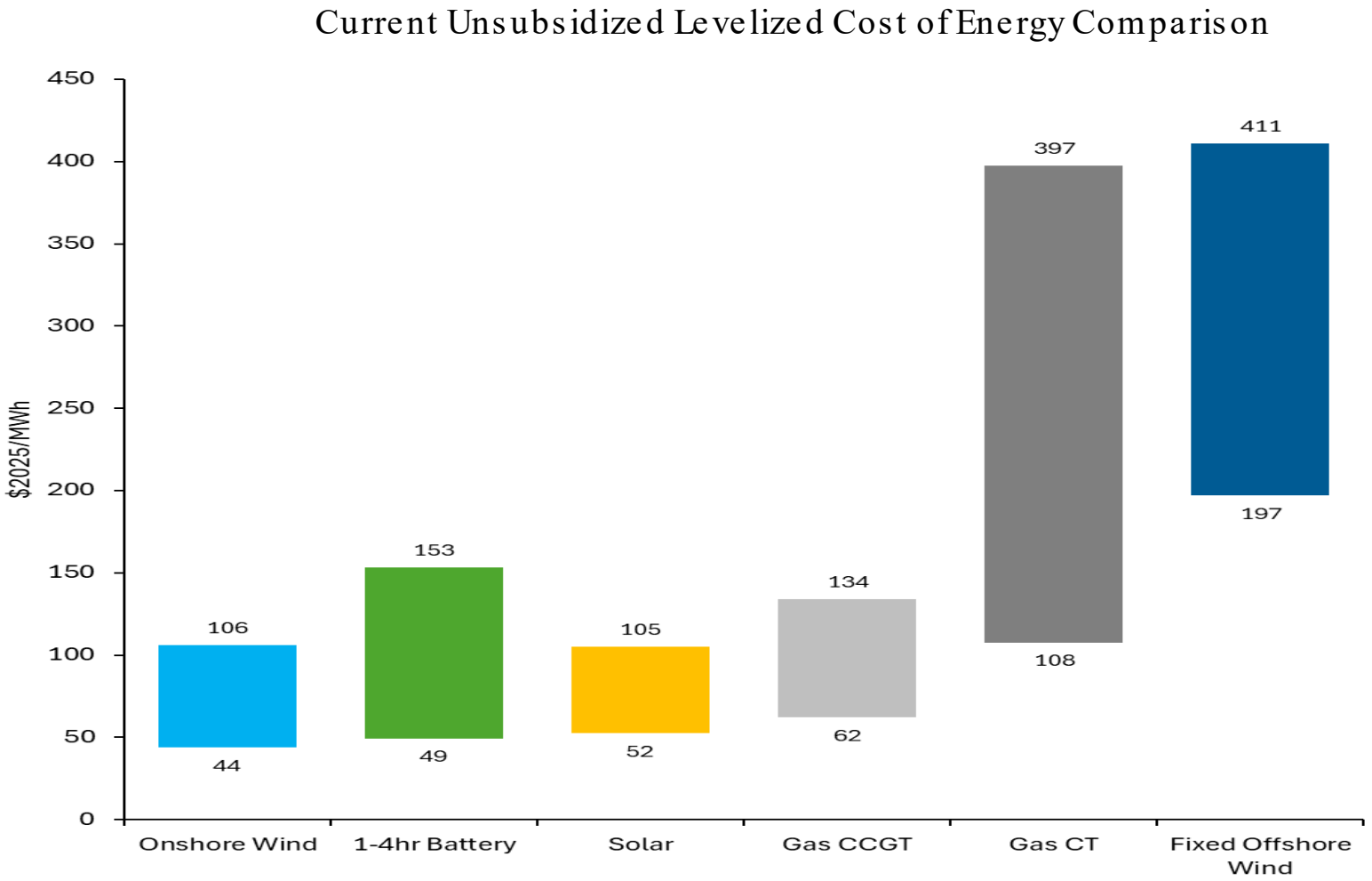


Most affordable option

Quickest and lowest cost option

Low-cost energy provides more room for capacity build

Batteries solidly competitive against CTs



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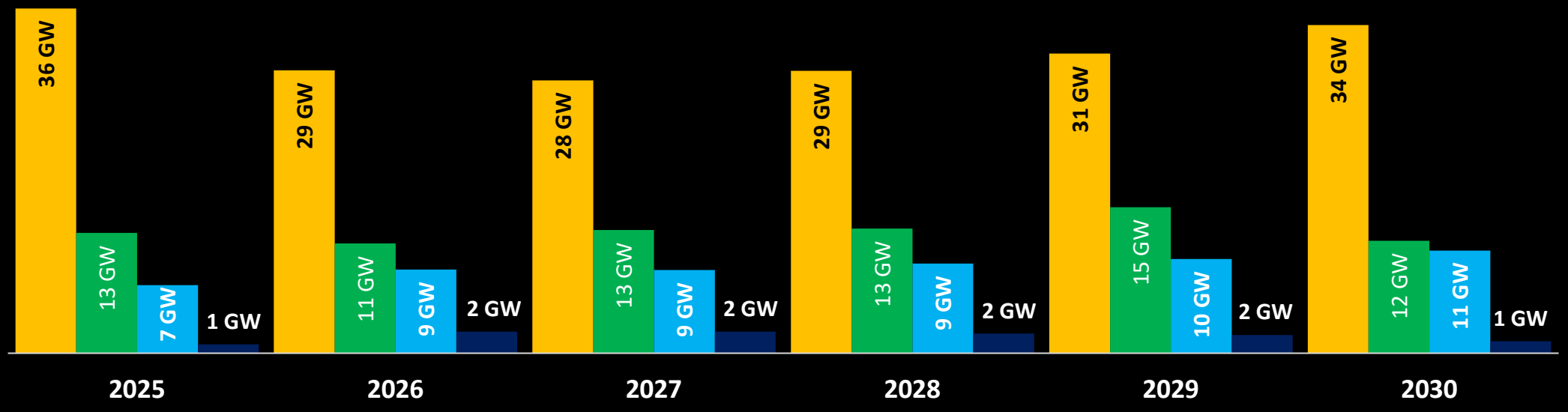
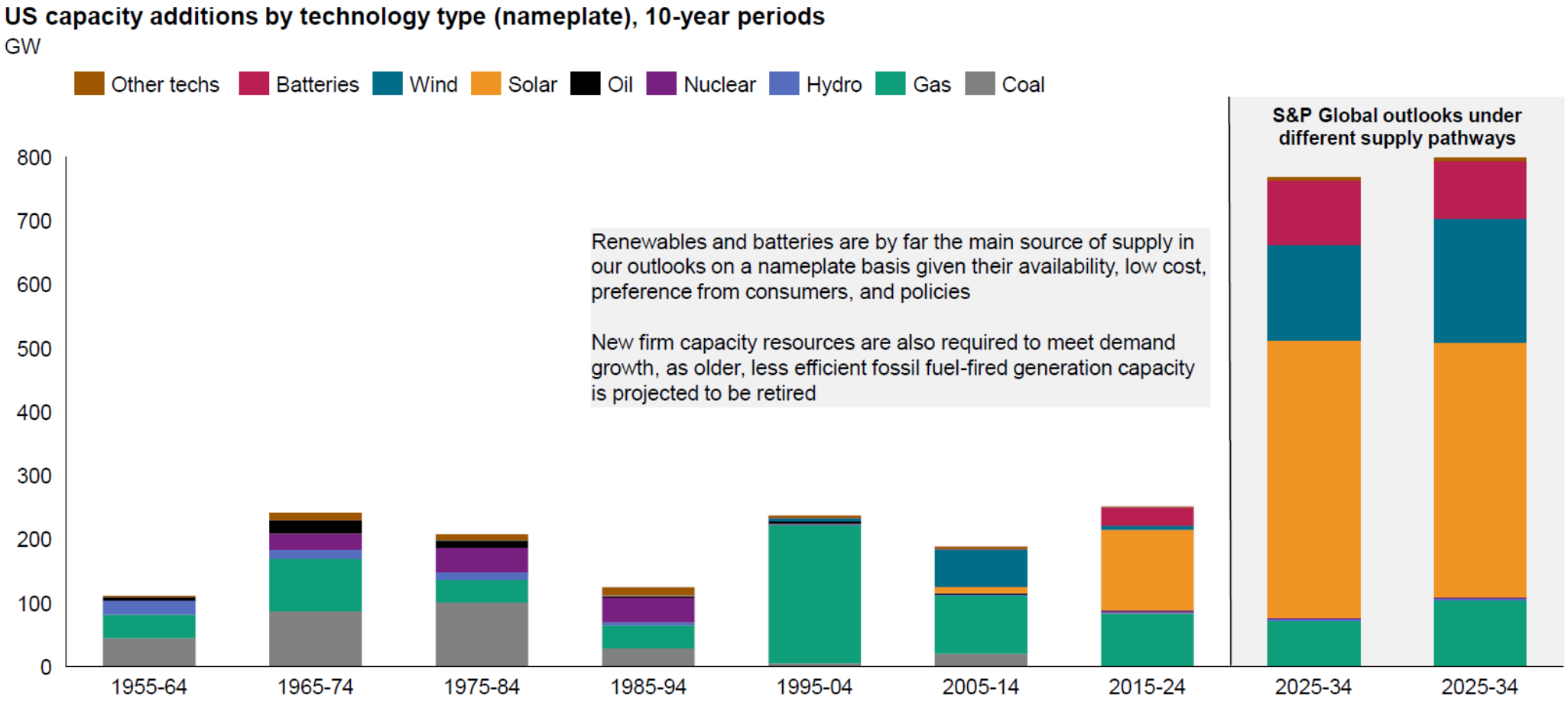
OUTLOOK


36 GW
13 GW
7 GW
1 GW
29 GW
11 GW
9 GW
2 GW
28 GW
13 GW
9 GW
2 GW
29 GW
13 GW
9 GW
2 GW
31 GW
15 GW
10 GW
2 GW
34 GW
12 GW
11 GW
1 GW
2025
2026
2027
2028
2029
2030
Solar
Storage
Wind
Offshore Wind

Clean energy bulk of deployments



Source: S&P Global

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