

State of Play: U.S. Renewable Energy

U.S. Energy Association
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Founded in 2001, the **American Council on Renewable Energy (ACORE)** is a national nonprofit organization that unites finance, policy and technology to accelerate the transition to a renewable energy economy.

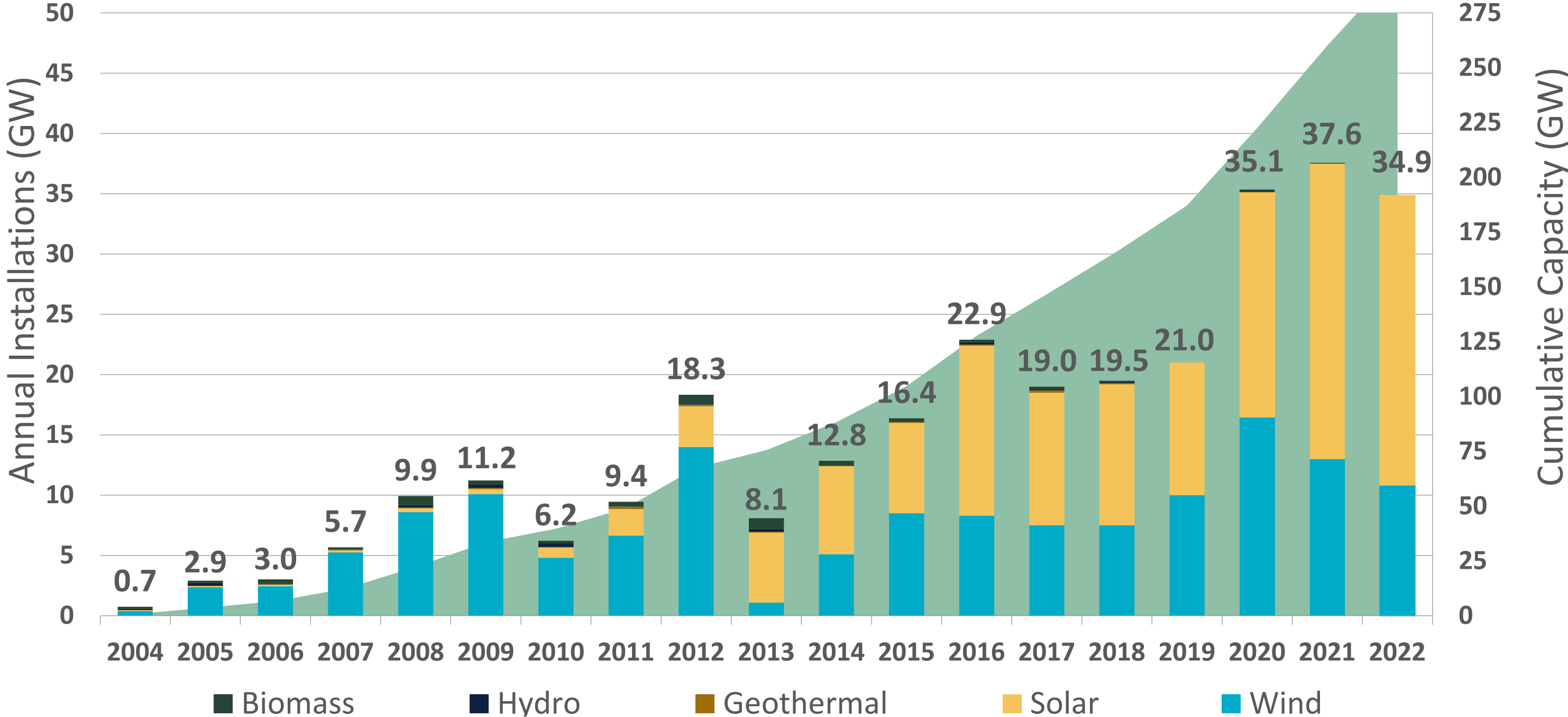


ACORE
AMERICAN COUNCIL ON
RENEWABLE ENERGY

Renewable Deployment in 2022 Can Reliably Power 8 Million Homes



U.S. Renewable Energy Capacity, 2004 – 2022 (preliminary)

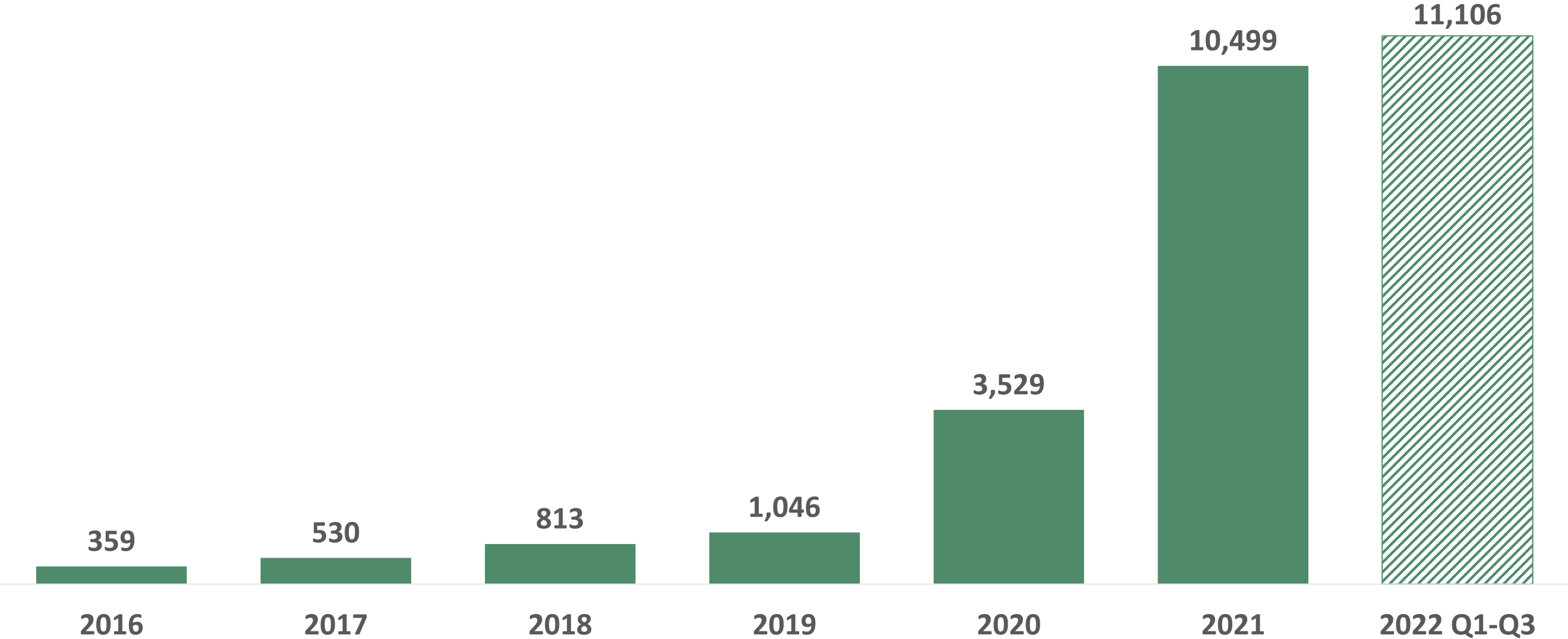


Source: BloombergNEF Capacity and Generation as of January 2023; Solar in GWdc, wind and other renewables in GWac

Energy Storage Deployment Reached Record Levels in 2022



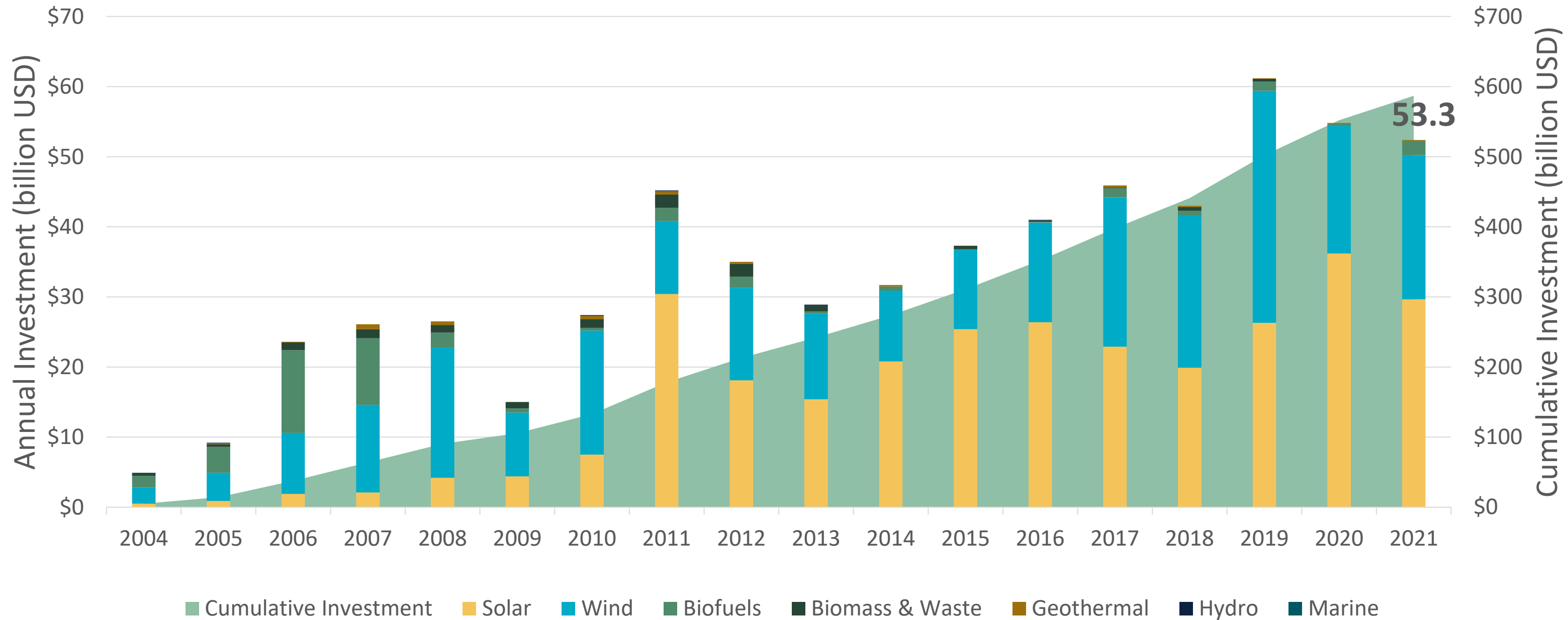
U.S. annual energy storage deployments across all market segments (MWh), 2016-2022 Q3



Source: ACP/Wood Mackenzie, Quarterly U.S. Energy Storage Monitor

Renewable Energy Investment Has Remained Strong

U.S. Private Sector Investment in Renewable Energy, 2004 – 2021



Source: BloombergNEF, accessed January 2023; Investment types include asset finance and small-scale solar; Sectors include solar, wind (onshore and offshore), biomass, biofuel, geothermal, hydropower, and marine energy.

Assessing the Underlying Health of the Sector

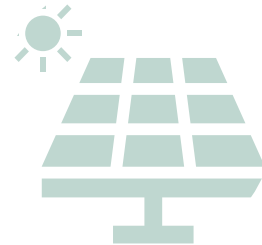
Historic Drivers for U.S. Renewable Energy Growth



Over a decade of improvement in cost-effectiveness



Substantial and growing demand from residential consumers and American companies



Aggressive state and local renewable standards in populous jurisdictions

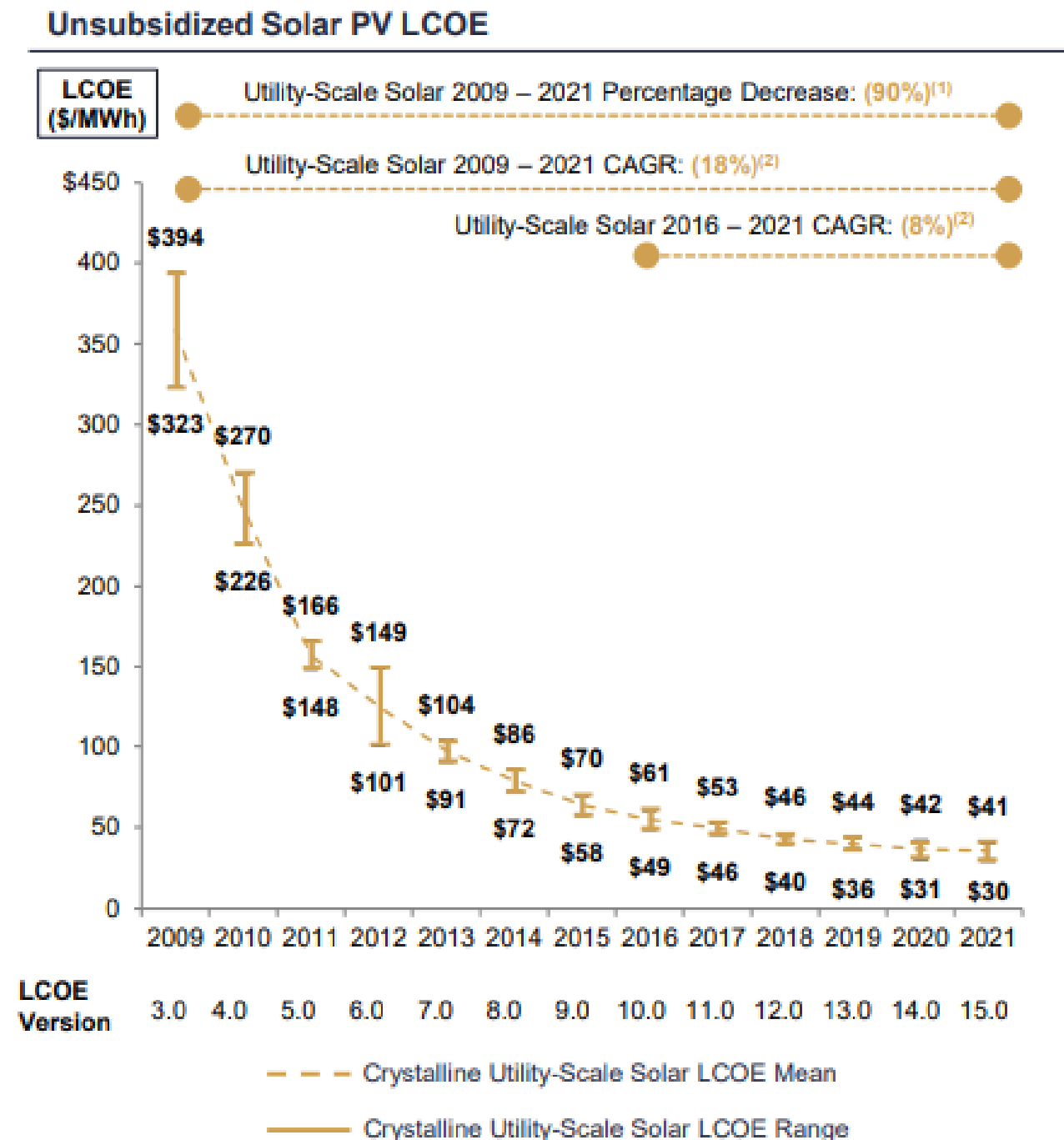


A supportive tax platform

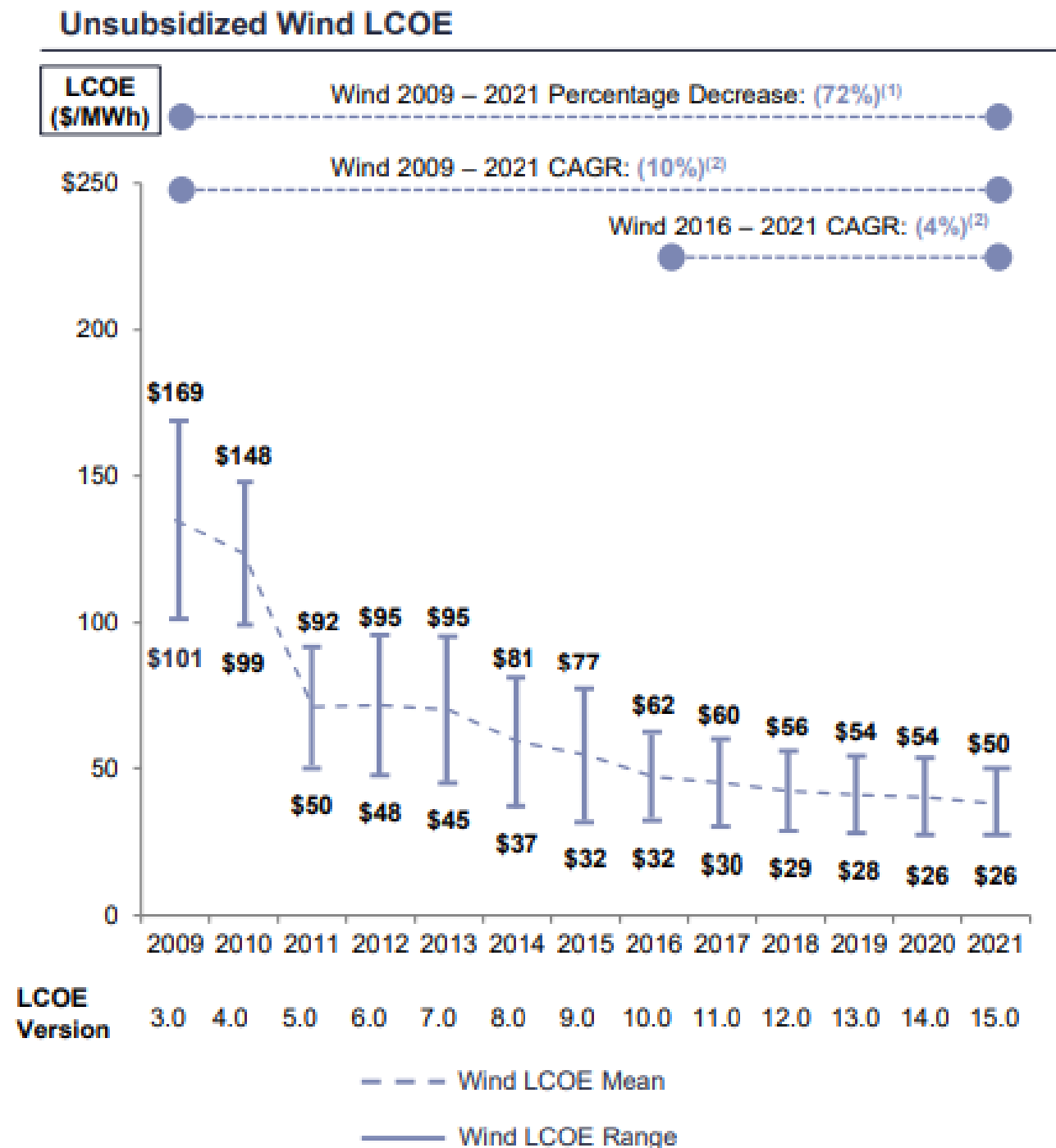
Driver #1: Over a Decade of Improvements in the Cost-Effectiveness of Solar and Wind Power



90% Reduction in Solar LCOE 2009-2021



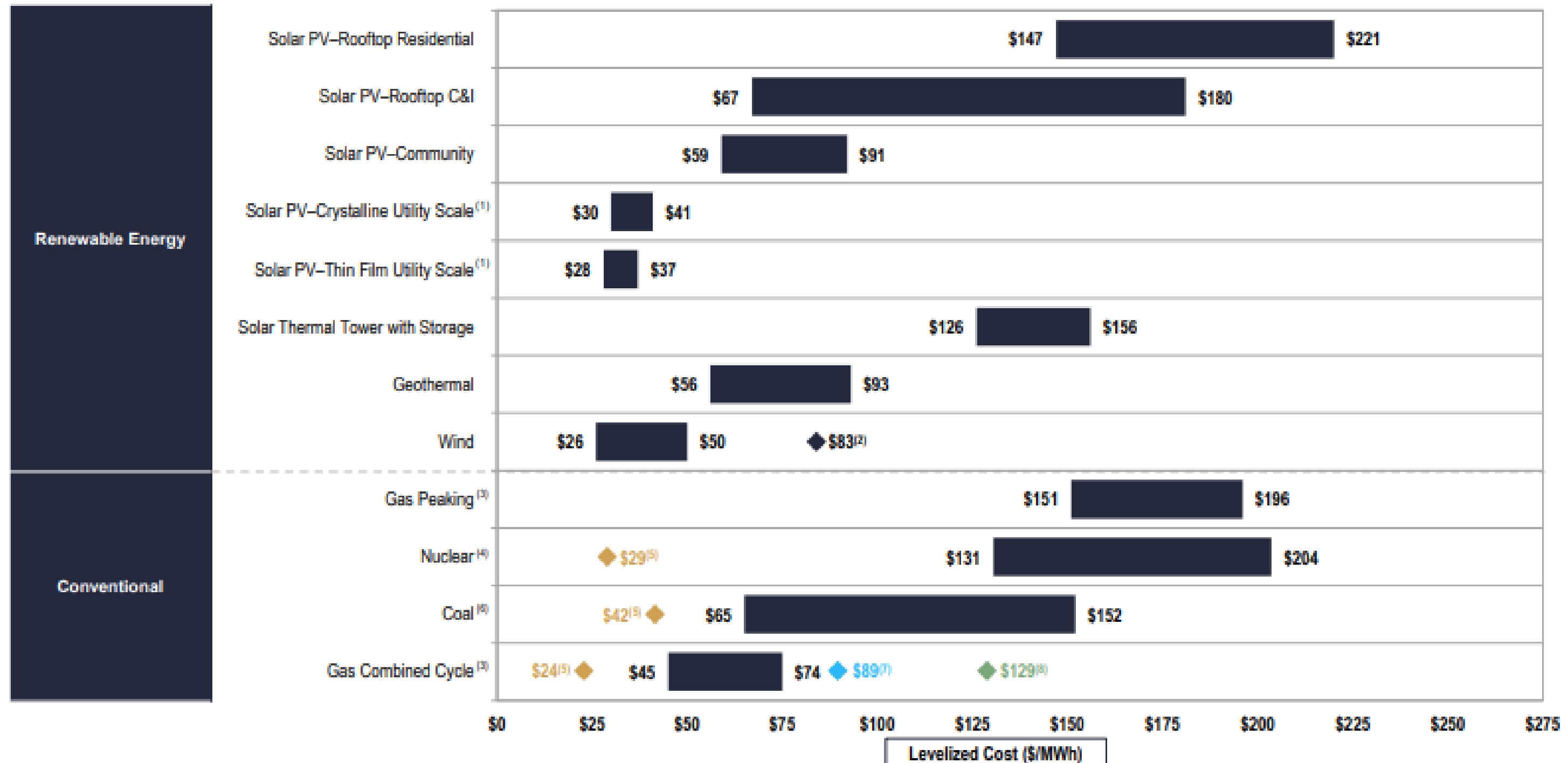
72% Reduction in Onshore Wind LCOE 2009-2021



Driver #1: Levelized Cost of Energy Comparison

Levelized Cost of Energy Comparison—Unsubsidized Analysis

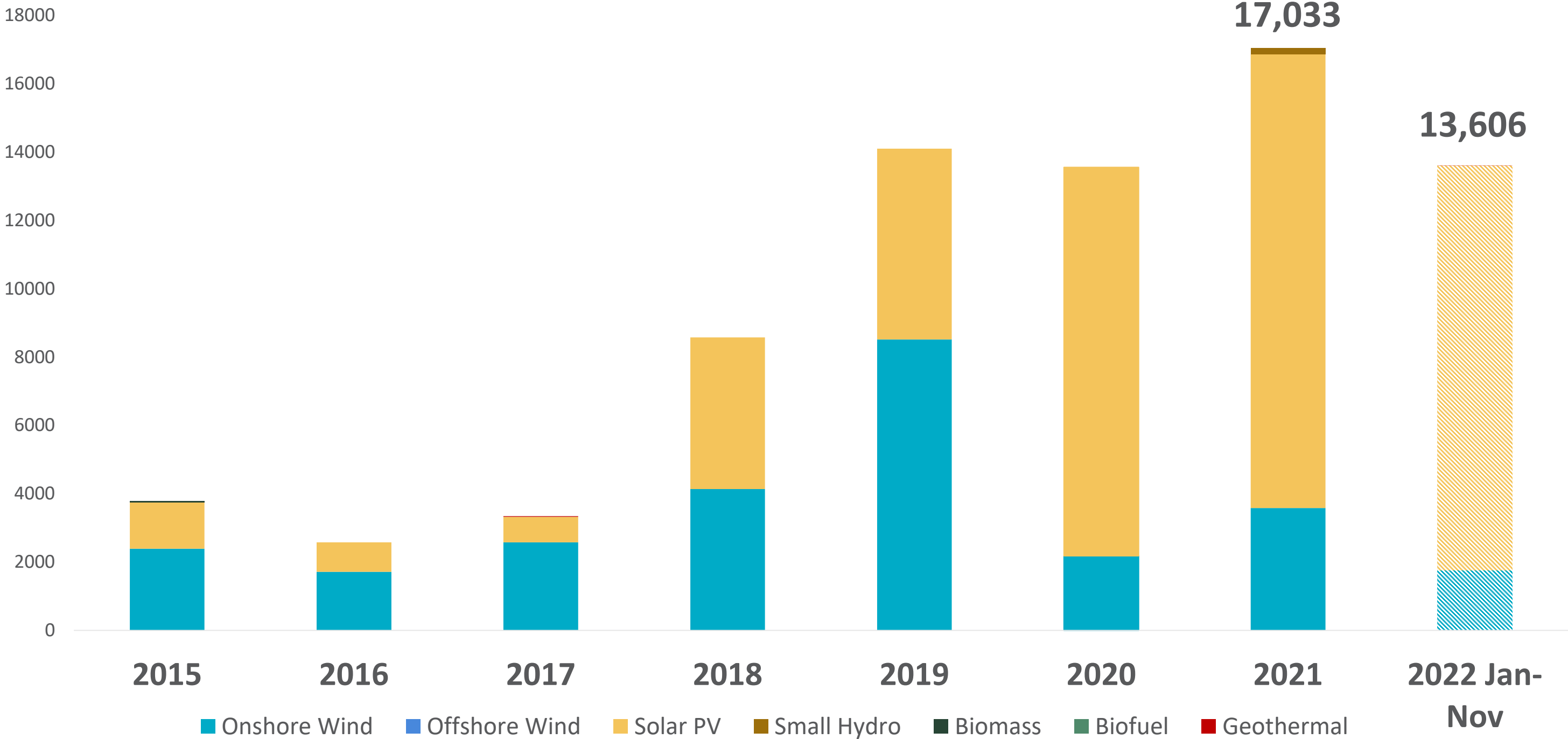
Selected renewable energy generation technologies are cost-competitive with conventional generation technologies under certain circumstances



Driver #2: Steady Demand from C&I Energy Consumers



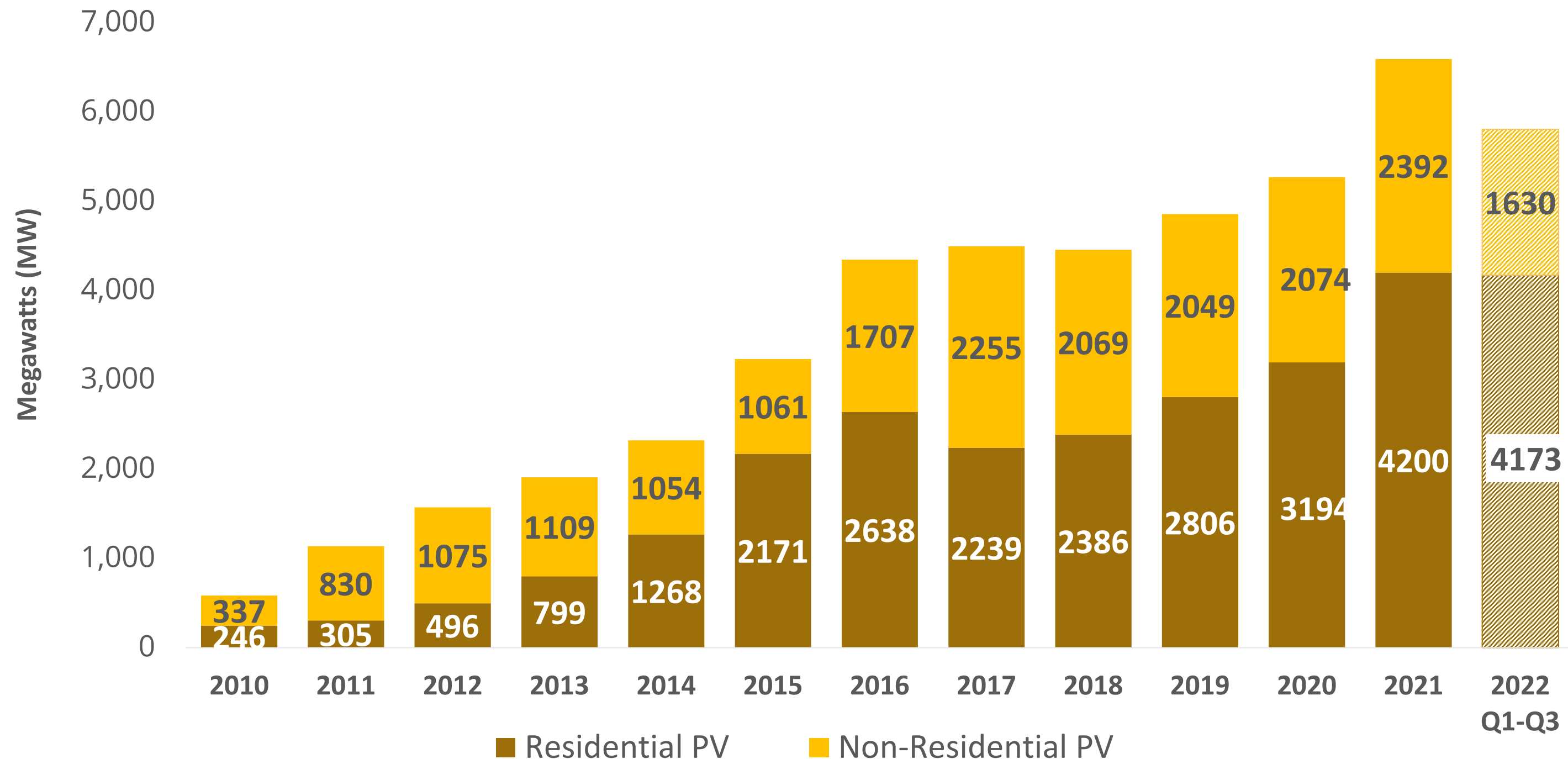
U.S. Corporate PPA Volumes, by Technology (MW), 2015 – 2022 Nov



Source: BloombergNEF, January 2023

Driver #2: Steady Demand for U.S. Residential Solar Installations

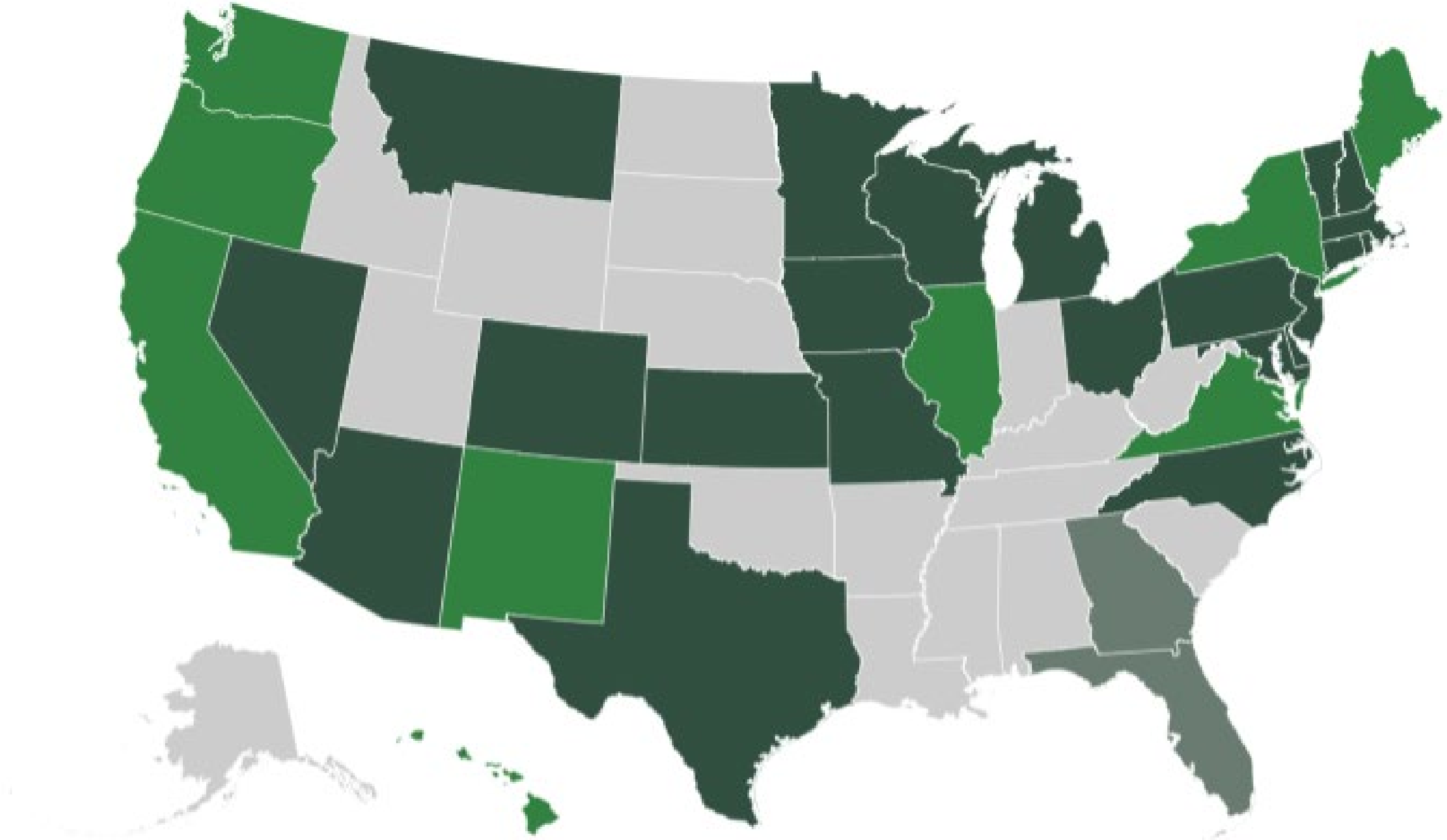
Annual U.S. Distributed Solar Installations (MW), 2010–2022 Q3





Driver #3: 31 States + D.C. & P.R. Have Renewable or Clean Energy Standards

■ Has a renewable energy standard and is committed to 100% ■ Has a renewable energy standard
■ Working on a statewide commitment



Source: Environment North Carolina

Driver #3: 18 States, DC and PR Seeking 100% Clean Energy

Clean Energy Laws	Clean Energy Executive Orders & Goals
California – 100% by 2045	Arizona – 100% by 2070
Hawaii – 100% by 2045	Colorado – 100% by 2050
Illinois – 100% by 2050	Connecticut – 100% by 2040
Maine – 100% by 2050	Minnesota – 100% by 2050
New Mexico – 100% by 2045	Nevada – 100% by 2050
New York – 100% by 2040	Nebraska – 100% by 2050
Puerto Rico – 100% by 2050	New Jersey – 100% by 2050
Rhode Island – 100% by 2033	North Carolina – 100% by 2050
Virginia – 100% by 2050	Wisconsin – 100% by 2050
Washington – 100% by 2045	
Washington, D.C. – 100% by 2032	

Five other states have net zero goals: LA, MD, MA, NE and NC

How Historic Drivers Fare in Today's Policy and Market Environment



Over a decade of improvements in cost effectiveness

Supply chain and other issues are pushing up wind and solar costs, but costs remain competitive with competing generation sources, in which costs are also increasing.

Increasing demand from residential consumers, American companies, and investors

Annual residential and commercial solar installations and corporate PPAs are all growing and on track for another big year.

Aggressive state and local renewable standards in populous jurisdictions

State programs are still driving growth and targets are holding firm.

A supportive tax platform

The Inflation Reduction Act (IRA) provisions include historic new and expanded tax credits for renewable technologies (see next slide).

Key IRA Provisions for Renewable Deployment



New and expanded tax credits for renewable energy technology

- **Full Value extension of the ITC (30%) and PTC (2.6c/kWh) for wind and solar for a decade**
Becomes tech-neutral after 2025 provided facilities generate zero GHG emissions
- **Establishment of a 30% ITC for stand-alone energy storage**
- **\$10B extension of Advanced Energy Project Credit (§48C)**
Expands to include facilities manufacturing clean energy technologies
- **Creation of Advanced Manufacturing PTC (§45X) for solar, wind and battery components**
- **Additive bonus credits for renewable projects**
Using domestic content (10%), placed in energy communities (10%), or sited in low-income communities (10-20%)
- **Direct pay credits for nonprofits, co-ops, tribes, and state & local governments**
Direct pay also available to all taxpayers for carbon capture, hydrogen, and advanced manufacturing credits
- **Transferable credits where no direct pay**
- **Renewable credits and depreciation benefits are exempted from 15% BTM provisions**

Provisions to accelerate transmission buildout

\$2B in direct loans for national interest transmission projects; \$760M in permitting & siting grants;
\$100 million for modeling and analysis

Forecasts for the Impact of the IRA

According to four independent analyses, the IRA provisions may result in:

- **65-95 GW** of annual new-build utility-scale wind and solar (almost 3x U.S. record deployment)
- **40%** reduction in GHG emissions below 2005 levels by 2030 (67%-78% reduction from electricity sector)
- **1.2-1.7 million** additional jobs in 2030
- **Up to \$320** in annual savings per average household by 2030

But... Unlocking the full benefits of IRA will require doubling the historic pace of transmission development in the U.S.

Further actions needed to maximize IRA's impact

- Comprehensive siting and permitting reform measures
- Establishment of a stand-alone transmission ITC
- Clear and timely tax guidance from Treasury & IRS

With Thanks

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