

The Renewable Energy Transition: A Status Report

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REN21 Global Status Report Webinar

Leading the Transition to a Renewable Energy Economy

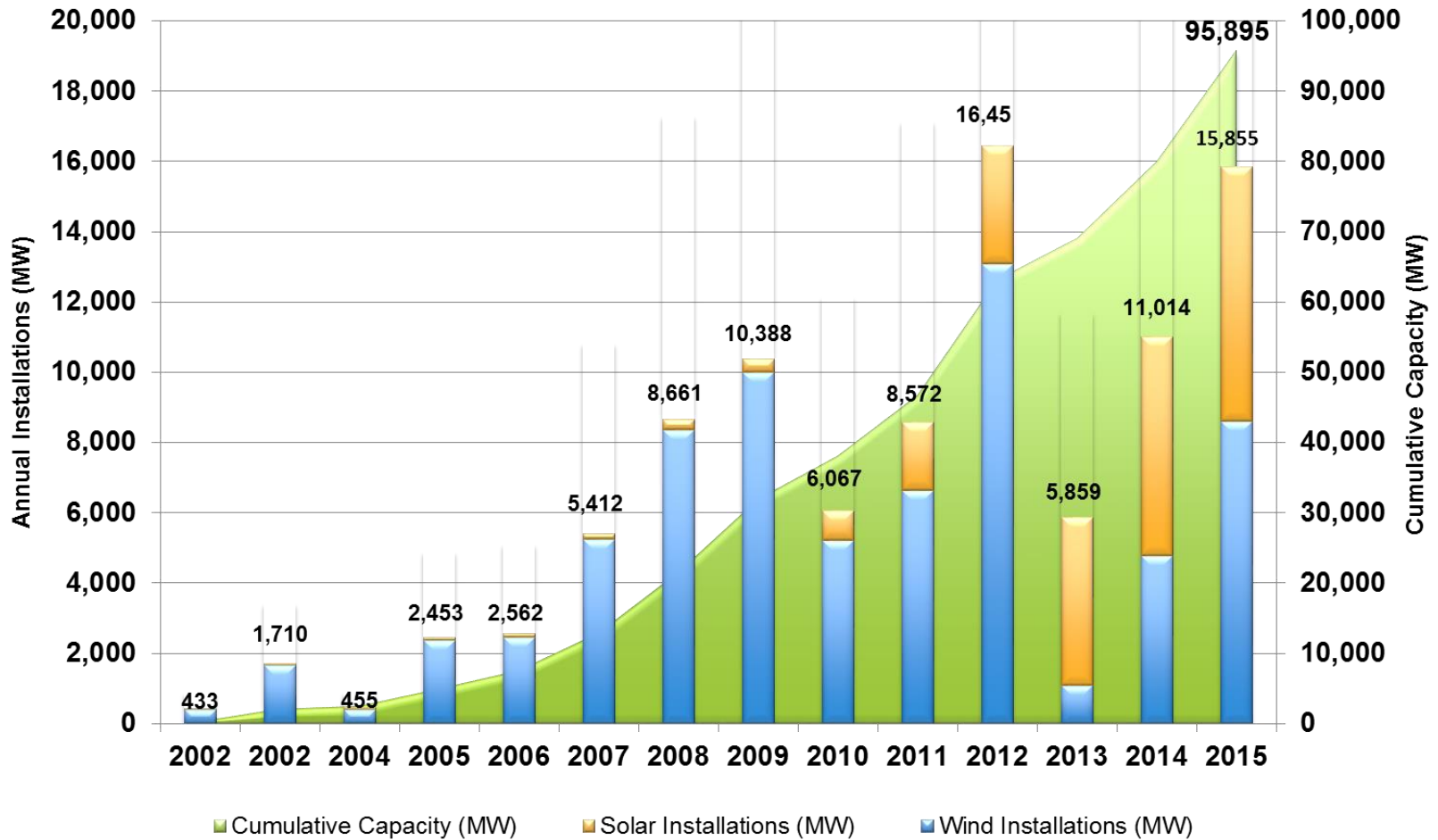
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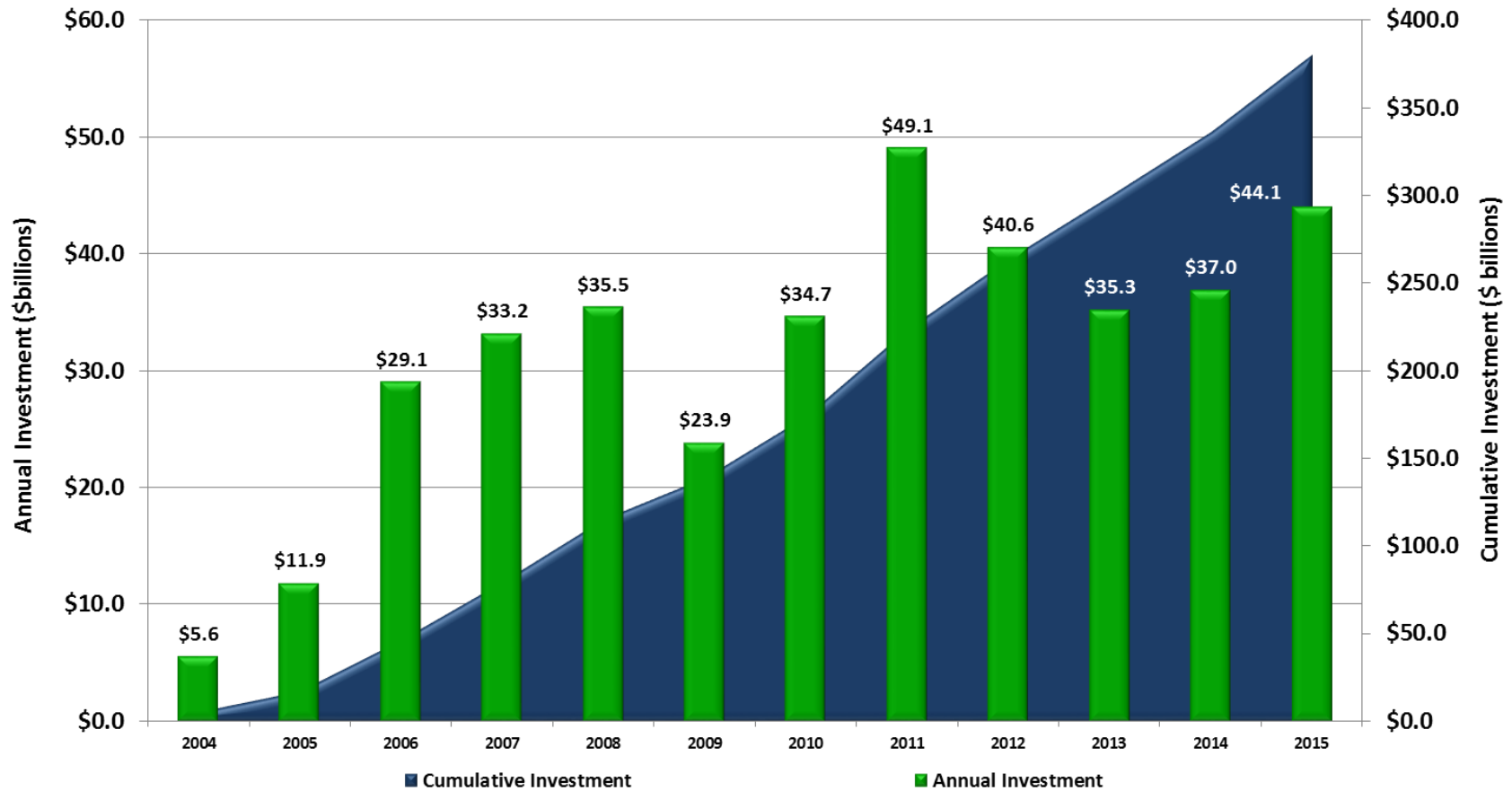
About ACORE

U.S. Wind and Solar Installations 2002 – 2016



Sources: AWEA, SEIA, GTM

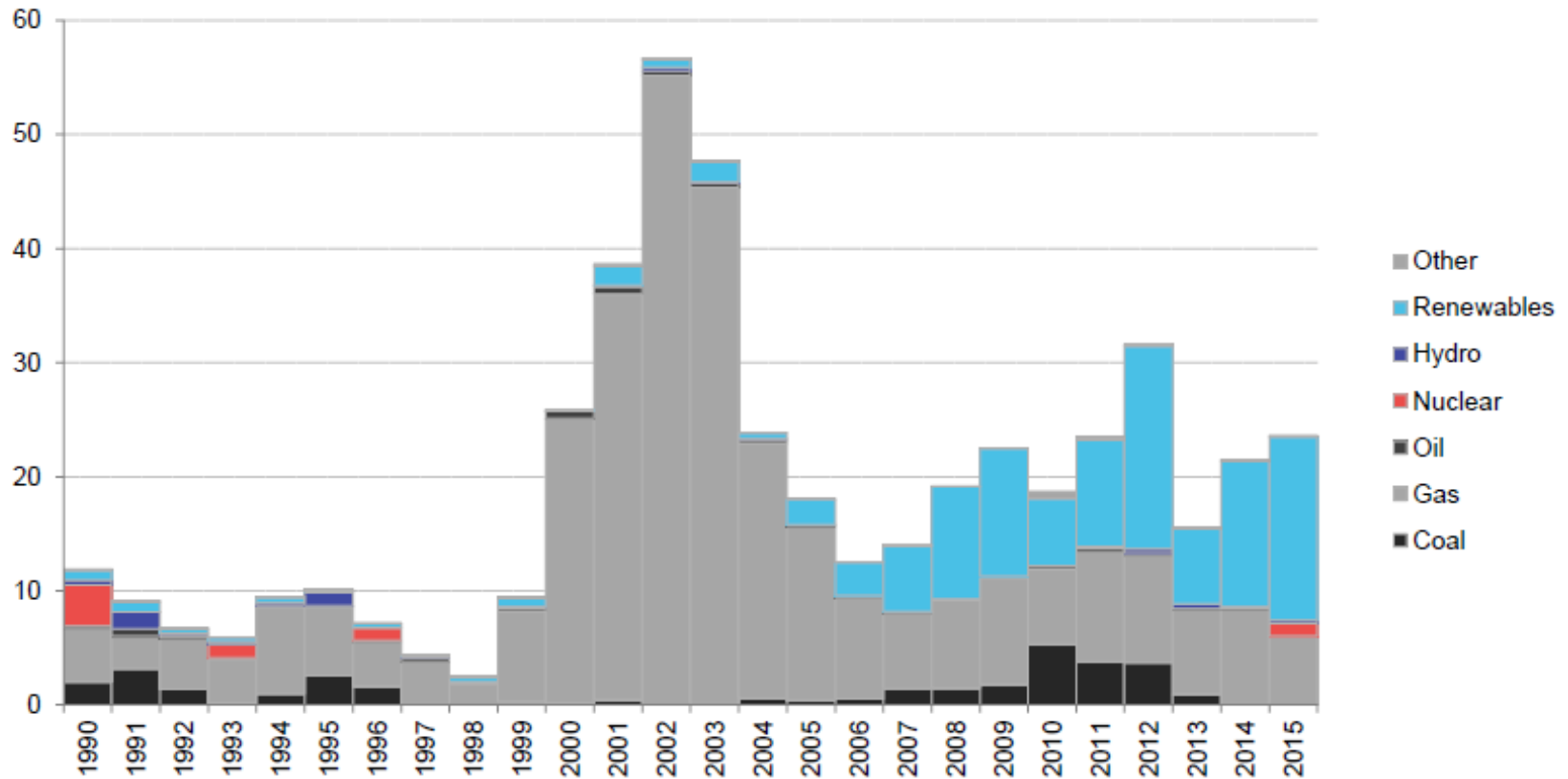
U.S. Total Renewable Energy Investment



Technologies include: all biomass and waste-to-energy, geothermal, and wind projects greater than 1 MW; all hydropower between 1 MW and 50 MW; all wave and tidal projects; all biofuel projects with a capacity of one million liters or greater per year; and all solar projects.

Source: Frankfurt School-UNEP/BNEF

Electric Generation Capacity Build by Fuel Type

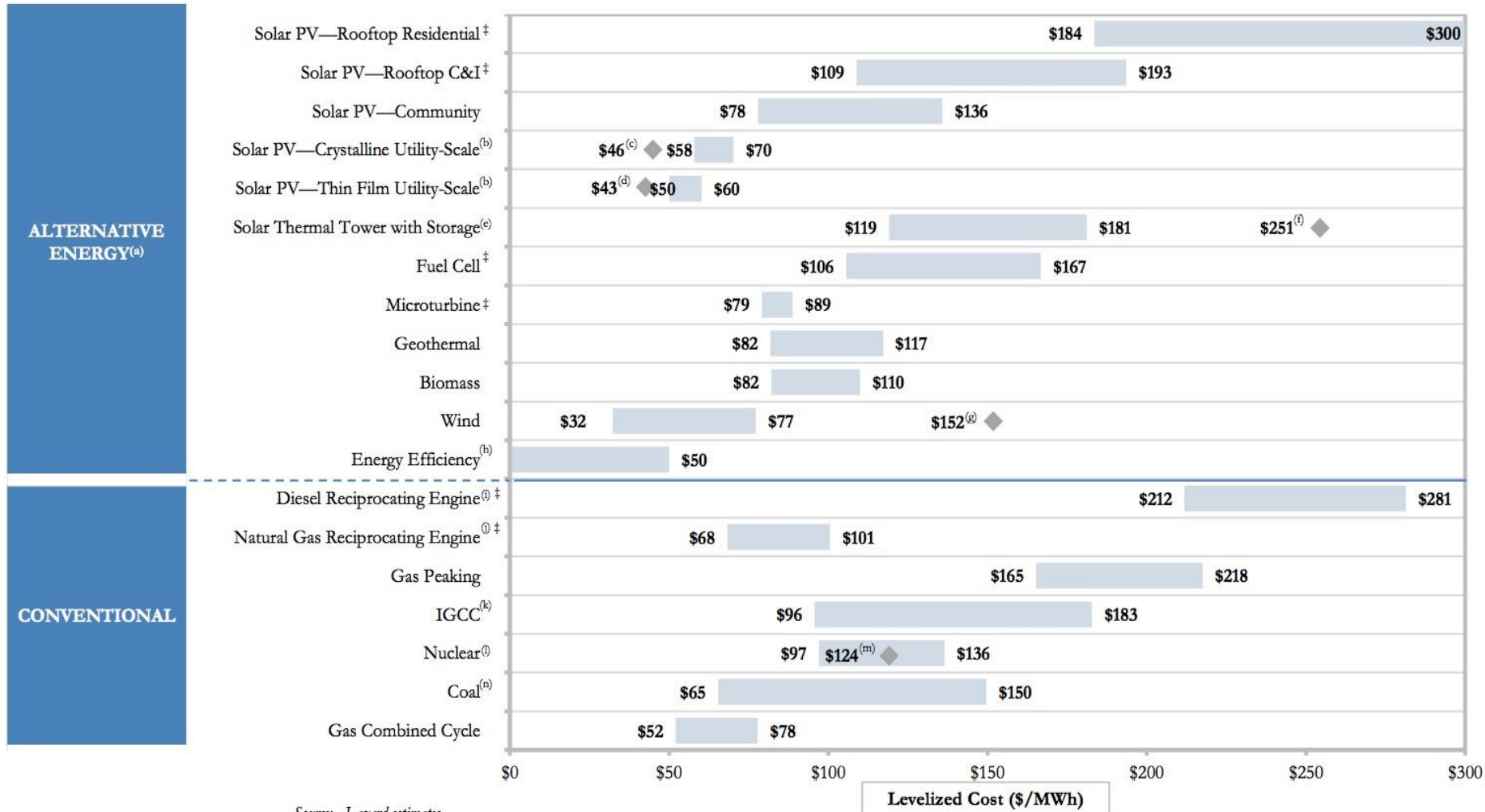


- Since 2008, renewable energy projects have made up just over 50% of new capacity additions.
- Since 2000, 94% of new power capacity built in the US has been natural gas plants or renewable energy projects.
- In 2015, non-hydro renewables were the largest contributor to build for the second year in a row, providing over 16GW or 68% of total build. Gas made up another 25%. For the first time since the 1990s, there was also nuclear build of 1.1GW.

Source: EIA, Bloomberg New Energy Finance

Wind and Solar PV are Cost Competitive

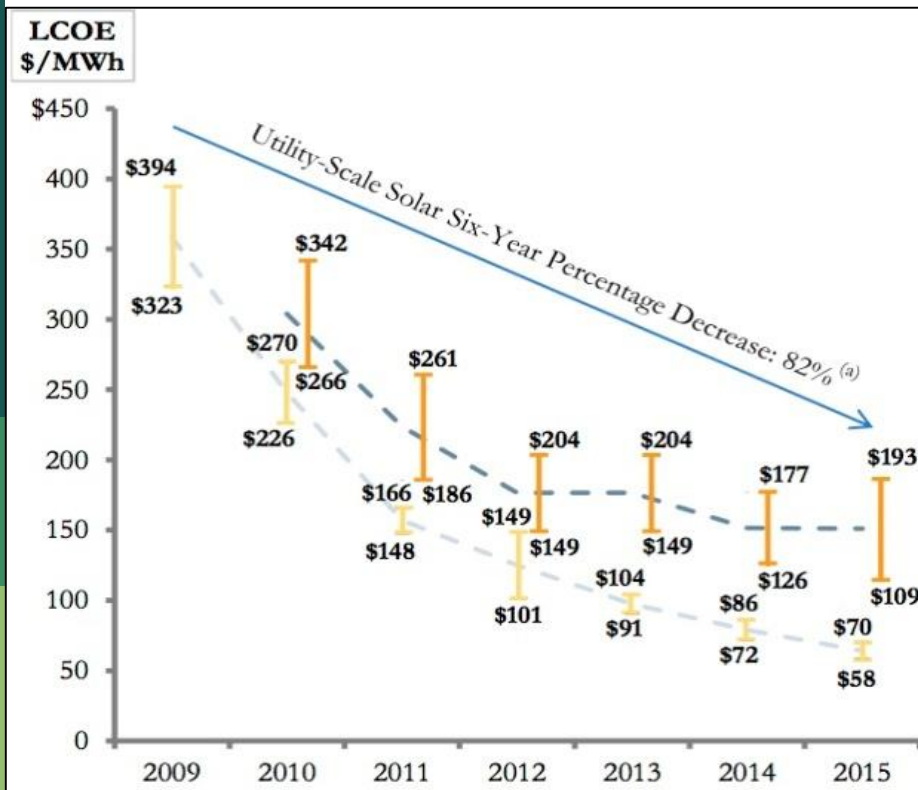
Unsubsidized Levelized Cost of Energy



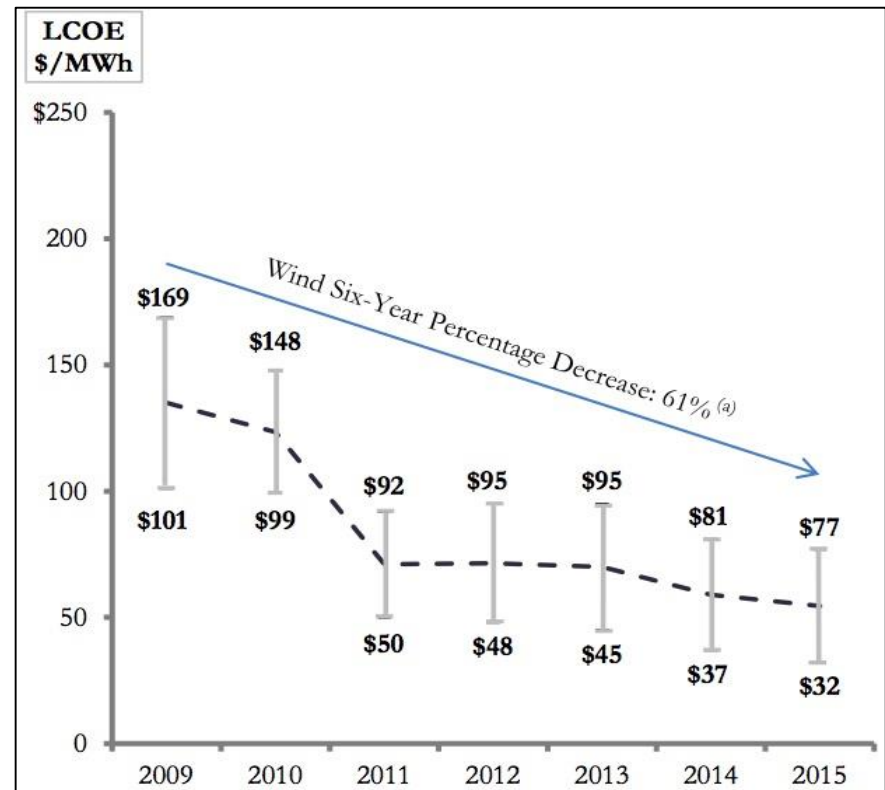
Source: Lazard estimates.

The Growing Cost-Effectiveness of Wind and Solar Power

82% Reduction in Solar LCOE



61% Reduction in Wind LCOE since 2009

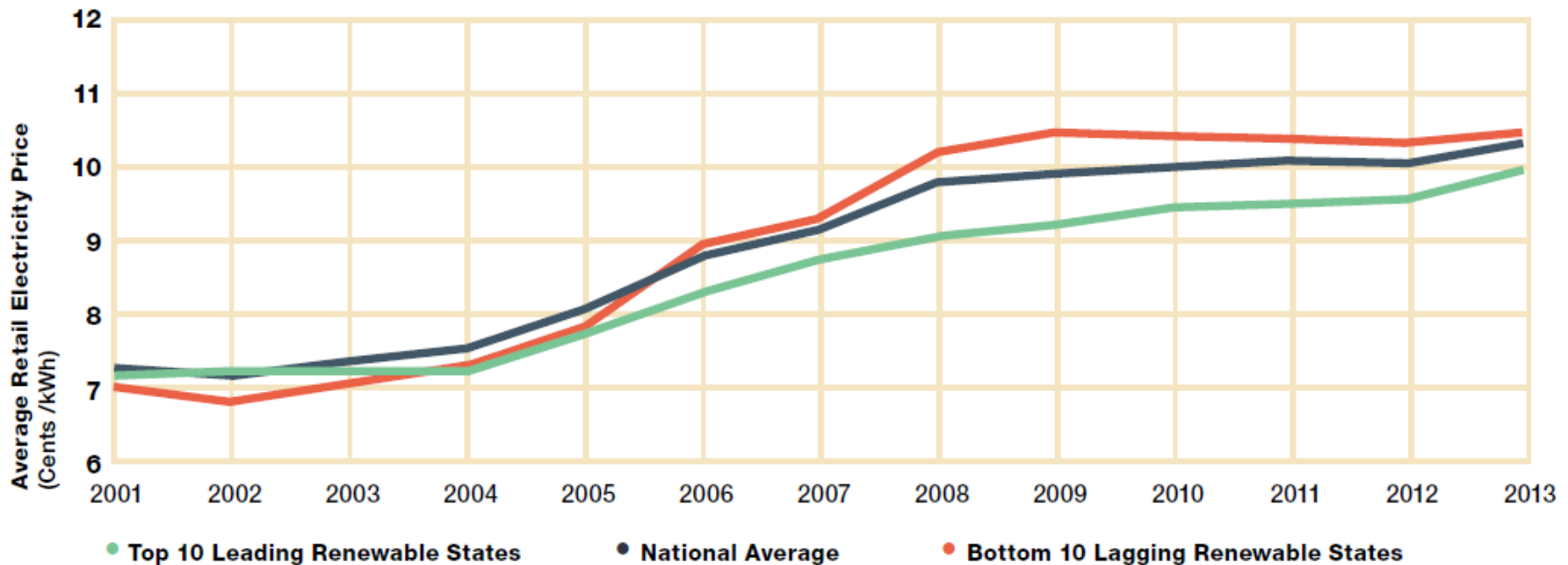


Charts courtesy of Lazard

Renewable Energy Saves Consumers Money

States with the most Renewables are paying less for electricity

Average Retail Electricity Prices 2001 - 2013



Source: U.S. Energy Information Administration

* The Top 10 Renewable States have experienced low retail prices for a variety of reasons, including, in many cases, abundant wind resources.

Chart courtesy of DBL Investors

Renewable Energy Saves Consumers Money (part 2)

Retail prices are increasing most slowly in the states with the most renewables energy

Renewable Leaders and Laggards:

Average Annual Increases in Retail Electricity Prices 2002 - 2013

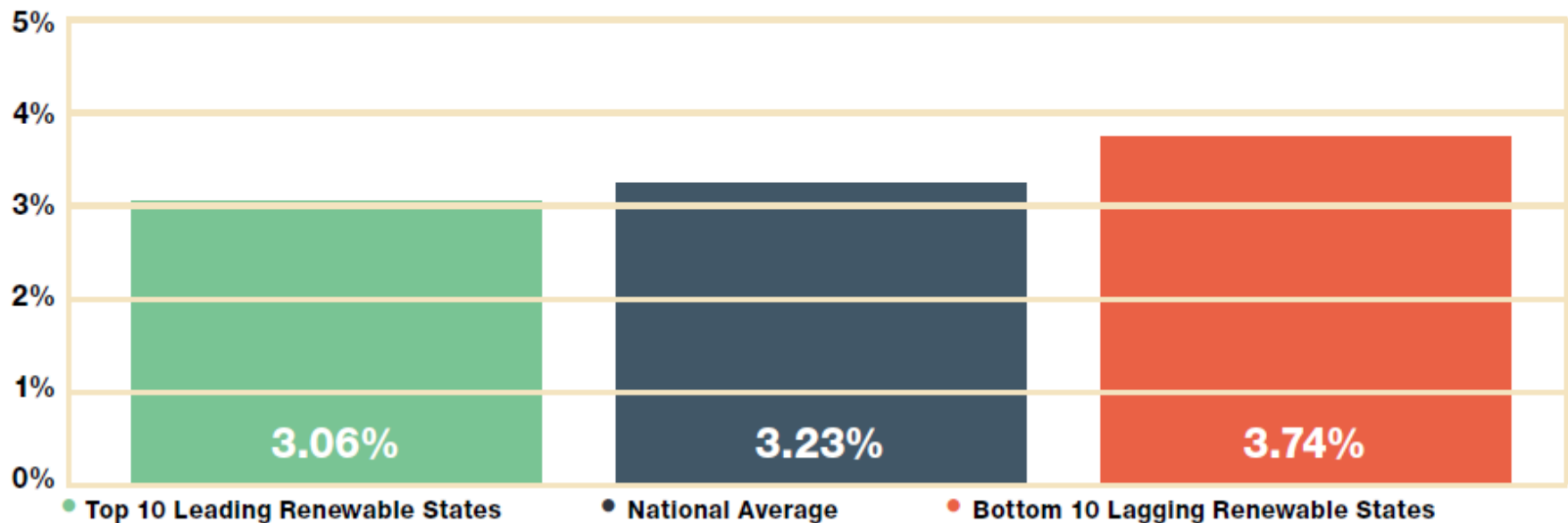
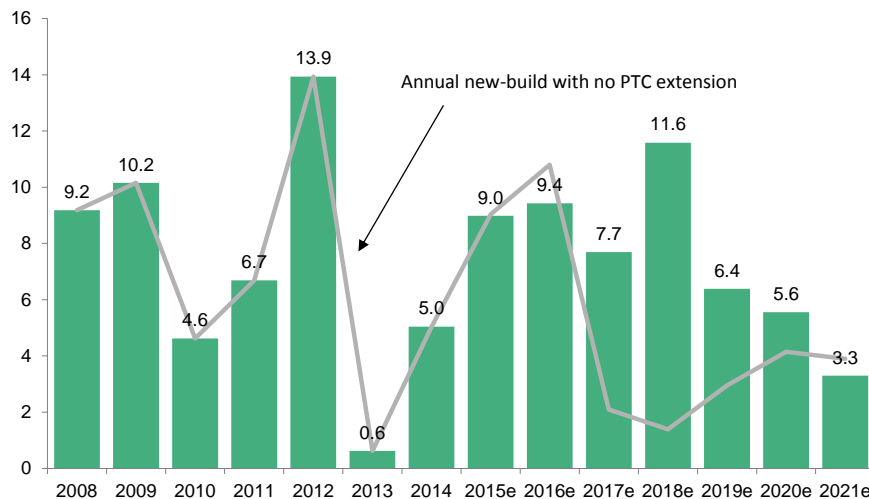


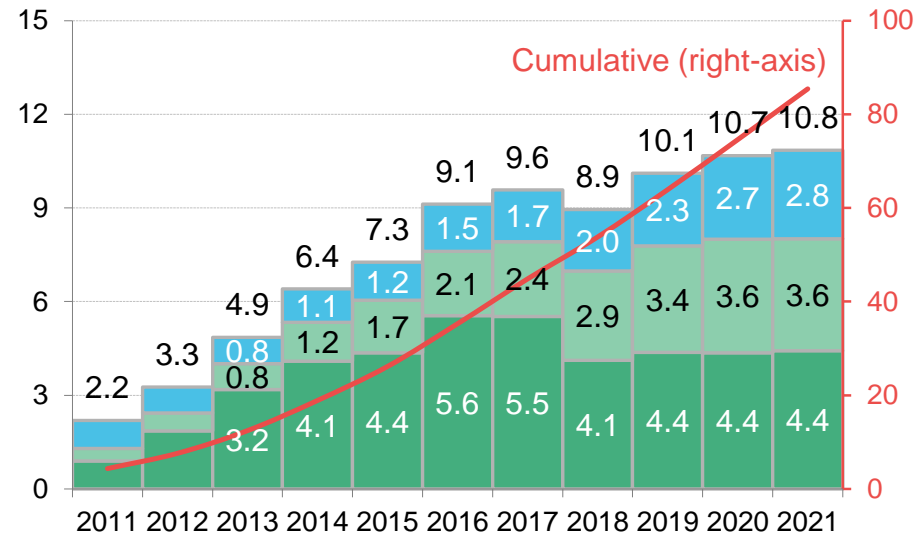
Chart courtesy of DBL Investors

Tax Policy as a Key Driver of US Renewable Energy Deployment

The five-year PTC extension will create an additional 19 GW of new wind capacity.



The five-year ITC extension will create an additional 18 GW of new solar capacity.

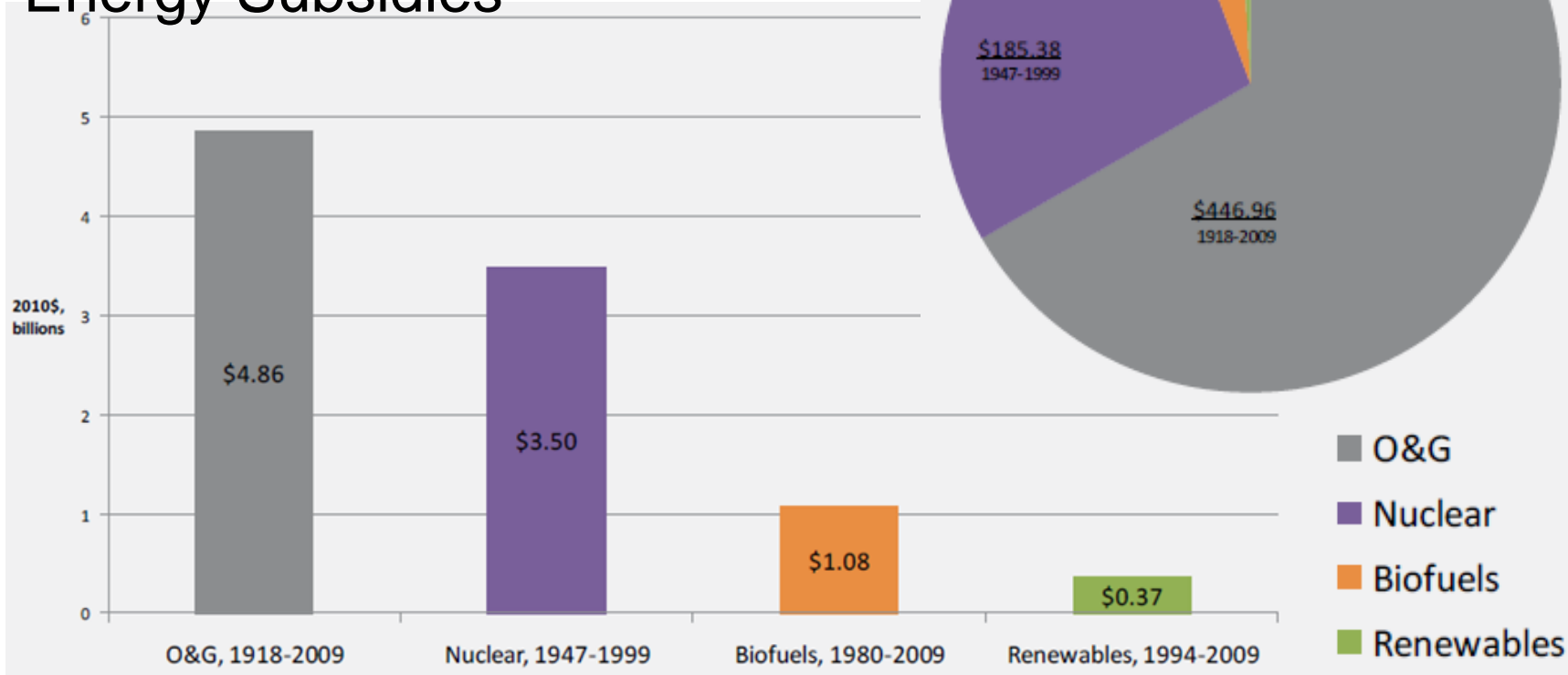


Data courtesy of Bloomberg New Energy Finance

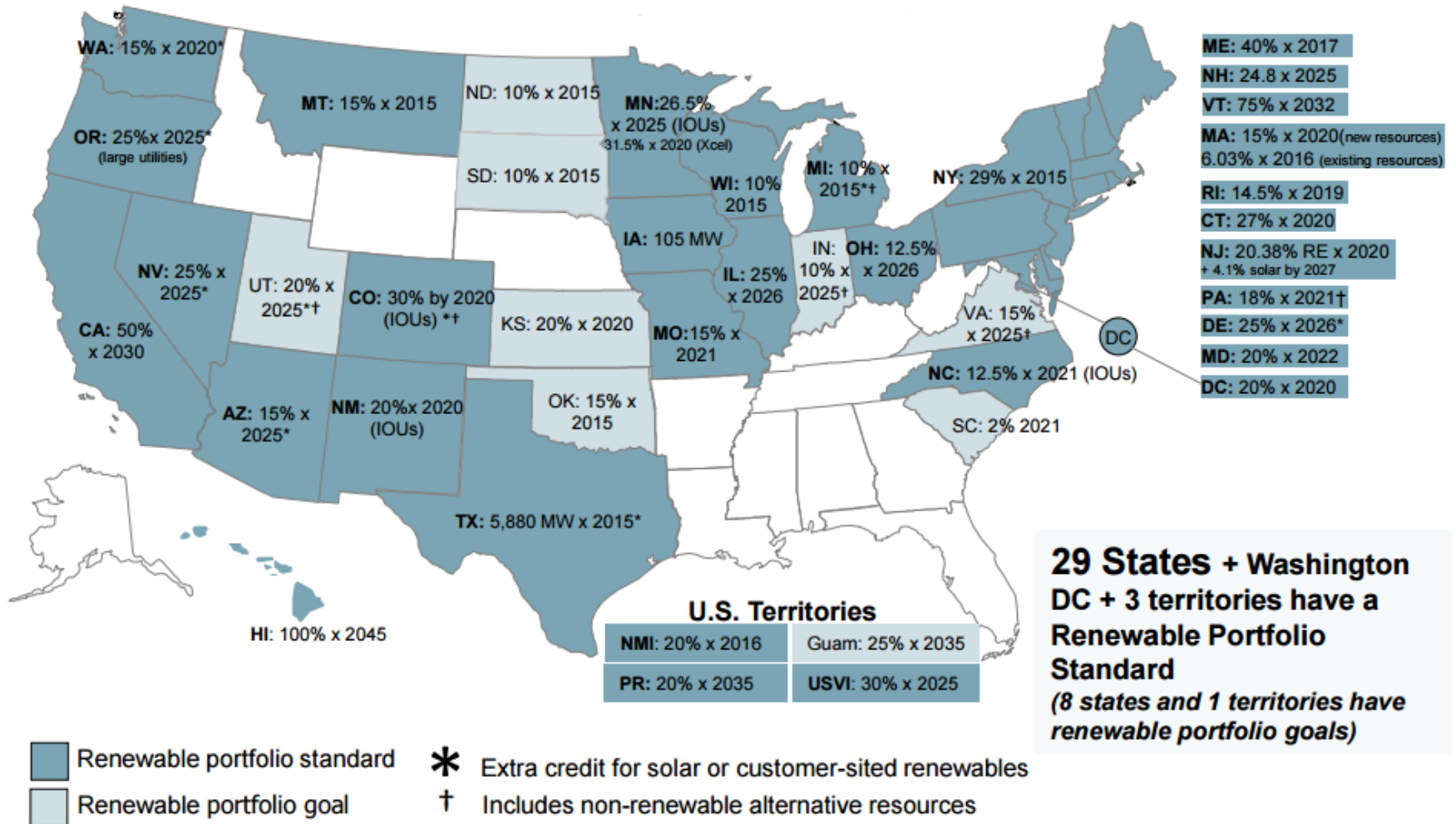
Renewable Energy Subsidies in Perspective

Cumulative Historic Federal Subsidies 2010, \$Billions

Historical Average of Annual Energy Subsidies



State Renewable Energy Directives



Source: DSIRE

Market Evolution: Renewable Energy Growth Exceeds RPS Mandates

Growth in U.S. Non-Hydro Renewable Generation (TWh)

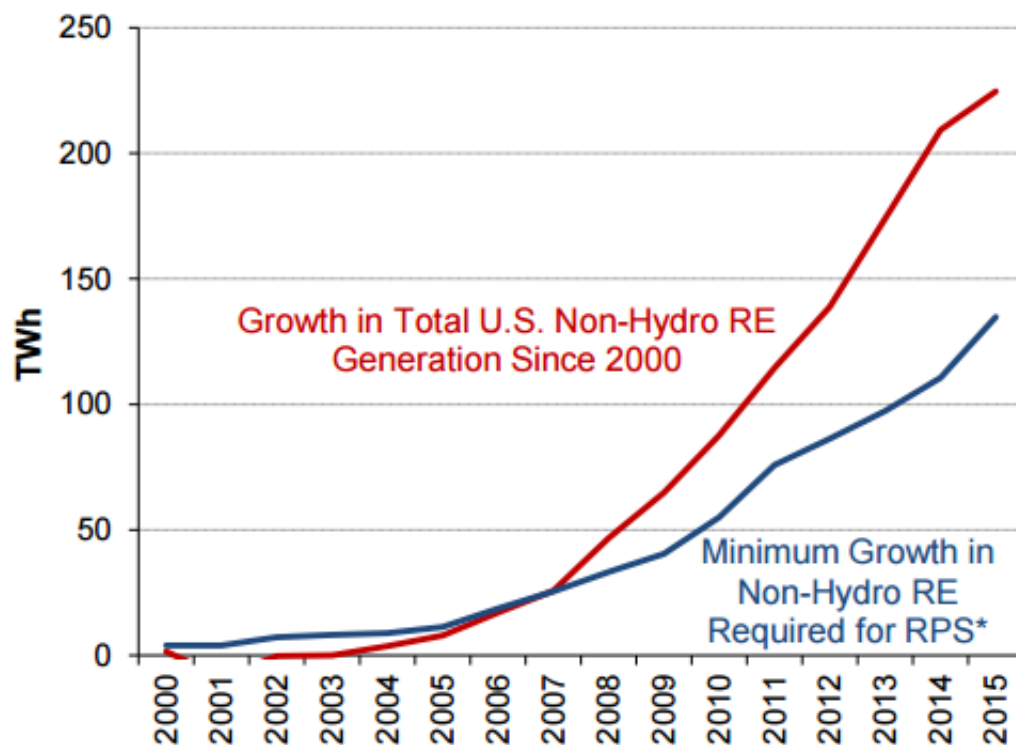


Chart courtesy of LBNL

Growing Consumer Demand: Increasing Deployment of Distributed Solar

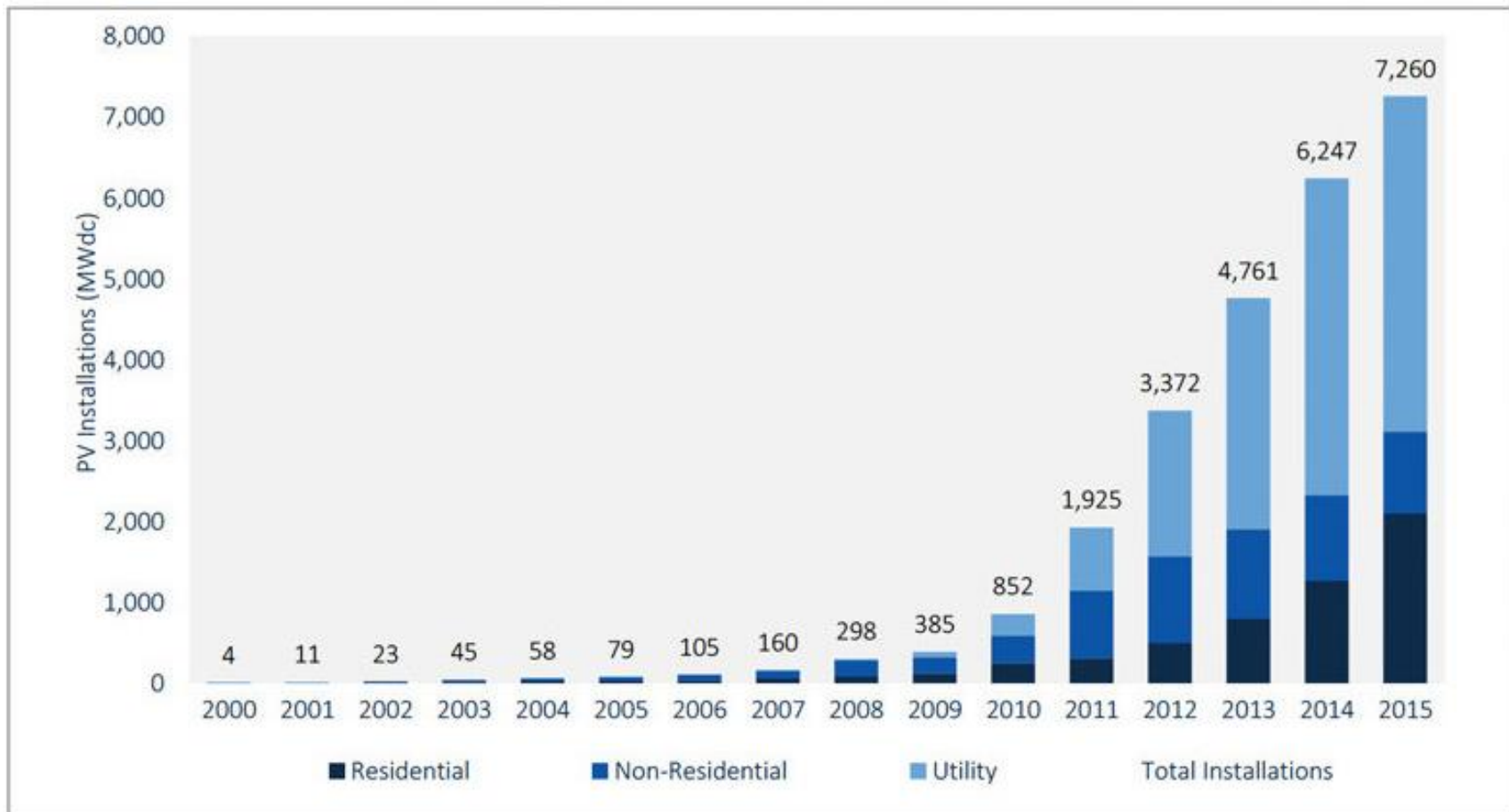
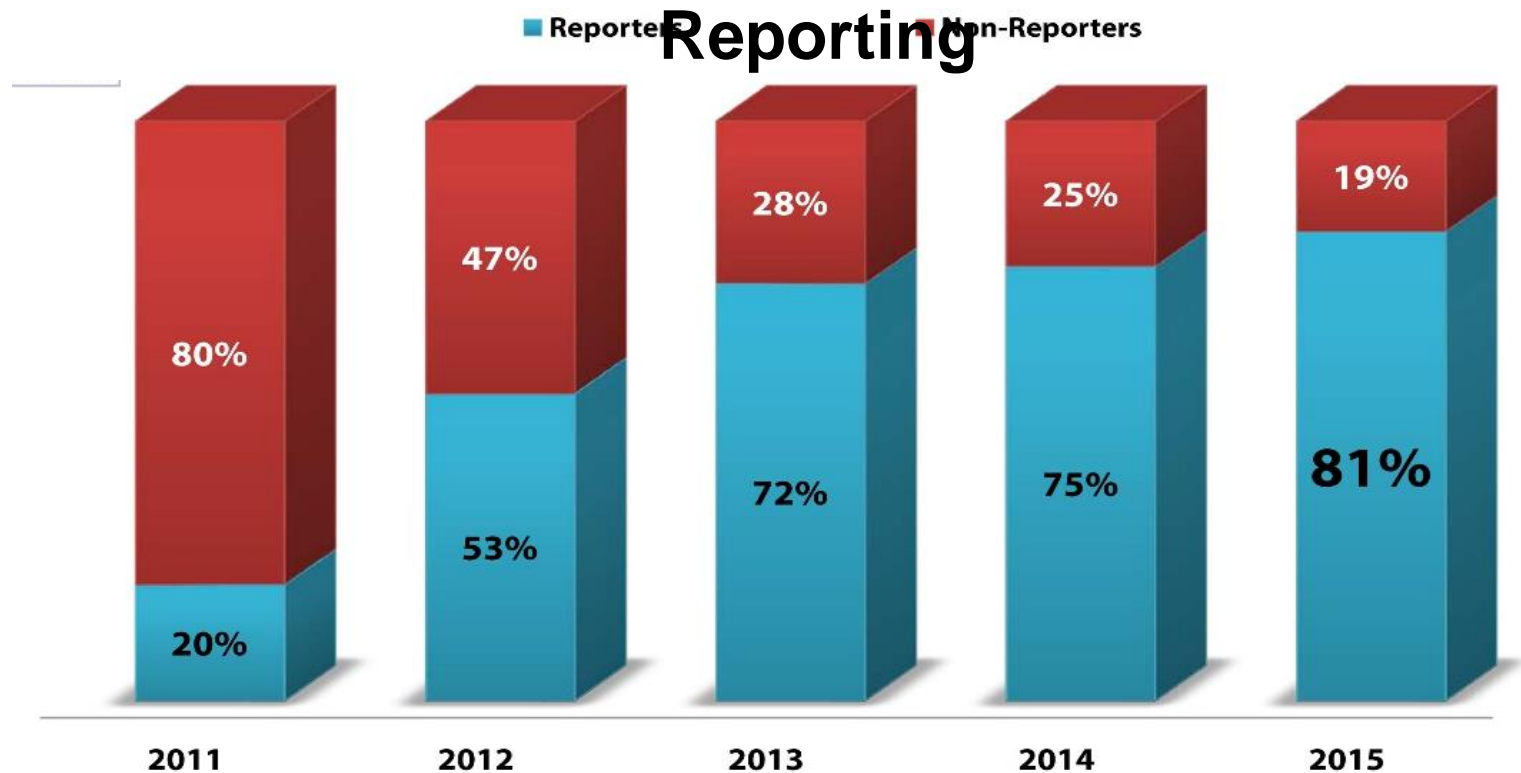


Chart courtesy of SEIA & GTM Research

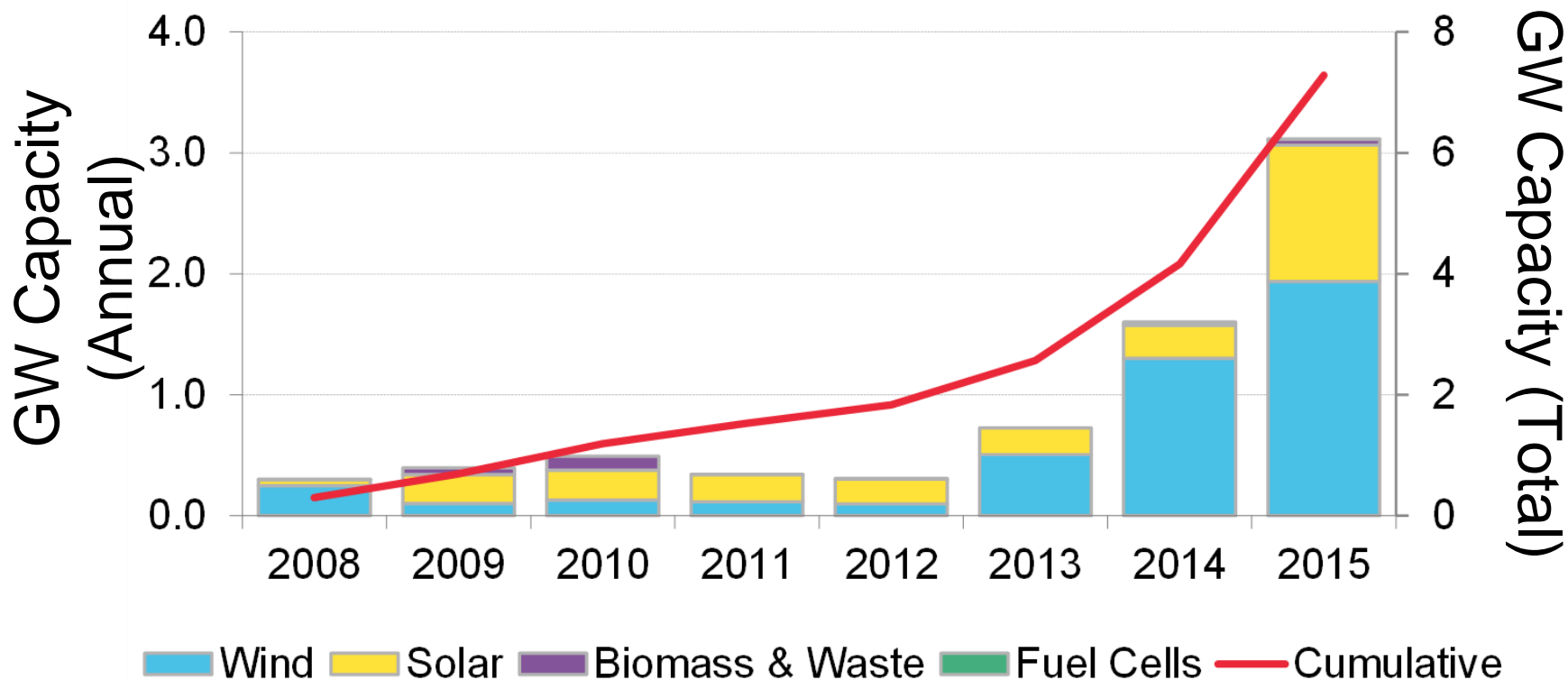
Growing Consumer Demand: Corporate Sustainability

S&P 500 Companies Sustainability



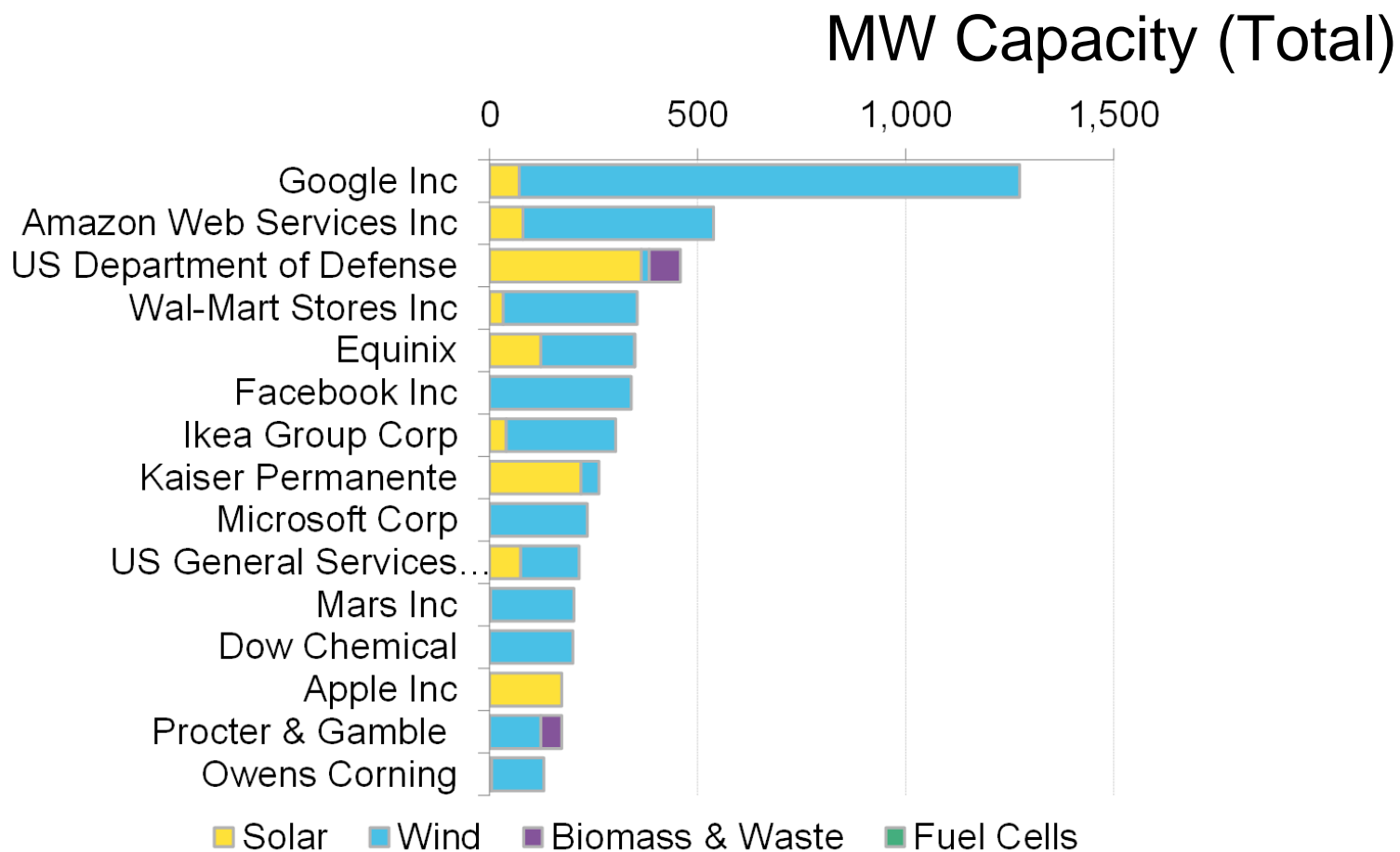
Growing Consumer Demand: Commercial and Industrial PPAs

Corporate Demand for Renewable Energy: New Market Entrants US PPA's by Sector



Charts courtesy of BNEF

Corporate Renewable Energy Leaders



Charts courtesy of BNEF

Emission Impact of EPA's Clean Power Plan

Annual Emissions: Reductions by 2030 Under the Clean Power Plan

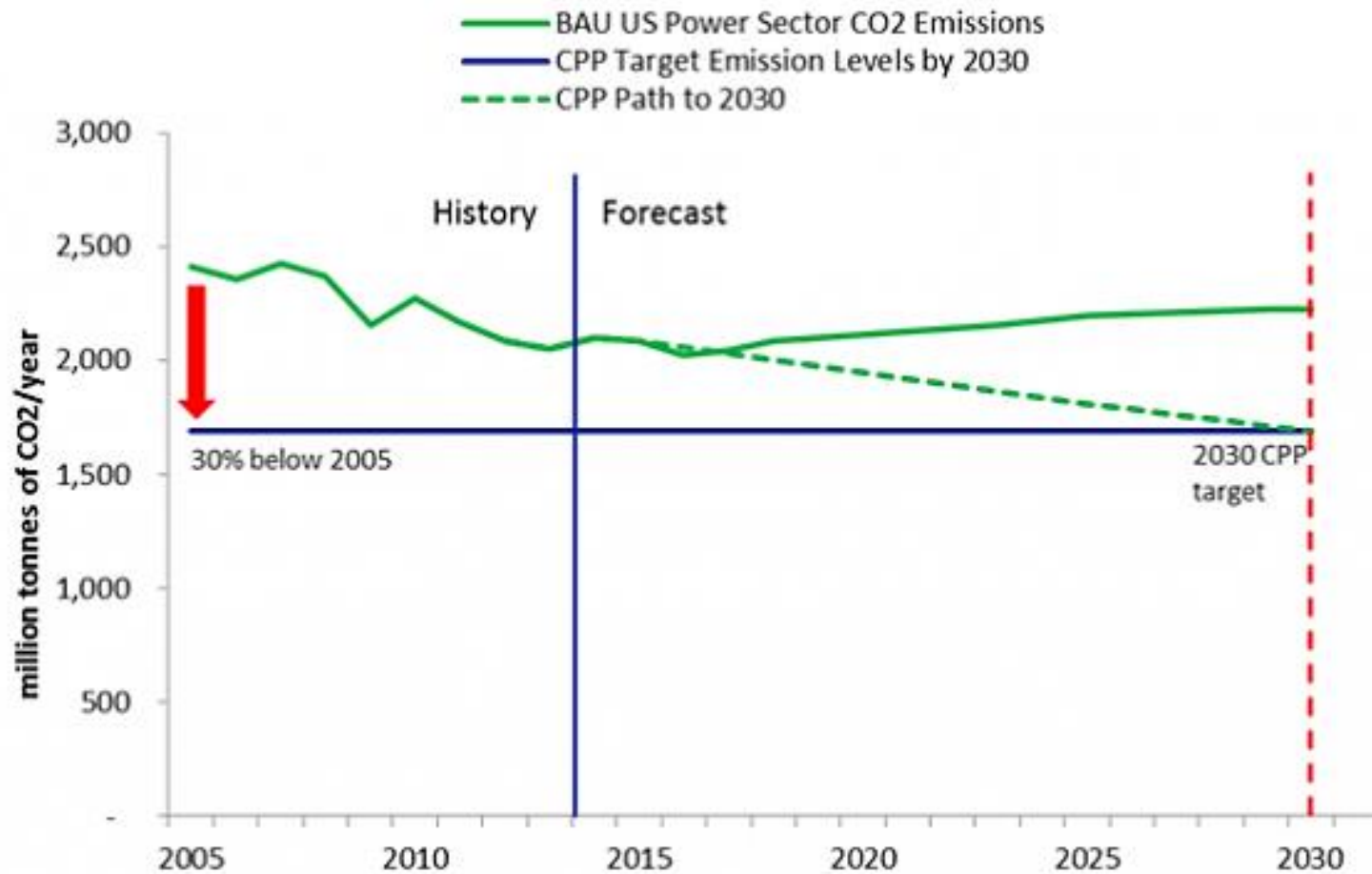


Chart courtesy of Greentech Media

US EPA Clean Power Plan: State Emission Reductions

State-by-State: Percentage Reduction of CO₂ Emissions Rate – 2012 to 2030 (lbs./MWh)

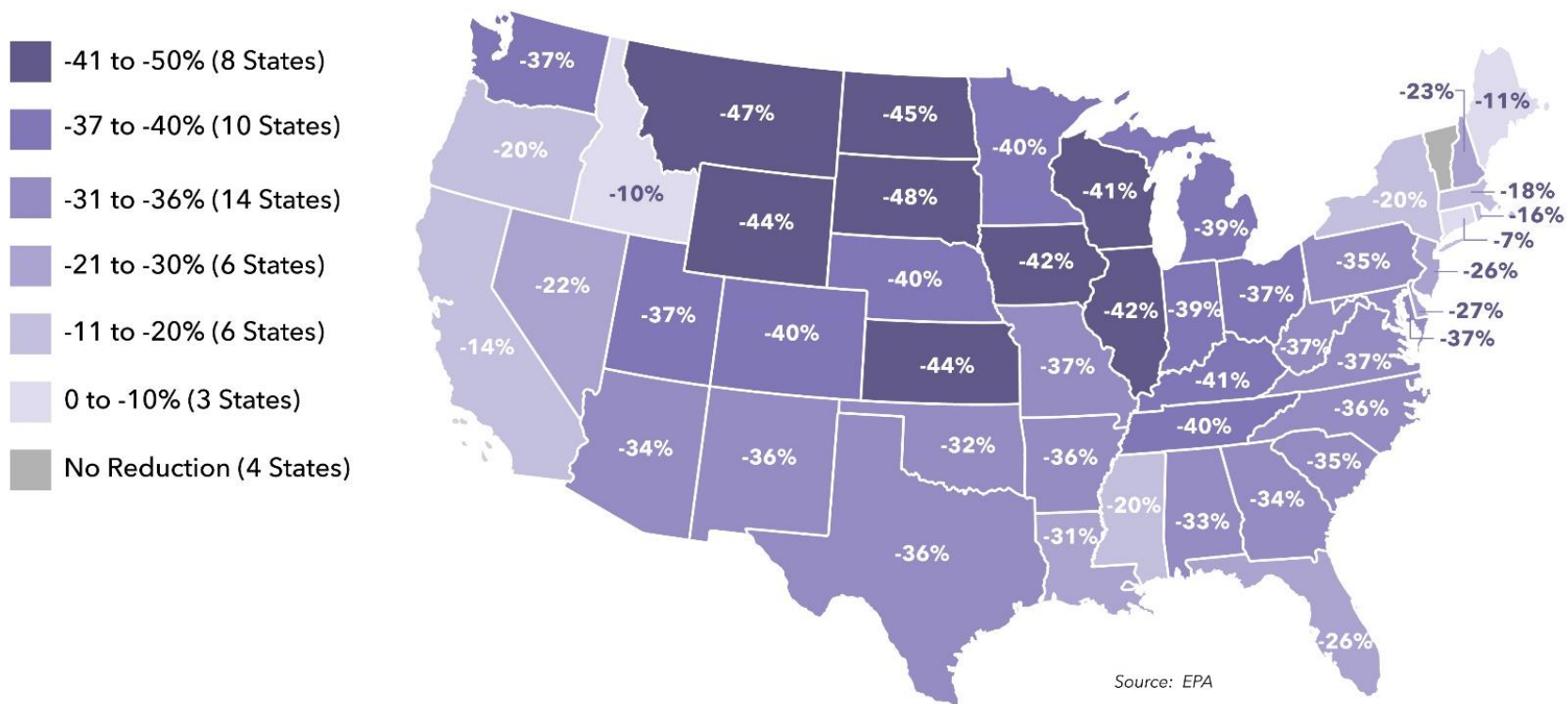
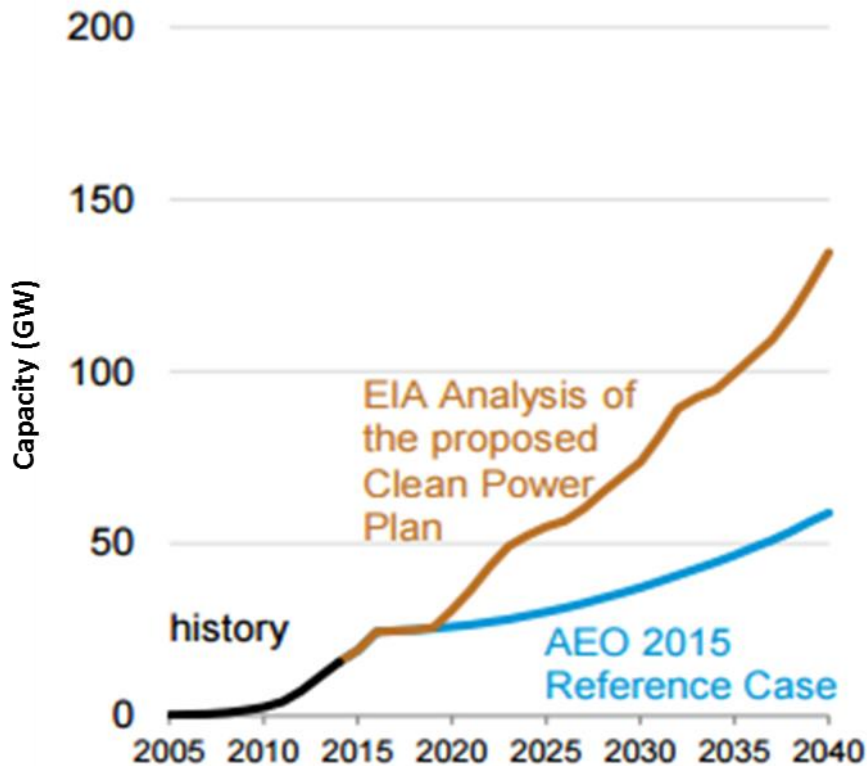


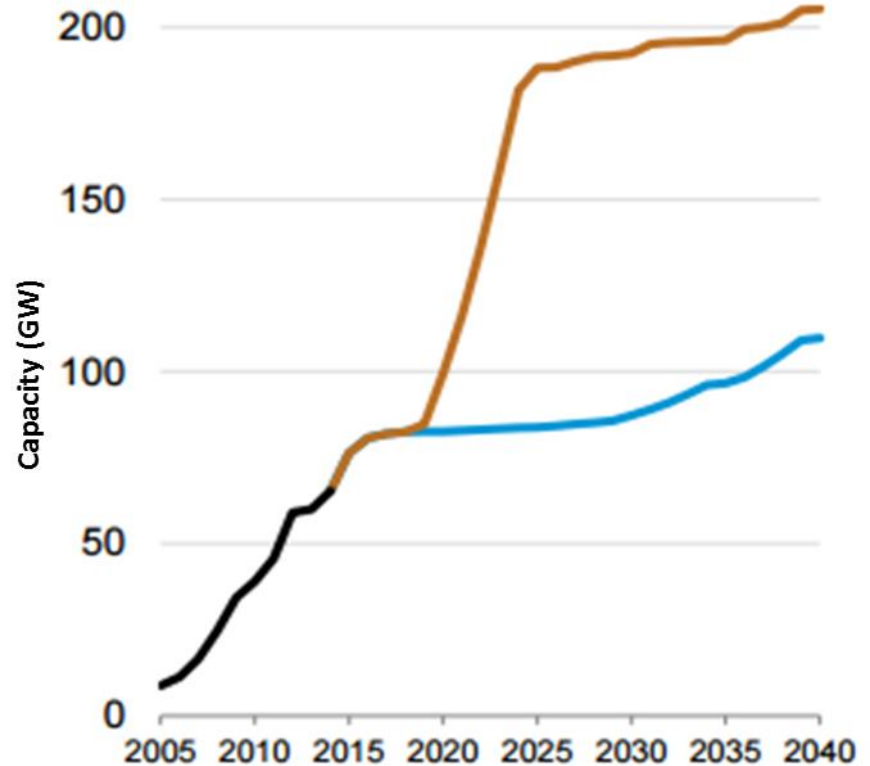
Chart courtesy of Chadbourne & Parke

Projected Impact of the Clean Power Plan on Renewable Deployment (Post 2020)

Solar



Wind



Charts courtesy of EIA

CPP Alone Will Not Get Us to Paris Commitments

U.S. Carbon Dioxide GHG Emissions 1990-2025



Gap of 375 to 475 MMT per year

Chart Courtesy of the Energy Collective

Data basis: EIA MER, [AEO2015](#), EIA [CPP report](#), and INDC published targets. Note: 'AEO CPP Adjusted' projection is based on fully implementing the CPP 32% reduction in Power Sector CO₂ emissions by 2030, the HDV CAFE standard's, and increased Residential/ Commercial/ Industrial Sectors' energy efficiencies.

Thank You

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