

The logo features the word 'CLEARPATH' in a bold, sans-serif font. 'CLEAR' is in blue and 'PATH' is in red. Below the text are two horizontal lines: a blue line on top and a red line on the bottom. Both lines start on the left, dip down at an angle, and then continue horizontally to the right, ending in an arrowhead pointing right.

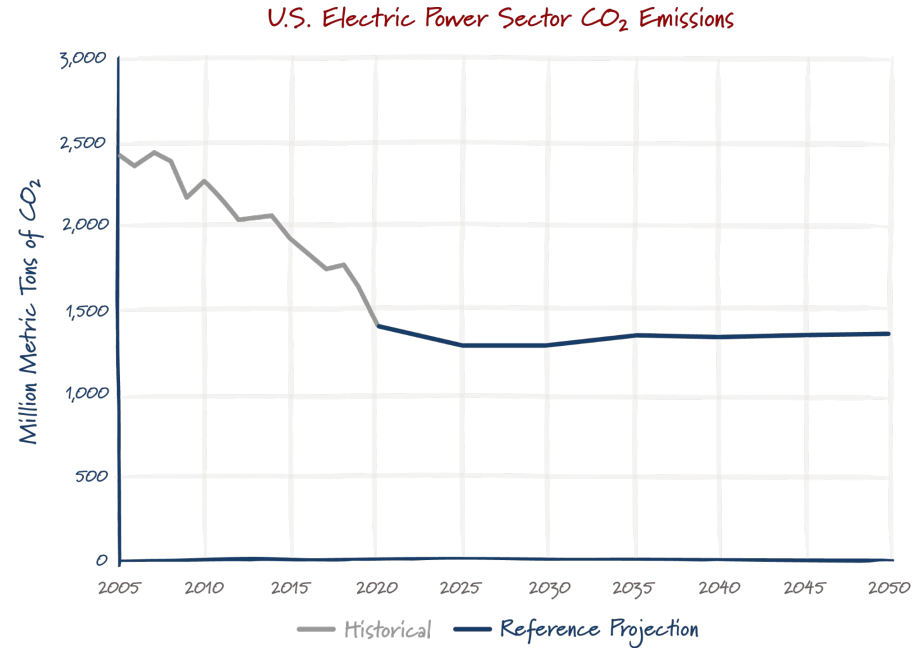
CLEARPATH

Rich Powell

**Emerging Clean Generation Technologies
August 31, 2021**

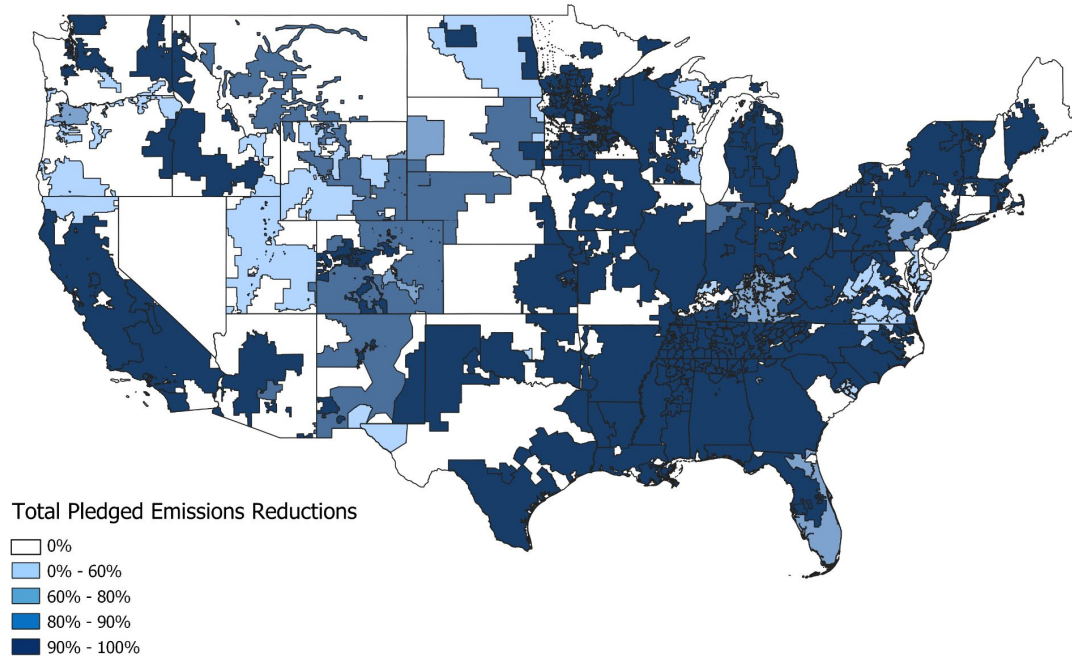
U.S. Power Sector Emissions Could Flatline After 2025

- Through 2025, a yearly average of:
 - - 16 GW of coal capacity
 - + 20 GW of NGCC
 - + 23 GW of renewables
- Following 2025, a yearly average of:
 - - 6 GW of nuclear
 - + 15 GW of NGCC
- Emissions remaining flat is an encouraging sign, but increasing load growth, and fewer coal to gas switch opportunities makes additional reductions more difficult



Utility Net Zero Targets Now Cover Over 70% of Customers

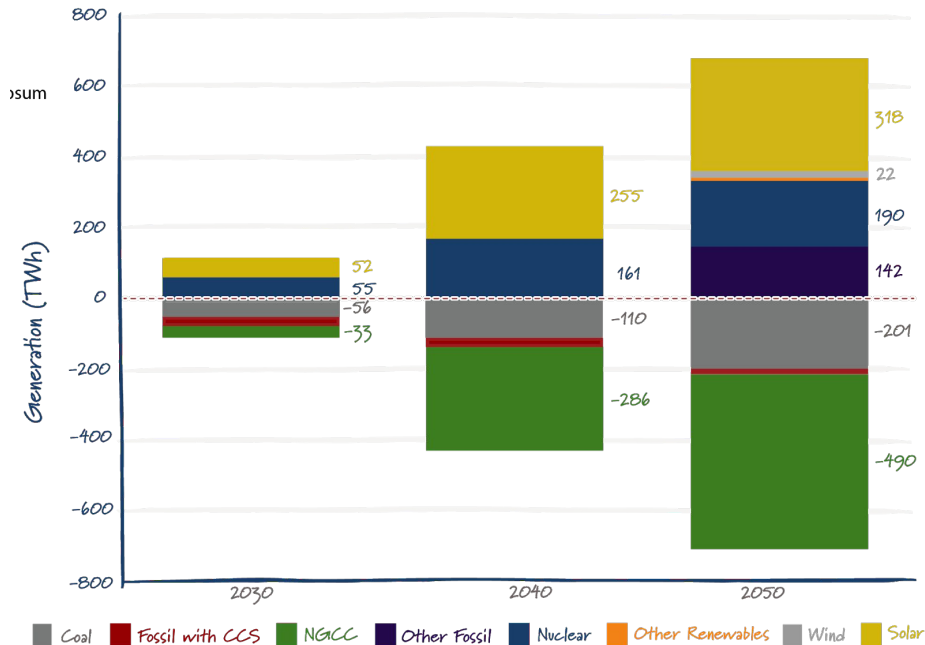
Utility Decarbonization Targets



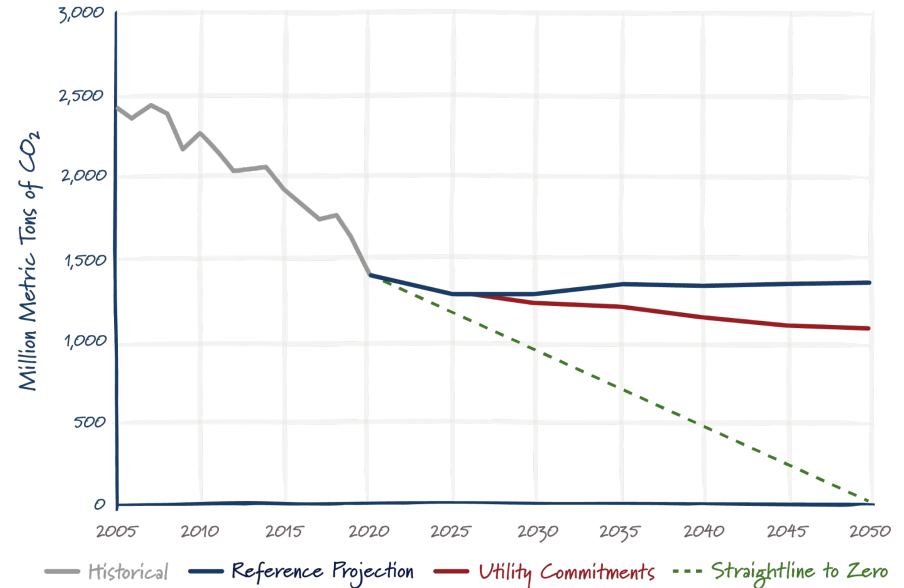
Source: [Smart Electric Power Alliance Utility Decarbonization Tracker](#)

Utility Commitments Narrow the Gap to Net-Zero

Generation Difference Between Utility Commitments and Reference Scenarios



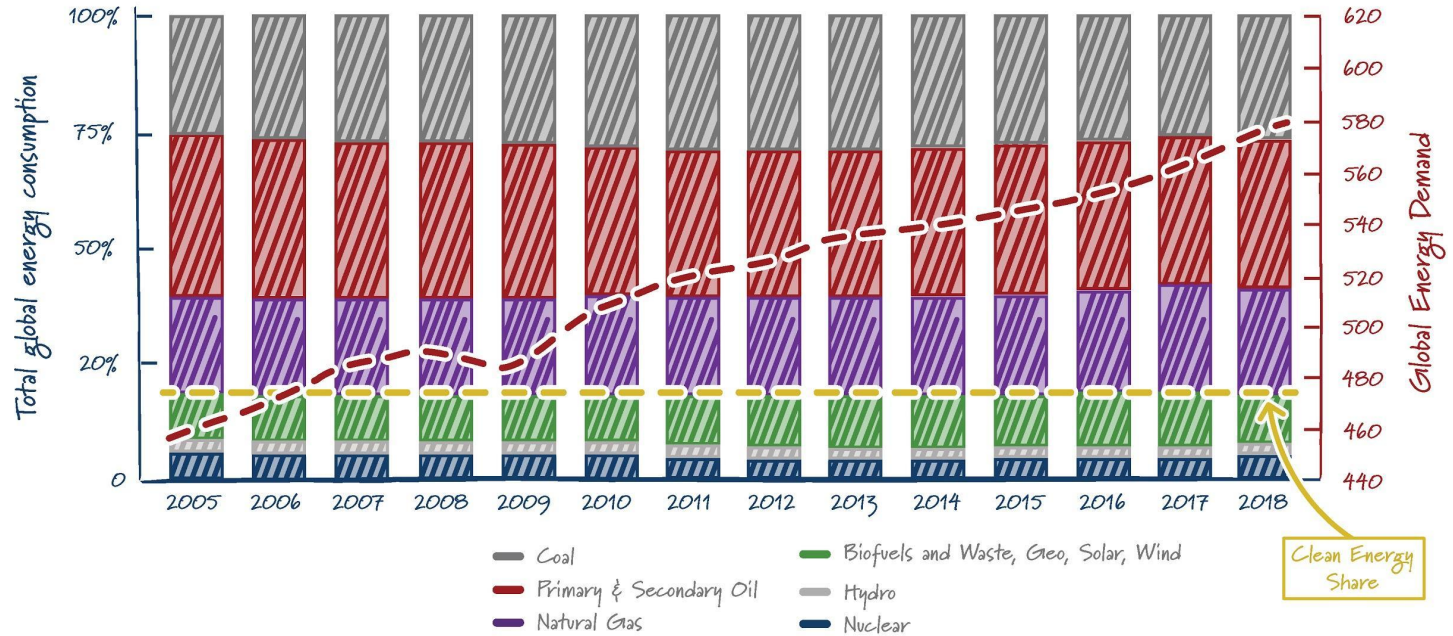
U.S. Electric Power Sector CO₂ Emissions



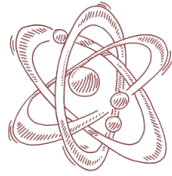
Source: [Clear Path to a Clean Energy Future](#)

Global Energy Mix, However, Remains Stagnant

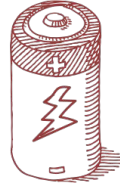
Share of Total Primary Energy Supply by Fuel Type



CLEARPATH



Nuclear



Storage



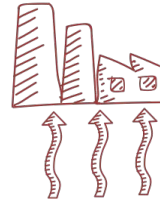
Natural Gas



Carbon Capture

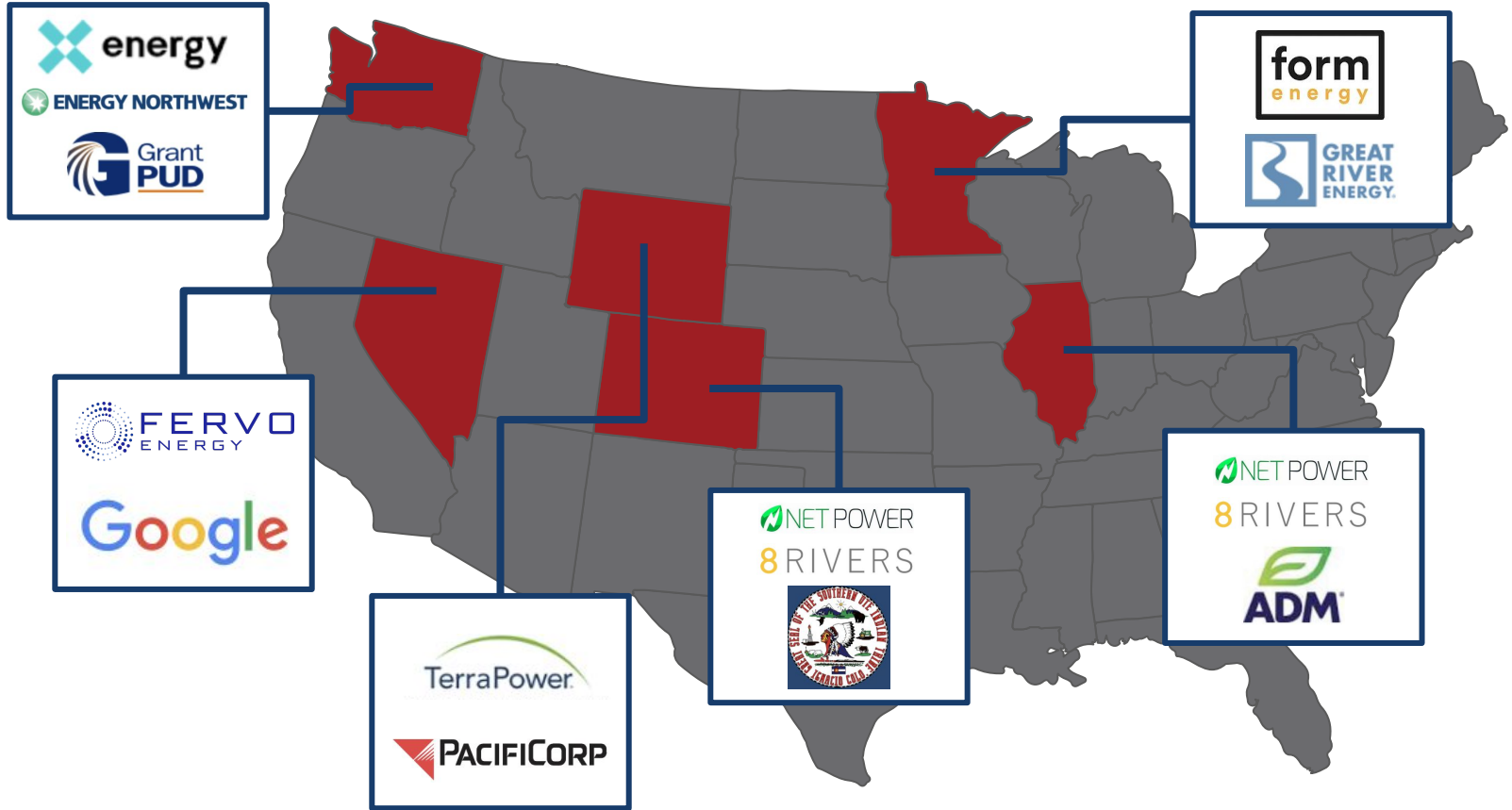


Hydropower








Geothermal

Innovative Technologies to Watch



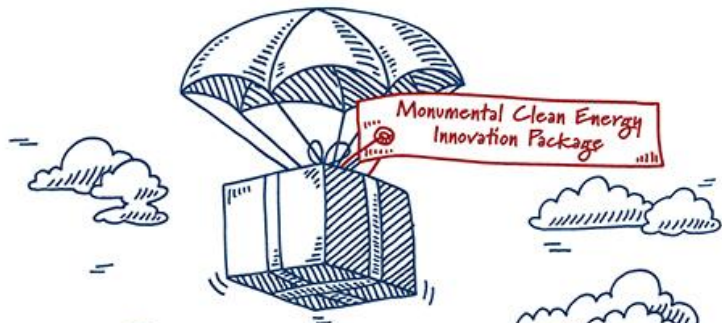
Progress Toward Moonshot Demonstration

Program	Progress toward moonshot demonstration			Funding increase since FY14
	Applied research	FEED* studies	Demonstrations underway	
Energy Storage	✓	✓	✓	 268%
Nuclear	✓	✓	✓	 70%
Carbon Capture	✓	✓		 33%
Geothermal	✓		✓	 131%
ARPA-E	✓		✓	 52%

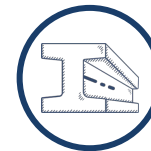
*FEED stands for Front-End Engineering Design

Biggest Climate Policy Success in Over a Decade

The Energy Act of 2020



20+ Large-Scale Clean Energy Demos



Tax credit extension for 45Q, ITC, and PTC

Enhancements to Loan Guarantee Program

RD&D for industrial energy

Ramp up DOE Office of Technology Transitions



“BIB” Would Rapidly Implement Energy Act 2020, and More

- Bipartisan infrastructure bill was recently passed by the Senate
- Contains significant clean energy and climate RD&D investments, including:
 - \$27 billion for grid infrastructure
 - \$21.5 billion for a new office of clean energy demos
 - \$10.5 billion for hydrogen and DAC regional hubs
 - \$6 billion to support the existing civil nuclear fleet
- Expected to reduce emissions by a total of 160 million metric tons of CO₂e per year over the next five years
 - Equivalent to all greenhouse gas emissions from aviation and rail in the United States



Going Further: Energy Sector Innovation Credit Act of 2021

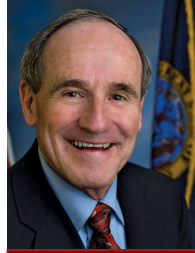
Republicans



Crapo



Barrasso



Risch

Democrats



Whitehouse



Bennet



Hickenlooper

Supportive Organizations (Partial)



Eligible Technologies (Partial)



A decorative graphic consisting of two horizontal lines, one blue and one red, that start on the left and then slope downwards to the right before continuing horizontally to the right edge of the slide. The blue line is on top and the red line is on the bottom.

Rich Powell

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 @powellrich