

# **Recent U.S. Federal Energy Policy**

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# A Federal Trifecta Game Changer

- **Infrastructure Investment & Jobs Act (“IIJA”), Nov. 15, 2021**
- **CHIPS and Science Act (“CHIPS Act”), Aug. 9, 2022**
- **Inflation Reduction Act (“IRA”), Aug. 16, 2022**
  - **About \$500 billion in federal support over the next decade for clean energy and clean technologies. An all-of-the-above approach that supports a wide range of technologies from basic science to early-stage commercialization, deployment, and supporting supply push and demand pull.**
  - **Policy: decarbonize the grid; electrification; and carbon capture and sequestration/negative emissions for the rest**

# CHIPS and Science Act (\$67B)

- **DOE's Office of Science – R&D program for basic energy science; funding for artificial photosynthesis, energy storage, carbon sequestration, climate research with NOAA, plant and microbial systems biology (bioenergy or biofuels), fusion energy.**
- **Other funding for advanced nuclear, low emission steel manufacturing, microelectronics for energy innovation.**
- **DOE's Advanced Research Projects–Energy (ARPA-E) – funding authorization doubled.**
- **National Labs – increased funding for lab infrastructure**
- **Major Research Facilities – the Long Baseline Neutrino Facility; Proton Improvement Plan II Accelerator Upgrade; Cosmic Microwave Background Stage 4 Project.**
- **Directorate for Technology, Innovation, and Partnerships at the National Science Foundation: two of its 10 focus areas are climate and clean-energy related. Purpose to push new technologies from the prototype stage to the mass market.**

# Infrastructure Investment & Jobs Act (\$73B)

- **Transmission, reliability, resilience, and smart grid investments (\$27 billion)**
- **Regional clean hydrogen hubs (\$8 billion)**
- **Green hydrogen earth shot -- \$2 kg by 2026 (\$1 billion)**
- **Regional direct air carbon capture hubs (\$3.5 billion)**
- **Developing new or expanded carbon storage projects (\$2.5 billion)**
- **Supporting nuclear (\$6 billion)**
- **Battery supply chains – processing materials, manufacturing, and recycling (\$6 billion)**
- **Energy-related products manufacturing and industry – 30% tax credit (\$8 billion)**

# Inflation Reduction Act (\$369B)

- **Production tax credits for clean hydrogen (up to \$3/kg); clean energy technology components; nuclear power production; renewable energy until 2024, then clean energy.**
- **Investment tax credits for renewable energy until 2024, then clean energy; advanced energy projects (including storage).**
  - **Credits continue until the later of 2032 or when power sector emits 75% less carbon than 2022.**
- **Fuel tax credits for sustainable aviation fuel, biofuels, renewable diesel.**
- **EV, hybrid, or hydrogen fuel cell vehicle tax credits of up to \$7500.**
- **Carbon management – tax credit for CCS**
- **Residential energy efficiency – 30% tax credit for solar and other renewables, other credits for windows, doors, heat pumps.**
- **DOE’s Loan Program Office receives an additional \$40 billion in authorization**
- **Advanced industrial facilities deployment program to invest in projects aimed at reducing emissions from energy intensive industries (\$5.8 billion)**

# Projected Impact of IRA

- **DOE estimates a 40% reduction in GHG emissions from 2005 levels by 2030. Provides a realistic pathway for U.S. to meet nationally determined commitment of 50-52% reduction under Paris Agreement given other state and federal policies.**
- **Clean generation rises from about 40% in 2021 to as much as 81% by 2030 (Rhodium Group)**
- **Creates 1.3 million jobs concentrated in manufacturing, construction, and service industries (Energy Innovation)**
- **Increases GDP by .65% to .77% (Energy Innovation)**
- **Results in cleaner air, avoiding up to 4500 premature deaths and 119,000 asthma attacks annually (Energy Innovation)**
- **Lowers energy costs for consumers by \$80 per household per year by 2030 (Energy Innovation)**

# Industrial Policy

- **CHIPS Act as the brain (R&D); IIJA as the backbone (infrastructure, including transmission); and IRA as the engine (driving investment). See Rocky Mountain Institute, *Congress's Climate Triple Whammy: Innovation; Investment, and Industrial Policy* (Aug. 22, 2022).**
- **Industrial policy through support for innovation, deployment, supply, and demand.**
  - **Example: CHIPS Act funds basic research and early stage commercialization; IIJA provides \$11 billion for regional hydrogen and carbon-removal hubs (supporting innovation/deployment through demonstration projects); the IRA supports new hydrogen factories (supply) and provides tax credits for low carbon hydrogen and CCS (demand).**
- **Decarbonization; economic growth/jobs; energy security and supply chains; environmental justice and equity; a just transition.**