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.


- 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.