Modeled Effects of Inflation Reduction Act of 2022

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Key Power Sector Provisions from Inflation Reduction Act

• Long-term extensions of production tax credit (PTC) for producing renewable electricity and investment tax credit (ITC) for building clean electricity projects

• Transition to technology-neutral incentive structure, based on emissions rate, after 2024

• Base rate of $5/MWh (PTC) and 6% (ITC)

• Layered bonus structure includes:
  • 5X bonus for meeting prevailing wage and apprenticeship requirements
  • 10% (PTC) or 10 pp increase (ITC) for projects located in energy communities
  • 10% (PTC) or 10 pp increase (ITC) for projects meeting domestic content criteria
Key Power Sector Provisions from Inflation Reduction Act

• PTC for existing nuclear generation, tied to market conditions
• 45Q credit for carbon capture increased to $85/ton
• Direct pay for tax-exempt entities, enhanced transferability of credits for others
RFF’s Haiku Electricity Market Model: Scenarios Modeled

- PTC/ITC extension (for wind, solar, and storage), with uncertainty bracketed across two main scenarios
  - Base case IRA: 30% ITC and 25 $/MWh PTC
  - “Additional Bonus” case: all projects meeting domestic content and energy community requirements (50% ITC, 30 $/MWh PTC)
- Effects of nuclear PTC approximated by fixing nuclear generation to a baseline
RFF’s Haiku Electricity Market Model: Scenarios Modeled

• Sensitivities: High and low natural gas prices
• Projected effects of the methane fee included in natural gas prices
• The enhanced 45Q credit for CCS is not modeled
Projected Electricity Sector Emissions Reductions

• 2030 electricity sector emissions are projected to drop to ~70-75 percent below 2005 levels, compared to 48.5 percent below 2005 levels without the policy

• Projected cumulative emissions reductions are ~4 billion metric tonnes below baseline over the next decade

• Effective cost per ton of reductions of $20-40
Average Retail Electricity Prices (2023-2032) projected to fall under the IRA

- Real electricity prices are projected on average to be ~5-7 percent lower than today
- Average electricity prices under the IRA are projected to be lower than the no policy case
- Greater deployment of clean electricity insulates prices against natural gas price fluctuations
Average Retail Electricity Prices projected to fall under the IRA

- Retail prices fall, even in the near-term, due to projects already planned for next year
- Prices stay below expectation for the next decade in the policy case even for the high natural gas price scenario
Quick Takes on Other Sectors

• Emission reductions from transportation provisions (based on previous analysis) are projected to be modest; set the stage for enhanced action at federal and state level

• Oil and gas leasing provisions are projected to contribute ~20 MMt of additional emissions domestically in 2030

• Reductions from the methane fee are highly uncertain due to the structure of the provision
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Explore More of RFF’s Analysis of the Inflation Reduction Act
https://www.rff.org/topics/federal-climate-policy/us-infrastructure/