

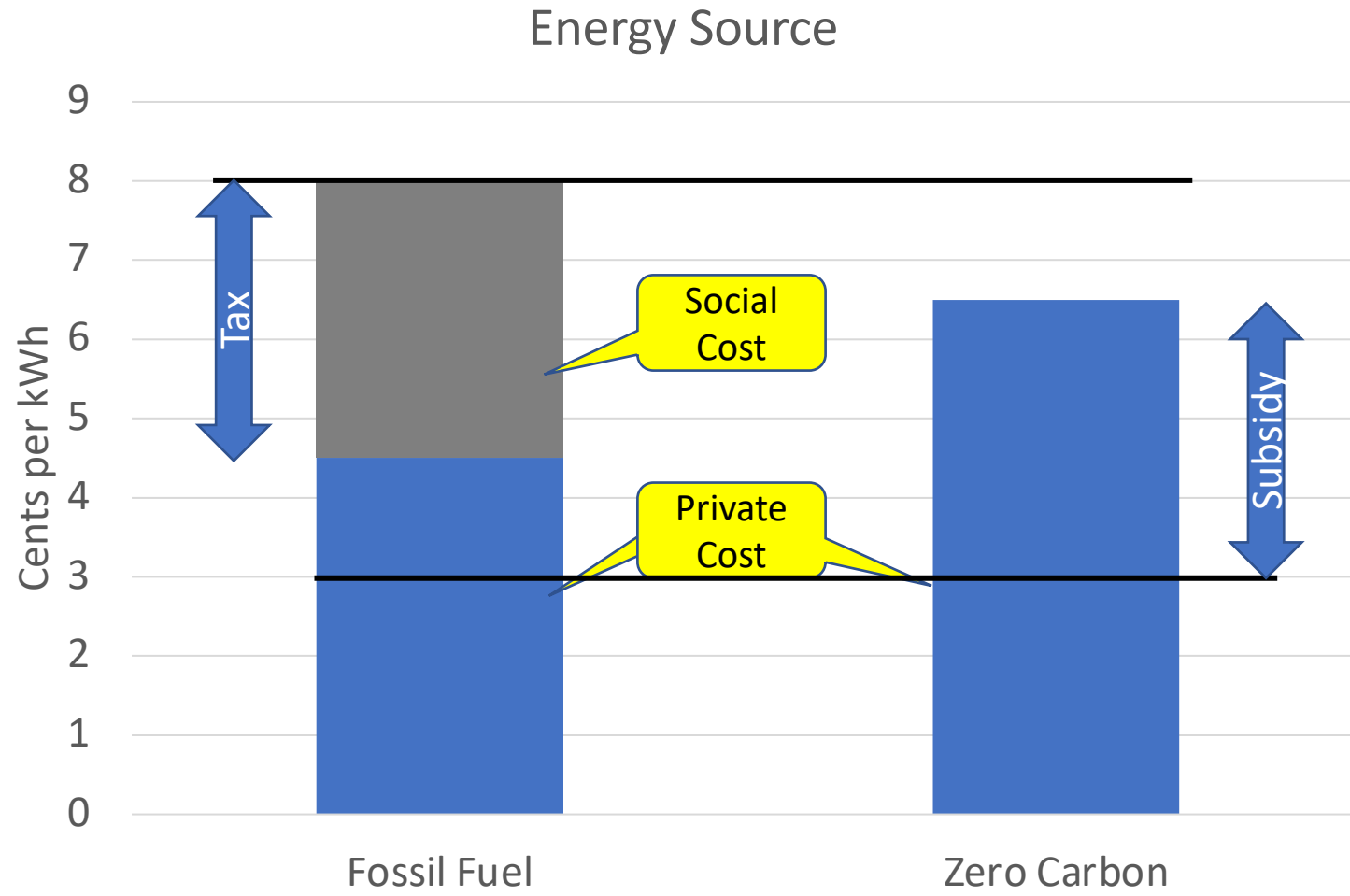
A New Direction for U.S. Climate Policy: The Inflation Reduction Act

Gilbert E. Metcalf
MIT and Tufts University

MIT Center for Energy and Environmental Policy Workshop
Nov. 16, 2022

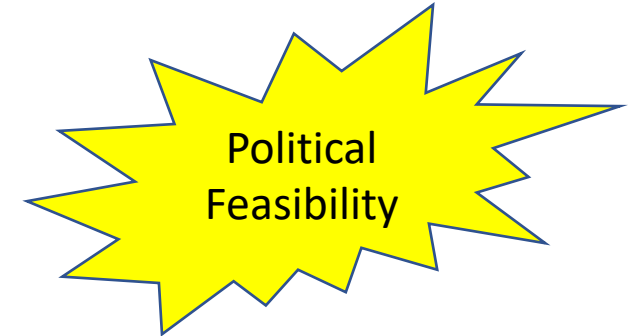


Policy Choices

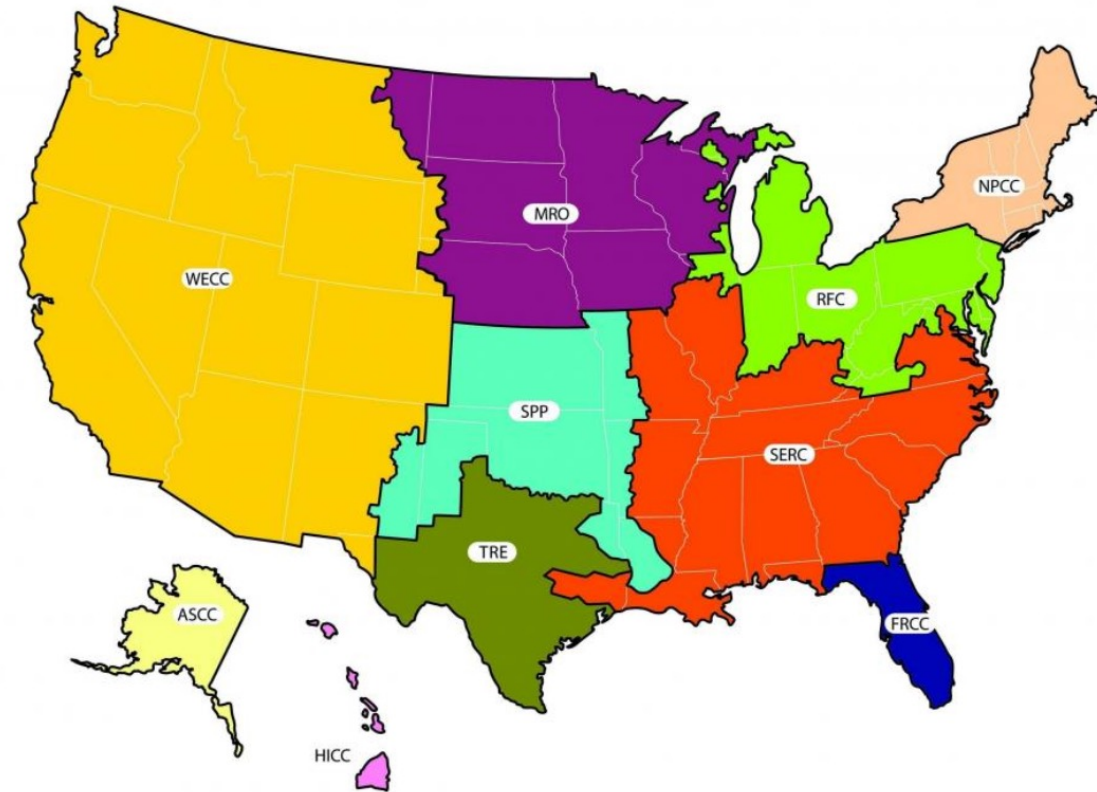
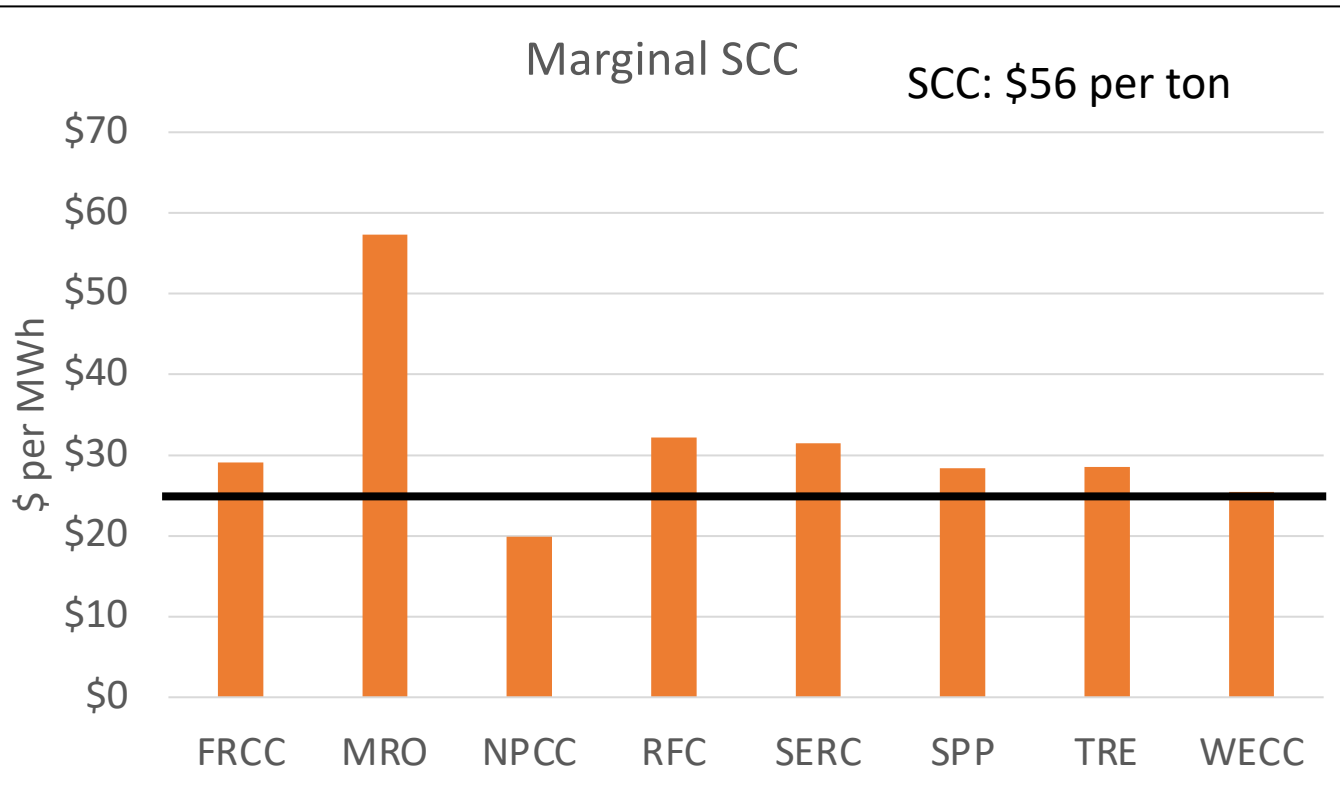


How Taxes and Subsidies Differ

- Revenue
- Consumer price impact
- Inframarginal payments
- Sending a constant price signal across energy sources



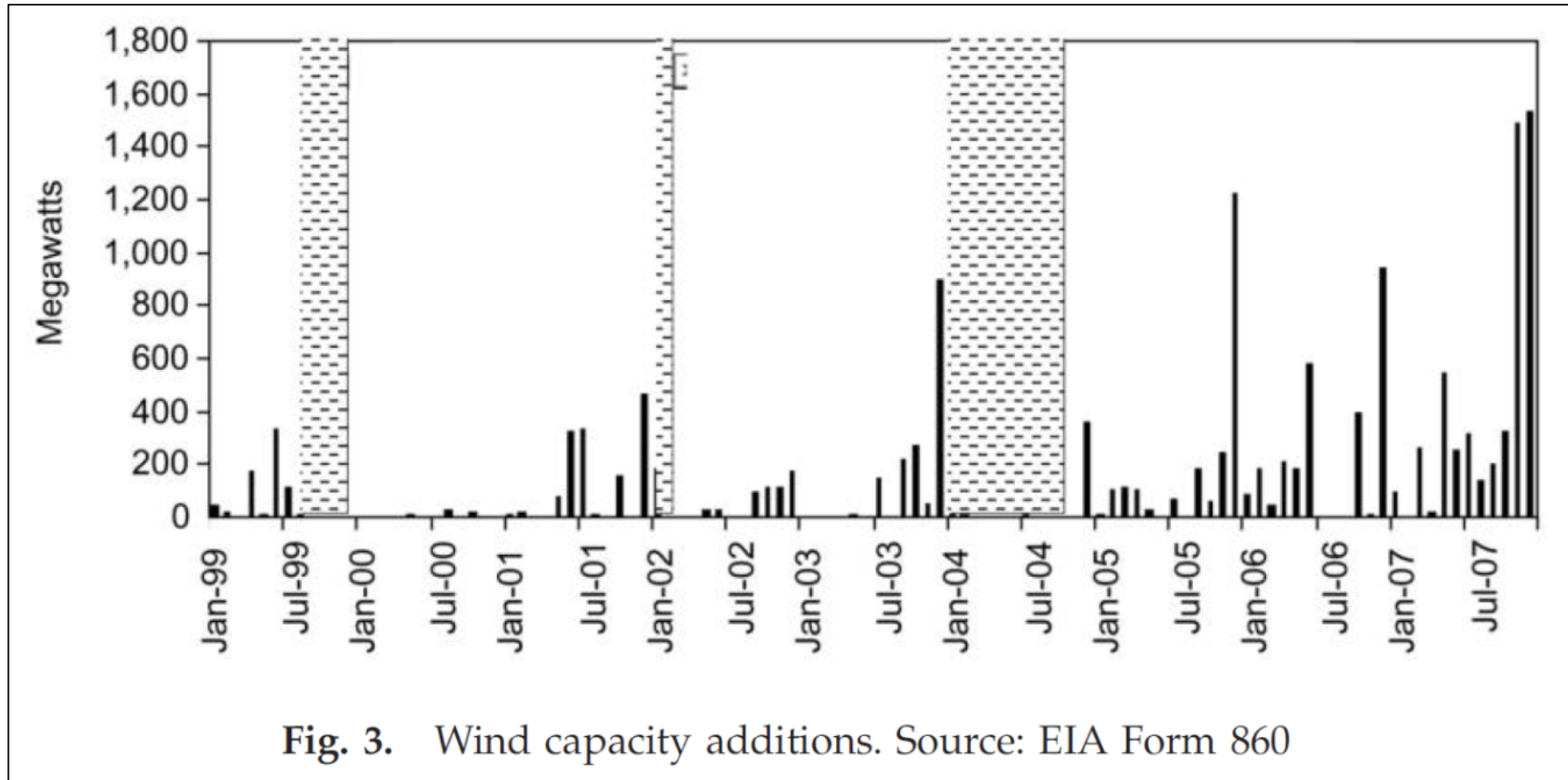
PTC and the Marginal Carbon Cost per MWh



How Taxes and Subsidies Differ

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- Congressional rules on taxes versus appropriations can affect durability of subsidies

Political Durability



Metcalf (2010)

How Taxes and Subsidies Differ

- Revenue
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- Sending a constant price signal across energy sources
- Congressional rules on taxes versus appropriations can affect durability of subsidies
- **Ability of taxpayers to utilize tax credits**
 - Tax equity deals were needed to align credits with taxpayers with tax appetite

IRA Addresses Some of These Problems

- Revenue
- Consumer price impact
- Inframarginal payments
- • Sending a constant price signal across energy sources
- ✓ • Congressional rules on taxes versus appropriations can affect durability of subsidies
- ✓ • Ability of taxpayers to utilize tax credits
 - Tax equity deals were needed to align credits with taxpayers with tax appetite

Investment versus Production Tax Credits

- Multiple externalities
- ITC should be used to address the R&D early adoption externality
 - Should phase out as technology gains market share
- PTC should be used to address environmental externality
 - Should not phase out
 - Should adjust as social cost of carbon changes
- The PTC can be improved...

Proposal: Tie PTC to Social Cost of Carbon

- Use official SCC values – adjusted annually

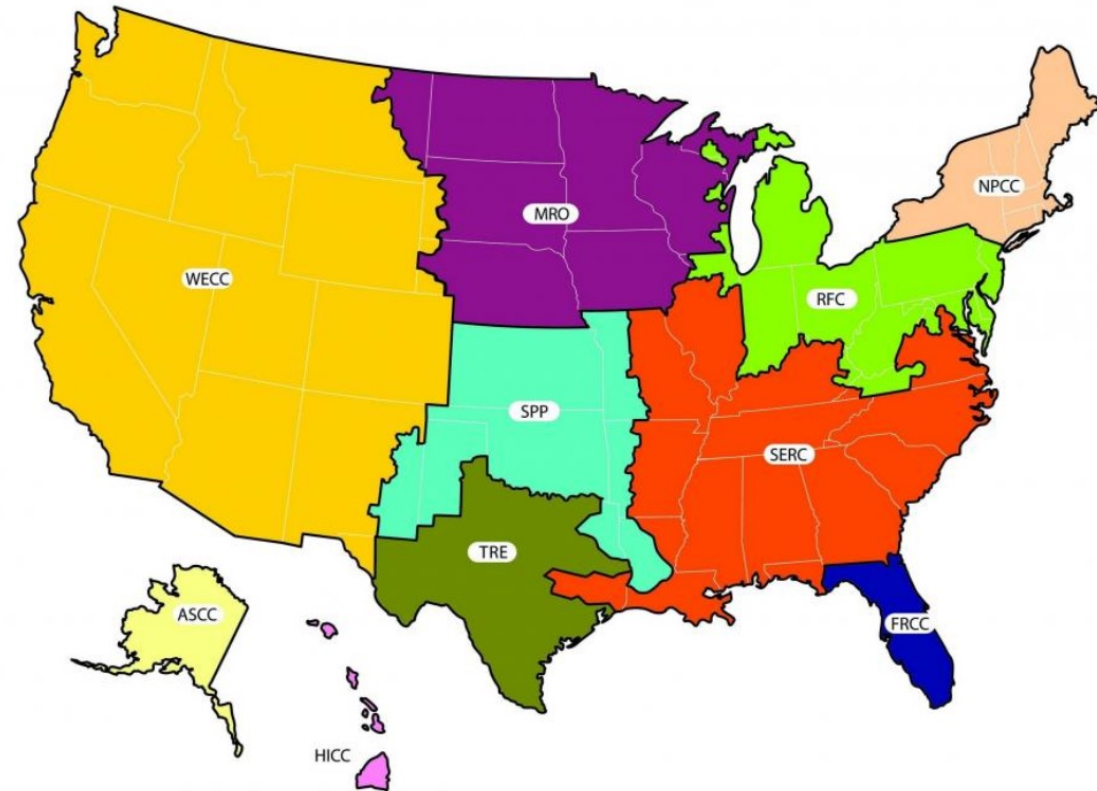
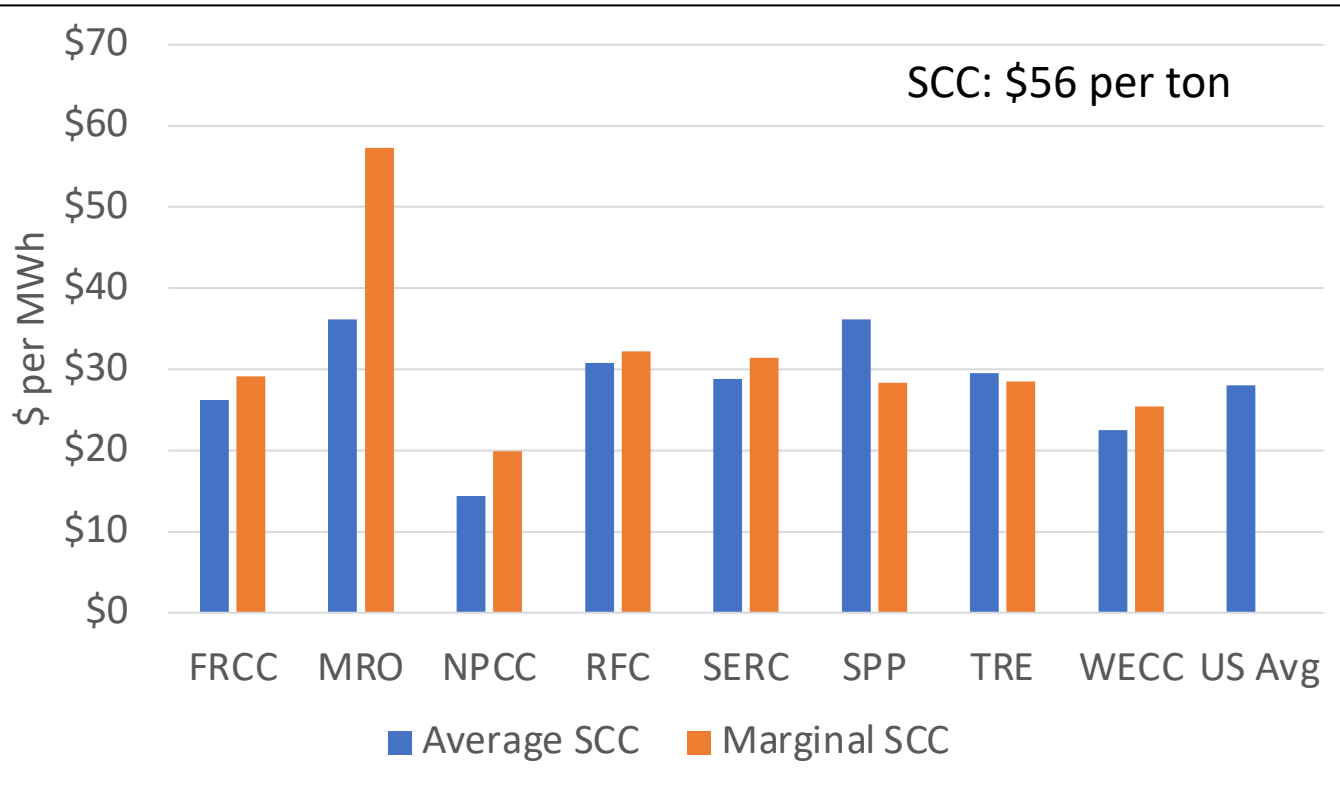
Table ES-1: Social Cost of CO₂, 2020 – 2050 (in 2020 dollars per metric ton of CO₂)³

Emissions Year	Discount Rate and Statistic			
	5% Average	3% Average	2.5% Average	3% 95 th Percentile
2020	14	51	76	152
2025	17	56	83	169
2030	19	62	89	187
2035	22	67	96	206
2040	25	73	103	225
2045	28	79	110	242
2050	32	85	116	260

Interagency Working Group (2021)

- Apply to CO₂ emissions per MWh
- Apply a regional rate based on average emissions rate

Average versus Marginal SCC



Marginal SCC: Borenstein and Bushnell (2021)
Average SCC: US EIA

New EPA Draft Estimate of SCC:
\$210 per ton in 2025

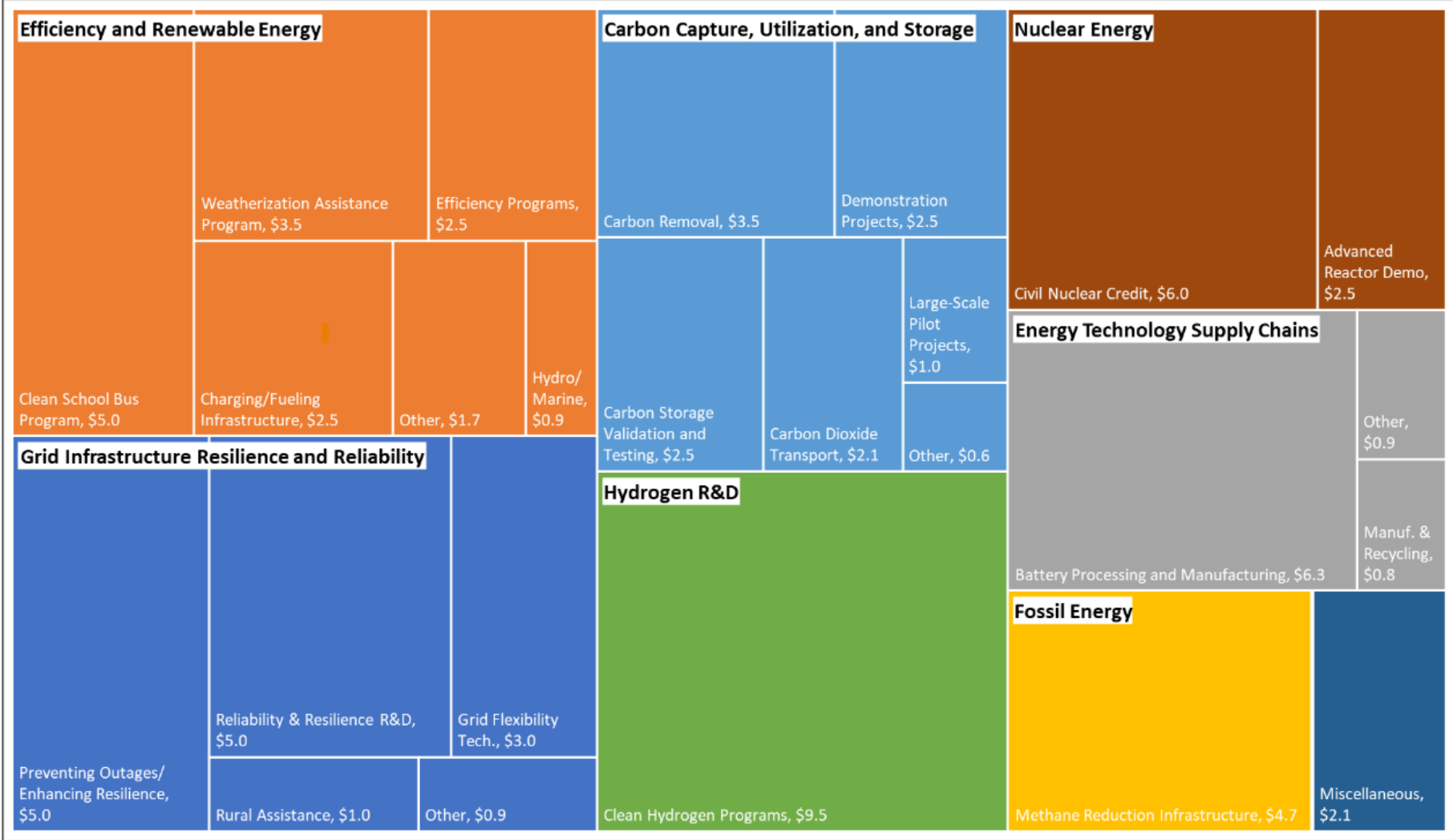
- Negative electricity prices more frequent?

Final Thoughts

- Much of the focus is on marginal pricing
- Significant infrastructure barriers exist

Bipartisan Infrastructure Law

Figure I. FY2022-FY2026 Energy-Related Appropriations in P.L. 117-58 by Category (\$ billions)



Source: CRS analysis of P.L. 117-58.

Notes: Excludes \$11.293 billion for the AML Reclamation Fund and \$6.42 billion for the DOT Carbon Reduction Program, which may fund non-energy projects. R&D denotes research and development. Manuf. denotes manufacturing.

Final Thoughts

- Much of the focus is on marginal pricing
- Significant infrastructure barriers exist
- The experience on the ground will provide valuable information to adjust policies over time

Thank You

