

Institute *for*
Policy Integrity

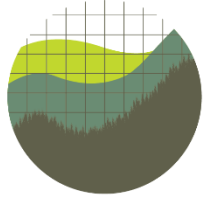
NEW YORK UNIVERSITY SCHOOL OF LAW

Federal Lands and Fossil Fuels

Jayni Hein

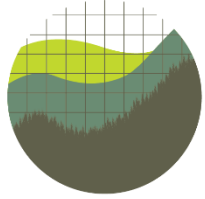
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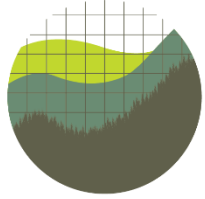
Overview

- *Federal Lands and Fossil Fuels: Maximizing Social Welfare in Federal Energy Leasing*, 42 HARV. ENVTL. L. REV. 1 (2018)
- Dept. of Interior's broad statutory mandates should be reinterpreted to account for economic and environmental values in more robust manner
- Fiscal reform can be used as a policy lever to help achieve climate goals
- Royalty reform: carbon adder case studies
- Pros and cons of fiscal reform versus other policy mechanisms



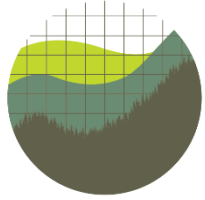
Interior's Fiscal Terms

- Minimum bids
 - Oil and gas: \$2/acre (1978)
 - Coal: \$100/acre (1982)
- Rents
 - Oil and gas: \$1.50-2/acre
 - Coal: \$3/acre
- Royalties
 - Onshore oil, gas, and surface-mined coal: 12.5% (1920)
 - Offshore oil: 18.75% (deepwater); 12.5% (shallow water)



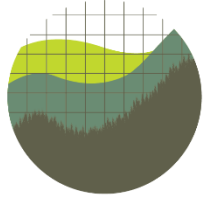
Interior's Statutory Mandates

- Mineral Leasing Act
 - Set fiscal terms as necessary for the “safeguarding of public welfare”
- Federal Land Policy & Management Act
 - “Multiple use” and “sustained yield” mandate
 - Meet present and future needs of public
 - “Fair market value” requirement
- Outer Continental Shelf Lands Act
 - Balance economic, environmental, and social values
- Interior's objective can/should be to maximize net public benefits by accounting for externality costs



How can Interior maximize social welfare?

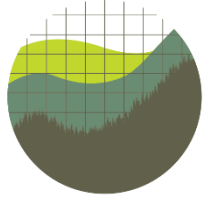
- Programmatic planning process
 - Long-term plans
 - Programmatic Environmental Impact Statements
- Evaluate alternatives
 - Higher royalty rate scenarios (including carbon adders)
 - Declining production cap
 - No new leases
- Ideally, compare the effects, including the relative emissions of energy substitutes, using a sophisticated, transparent model
 - Courts agree. 10th Cir: “perfect substitution assumption...[is] irrational (i.e., contrary to basic supply and demand principles).”



Social Cost of GHGs

2016 IWG Estimates (2017\$ per metric ton)

Year	Social Cost of Carbon Dioxide				Social Cost of Methane				Social Cost of Nitrous Oxide			
	Low (5% discount)	Central (3% discount)	High (2.5% discount)	High Impact (95 th %)	Low (5% discount)	Central (3% discount)	High (2.5% discount)	High Impact (95 th %)	Low (5% discount)	Central (3% discount)	High (2.5% discount)	High Impact (95 th %)
2020	\$14	\$50	\$74	\$148	\$648	\$1440	\$1920	\$3839	\$5639	\$17,996	\$26,393	\$46,788
2025	\$17	\$55	\$82	\$166	\$780	\$1680	\$2159	\$4439	\$6598	\$20,395	\$28,793	\$52,787
2030	\$19	\$60	\$88	\$182	\$912	\$1920	\$2399	\$5039	\$7558	\$22,794	\$32,392	\$58,785
2035	\$22	\$66	\$94	\$202	\$1080	\$2159	\$2759	\$5879	\$8878	\$25,194	\$34,791	\$65,984
2040	\$25	\$72	\$101	\$220	\$1200	\$2399	\$3119	\$6598	\$10,078	\$27,593	\$38,390	\$71,982
2045	\$28	\$77	\$107	\$236	\$1440	\$2759	\$3359	\$7318	\$11,397	\$29,993	\$40,790	\$79,180
2050	\$31	\$83	\$114	\$254	\$1560	\$2999	\$3719	\$8038	\$13,197	\$32,392	\$44,389	\$86,379



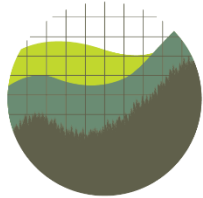
Clean Power Plan vs. Royalty Rate Adders

Final Clean Power Plan (nat'l trading case)

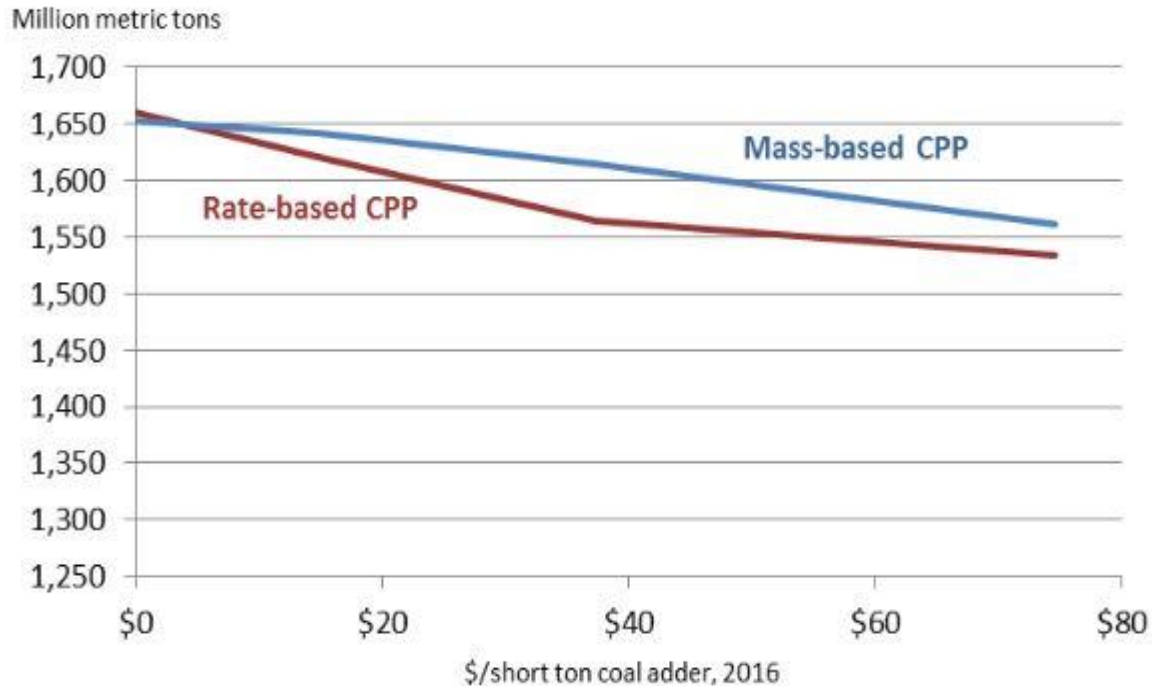
- Total national electricity emissions 32% lower than 2005 levels by 2030
- CO₂ emissions cut by 145 mmt by 2020; 388 mmt by 2030

Coal Royalty Adders (Reeder & Stock (2016))

- **Changes in 2030, relative to no CPP base case (CO₂ emissions - mmt)**
 - 20% SCC (\$15.30/ton of coal) -54
 - 50% SCC (\$38.30/ton -155
 - 100% SCC (\$76.70/ton) -260
- **Changes in 2030, relative to CPP/mass-based case (CO₂ emissions - mmt)**
 - 20% SCC -10
 - 50% SCC -37
 - 100% SCC -90
- Royalty adder generates revenues for affected states and federal coal community transition

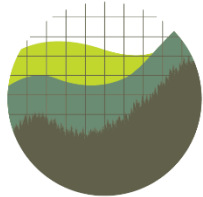


National CO2 Emissions from the Power Sector in 2030 Effect of federal coal royalty increase under the Clean Power Plan, Base Case B



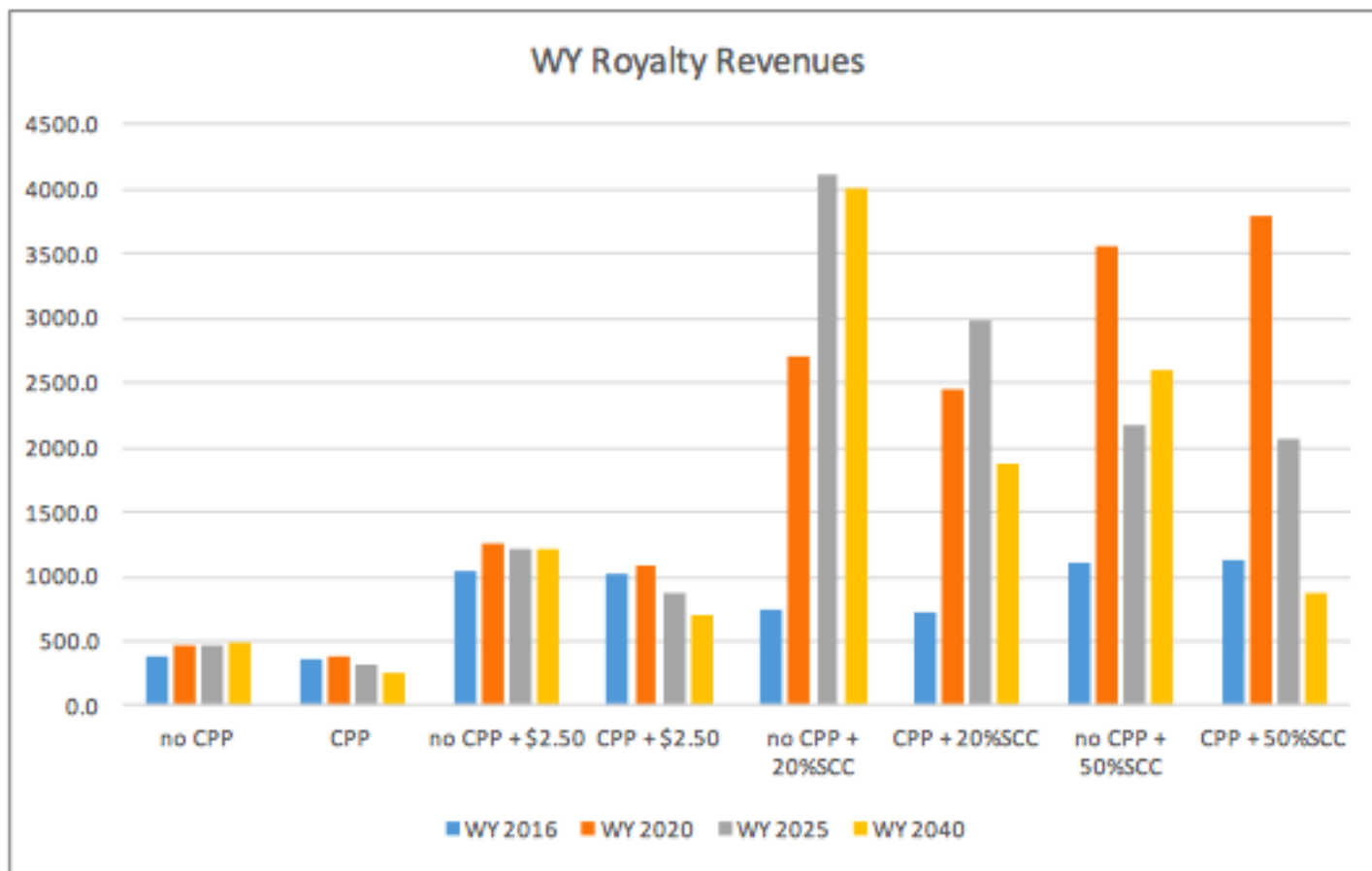
Notes: The lines present power sector emissions in 2030 under the 20%, 50%, and 100% SCC carbon adder case. The horizontal axis is the dollar value of the relevant percent of the SCC in 2016. Based on IPM simulations by ICF for Vulcan Philanthropy.

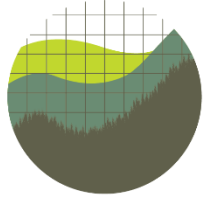
Source: Reeder & Stock, Federal Coal Leasing Reform Options: Effects on CO2 Emissions and Energy Markets (2016)



State revenues, \$ millions (2012 dollars)

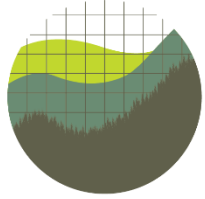
Effect of 20%, 50% policy scenarios on state coal royalty revenues (Reeder & Stock 2016)





Other Policy Scenarios

- Upstream methane and transportation externalities (Hein & Howard, 2015)
 - \$1/ton methane; \$10/ton transp. externalities
- Maximizing return to taxpayer (White House CEA, 2016)
 - \$30/ton adder
- No new fossil fuel leases or renewals (Erickson & Lazarus, 2018)



Takeaways

- Interior has ample discretion to reimagine its federal leasing policies to increase social welfare
- Fiscal reform can drive meaningful emission reductions, even after accounting for energy substitution
- Addressing climate change through fiscal reform offers some revenue benefit to federal, state, and local governments
 - Can assist communities in transition away from fossil fuel dependence
- Multiple avenues to addressing emissions – each with environmental, social, and economic tradeoffs
 - *Not* acting to address emissions is costly option