

Fossil Fuel Subsidy Reform in the United States: Impediments and Opportunities

Fossil Fuel Supply and Climate Policy: An International Conference

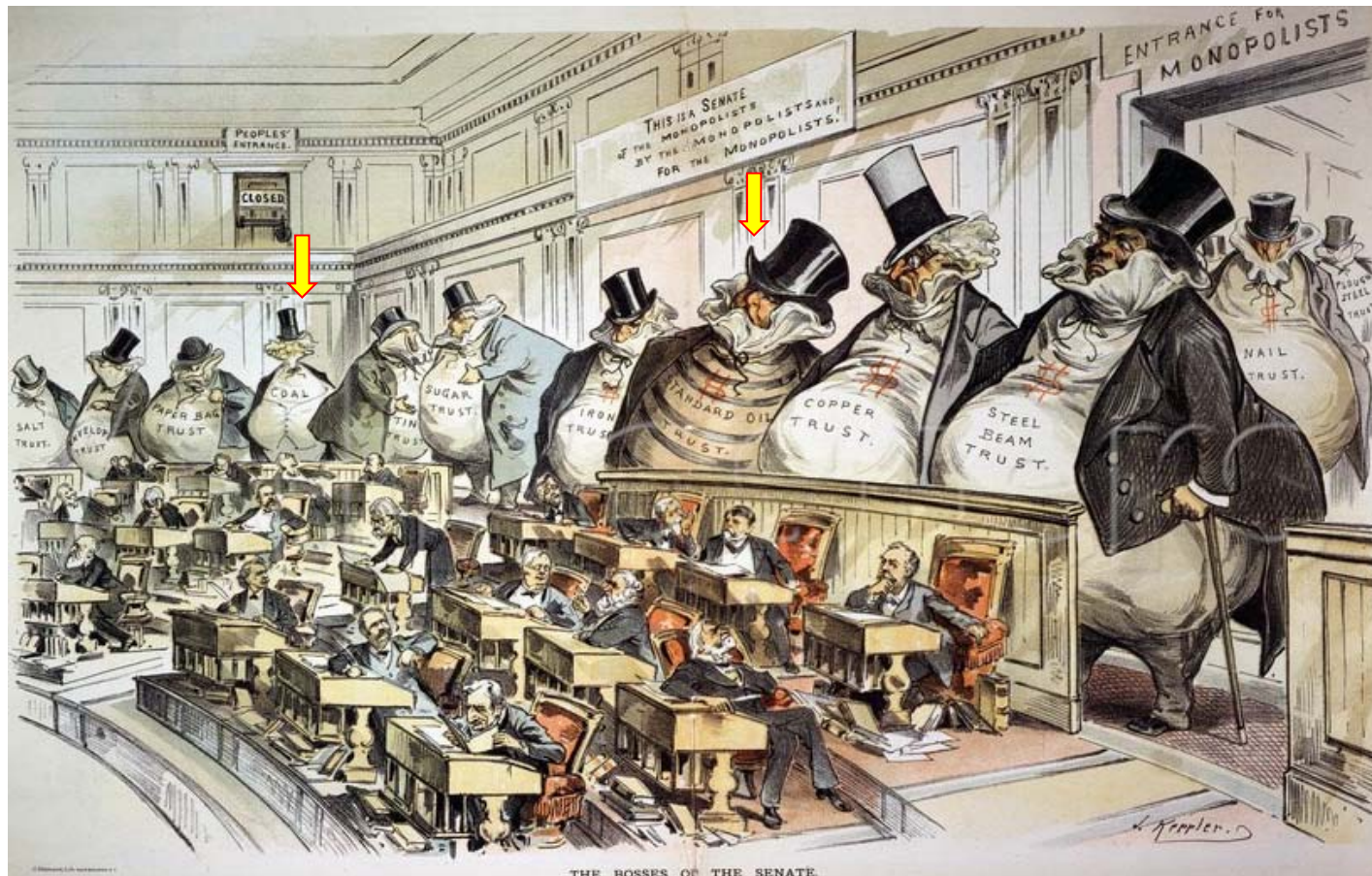
September 26-27, 2016*
Queen's College
Oxford, UK

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**Draft charts (slides 14-17) from Erickson, Down, Lazarus and Koplow used in the original presentation were updated in January 2017 to reflect the final published versions.*

US Subsidy Reform History

Fossil Fuels & Government: A Very Long Term Concern



Joseph Keppler, *Puck Magazine*, January 23, 1889.

US Subsidy Reform History

Our Focus on Reform is Not a New One

SUBJECT REPORT IN RE SECTION 204 (c) (2)

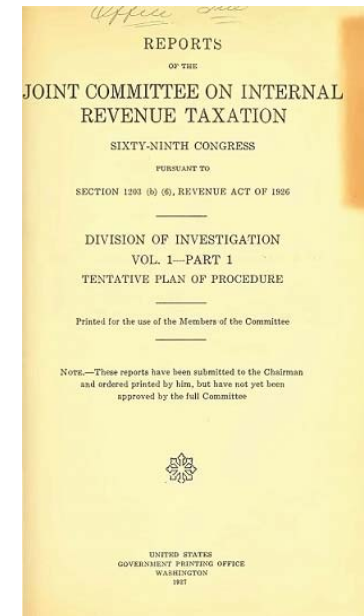
REFERENCE NO. 2.—DEPLETION OF OIL AND GAS WELLS

The operation and effect of the depletion provision in regard to oil and gas wells as allowed under section 204 (c) (2), with special reference to the relief afforded by the arbitrary 27½ per cent of the gross income allowed as a depletion deduction.

NOTE.—The 1926 act in regard to depletion on oil and gas wells includes a radical change from the 1924 act, consisting of the substitution of an arbitrary 27½ per cent of gross income for a depletion deduction in lieu of the depletion, on discovery value previously allowed. It is most important to study the effect of this change as it was made on insufficient data.

-US Joint Committee on Taxation, Division of Investigation, 1927

“Texas Sen. Tom Connally, who sponsored the break, later admits, ‘We could have taken a 5 or 10 percent figure, but we grabbed 27.5 percent because we were not only hogs but the odd figure made it appear as though it was scientifically arrived at.’” (Kroll et al., 2014)



US Subsidy Reform History

Milestones in Subsidy Transparency

- Tax expenditures
 - Required reporting as of 1974; most states also report, though methods not identical.
 - Outlay equivalent metric eliminated in 2008.
 - GASB 77 (tax abatement disclosures) makes it mandatory as of 2017.
- Credit subsidy reporting
 - Federal reporting starting ~1991. Little sub-national coverage.
 - Fairly crude: excludes admin costs; no risk rating or link to specific borrowers.
- State-owned enterprises
 - Formal businesses (e.g., PMAs) have public financial reporting with independent audit requirements.
 - Blurry lines abound: services (e.g., federal waterway maintenance or petroleum stockpiling) often have partial or inaccurate costing.

Current Trends

Growing Data, Reform Consensus

- From sidelines to front lines.
 - From EPA and DOE to Treasury and the President
 - Elimination of selected key ff subsidies in most Obama budget proposals.
- Growing data, increased frequency.
 - OECD and other IGOs; NGOs.
 - G20 finally moving? US-China peer review released publicly last week (thank you OECD).
- Policy relevance. Subsidy elimination widely viewed as a logical and important element of ghg reduction.

Current Trends

But the Mood is Fairly Negative...

Quotes from my informal survey of practitioners

“Inquiring minds want to know. I can’t remember the last time the US successfully reformed a fossil-fuel subsidy; that is [when]...the US Federal government overcame opposition from Congress in reforming a subsidy.”

“You got me there. What reforms?”

“...all of our actual successes repealing subsidies have been administrative.”

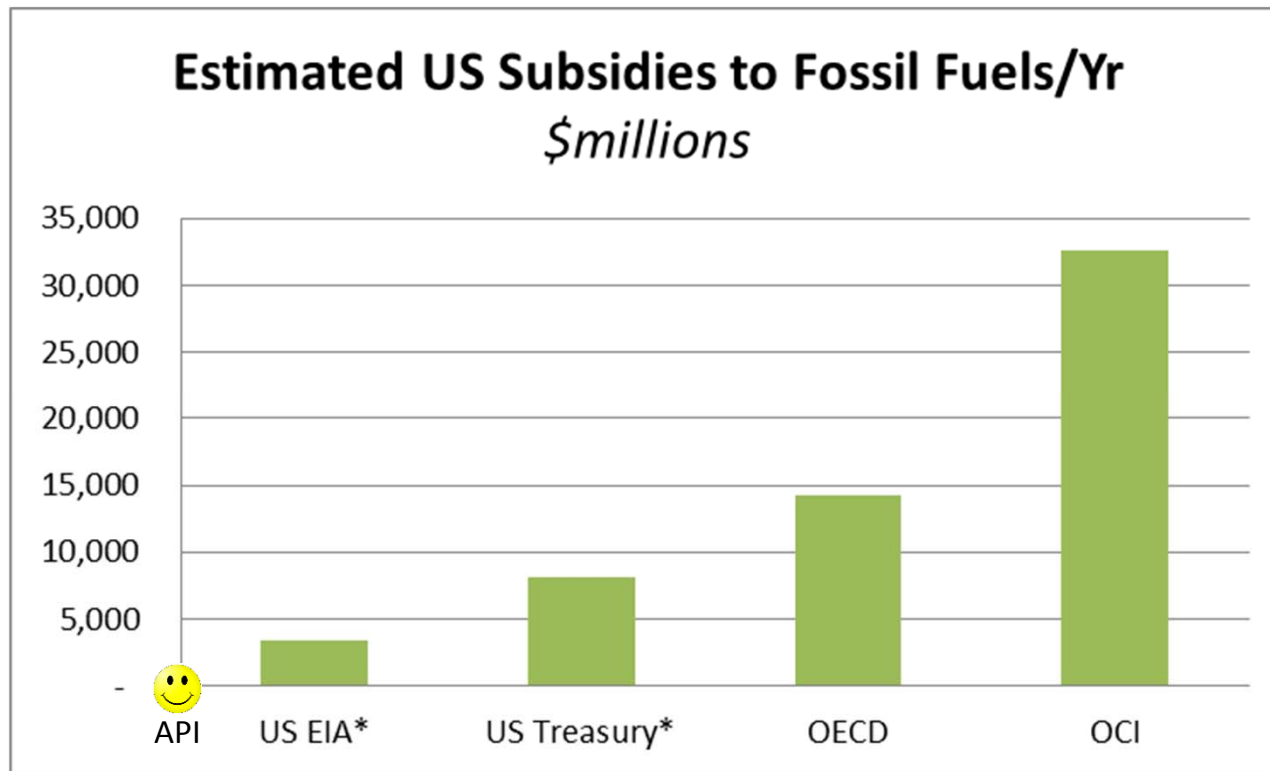
Current Trends

And Our Success Rate Remains Low

- Tax expenditure removal has proven challenging.
 - Some narrowing of O&G breaks over time (lower % depletion rate, reduced eligibility for international production, majors).
 - However, many O&G breaks survived TRA 1986.
 - Sunsetting is for the little (renewable) people; few fossil fuel subsidies expire on their own.
 - Industry always pushing for more. Refinery expensing; MLP private letter rulings; royalty-free production in Gulf of Mexico; 45Q CCS for EOR.
- Administrative successes more common.
 - Leasing, royalty modifications.
 - Increased stringency of regulatory oversight.

Constraints to Reform

Numerical Friction: Scope, Definitions, Valuation



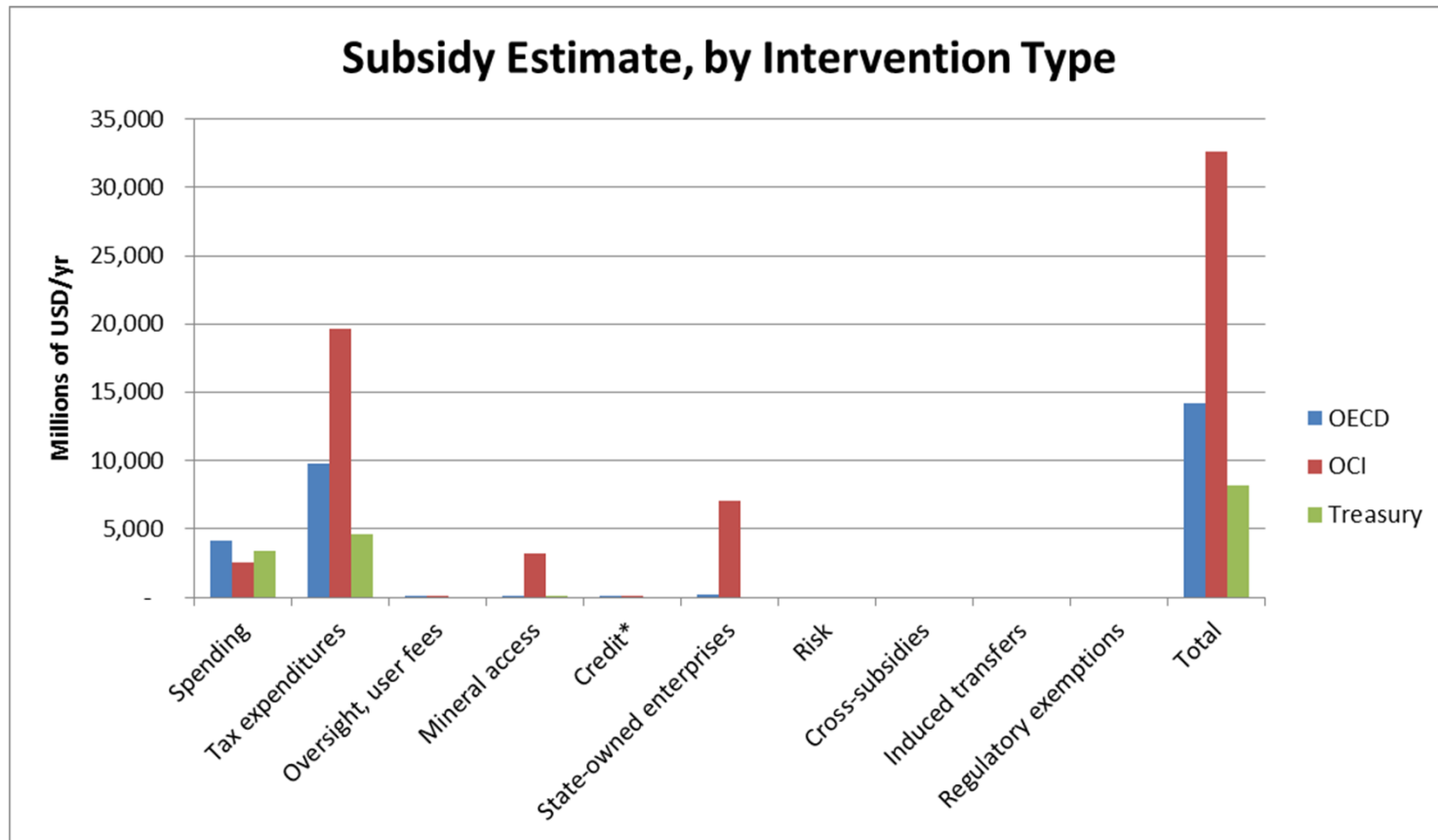
Sources: EIA (2015); US Treasury (2015); OECD (2015); OCI (2014); API (1993-2016).

*Federal subsidy estimates only; no sub-national data in totals.

Data years: 2013 (EIA, OCI); 2014 (OECD); Avg projected 2016-25 (US Treasury).

Constraints to Reform

Data Gaps are Not Uniform; Require Attention



Sources: Earth Track analysis of OECD (2015), OCI (2014), and Treasury (2015).

*Insufficient data to calculate credit subsidies. Face value of commitments to fossil fuel projects in 2013 were about \$4.5b/year (OCI 2014).

Constraints to Reform Subsidy Capture Rates Vary Widely by Type

Subsidy Type as Share of Total Estimate

Intervention Category and Description	OECD	OCI
	<i>Avg. 2010-14</i>	<i>2013</i>
Direct spending (including grants, R&D)	29.0%	7.9%
Tax expenditures	68.7%	60.3%
Oversight, reclamation & inadequate user fees	0.2%	0.1%
Terms of access to resources (auction competitiveness, royalty rates, leasing concessions)	0.2%	9.8%
Credit (below market loans or loan terms; guarantees)	0.4%	0.2%
State-owned enterprises (often multiple levels of subsidy)	1.4%	21.6%
Risk (below market insurance or indemnification)	0.0%	0.0%
Cross-subsidies	0.0%	0.0%
Induced transfers (e.g., purchase mandates, price controls, import or export restrictions)	0.0%	0.0%
Special regulatory exemptions	0.0%	0.0%

Sources: Earth Track analysis of OECD (2015) and OCI (2014).

Constraints to Reform Powerful Opposition, the Fog of Money

Since its inception, the U.S. tax code has allowed corporate taxpayers the ability to recover costs. These cost-recovery mechanisms, also known in policy circles as “tax expenditures,” should in no way be confused with “subsidies” – direct government spending or “tax loopholes.”

-Stephen Comstock, API tax policy lead, 2014

Organization	Spending in FY 2014
American Petroleum Institute	\$244.3 million
Independent Petroleum Association of America	\$13.3 million
Oil Change International	\$1.8 million
Greenpeace, Inc.	\$35.7 million
Natural Resources Defense Council	\$126.7 million

Source: Form 990 PF filings with the IRS.

Constraints to Reform Powerful Sectors Capture Even “General” Programs

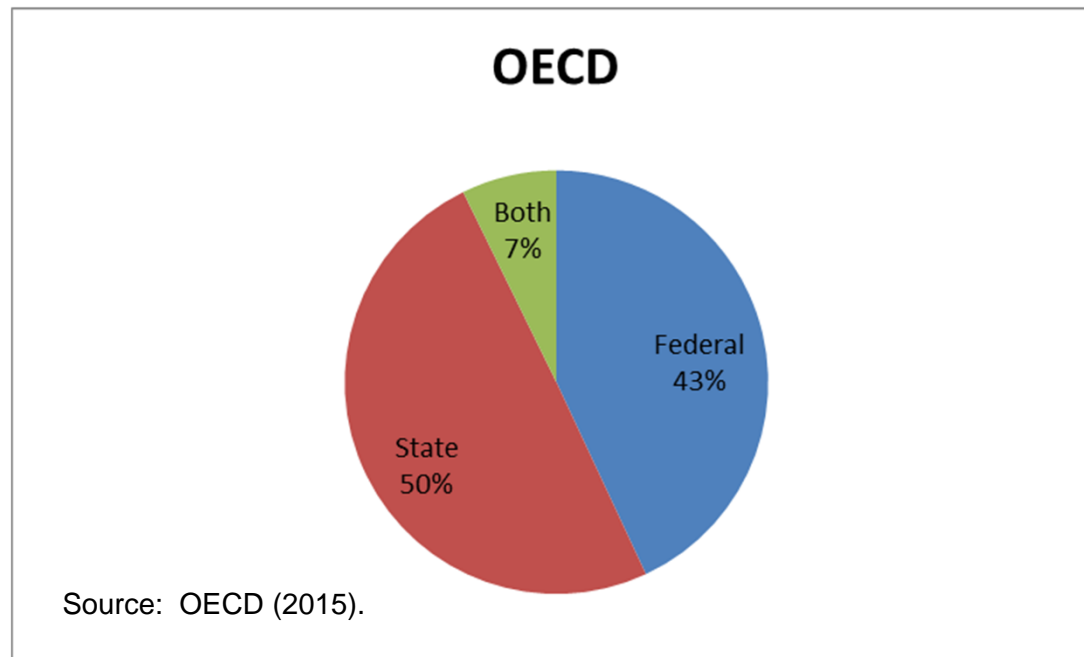
Fossil Fuel Sector Capture of Post-Hurricane Katrina Gulf Opportunity Zone Bonds*

Category/Project	Issued Amount	% of Total Issued
Fossil Fuel Infrastructure	\$ 4,502,193,000	57.4%
Joint use infrastructure, including fossil fuels	\$ 620,000,000	7.9%
All applicants	\$ 7,839,749,820	
Four of five largest projects were in fossil fuels Sector		
Recipient	Amount Issued	Project
Marathon Oil, refinery	\$ 1,000,000,000	Oil refinery
Lake Charles Cogen Project	\$ 1,000,000,000	Petroleum coke gasification
Exxon Capital Ventures	\$ 300,000,000	Expansion of existing refinery
Valero Energy Corporation	\$ 300,000,000	Hydrocracker unit
FF in Top Five, total	\$ 2,600,000,000	
% of all Issues	33%	

Source: Earth Track tabulations based on data provided by the Louisiana State Bond Commission, applications as of 3 January 2012.

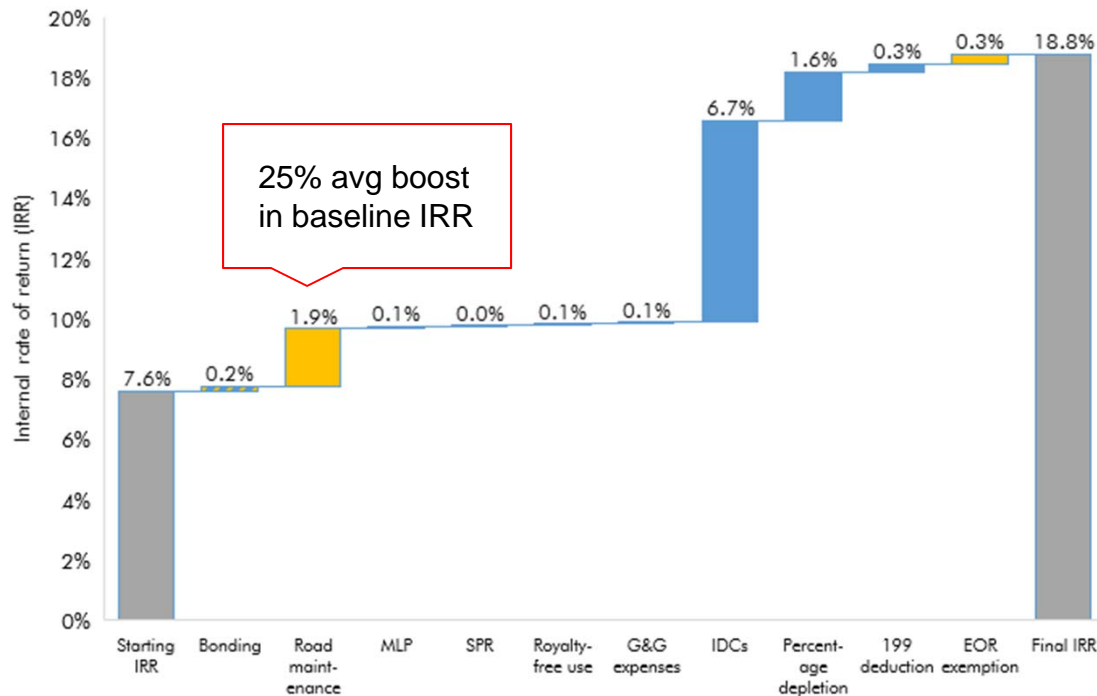
**Gulf Opportunity Zone Bonds are a special class of tax-exempt bonds allowed to help rebuild the Gulf after Hurricane Katrina in 2005. They greatly increased the allowable issuance of tax-exempt bonds for private activities in the affected states, including Louisiana. The tax-exempt status of interest payments enables borrowers to obtain a lower interest rate on the debt.*

Forward Movement Subnational Data Can't be Ignored



Forward Movement Hidden Supports are Important to Capture

Figure 3. Average effect of subsidies analysed in the Permian Basin of Texas at \$50 per barrel (average effect on production-weighted basis across all fields)

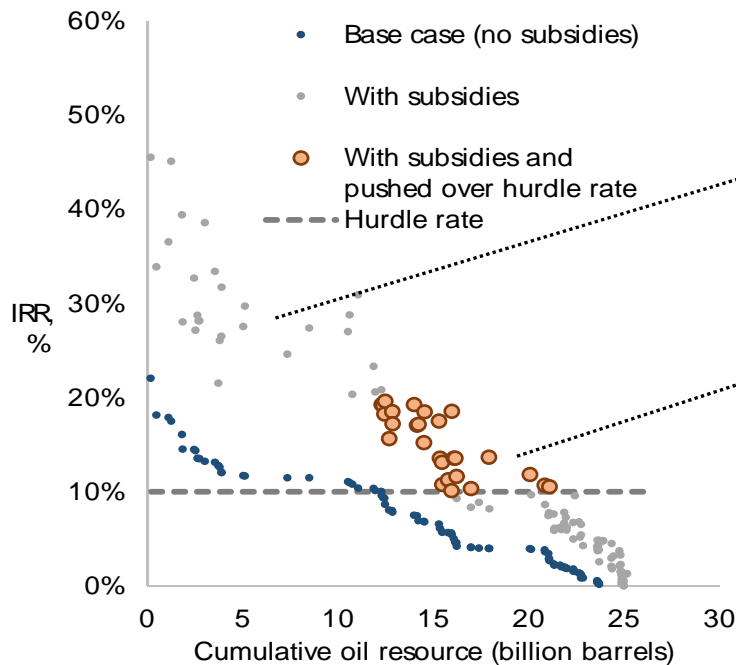


Source: Erickson, Down, Lazarus, and Koplów, 2017

Forward Movement Mapping “Leakage” and “Carbon Abatement”™

Moving from National Averages to Project-Specific Impacts

Figure 1. Effect of subsidies on project economics at \$50 per barrel, for fields discovered but not yet producing – Permian Basin



Leakage zone: taxpayer \$ flows to profits. *In general, higher oil prices increase leakage rates.*

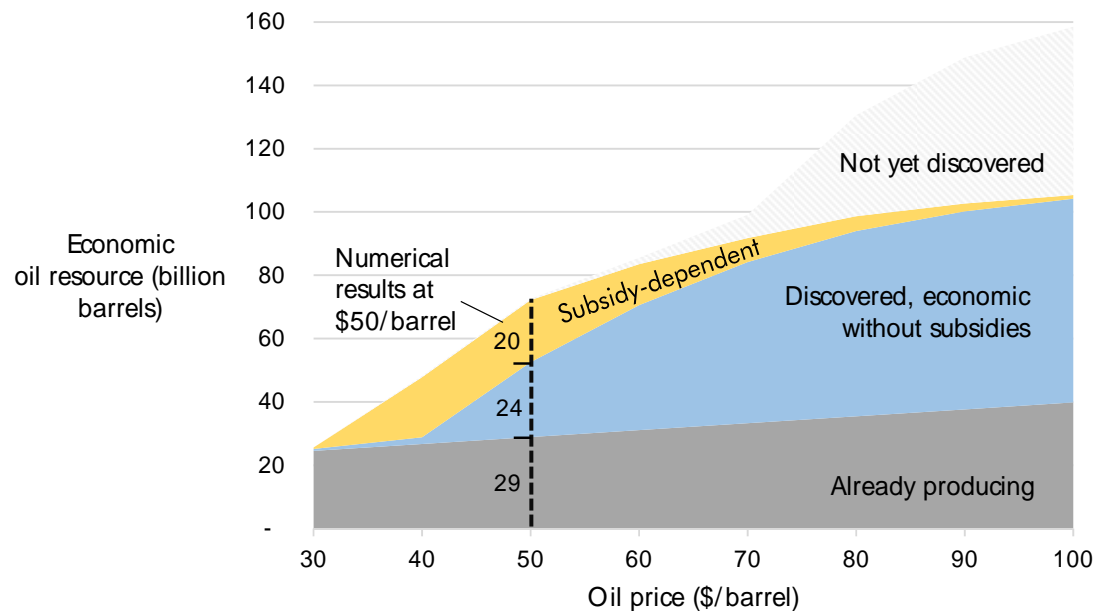
Abatement zone: taxpayer \$ unlocks ghg emissions that would not otherwise have been developed.

Source: Erickson, Down, Lazarus, and Koplw, 2017.

Forward Movement

At Current Prices, Subsidies Major ghg Driver

Figure 2. The share of oil resources that are subsidy-dependent as a function of oil prices (Chart assumes 10% hurdle rate)



Source: Erickson, Down, Lazarus, and Koplow, 2017.

Forward Movement

Linking Subsidies to Projects and Problems

Table 4: Impact of subsidies on undeveloped oil resources and GHG emissions (at \$50/bbl)

Area	Economic oil resources, discovered but not yet producing (billion barrels)	Percent subsidy-dependent	Increase in economic oil resources due to subsidies		Increase in net GHG emissions (Gt CO ₂)
			(billion barrels)	(Gt CO ₂)	
Williston basin	4.1	59%	2.4	1.0	0.2
Permian basin	20.3	40%	8.0	3.3	0.6
Gulf of Mexico	2.1	73%	1.5	0.6	0.1
Rest of U.S.	16.7	46%	7.6	3.1	0.6
Total U.S.	43.3	45%	19.6	8.1	1.5

SEI analysis based in part on data from Rystad Energy.

Source: Erickson, Down, Lazarus, and Koplow, 2017.

Forward Movement

Subsidy Data Capabilities for Real Reform

- **Decision-making relevance.** Near-real time data on subsidy policies that distort or undermine trade and climate commitments.
- **Policy alignment.** Fiscal spending supports environmental objectives; climate policy and subsidies not at cross-purposes.
- **Policy contestability.** Ability to evaluate promised outcomes versus actual; and to propose more varied options with better fiscal and environmental trade-offs.
- **Fiscal savings** and improved economic efficiency.