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DIRTY ENERGY DOMINANCE: DEPENDENT ON DENIAL

HOW THE U.S. FOSSIL FUEL INDUSTRY DEPENDS
ON SUBSIDIES AND CLIMATE DENIAL

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Oil Change International is a research, communications, and advocacy organization focused on exposing the true costs of fossil fuels and facilitating the coming transition towards clean energy.

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CONTENTS

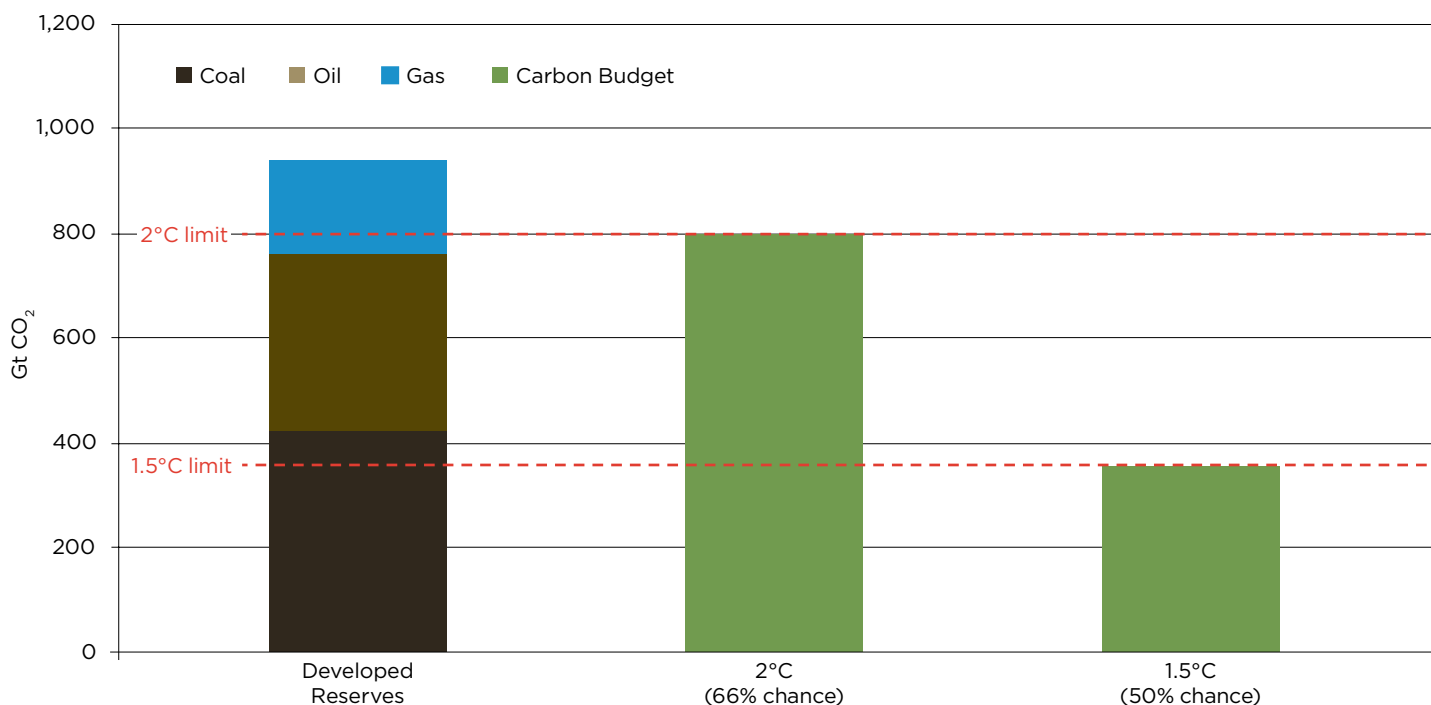
EXECUTIVE SUMMARY	4
WHAT IS A FOSSIL FUEL SUBSIDY?	7
THE SKY'S LIMIT AND U.S. FOSSIL FUEL SUBSIDIES	8
ENERGY DOMINANCE AND A U.S. FOSSIL FUEL FUTURE	13
DIRTY ENERGY MONEY CYCLE	16
FEDERAL SUBSIDY HIGHLIGHTS: BILLIONS WASTED	17
The Big Fossil Four	17
Fire-Sale on Federal Lands	17
Coal Company Bailouts	18
Subsidizing Pollution	18
Subsidies that Lock-In Fossil Fuel Dependence	18
STATES FOLLOW SUIT ON OIL AND GAS GIVEAWAYS	19
ADDITIONAL U.S. SUPPORT FOR FOSSIL FUELS	21
Financing Fossil Fuel Projects Overseas	21
Military Expenditure to Secure Oil Supply Overseas	21
Externalities	22
Consumption Subsidies	22
MOVING FORWARD: OPPORTUNITIES TO ELIMINATE SUBSIDIES	23
APPENDIX I: COMPLETE LIST OF U.S. FEDERAL AND STATE FOSSIL FUEL PRODUCTION SUBSIDIES	24
APPENDIX II: METHODOLOGY FOR CALCULATING SELECTED U.S. FOSSIL FUEL PRODUCTION SUBSIDIES	35
REFERENCES	37

EXECUTIVE SUMMARY

In December 2015, world governments, informed by the best available science, agreed in Paris to limit global average temperature rise to well below 2°C, and to aim for below 1.5°C. Recent analysis shows that burning the reserves in already-operating oil and gas fields alone, even if coal mining is completely phased out tomorrow, would take the world beyond 1.5°C of warming. And yet, U.S. federal and state governments hand the fossil fuel industry more than \$20 billion each year in subsidies to sustain and expand their operations.

The majority of Americans want stronger U.S. action on climate change. After President Trump announced his intention to pull the country out of the Paris Climate Agreement, states, cities, universities and businesses pledged to uphold its emissions reduction targets. But while the commitment to climate action is gaining momentum from the grassroots up, policies at the state and federal level continue to underwrite the ongoing exploration and production of fossil fuels. **Every dollar spent subsidizing this industry takes us further away from achieving internationally agreed emissions goals, and maintaining a stable climate.**

Figure ES-1: Emissions from Developed Fossil Fuel Reserves, Compared to Global Carbon Budgets



Sources: Rystad Energy, International Energy Agency (IEA), World Energy Council, Intergovernmental Panel on Climate Change (IPCC)⁷

Policies, rules, and provisions in the tax code that continue to support fossil fuel production undermine efforts to transition to a clean energy economy, and rob the public purse of the resources needed to do so. **Removing these highly inefficient subsidies – which waste billions of dollars propping up an industry incompatible with safe climate limits – should be the first priority of fiscally responsible climate, energy, and tax reform policies.**

This report inventories subsidies based on the latest available data at the time of writing. Today, there are several efforts already underway by fossil fuel-backed politicians to create even more ways for the fossil fuel industry to benefit from subsidies. A full list of all the subsidies examined, and the sources for their estimation, can be found in Appendices I and II.

In summary, the key findings of this report include:

- ❖ The United States federal and state governments gave away \$20.5 billion a year on average in 2015 and 2016 in production subsidies to the oil, gas, and coal industries, including \$14.7 billion in federal subsidies and \$5.8 billion through state-level incentives. At the state level, this is likely a significantly conservative estimate, given limits to available data.^a
- ❖ Repeated proposals by the Obama White House to remove some of the most damaging federal subsidies were thwarted in large part due to the cozy relationship between Congress and the fossil fuel industry. In the 2015-2016 election cycle oil, gas, and coal companies spent \$354 million in campaign contributions and lobbying and received \$29.4 billion in federal subsidies in total over those same years - an 8,200% return on investment.
- ❖ The cost of federal fossil fuel subsidies to American taxpayers is equivalent to the projected 2018 budget cuts from Trump's proposals to slash 10 public programs and services, including supports for America's most vulnerable children and families. Misplaced priorities, not a scarcity of resources, are driving this administration's efforts to balance the national budget at the expense of the most vulnerable.
- ❖ Despite rhetoric about a supposed war on coal, federal and state governments spent on average more than \$4 billion annually incentivizing coal production in 2015 and 2016. Oil and gas production was underwritten with more than \$16 billion in corporate handouts on average per year during that period.
- ❖ The U.S. spent on average \$2.5 billion annually subsidizing the exploration of new fossil fuel resources in 2015 and 2016, even though the science clearly shows that fossil fuel expansion must stop immediately in order to meet internationally recognized climate goals.
- ❖ Unconventional fossil fuel production technologies, like carbon capture and sequestration and enhanced oil recovery (EOR), received almost \$700 million in government support annually in 2015 and 2016. However, the Office of Management and Budget (OMB) projects EOR tax credits alone to be worth \$8.8 billion over the next decade, exposing the assumption that the U.S. will fail to curb the power of the fossil fuel industry and meet international climate goals.
- ❖ Taxpayers are being forced to pick up a significant share of the bill – at least \$3.5 billion per year in 2015-2016 – for lasting harm to the environment, workers, and local communities caused by oil, gas, and coal operations. These costs could grow in the future due to inadequate bonding and lax management of liability that shifts the burden of damaged infrastructure, spills, and mounting problems like drilling-induced earthquakes to taxpayers.

^a Subsidy estimates are calculated based on the best data available primarily from federal and state budget and tax commission documents, as well as earlier research from other non-profit and non-industry associated groups, in particular, the OECD's Inventory of Support Measures for Fossil Fuels and Earth Track. The state subsidies total is likely a conservative estimate given some top fossil-fuel producing states, such as North Dakota and Wyoming, do not consistently report on revenue losses from the tax breaks they provide.



The subsidies outlined in this report predate Trump's arrival in the White House and his promise to ramp up oil, gas, and coal production in an effort to gain "energy dominance." But if they stay in place, they will help buoy current fossil fuel expansion plans by making it easier for industry to access public energy resources, allowing cheaper access to capital, and reducing operating expenses. Those incentives are paid for by U.S. taxpayers, both in lost revenue and increased financial, environmental, and social costs.

Climate champions in Congress, statehouses, and governors' residences concerned about using taxpayer dollars wisely can push back on Trump's fossil fuel agenda by taking the following actions:

- ❖ Immediately repeal existing tax breaks for fossil fuel exploration and production, including the \$8.7 billion per year in federal subsidies recommended for elimination by the Obama Administration. Ending these inefficient subsidies should be part of any attempt to overhaul the federal tax code.
- ❖ Halt efforts to extend and expand tax credits for unconventional fossil fuel production technologies, like carbon capture and storage and enhanced oil recovery.
- ❖ Champion broader legislation that ends investment in fossil fuel expansion, and funds a just transition for industry-dependent workers and communities, while supporting a clean, renewable energy economy.
- ❖ Resist administrative maneuvers to give away public lands and waters to fossil fuel companies; undermine regulation of the oil, gas, and coal industry limiting emissions and protecting human health; or revise royalties and payments to further shortchange American taxpayers and resource owners.
- ❖ Take action to bring consistency and transparency to how rates, credits and exemptions are written into the federal and state tax codes, how subsidies are measured and valued, and how subsidy costs and collected revenue are reported.
- ❖ Break the cycle of dirty energy money, particularly by elected officials at all levels of government pledging to refuse campaign donations and other forms of support from the oil, gas, and coal industries.

WHAT IS A FOSSIL FUEL SUBSIDY?

Broadly speaking, a fossil fuel subsidy is any government action that lowers the cost of production, lowers the cost of consumption, or raises the price received by producers.

Types of fossil fuel subsidies include financial contributions or support from the government or private bodies funded by governments, including direct transfers of funds; transfer of operating or accident risks, such as by capping liability; foregone revenue including tax breaks; and provision of goods and services at below-market rates.^b

Oil Change International groups fossil fuel subsidies into two categories:

1. Production: support to fossil fuel companies for producing oil, gas, and coal, usually in the form of special tax deductions, low-cost access to government land, and infrastructure support. A particularly important subset are subsidies for **exploration**, which incentivize expanding fossil fuel reserves, including the discovery of new resources. Production subsidies also include support for access, appraisal, development, extraction, preparation, transport (to utilities and refineries), plant construction and operation (of utilities

and refineries), distribution (fuel products and fossil fuel-based electricity) and decommissioning.

2. Consumption: support to consumers to lower the cost of fossil fuel use (not included in the total subsidy estimates in this analysis).

Given the increasing urgency of climate change and concerns about balancing government budgets, it is highly inefficient to continue subsidizing fossil fuels. Removing subsidies to the fossil fuel industry is one of the first goals that fiscally responsible climate and energy policy should seek to achieve. The huge social costs of carbon and community-level impacts resulting from increased fossil fuel extraction further highlight the importance of this objective.

International efforts on fossil fuel subsidy elimination have been mostly targeted at consumption subsidies, many of which have been put in place with the stated intention of making energy more affordable to low-income households. However, consumption subsidies have been heavily criticized for being poorly targeted, often

captured by wealthier members of society who least need them and encouraging inefficient fuel use.¹ Lower cost alternatives are available, including cash transfers not linked to fuel consumption for insulation and weatherization.² Targeted support to low-income energy consumers such as this could reduce energy need and fuel consumption while increasing families' comfort and leaving more money in people's pockets. Ultimately, programs like the Low Income Home Energy Assistance Programs (LIHEAP) should be replaced with more effective policy that ensures equal or greater benefit to low-income households.

Because they encourage increased extraction of dirty energy resources, and thus greenhouse gas emissions that our climate cannot safely absorb, we consider production subsidies to be among the most egregious support mechanisms to fossil fuels. The more we invest in long-lived high-carbon assets, the stronger fossil fuel institutions will be, and the greater the resistance to a low-carbon transition.³ Therefore, production subsidies are the focus of this analysis rather than consumption subsidies.

^b Definition adapted from OECD, "OECD Companion to the Inventory of Support Measures for Fossil Fuels 2015," 2015, <http://dx.doi.org/10.1787/9789264239616-en> and WTO, "Defining Subsidies," World Trade Report 2006, http://www.wto.org/english/res_e/booksp_e/anrep_e/wtr06-2b_e.pdf and WTO Agreement on Subsidies and Countervailing Measures Article 1.1: http://www.wto.org/english/docs_e/legal_e/24-scm_01_e.htm

THE SKY'S LIMIT AND U.S. FOSSIL FUEL SUBSIDIES

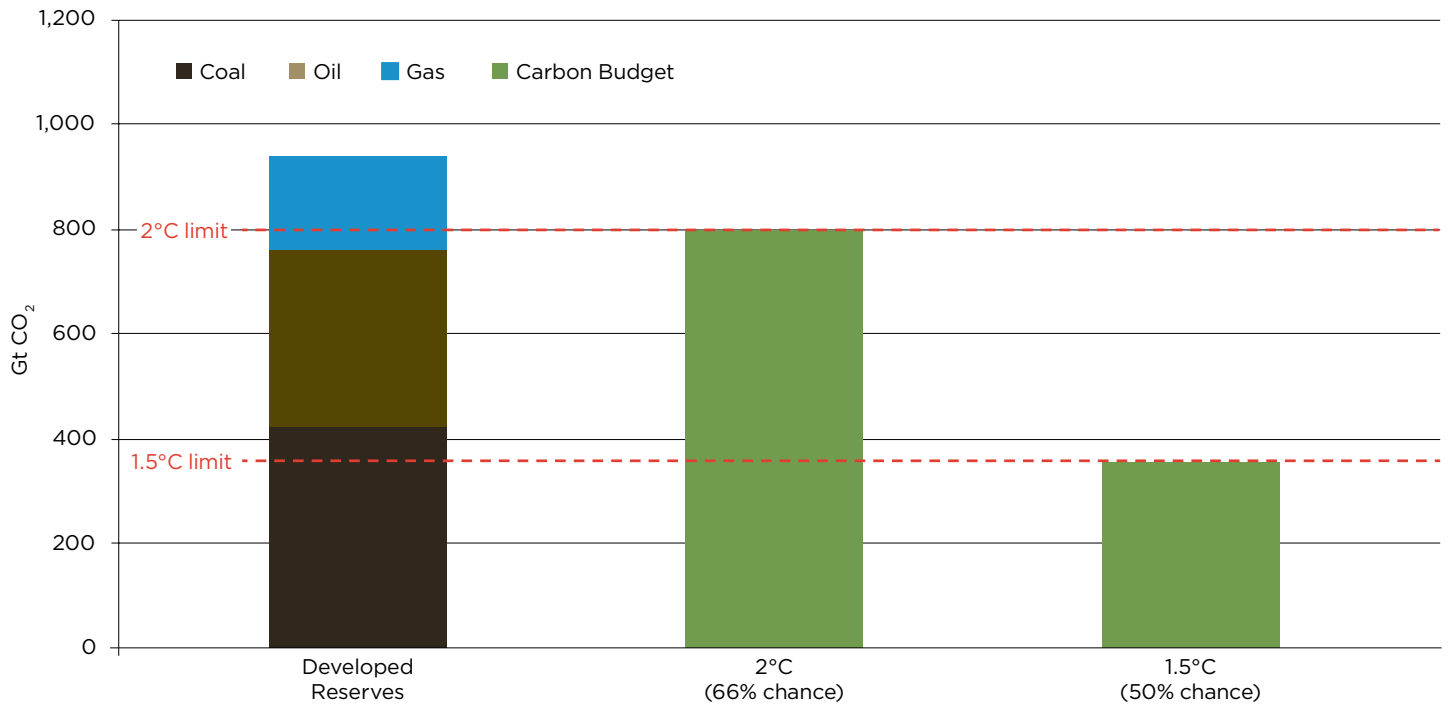
The best available science shows an urgent need to keep global temperature increases to below 1.5°C to avoid severe disruptions to people and ecosystems.⁴ With the signing of the 2015 Paris climate agreement, the global community agreed to keep warming to well below 2°C, and aim for no more than 1.5°C. Although President Trump has announced his intention to pull the United States out of the international accord, hundreds of cities and states, representing about a third of the U.S. population and economy, have pledged to take action to meet the Paris goals.⁵

However, as recent analysis shows, the potential carbon emissions from fossil fuels in the world's already-operating fields and mines would take us well beyond 2°C. Burning the reserves in operating oil and gas fields alone, even if coal mining were completely phased out, would take the world beyond 1.5°C (Figure 1).⁶

The implications are clear. To avoid climate disruption, no new fossil fuel resources can be developed, and in fact, some already-tapped reserves must be retired early. For the U.S., one of the world's wealthiest

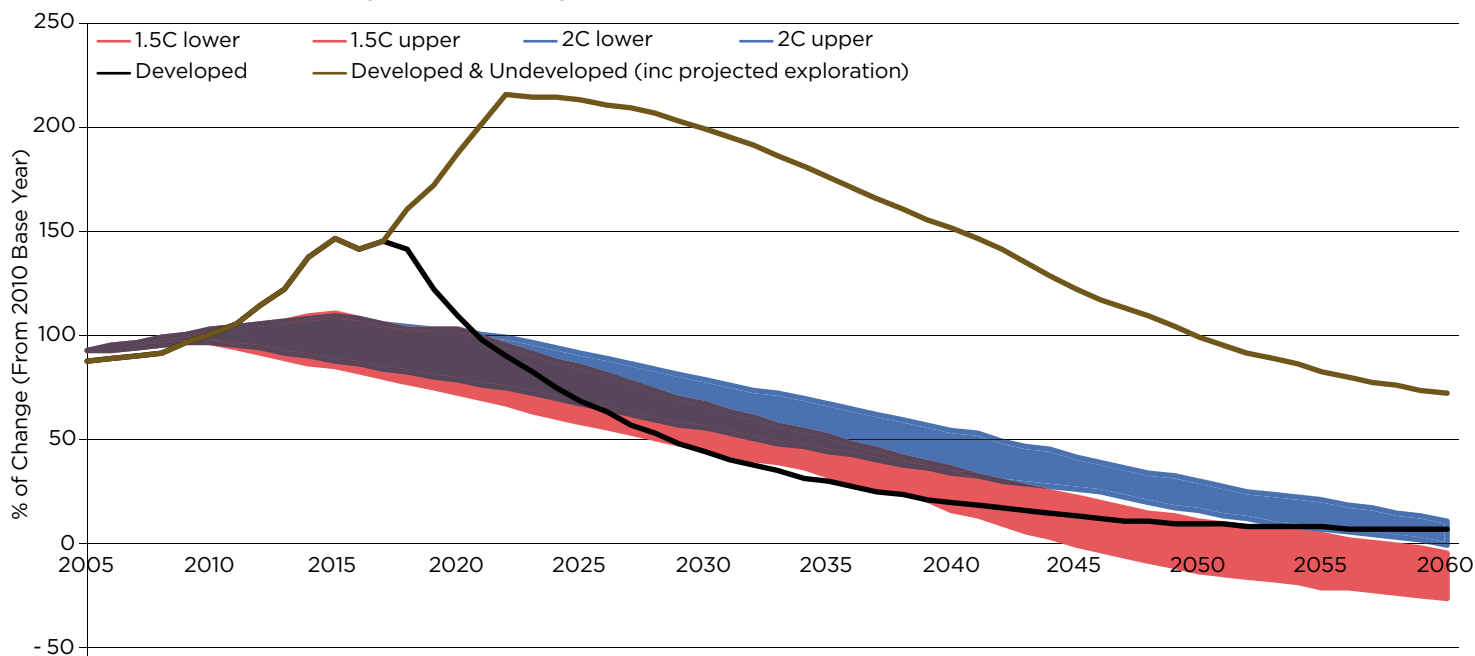
nations and largest historical emitters,⁸ this means managing a decline in fossil fuel production and a rapid and just transition to a clean energy economy. As Figure 2 illustrates, potential U.S. expansion of oil and gas production is incompatible with the rates of global emissions reductions required to stay within climate limits.

Figure 1: Emissions from Developed Fossil Fuel Reserves, Compared to Global Carbon Budgets



Sources: Rystad Energy, International Energy Agency (IEA), World Energy Council, Intergovernmental Panel on Climate Change (IPCC)⁷

Figure 2: Rates of Change* of Global Emissions in a Range of 1.5 or 2 degree Celsius Scenarios, and of Emissions from U.S. Developed and Undeveloped Oil and Gas Fields



Sources: Joeri Rogelj et al.⁹ (emissions pathways) and Rystad Energy UCube, July 2017 (production data) *Rates of change are based off of 2010 emissions and production levels.

Subsidizing fossil fuels is in direct conflict with a managed phase-out of the fossil fuel industry, undermining efforts to address climate change in three ways. First, subsidies act as a “negative carbon price.” A carbon price is meant to make emitting carbon pollution more costly, but subsidies incentivize companies to release more greenhouse gas emissions by encouraging fossil fuel production. Second, they help drive the lock-in of high carbon energy infrastructure for decades to come, making the transition to clean energy more difficult and costly. Third, subsidies make uneconomical dirty energy financially viable, thereby enabling new energy projects that would never even begin operating without such support.¹⁰

Despite the fact that the climate cannot afford for us to develop new fossil fuel resources, this study finds that U.S. federal and state governments are funneling more than \$20 billion each year to the oil, gas, and coal industries to support exploration, development, and production of fossil fuels. On average during 2015 and 2016, U.S. subsidies totaled at least \$20.5 billion,

of which \$14.7 billion came from the federal government, and \$5.8 billion from state-level incentives.

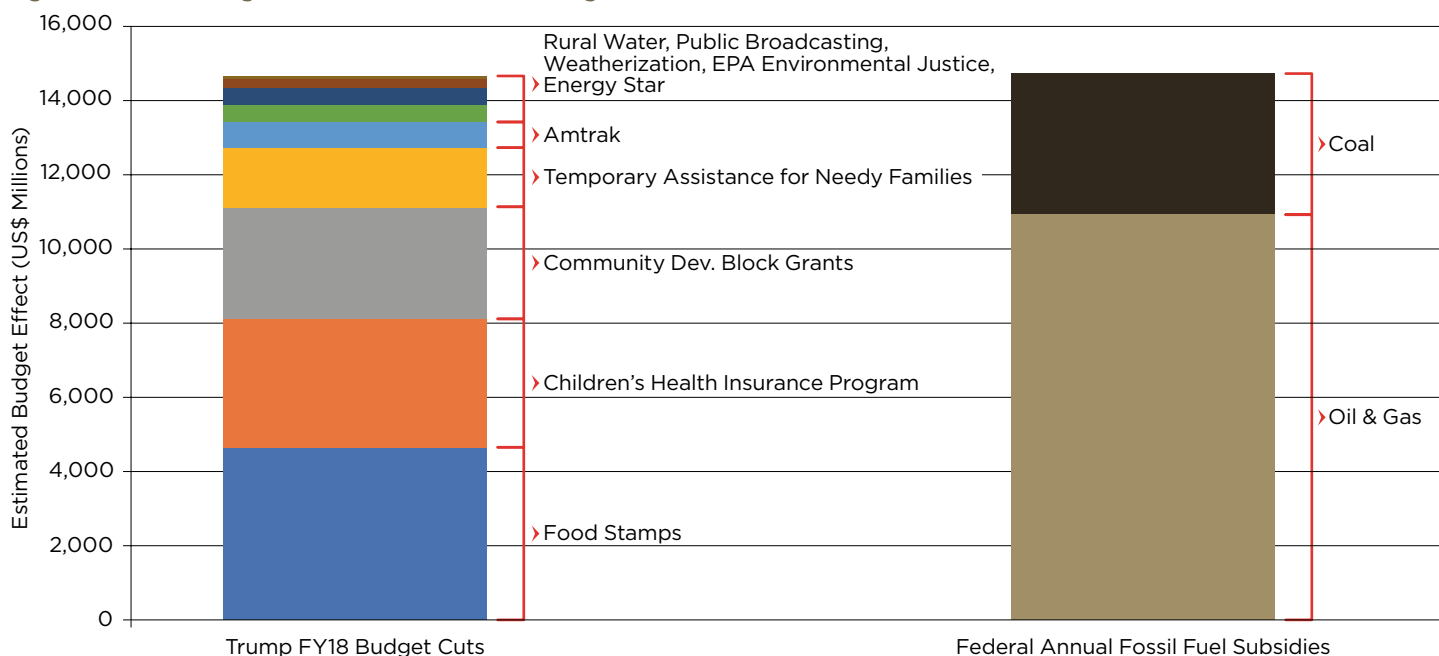
Federal government subsidies in this total include support for fossil fuel exploration and production, such as tax credits for using carbon pollution to pump more oil, and deductions for costs related to oil and gas drilling like labor, surveying, and ground-clearing. It should be noted that over this period, President Obama marked an average \$8.7 billion of incentives per year for elimination in his proposed budgets – more than half of all federal production subsidies.

The cost of federal subsidies to the fossil fuel industry is equivalent to the projected 2018 budget cuts from Trump’s proposals to eliminate or significantly scale back the following 10 public programs and services: food stamps, the Children’s Health Insurance Program, Community Development Block Grants for affordable housing, Temporary Assistance for Needy Families, long-distance Amtrak service, grants for rural water and waste disposal, the Public Broadcasting

Corporation, the Weatherization Assistance Program for low-income households, Energy Star, and EPA enforcement, including of environmental justice. Misplaced priorities, not a scarcity of resources, are driving this administration’s efforts to balance the national budget by slashing programs that help Americans meet their basic needs and stay healthy and safe.

State government subsidies estimates include available data on exploration and production subsidies in 16 states: Alaska, Arizona, Arkansas, California, Colorado, Kentucky, Louisiana, Montana, New Mexico, North Dakota, Ohio, Oklahoma, Pennsylvania, Texas, West Virginia, and Wyoming. The oil and gas sector received more than 20 times as much support from state governments as the coal sector. Texas, Alaska, Oklahoma, and Louisiana directed the most support to the fossil fuel production over 2015 and 2016. Still, major fossil fuel producing states like Louisiana, Oklahoma, and Texas have seen dramatic drops in associated revenue because the taxable value of that production has dropped.

Figure 3: Selected Program Cuts in the President's Budget FY2018 vs. Annual Federal Fossil Fuel Subsidies



Subsidy estimates are calculated based on the best data available primarily from federal and state budget and tax commission documents, as well as earlier research from other non-profit and non-industry associated groups, in particular, the Organization for Economic Cooperation and Development (OECD)'s Inventory of Support Measures for Fossil Fuels and Earth Track.¹¹ The state subsidies total is likely a conservative estimate given some top fossil-fuel producing states, such as North Dakota and Wyoming, do not consistently report revenue losses from the tax breaks they provide.

A full list of the subsidies included in the \$20.5 billion total, including those which were tagged for elimination in Obama's proposed budgets, can be found in Appendix I.

As can be seen in Figure 4, the vast majority of U.S. subsidies to fossil fuels (80 percent)

are flowing to oil and gas operations, while a significant but smaller portion (20 percent) continues to prop up the coal industry.

The U.S. spent on average \$2.5 billion annually subsidizing the exploration of new fossil fuel resources in 2015 and 2016, even though the science clearly shows that fossil fuel expansion must stop immediately in order to meet internationally recognized climate goals (see Figure 5). The largest single federal oil and gas subsidy is the deduction for intangible drilling costs, which allows producers to deduct 100 percent of their costs related to exploratory drilling and preparing new wells for production (see Figure 6).

This study also finds that taxpayers are at risk of facing a growing bill for remediating the harm to workers and the environment caused by fossil fuel production - costs that should be borne by the companies responsible for the damage. As the coal

industry declines, and companies face bankruptcy, additional costs for cleaning up mines and taking care of workers suffering from black lung disease could shift to taxpayers. Meanwhile, if oil and gas production rises (as is the intention behind the Trump's Administration's attacks on energy regulation), inadequate bonding and lax liability could shift the growing costs of damaged infrastructure, spills, and mounting problems like drilling-induced earthquakes onto taxpayers. In Texas alone, studies estimate that drilling activity causes \$2 billion per year in road damage.¹² Many of these costs are not currently quantifiable.

Federal and state governments should publicly disclose the methodologies by which they estimate the value of subsidies made available to oil, gas, and coal companies to dispel disagreements over subsidy definitions and volumes.

Figure 4: U.S. Fossil Fuel Subsidies by Energy Type, 2015-2016

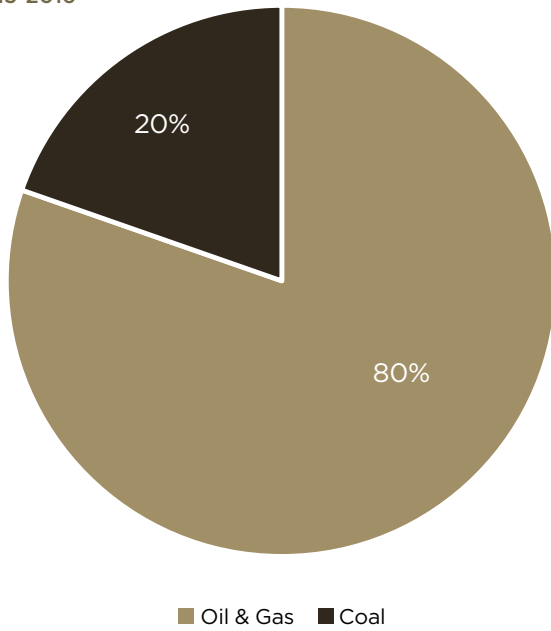
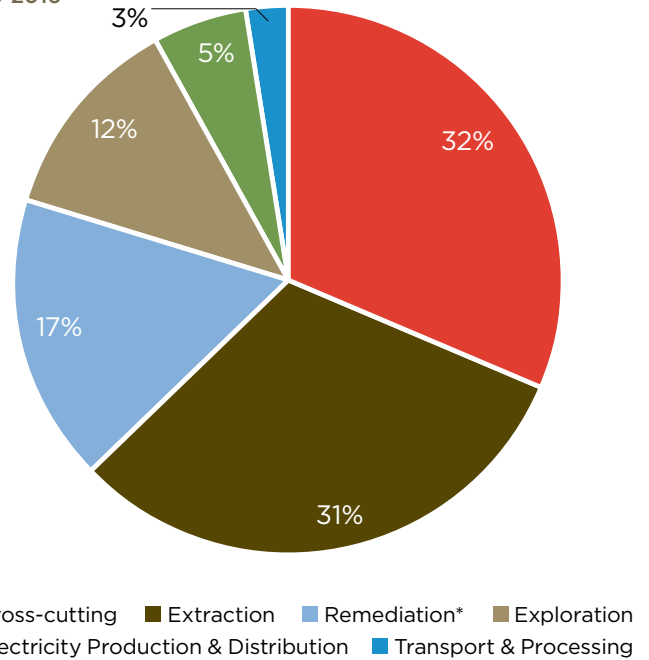
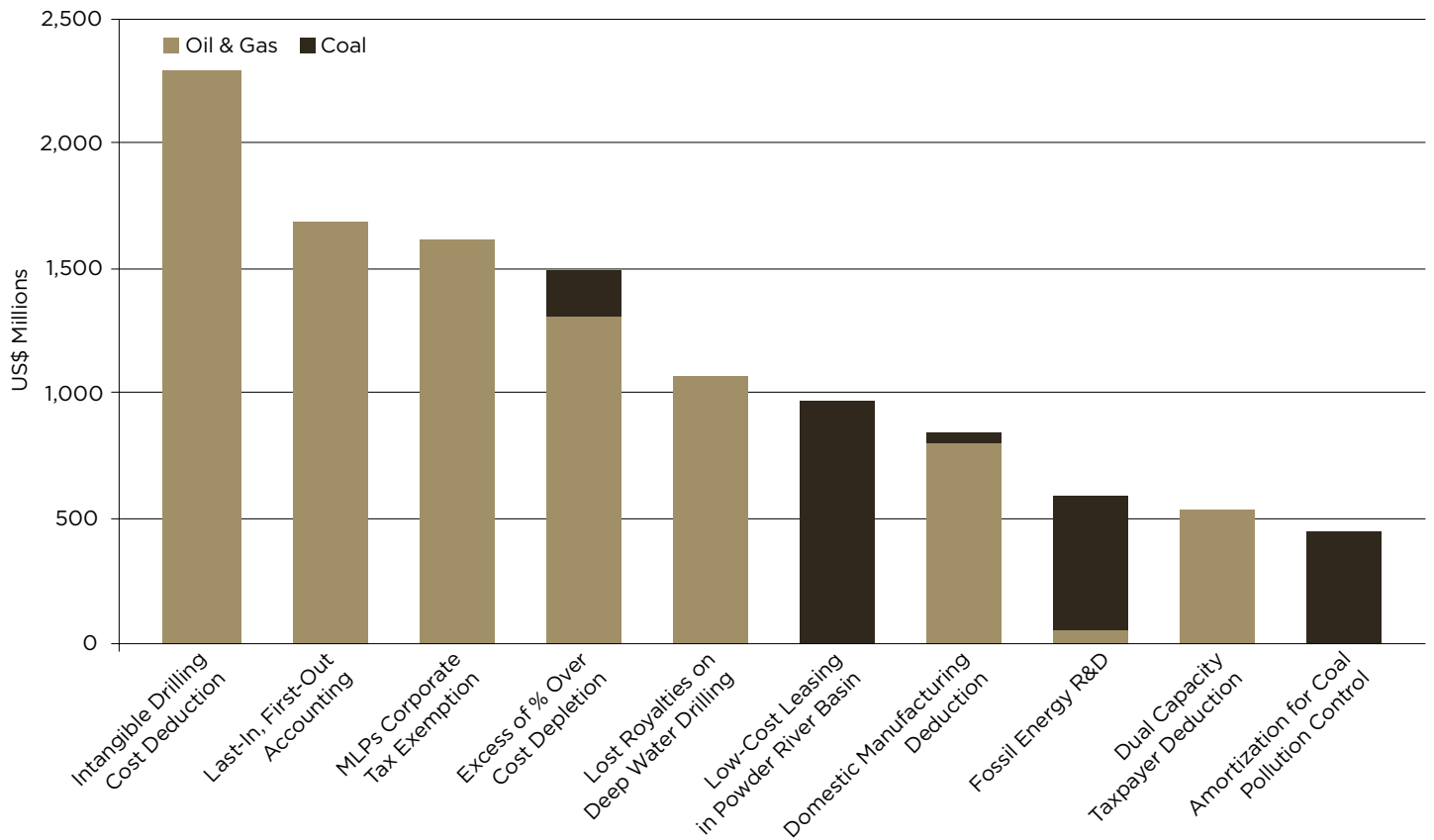


Figure 5: U.S. Fossil Fuel Subsidies by Stage of Production, 2015-2016



*The estimated total targeted to remediation may significantly undercount total taxpayer liability, given the limitations in quantifying the risks related to inadequate bonding, insurance, and liability caps that limit industry responsibility for damage and clean-up costs.

Figure 6: Largest Federal Fossil Fuel Subsidies by Annual Average, 2015-2016



Box 1: Permanent Subsidies for Renewable Energy vs. Fossil Fuel Production

Fossil fuel industry advocates often point to current levels of public support for the renewable energy sector, especially wind and solar power, to justify continued government handouts to oil, gas, and coal companies. However, the majority of renewable energy subsidies – including the investment tax credits (ITC) and production tax credits (PTC) – are set to expire in part or in whole over the next five years. Meanwhile, one of the largest fossil fuel subsidies in the tax code, a deduction for the intangible costs of oil and gas drilling worth \$2.3 billion in 2016, has remained on the books for over 100 years and will stay there until Congress reforms our nation’s tax policy.

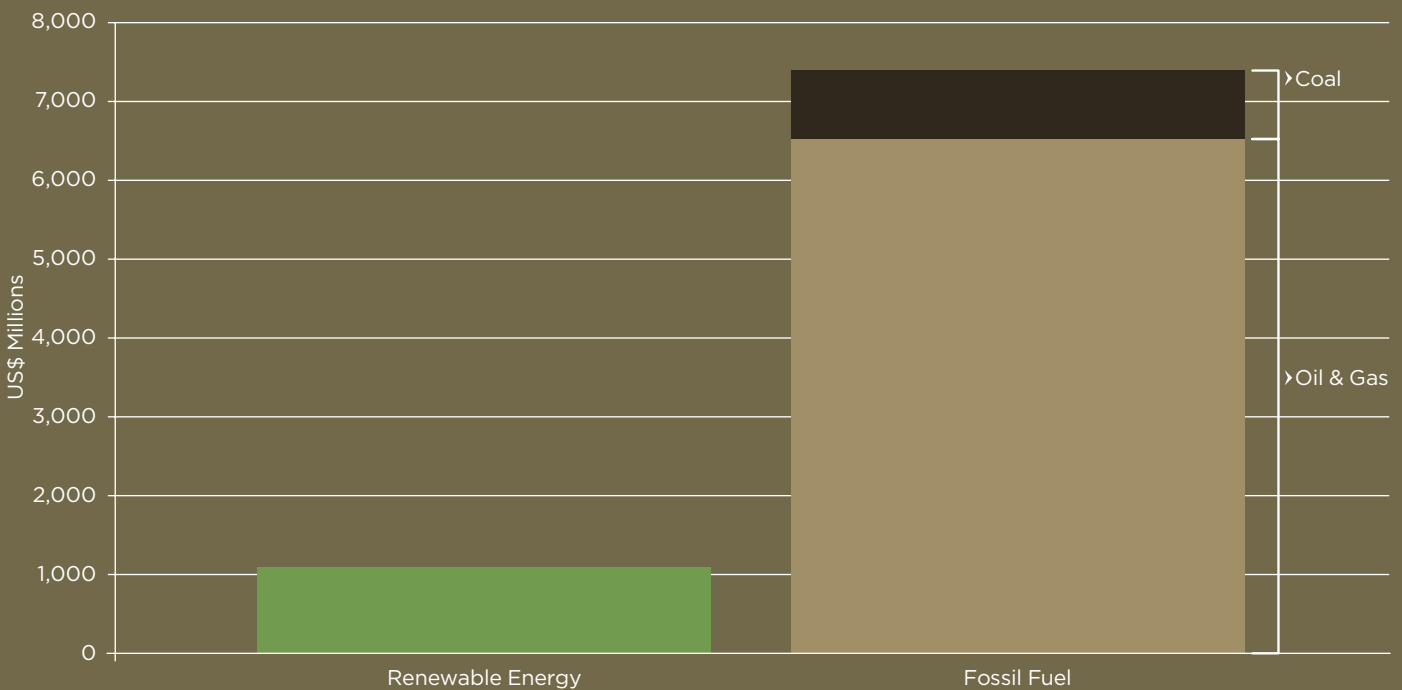
The reality is that permanent tax breaks enshrined in the federal internal revenue code favor the fossil fuel industry over the renewable energy sector seven-to-one (Figure B-1). Looking only at the value of permanent tax expenditures, the oil, gas, and coal industry received a total of \$7.4 billion in 2016. By contrast, permanent tax expenditures available to renewable energy companies, including solar, wind, geothermal, biofuel and hydropower, were only worth \$1.1 billion in 2016. This total reflects a 5-year depreciation for certain renewable energy equipment, and a 10% energy investment tax credit for solar and geothermal electricity generation that remains in effect after of

the remainder of the ITC is phased out by 2022.¹³ All other public supports for renewable energy either expire or have a fixed subsidy amount that will no longer be available once it has been spent down.

Renewable energy subsidies are sometimes subject to short-term extension, but the boom and bust cycle created by repeatedly allowing tax credits to expire before renewing them creates uncertainty among clean energy companies and disrupts the renewable energy market. In the case of the PTC, wind capacity installation rates repeatedly dropped – and workers were let go – in the years after Congress allowed this tax credit to expire.¹⁴ The longevity and persistence of fossil fuel subsidies gives the industry the added advantage of stability, as well as massive cumulative financial benefits.

This mismatch between what the science and the American people demand (a rapid shift away from fossil fuel energy) and what is currently written into national tax policy can be fixed by Congress. Any serious attempt at tax reform must correct this misallocation of public resources by eliminating fossil fuel subsidies and making supports for safe, clean renewable energy permanent.

Figure B-1: Value of Permanent Tax Breaks for Renewable Energy vs. Fossil Fuels, FY2016



ENERGY DOMINANCE AND A U.S. FOSSIL FUEL FUTURE

Under the Obama Administration, the government continued to give billions in subsidies to the fossil fuel industry, despite some efforts by the White House to end select subsidies in the President's budget requests, and some action to curtail subsidies under executive control toward the end of his time in office. Under the Trump Administration, a cabinet stacked with climate deniers and fossil fuel enthusiasts has already begun leading the nation down a path of even greater handouts to oil, gas, and coal companies.

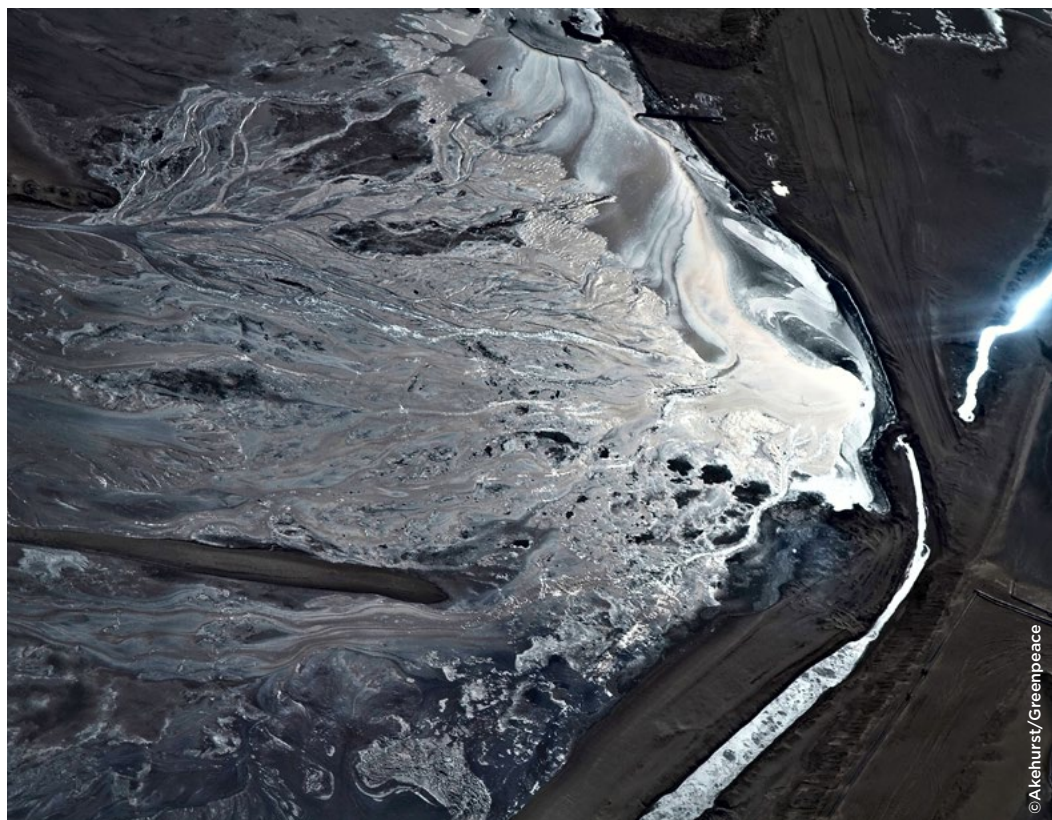
Trump came into office promising to breathe life into a flagging coal sector, ramp up gas fracking and export, and reopen and expand offshore drilling.¹⁵ The administration's energy agenda, dubbed "energy dominance," is largely predicated on speeding up oil, gas, and coal production to make the United States a net energy exporter, and using these exports as a bargaining chip to sway geopolitics.

To implement this agenda, the Trump Administration has appointed people to key cabinet posts with close ties to the dirty energy industry. Many of these appointees have been pushing for deregulation as lobbyists, lawyers, and industry association experts for years, and are now responsible for the administration's energy and climate agenda.

Most relevant to fossil fuel subsidies out of this long list are Department of Interior (DOI) Secretary Ryan Zinke, Secretary of Energy Rick Perry, and EPA Administrator Scott Pruitt. Unlike Secretary of State Rex Tillerson, none of these men has served as

the CEO of a major fossil fuel company, but they have been board members, partners in litigation, and strategic allies with oil, gas, and coal companies (see Box 2 for more detail).

A tailings pond at the Suncor Steepbank/Millennium Mine in the Canadian tar sands. Alberta, Canada, 2014.



©Akehurst/Greenpeace

Box 2: Corporate Connections: Fossil fuel ties to the Trump Administration

Many members of the Trump Administration who have been tapped to lead policy on energy, environment, and public lands are deeply connected to the fossil fuel industry. Examples of how these conflicted officials have already promoted a fossil fuel-focused agenda include:

Ryan Zinke, Secretary of the Interior

Even before arriving at the Department of Interior, Ryan Zinke demonstrated that he would go to bat for his associates in the fossil fuel industry. From 2012 to 2015, Zinke was on the board of the oil pipeline company QS Energy (formerly Save the World Air), which had a financial interest in the Keystone XL pipeline. Soon after joining Congress as a Montana Representative, he cosponsored a bill to build the pipeline.¹⁶

Zinke has another connection to fossil fuel companies: more than \$386,000 in contributions from industry PACs, including Peabody Energy Corporation PAC, Cloud Peak Energy Resources PAC, Alpha Natural Resources PAC, the National Mining Association PAC, and Haliburton.¹⁷ At the DOI, Zinke and appointees meet often with oil, gas, and coal representatives, and policies that favor their industry appear quick to follow.¹⁸

Scott Pruitt, Environmental Protection Agency Administrator

Like his colleague at DOI, Administrator Pruitt showed in his previous position as Oklahoma Attorney General an allegiance to his fossil fuel industry friends and contributors – more than half of which came from the energy sector.¹⁹ In that post, he crafted policy on behalf of fossil fuel companies, lobbied the

EPA using the industry's own words, and repeatedly sued the agency he now leads over regulation of the power sector.²⁰

Since taking the helm at EPA, Pruitt has met with executives and lobbyists from the oil and gas industry, like the American Petroleum Institute, but largely ignored environmental groups and career EPA staff. He has placed regulation of the fossil fuel industry squarely in his crosshairs, proposing to review and rescind the Clean Power Plan, delaying rules to curb methane leaks from oil and gas operations, and preparing the legal path to withdrawing the U.S. from the Paris Agreement.²¹

Rick Perry, Energy Secretary

Prior to joining the Trump Administration, Rick Perry, a long-time climate denier, oversaw a boom in the state's oil and gas production, the construction of new coal plants, and the muzzling of climate scientists. On leaving office he joined the board of Energy Transfer Partners, owner of controversial Dakota Access Pipeline.²² Since landing at the DOE, an agency he once called on to be abolished, Perry has slashed the department's clean energy budget and ordered a study on the national grid that recommended weakening environmental regulations for coal plants and expediting permits for energy infrastructure.²³

(For more information, see Center for American Progress Action Fund, Dirty Deputies database, <https://dirtydeputies.org/> and Western Values Project, Department of Influence, <https://departmentofinfluence.org/>)

Many of the first actions by the Trump Administration have focused on giving the fossil fuel industry what its lobbyists have been asking for. Here are some of the most notable attempts to promote fossil fuel expansion in the first seven months of this administration:

- ❖ DOI Sec. Zinke **ended a Federal Coal Leasing Program moratorium** put in place by the Obama administration and canceled an on-going programmatic environmental impact assessment and review of royalty rates paid by companies for their use of coal from public lands.²⁴
- ❖ The DOI **rescinded a 2016 coal valuation rule** that closed a billion-dollar-per-year loophole by requiring companies mining coal on taxpayer-owned public land to pay royalties on sales to the first unaffiliated customer (an "arm's length"

rule). Before this rule was in place, companies were able to sell coal to their own subsidiaries for low prices to push down royalty payments, then raise prices for the next customer in line.²⁵

- ❖ Bureau of Ocean Energy Management (BOEM) **lowered royalty rates** for drilling in shallow offshore waters to stimulate more oil exploration and production.²⁶
- ❖ **The Department of Interior 2018 Budget** request included an increase of \$16 million and 82 additional Bureau of Land Management (BLM) staff to process permits for oil and gas development on public lands, an extra \$8 million and 48 new hires to speed up coal mining permits, and added \$10 million to the Outer Continental Shelf Oil and Gas Leasing Program for expanding offshore oil and gas drilling. At the same time, it slashed funding for clean energy

permitting and support functions by \$15.5 million and laid off more than half of the BLM's renewable energy management workforce.²⁷

By ramping up fossil fuel production, the White House claims, the country can unlock "millions of jobs and trillions of dollars in wealth."²⁸ But Trump's energy dominance agenda, and the subsidies that help drive fossil fuel expansion, are at odds with the facts. Energy experts have noted that Trump's job creation estimates are unrealistic,²⁹ and the majority of Americans are demanding action on climate, and want the U.S. to meet internationally agreed climate goals.³⁰

Also, the renewable energy sector is growing rapidly as prices fall and consumers go looking for clean power. Over the last three years, jobs in the U.S. solar industry have grown 82 percent and 100 percent

in the wind sector.³¹ Capital investment in these industries creates about one-fifth more jobs than an equivalent investment in the fossil fuel sector, resulting in more jobs per dollar of investment.³² Efficiency and renewable energy jobs are largely in manufacturing, construction, maintenance, and electricity generation. To their advantage, these jobs can be widely dispersed across the country, include a variety of skill levels, and often create opportunities in rural areas.³³ Still, much work needs to be done to ensure that they are good, secure jobs with opportunities for education, training, and advancement.

Trump's dirty energy agenda may be good for oil executives, but it will leave American workers and communities behind the global renewable energy curve.

Eliminating subsidies is critical to stopping Trump's fossil fuel bonanza, because the industry heavily relies on government giveaways to remain profitable. Recent economic analysis of the nation's proven but not-yet-developed oil resources revealed that at current prices, the production of nearly half of all U.S. oil is not economically viable, except with federal and state subsidies. The 20 billion barrels made

possible by taxpayer handouts would emit as much climate pollution as 100 coal-fired power plants operating for a quarter of a century.³⁴ Coal companies are eagerly urging Members of Congress to support changes to the federal tax code that throw the outdated industry a financial life-line by expanding subsidies for capturing, storing and selling their carbon pollution to oil companies that use it to increase production.³⁵ Bold action on Capitol Hill will be key to ensuring subsidies do not lock America into an energy future dominated by fossil fuels.

A flare burns near a hydraulic fracturing drilling tower in rural Weld County in northern Colorado



DIRTY ENERGY MONEY CYCLE

In each year of his administration, President Obama proposed a budget that included the elimination of billions in annual tax preferences to the fossil fuel industry.³⁶ And every year, Congress – influenced by millions of dollars from fossil fuel companies seeking to hang on to handouts – failed to pass even these limited subsidy cuts.

The fossil fuel industry buys their influence over policymakers by pouring money into Congress to protect their subsidies and weaken safety and environmental regulations. During the 2015-2016 election cycle, oil, gas, and coal companies, and the industry associations that advocate for them, spent \$354 million in campaign finance contributions and lobbying expenditures.³⁷ That bought them action in the new House and Senate, including a push led by Republican lawmakers (recipients of 88 percent of contributions) to repeal rules that the industry perceived as limiting their power.³⁸

Before 2017, the Congressional Review Act (CRA) had been successfully used to block administrative rules only once.³⁹ This Congress invoked the CRA to kill a regulation mandated by the Dodd-Frank Consumer Protection Act to stem corruption by requiring fossil fuel companies to disclose payments made to foreign governments for developing their oil and gas resources.⁴⁰ Lawmakers also used the CRA to repeal the Department of Interior's Stream Protection Rule, which held coal companies accountable for cleaning up waste from mountaintop removal



View of smoke plumes emitted from the Syncrude upgrader plant north of Fort McMurray.

mining and protecting local waters from toxic contamination.⁴¹ The move to rescind the BLM's Methane and Waste Prevention Rule was narrowly defeated in the Senate, preserving regulation to curb methane flaring, venting and leaks from onshore gas and oil production on public lands, and updating existing royalty provisions.⁴² However, Secretary Zinke has since delayed parts of the rule that were to take effect in 2018.⁴³

The fossil fuel industry's massive spending also paid off in securing \$29.4 billion in total fossil fuel subsidies from the federal government between 2015 and 2016. Put

another way, for every \$1 that fossil fuel companies spent on lobbying and campaign finance contributions to Congress, it received more than \$83 back in subsidies – that's an almost 8,200 percent return on investment to protect the status quo.

This cycle of money into Congress from the fossil fuel industry and money back out to the industry in the form of subsidies has contributed significantly to stymying even modest proposals for fossil fuel subsidy reform. Moving forward, true climate leadership should be measured in elected officials by whether they still accept support from the fossil fuel industry.

FEDERAL SUBSIDY HIGHLIGHTS: BILLIONS WASTED

In a carbon- and budget-constrained world, some of the worst subsidies are those that give corporations incentives to increase fossil fuel production, and those that make more income available for these companies to expand operations at the expense of taxpayers. Support measures that bail out industry, and subsidies for environmental remediation, allow companies to shirk their cleanup responsibilities and encourage reckless behavior, while the public picks up the tab. And incentives put Americans and climate goals at risk when they underwrite technologies that delay the clean energy transition and attempt to breathe new life into fossil fuels.

THE BIG FOSSIL FOUR

These subsidies allow oil, gas, and coal companies to deduct costs associated with exploration and production in ways that net them billions of dollars. Two of the largest subsidies that incentivize developing new fossil fuel resources include:

- ❖ **Intangible drilling oil & gas deduction (\$2.3 billion):** independent producers are able to immediately deduct 100 percent of costs not directly part of the final operating oil or gas well (such as labor, surveying, and ground clearing), including oil and gas exploration and development costs.⁴⁴ Integrated companies – those that also have retail operations – can immediately deduct 70 percent of intangible drilling costs, with the remaining 30 percent amortized over five years. In the absence of this credit, these deductions would have to be amortized over a much longer time period.

- ❖ **Excess of percentage over cost depletion (\$1.5 billion):** allows independent fossil fuel producers to deduct a percentage of their gross income from production, rather than writing off the real cost reflecting how much of the reserve has been depleted as a result of the oil, gas, or coal produced that year.⁴⁵

There are a number of subsidies that are not directed at any particular stage of production, but are heavily depended on by the industry as accounting tricks to avoid taxation, making more capital available for investing in new projects. Some, like last-in, first-out accounting, are prohibited under international financial reporting standards. The values included in our inventory reflect only the portion of the subsidy specifically claimed by oil and gas companies. The following examples were slated by the Obama administration for removal:

- ❖ **Master Limited Partnerships tax exemption (\$1.6 billion):** a special corporate form that is both exempt from corporate income taxes and publicly-traded on stock markets which is primarily available to natural resource firms, the majority of which are fossil fuel companies.⁴⁶

- ❖ **Last-in, first-out (LIFO) accounting (\$1.7 billion):** allows oil companies to assume for accounting purposes that they sell the inventory most recently acquired or manufactured first. When inventory is experiencing increasing prices, LIFO assigns the most recent prices to cost of goods sold and oldest prices to

remaining inventory, hence resulting in the highest amount of cost of goods sold and lowest taxable income for the company.⁴⁷ The energy sector is the single largest beneficiary of this subsidy, holding more than a third of LIFO reserves.⁴⁸

FIRE-SALE ON FEDERAL LANDS

The federal government continues to hand over energy resources from our public lands and federally-controlled waters to the fossil fuel industry for cheap. With the Trump Administration already taking action to reduce royalty rates, open more land and waters to drilling and mining, and speed up permitting, the country may be headed toward even greater giveaways. Subsidies for production on federal lands include:

- ❖ **Lost royalties from onshore and offshore drilling (\$1.2 billion):** outdated royalty exemptions, rate setting, and procedures for assessing oil and gas production on federal lands shortchange taxpayers by more than a billion dollars each year.⁴⁹ BOEM announced it will drop the royalty rate for shallow-water offshore drilling, encouraging even more production.⁵⁰

If the federal government were to charge a 20 percent royalty rate for onshore drilling, the lowest rate charged by the state of Texas, taxpayers would benefit from an additional \$3 billion in revenues.⁵¹

- ❖ **Low-cost leasing of coal-production in the Powder River Basin (\$963 million):** allows coal companies to lease federal land at low costs in the Powder River

Basin (PRB), a mostly federally-owned coal producing region in Wyoming and Montana that accounts for 40 percent of U.S. coal production (and 85 percent of coal production from federal lands). By exempting PRB from 'major coal producing region' status, the federal government did away with requirements to plan and monitor coal production according to a systematic management process. The result has been significantly lenient lease rates in the PRB.⁵² The Government Accountability Office (GAO) and DOI have recognized a lack of competitive bidding and insufficient valuation approaches in lease sales – and as a result, cheap corporate access to public coal resources – as common problems on federal lands.⁵³

COAL COMPANY BAILOUTS

As coal continues to decline due to competition from cheaper energy sources, and coal companies become insolvent, taxpayers are increasingly covering the costs of industry's obligations to communities and workers.⁵⁴ Examples of these subsidies include:

- ⊗ **Inadequate industry fees recouped to cover the Abandoned Mine Land Grant Fund (\$400 million):** tax dollars transferred from the U.S. Treasury to cover the administration of the fund and shortfalls in payments to states and mineworker pensions resulting from inadequate fees collected from active coal mine operators.⁵⁵ This fund has an important role to play in remediating ecological and worker impacts of mining, but should be funded by the industry responsible, not taxpayers.
- ⊗ **Inadequate industry support to cover worker health impacts: (\$330 million):** contribution from the Treasury covering shortfalls and administration of the Black Lung Disability Trust Fund, which provides income support and medical care to workers who are too sick from

black lung to perform their previous coal mine work.⁵⁶ This support for workers is critical, and this program must remain, but industry should pay for it.

SUBSIDIZING POLLUTION

Allowing fossil fuel companies to use deductions and accounting tricks to lower their clean-up and liability costs, and exempting some activities from payment altogether, incentivizes risky and polluting behavior. Trump's executive order to expand offshore oil and gas drilling to new parts of the outer continental shelf, which includes a call for reconsidering controls to prevent well blowouts, has watchdogs like the bipartisan National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling worried that more pollution, coupled with more clean-up costs to the public, could be on their way.⁵⁷ Subsidies that force taxpayers foot the bill for industry's mess include:

- ⊗ **Deduction for oil spill penalty costs (\$334 million):** in cases of large legal settlements for pollution violations – like the \$20.8 billion settlement BP reached with the U.S. government over its 2010 oil spill disaster – the government often fails to make such payments non-deductible. In this way, companies can claim a massive tax write-off as a reward for their wrongdoing.⁵⁸
- ⊗ **Tar sands exemption from payments into the Oil Spill Liability Trust Fund (\$47 million):** tar sands producers are currently exempt from paying the 8 cents per barrel tax into the fund, which is meant to provide financial resources for oil spill clean-up.⁵⁹

Furthermore, coal companies are frequently not required to hold adequate bonding to cover mine reclamation costs, adding another layer of subsidy. In the Powder River Basin, insufficient bonding resulted in a \$282 million annual industry giveaway.⁶⁰

SUBSIDIES THAT LOCK IN FOSSIL FUEL DEPENDENCE

Some subsidies are based on the fatalistic assumption that the United States won't be able - or willing - to get off of fossil fuels fast enough to meet global climate targets. These subsidies direct support to research and development of unconventional fossil fuel production methods, as well as R&D of technologies that capture carbon emissions, and in some cases, use it to enable more drilling, instead of preventing climate pollution in the first place.

- ⊗ **Enhanced oil recovery credit (*de minimis*):** permanent tax credit triggered by low oil prices that became available in 2016 after 10 years of inactivity. This allows oil and gas companies to claim 15 percent of the costs of pumping hard-to-get oil out of wells when using a tertiary injectant. The Office of Management and Budget shows the value of this tax credit jumping from negligible to \$235 million in 2017, and forecasts that it could cost \$8.8 billion over the next decade.⁶¹
- ⊗ **CO₂ sequestration credit (45Q) (\$95 million):** gives companies that capture and dispose of carbon emissions underground a \$20 per metric ton of CO₂ tax credit, or a \$10 per metric ton of CO₂ credit for using emissions as an injectant for EOR. Legislation has been introduced to extend and more than double this tax credit to \$50 per metric ton CO₂ for carbon capture and storage (CCS) and \$35 per metric ton CO₂ for EOR, based partly on claims that, because continuing to burn fossil fuels is inevitable, carbon capture and sequestration is needed to reduce emissions to meet climate goals.⁶²

STATES FOLLOW SUIT ON OIL AND GAS GIVEAWAYS

State governments, like their federal counterpart, also allow fossil fuel companies to take special tax exemptions and deductions, starving state treasuries of revenue, and to carve out public funding for programs that incentivize investment in oil, gas, and coal production. State subsidies are additional to federal supports, giving fossil fuels another economic advantage over cleaner and more efficient energy options. Even where incentive programs are not targeted to a particular sector, fossil fuel companies are often able to capture a significant share of the benefits.⁶³

The 16 U.S. states reviewed in this report subsidized the oil, gas, and coal sectors to the tune of \$5.8 billion on average in 2015 and 2016.⁶⁴ This is a conservative estimate given that several major fossil fuel-producing states that give numerous tax breaks to oil and gas companies provide little to no reporting on their value. North Dakota, for example, does not report any tax expenditure data. Pennsylvania and California have no severance tax on oil and gas extraction, and do not publicly disclose the value of these foregone revenues.

While state governments often view fossil fuel production within their borders as a job creator and revenue raiser, the subsidies and direct spending used to incentivize industry investment must be made up by increasing taxes on other sectors or cutting budgets, undermining the expected net economic development benefits. With fossil fuel prices expected to stay low in the near future,⁶⁵ and states shouldering more responsibility for providing social services and environmental safeguards that the federal government

hopes to cut, subsidies will continue to contribute to fiscal turmoil. For example, falling oil prices have factored into budget shortfalls in Alaska, Louisiana, Oklahoma, and Wyoming. **Carving out exemptions to lure extraction and production activity becomes an expensive Catch-22.**

Though no two states have exactly the same fossil fuel subsidy regime, the following are examples of how subsidies feed the dirty energy sector while starving state coffers:

- ❖ **California** is often considered a national leader when it comes to environmental protection and climate action, but it is also a major oil and gas producing state with big industry giveaways. California has no severance tax, a tax imposed by more than 30 states on the extraction of non-renewable natural resources such as oil, gas, and coal. Instead, the Department of Conservation levies a statewide assessment fee each year that is nowhere near as large as a normal severance tax.⁶⁶ **Pennsylvania** is the only other fossil fuel-producing state without a severance tax. This has meant taxpayers in both states have missed out on possible millions in public revenue while making production less costly for fossil fuel companies.
- ❖ **Colorado** has the second lowest effective severance tax rate in the region.⁶⁷ In addition, a special tax credit allows companies to deduct 87.5 percent of the local property taxes they paid on oil and gas production from their severance tax liability.⁶⁸ Even so, BP sued

the state over one of its severance tax provisions, and won the case in the state supreme court in 2016.⁶⁹ Colorado is now having to appropriate money from its general fund to rebate portions of the severance tax collected from BP and other companies. The state Department of Revenue estimates that taxpayers will ultimately shell out over \$107 million, payments of which began in 2016.⁷⁰ In 2017, Gov. John Hickenlooper asked the legislature for another \$77.4 million to cover costs related to the lawsuit. These repayments and anemic income from an already low severance tax, among other industry handouts, are in part to blame for cutbacks in state and local programs such as water infrastructure projects and impact grants for communities to repair police stations.⁷¹

- ❖ **Oklahoma** is watching its budget shrink as oil and coal revenues drop. To cope with shortfalls, lawmakers slashed \$109 million in public school funding, leading to shortened school weeks for students across the state.⁷² At the same time, because of legislation passed in 2014 to lower the tax rate on all new wells and some older horizontal and deep wells, annual giveaways to oil and gas rose to an average of \$502 million in 2015 and 2016.⁷³ Now, with a gaping budget gap to fill, the generous oil and gas tax breaks are being called into question.⁷⁴
- ❖ In **North Dakota**, where the governor has called for the largest percentage budget cuts in modern state history, the state continues to funnel millions in severance tax revenue out of its general fund and

into programs designed to promote fossil fuel expansion.⁷⁵ The Lignite Research, Development and Marketing Program is a multi-million dollar state-industry partnership that advocates for coal development in North Dakota and, surprisingly, lobbies legislators in Minnesota on policies to keep coal a major part of their energy mix, too.⁷⁶ The program's 2015-2017 budget even includes a \$1.5 million line-item for litigation in Minnesota, presumably for the ongoing costs associated with a case brought against their neighbor for restricting new power generation from coal.⁷⁷

Two of the states profiled in this report, California and Colorado, have joined with more than a dozen others to form the United States Climate Alliance, and two additional states included

here, Pennsylvania and Montana, have expressed interest. The group's members have committed to do their part to meet or exceed emissions targets set in the Paris climate agreement by achieving U.S. emission reduction goals, with or without the cooperation of the Trump Administration.⁷⁸ **This claim would be far more credible if states were to first make serious efforts to remove their existing incentives for increasing fossil fuel production.**

Some states are beginning to curb fossil fuel subsidies in response to public outcry over climate impacts, local pollution, tight budgets, and wasteful spending.

In response to pushback over a plan to build a coal export terminal in Oakland, California, Gov. Jerry Brown signed a law blocking the state Transportation Commission from

using public funds to subsidize projects that would help build new coal transportation facilities.⁷⁹ Washington Gov. Jay Inslee recently vetoed a sales and use tax exemption buried in must-pass legislation meant to encourage the conversion of a coal-fired power plant to gas. The subsidy would have been available to only one company – TransAlta – for a facility already scheduled for closure.⁸⁰

Stopping handouts to any given project – as Washington and California have done – is important for preventing lock-in of high carbon infrastructure. Equally, if not more, urgent is getting rid of subsidies baked into policy that recur year after year. To balance Alaska's budget, the state legislature and governor agreed to cut oil and gas drilling subsidies that will save Alaskan taxpayers \$200 million per year.⁸¹ More state action like this is needed across the country.

Rig PA.



ADDITIONAL U.S. SUPPORT FOR FOSSIL FUELS

In addition to the subsidies outlined in this report, the U.S. government supports the fossil fuel industry by financing dirty energy projects overseas, using the military to protect fossil fuel assets, and allowing oil, gas, and coal producers to avoid bearing the public health and environmental costs of their activities. These massive expenditures are estimated and discussed below, but are not included in the total subsidy calculation due to differences in subsidy definitions and methods for measuring them.

FINANCING FOSSIL FUEL PROJECTS OVERSEAS: \$2.1 BILLION ANNUALLY

The United States underwrites fossil fuel industry activities overseas with billions of dollars every year through contributions to Multilateral Development Banks (MDBs) and bilateral financing for oil, gas, and coal projects abroad. A detailed explanation of our methodology and full list of bilateral fossil fuel transactions can be found on the Oil Change International website.⁸²

The support described in this section is limited to public finance, in the form of loans, equity investments, or guarantees. For each of these transactions, only a portion of the finance is a subsidy (for example, the difference between preferential financing terms offered by these institutions, and the higher rates or shorter loan tenures a borrower might otherwise secure on market terms). However, due to a lack of detailed reporting on the terms of transactions, the gross volume of U.S. public finance for fossil fuels is reported in this section.

The U.S. Export Import Bank (ExIm), the official export credit agency of the United States, committed an average of \$1 billion annually in 2015 and 2016. In 2016, ExIm commitments to fossil fuel-related projects were substantially lower than in 2015, likely in large part because ExIm lacked board quorum for much of 2016, and therefore authorized less than \$5 billion in total financing across all sectors, compared to over \$20 billion in 2014, the last year in which ExIm was fully operational.⁸³ It is possible - and perhaps likely - that if ExIm achieves a board quorum and returns to its previous levels of operation, fossil fuel finance will again increase to past levels.

Through the Overseas Private Investment Corporation (OPIC), an agency that supports U.S. business development overseas, the federal government spent on average \$649 million a year on fossil fuel projects in 2015 and 2016. OPIC established greenhouse gas emissions limits on its portfolio in 2010, which has restricted the volume of oil, gas and coal project funding it could deliver.⁸⁴ Consequently, it has been the target of legislative maneuvers to suspend these limits and allow additional fossil fuel finance.⁸⁵

U.S. shares of multilateral development bank finance for fossil fuels totaled \$489 million in 2015.⁸⁶ The Trump Administration recently revised Treasury guidance on U.S. engagement with the multilateral development banks, removing Obama-era restrictions on U.S. support for the most polluting types of coal projects.⁸⁷ This stands in contrast to recent statements from other multilateral public finance

institutions, such as the China-led Asian Infrastructure Investment Bank, whose management recently indicated that the bank will not fund coal power projects, and that there are no coal power plants currently in their project pipeline.⁸⁸

MILITARY EXPENDITURE TO SECURE OIL SUPPLY OVERSEAS: \$10.5 TO \$500 BILLION ANNUALLY

The U.S. spends tens to hundreds of billions of dollars each year in military expenditures to defend overseas oil interests. A 1998 study estimated the amount of U.S. military spending in the Persian Gulf directly attributable to defending oil supplies to be \$10.5 to \$23.3 billion each year.⁸⁹

A more recent 2010 Princeton University study used detailed cost accounting data from the military to assess both direct and support costs for protecting oil shipping lanes. It found that oil-related rationales are the major driver of U.S. military force in the Persian Gulf, and as a result determined that "a very large fraction" of the \$500 billion in annual defense spending in the region is oil related.⁹⁰ In 2016, the U.S. imported 20 million more barrels of crude oil and petroleum products from the Persian Gulf than in 2010.⁹¹

While exact estimates of oil-related military spending vary, it is clear that oil is an important driver of U.S. military force in the Persian Gulf. Taxpayers are paying a huge unaccounted-for price for oil imports, not to mention the political destabilization and lives lost due to military force in the region - casualties of the insatiable U.S. thirst for oil.

EXTERNALITIES: \$186 TO \$686 BILLION ANNUALLY

There are significant public health and environmental costs associated with burning fossil fuels that are borne by taxpayers that are not included in our domestic subsidy estimate. Among the various ways to calculate these impacts are:

❖ **Social cost of carbon:** The Obama Administration introduced a social cost of carbon, set at \$36 per metric ton of CO₂, based on the economic impacts of climate change, to help the EPA and other federal agencies calculate the benefits of rulemaking – a practice that Trump has since ended.⁹² In 2016, the U.S. emitted 5.2 billion metric tons of CO₂ emissions due to fossil fuel use, which, using the Obama Administration’s value, is equal to a social cost of \$186 billion.⁹³

❖ **International Monetary Fund subsidies survey:** In its calculations of global fossil fuel subsidies, the IMF estimates a “post-tax subsidy,” their term for externality, which reflects environmental degradation, human health impacts, and other damages the institution associates with fossil fuel consumption. The IMF estimates that the U.S. government bears \$686 billion in costs from climate change, local air pollution impacts, and infrastructure damage not captured by energy taxes.⁹⁴

The lack of proper regulation to eliminate these impacts allows fossil fuel producers to pass on costs to taxpayers and the general public, resulting in a huge additional benefit to the industry.

CONSUMPTION SUBSIDIES: \$14.5 BILLION ANNUALLY

U.S. federal and state governments provide an estimated \$14.5 billion annually in consumption subsidies that reduce the cost of fossil fuel energy use by end-users. This annual estimate combines a federal annual average for 2015 to 2016, including LIHEAP (\$3.4 billion) and Highway Trust Fund (\$8.3 billion) spending,⁹⁵ and state-level totals for 2014 (\$2.8 billion), which come from OECD’s state inventory of direct consumer support subsidies.⁹⁶ Oil Change International acknowledges these as subsidies but does not focus on them in this report because they do not directly increase fossil fuel production.

Aerial view of the Suncor tar sands mining operation in the Boreal forest north of Fort McMurray, northern Alberta, Canada.



MOVING FORWARD: OPPORTUNITIES TO ELIMINATE SUBSIDIES

In 2015 and 2016, tens of billions of dollars of wealth was transferred from American taxpayers to oil, gas, and coal companies. With Trump in the White House and fossil fuel cronies in the cabinet, we now face a political landscape more hostile to climate action, and intent on extending the reach of the fossil fuel industry into our federal lands and waters and public purse. However, champions of climate action are also emerging in Congress, statehouses and governor's mansions with bold proposals to stop the expansion of fossil fuels.

It is expected that the Trump Administration and 115th Congress will attempt to move forward on sweeping policy restructuring, including tax cuts for the wealthy and corporations, and overhauling the nation's public infrastructure. Any of these could serve as a vehicle for pushing the administration's energy dominance agenda and bolstering fossil fuel subsidies – or as an opportunity for lawmakers to resist Trump's handouts to the oil, gas, and coal industries.

Many in **Congress** remain concerned about the long-term fiscal and social impacts of a changing climate, and the deficit consequences of efforts by the Trump Administration to cut taxes. A number of important steps need to be taken to protect both the climate and the federal budget, including:

- Allow tax credits for carbon capture and storage, and enhanced oil recovery (45Q) to expire in 2018, and halt efforts to extend and expand this subsidy in the Senate through the Furthering carbon capture, Utilization, Technology, Underground storage, and Reduced Emissions (FUTURE) Act and its companion bill in the House.
- Repeal existing tax breaks for fossil fuel exploration and production through legislative action, including the \$8.7 billion in subsidies recommended for elimination by the last administration.
- Champion broader legislation that ends investment in fossil fuel expansion and funds a just transition for industry-dependent workers and communities, while supporting a clean, renewable energy economy.
- Resist administrative maneuvers to give away shared energy resources on public lands and waters to fossil fuel companies; undermine regulation of the oil, gas, and coal industry that cuts emissions and protects human health; or revise royalties and payments to further shortchange American taxpayers.

States can play a critical role in eliminating billions of dollars of incentives for fossil fuel expansion across the country. As has been evidenced in multiple states, governors can use their executive powers to stop handouts to particularly dirty energy projects. State legislatures can and should enact policy to reduce and remove subsidies for fossil fuel exploration and production. And efforts to push new state-level renewable energy policy can be paired with policies (like subsidy removal) that support a managed decline of the fossil fuel sector.

The **federal government** (or state governments in the absence of federal action) should put in place a climate test to evaluate fossil fuel subsidies and energy policies related to activity on federal lands and determine the compatibility of each with achieving internationally agreed limits to global temperature rise of 1.5°C and 2°C.

At **every level of government**, action should be taken to ensure consistency and transparency in how rates, credits and exemptions are written into the federal and state tax code, how subsidies are measured and valued, and how subsidy costs and collected revenues are reported.

APPENDIX I: COMPLETE LIST OF U.S. FEDERAL AND STATE FOSSIL FUEL PRODUCTION SUBSIDIES

Table 1: Federal Fossil Fuel Production Subsidies, 2015 to 2016

Subsidy Name & Description	Subsidy Type	Targeted Energy Source	Targeted Stage	2015 Estimate (in millions)	2016 Estimate (in millions)	Estimated Annual Average, 2015-2016 (in millions)	Source
Federal Oil & Gas Production Subsidies							
Deduction for Intangible Drilling Costs* - 100% tax deduction for costs not directly part of the final operating of an oil or gas well	Tax expenditure	Oil & Gas	Exploration and field development	2,317	2,267	2,292	OMB 2014 p. 156 ; OMB 2015 p. 172
Last-In, First-Out (LIFO) Accounting for Fossil Fuel Companies* - allows companies to undervalue their inventory, reducing taxable income; oil and gas companies account for over one-third of LIFO benefits	Tax expenditure	Oil & Gas	Cross-cutting	1,453	1,927	1,690 ^a	OMB 2014 p. 157 ; OMB 2015 p. 173 ; American Petroleum Institute (API) 2017
Corporate Tax Exemption for Fossil Fuel Master Limited Partnerships* - allows companies to pay zero corporate income tax	Tax expenditure	Oil & Gas	Cross-cutting	755	2,473	1,614 ^f	D. Koplow/Earth Track 2017
Excess of Percentage Over Cost Depletion* - independent producers can deduct a percentage of gross income from production, rather than reflecting the value of the reserve depleted	Tax expenditure	Oil & Gas	Cross-cutting	1,502	1,118	1,310	OMB 2014 p. 156 ; OMB 2015 p. 173
Lost Royalties on Offshore Drilling for Leases Issued from 1996 through 2000 (Outer Continental Shelf Deep Water Royalty Relief Act)	Royalty relief	Oil & Gas	Extraction	1,072	1,072	1,072 ^f	GAO 2007, p. 11 ; GAO 2008, p. 16
Domestic Manufacturing Deduction for Oil & Gas* - allows oil & gas producers to claim a tax break intended for the manufacturing of goods	Tax expenditure	Oil & Gas	Cross-cutting	963	647	805	OMB 2014 p. 156 ; OMB 2015 p. 173
Dual Capacity Taxpayer Deduction* - allows oil and gas companies operating abroad to deduct royalty payments to foreign governments from U.S. income taxes	Tax expenditure	Oil & Gas	Remediation	527	533	530 ^b	OMB 2014 p. 155 ; OMB 2015 p. 171
BP Deduction for Oil Spill Legal Settlement - BP was allowed to deduct the vast majority of damages paid to the U.S. government under the spill settlement	Regulatory	Oil	Transport	334	334	334 ^f	U.S. PIRG 2015, p. 4
Inland Waterways Transport for Petroleum - reflects the tonnage of oil shipped in proportion to operations, maintenance, and construction costs not covered by user fees	Direct spending	Oil	Distribution	217	241	229 ^f	Army Corps of Engineers (ACORE) Navigation Data Center ; ACORE Funding for Inland Waterways

Petroleum Reserves – Strategic Petroleum Reserve, Naval Petroleum and Oil Shale Reserves, and Northeast Home Heating Oil Reserve; the subsidy is due to the public provision of the reserves, rather than requiring the private sector to build and maintain stockpiles	Direct spending	Oil	Distribution	223	238	231	DOE 2016 , pp. 683, 677, 716
Accelerated Depreciation of Natural Gas Distribution Pipelines – pipelines treated as 15-year property; allows companies to deduct higher levels of depreciation costs upfront	Tax expenditure	Gas	Distribution	160	140	150	OMB 2016 , p. 228; OMB 2017 , p. 130
Reduced Government Take from Onshore Federal Oil & Gas Leasing – the onshore royalty rate is significantly lower than the primary royalty rate for offshore federal waters	Royalty relief	Oil & Gas	Extraction	125	125	125 ^c	GAO 2013 , p. 19
Inadequate Administrative Fees for Onshore Drilling Management – Bureau of Land Management costs associated with drilling covered by taxpayers instead of industry	Direct spending	Oil & Gas	Cross-cutting	98	115	107 ^d	BLM 2016 , p. VII-97; BLM 2017 , p. VII-79
Amortization of Geological and Geophysical Expenditures* – independent oil and gas companies can recover costs of seismic surveys and exploration drilling over a shorter time period	Tax expenditure	Oil & Gas	Exploration	90	70	80	OMB 2016 , p. 228; OMB 2017 , p. 130
Royalty-Free Flaring and Venting of Federal Gas Resources – producers can vent and flare gas for free on federal lands, resulting in lost royalty revenue	Regulatory	Oil & Gas	Extraction	70	70	70	U.S. Self-Review of Fossil Fuel Subsidies (submitted to the G-20), p. 11
New Refiners Deduction – allows independent refiners to exclude 75% of oil transportation costs from the calculation of their manufacturing deduction; went into effect in 2016	Tax expenditure	Oil	Processing	NA	119	60	JCT 2015 , p. 2
Exemption from Passive Loss Limitation* – exempts investors from limits on deductions of losses from oil and gas activities in which they are not directly involved	Tax expenditure	Oil & Gas	Exploration	40	60	50	OMB 2016 , p. 228; OMB 2017 , p. 130
Tar Sands Exemption from Payments into the Oil Spill Liability Trust Fund – tar sands producers are currently exempted from paying fees into the fund	Tax expenditure	Oil	Extraction	47	47	47	CRS 2017 , p. 11
Gas Arbitrage Bonds Exemption – allows state and local governments to use proceeds from tax-exempt bond sales for prepayments for natural gas and electricity, even if the discount from prepayment exceeds the bond yield (normally prohibited)	Tax expenditure	Gas	Cross-cutting	42	42	42	Friends of the Earth 2016
Royalty-Exempt Use of Fuels – producers can use extracted oil and gas within their federal lease without paying royalties	Regulatory	Oil & Gas	Extraction	39	39	39	U.S. Self-Review of Fossil Fuel Subsidies (submitted to the G-20), p. 11
Inadequate Administrative Fees for Offshore Drilling Management – Bureau of Ocean Energy Management costs associated with drilling covered by taxpayers instead of industry	Direct spending	Oil & Gas	Cross-cutting	30	35	33 ^e	BOEM 2015 , p. 30; BOEM 2016 , p. 34

Deduction for Tertiary Injectants* – allows companies to deduct the costs of fluids, gases, and other chemicals used for enhanced oil recovery from existing wells	Tax expenditure	Oil & Gas	Distribution	10	7	9	OMB 2014 p. 156; OMB 2015 p. 173
Deep Gas & Deep Water Production Royalty Relief – suspension of royalty payments for deep water oil and gas production	Relief on royalties	Oil & Gas	Distribution	1	1	1 ^f	CBO 2011 , p. 2
Natural Gas Gathering Lines, 7-Year Depreciation with Alternative Minimum Tax Relief – allows companies to deduct higher levels of depreciation costs upfront	Tax expenditure	Gas	Distribution	Negligible	Negligible	Negligible	JCT 2017 , p. 23
Unpaid Royalties – the government does not reliably collect the full royalty amounts it is owed due to inadequate oversight and enforcement; or penalties charged are less than the lost revenues	Regulatory	Oil & Gas	Extraction	NQ**	NQ	NQ	For example, see GAO 2015 .
Enhanced Oil Recovery Credit* – credit for qualified costs related to this oil well extraction method; triggered by price and claimable for the first time in a decade in 2016	Tax expenditure	Oil & Gas	Extraction	NA***	NQ	NQ	IRS 2017 ; OMB 2016 , p. 202
Marginal Wells Credit* – credit for oil and gas extracted from qualified low-producing wells, up to a certain amount of production; price triggered	Tax expenditure	Oil & Gas	Extraction	NA	NA	NA	OMB 2016 , p. 202
Federal Oil & Gas Total				\$10,115 million	\$11,720 million	\$10,918 million	

Federal Coal Production Subsidies

Powder River Basin Coal Lease Subsidy – coal companies lease federal land at below-market values, leading to lost bonus payments and royalties	Regulatory	Coal	Extraction	963	963	963 ^e	IEEFA 2012 , p. 32
Fossil Energy Research & Development – supports carbon capture and storage, coal fuels, and unconventional oil and gas	Direct spending	Coal, Oil & Gas	Cross-cutting	549	632	591	DOE 2015 , p. 566; DOE 2016 , p. 560
Amortization Period for Coal Pollution Control – allows coal-fired facilities to deduct greater levels of pollution control costs	Tax expenditure	Coal	Electricity production	400	500	450	JCT 2015 , p. 30; JCT 2017 , p. 30
Inadequate Industry Fees for the Abandoned Mine Land Grant Funds – reflects U.S. Treasury contributions required to cover administration of the fund and shortfalls	Direct spending	Coal	Remediation	228	571	400 ^g	OSMRE 2015 , p. 31; OSMRE 2016 , p. 31
Inadequate Industry Fees for the Black Lung Disability Trust Fund – reflects U.S. Treasury contributions required to cover administration of the fund and shortfalls	Direct spending	Coal	Remediation	321	339	330	Department of Labor 2016 , p. 3
Powder River Basin Insufficient Bonding – reduced cost of capital from self-bonding for mine closure and reclamation liabilities	Insufficient bonding or user fees	Coal	Remediation	282	282	282 ⁱ	Carbon Tracker et. al. 2015 , p. 34-36
Inland Waterways Transport for Coal – reflects the tonnage of coal shipped in proportion to operations, maintenance, and construction costs not covered by user fees	Direct spending	Coal	Transport	182	205	194 ⁱ	ACORE Navigation Data Center ; ACORE Funding for Inland Waterways

Excess of Percentage Over Cost Depletion* - allows companies to deduct a percentage of gross income from production, rather than reflecting the value of the reserve depleted	Tax expenditure	Coal	Extraction	167	183	175	OMB 2014 p. 157; OMB 2015 p. 173
Credit for Investment in 'Clean Coal' Facilities	Tax expenditure	Coal	Electricity production	40	160	100	OMB 2016, p. 228; OMB 2017, p. 130
CO₂ Sequestration Credit - tax credit of \$20 per ton of CO ₂ sequestered (largely from coal plants); \$10 per ton for CO ₂ used for enhanced oil recovery	Tax expenditure	Coal & Oil	Electricity production	80	110	95	OMB 2016, p. 228; OMB 2017, p. 131
Domestic Manufacturing Deduction for Mining* - allows mining companies to claim a tax break intended for the manufacturing of goods	Tax expenditure	Coal	Extraction	36	45	41	OMB 2014 p. 157; OMB 2015 p. 173
Special Rules for Mining Reclamation Reserves - allows a deduction for costs from clean-up and closure of coal mining and waste sites	Tax expenditure	Coal	Remediation	40	40	40	JCT 2017, p. 31
Coal Exploration and Development Expensing (Mining Exploration Deduction)* - mining companies can deduct exploration costs from income taxes	Tax expenditure	Coal	Exploration and mine development	39	40	40	OMB 2014 p. 156; OMB 2015 p. 173
Exclusion of Benefit Payments to Disabled Coal Miners	Tax expenditure	Coal	Remediation	30	30	30	OMB 2016, p. 231; OMB 2017, p. 133
Capital Gains Treatment of Royalties on Coal* - royalties to private owners of coal rights are taxed at the lower capital gains tax rate (rather than the income tax rate)	Tax expenditure	Coal	Extraction	20	27	24	OMB 2014 p. 157; OMB 2015 p. 173
Indian Coal Credit - tax credit to producers of coal on Native American-owned land	Tax expenditure	Coal	Extraction	20	20	20	JCT 2017, p. 30
Refined Coal Credit	Tax expenditure	Coal	Processing	20	20	20	JCT 2017, p. 30
Partial Expensing for Advanced Mine Safety Equipment - companies can deduct 50 percent of equipment costs from income taxes	Tax expenditure	Coal	Extraction	Negligible	Negligible	Negligible	JCT 2017, p. 23
Federal Coal Total				\$3,417 million	\$4,167 million	\$3,792 million	
Federal Total				\$13,532 million	\$15,887 million	\$14,710 million	

* Indicates this subsidy was targeted for elimination in President Obama's proposed FY2016 budget.

** NQ indicates values are not quantified.

*** NA indicates subsidy was not applied in this year.

† The methodology for estimating these subsidies is detailed in Appendix II.

Notes:

- These figures reflect the oil and gas industry's share of the LIFO deduction, which API estimates to be 35 percent.
- According to the U.S. Chamber of Commerce, nearly all dual capacity taxpayers are U.S.-based oil and gas companies.⁹⁶
- GAO estimate of \$1.25 billion in foregone revenue over 10 years is converted to an annual average.
- These figures reflect direct appropriations (not including fees collected by industry) to fund BLM's Energy and Minerals Management program.
- These figures reflect direct appropriations (not including fees collected by industry) to fund BOEM's Conventional Energy program.
- CBO estimate of \$10 million in foregone revenue over 10 years is converted to an annual average.
- These figures include three budget items: the administrative cost of running the fund that is not covered by fees, transfers from the U.S. Treasury to mineworker health plans, and transfers from the U.S. Treasury to states in lieu of coal receipts.

Table 2: State Fossil Fuel Production Subsidies, 2015 to 2016^c

Subsidy Name	Subsidy Type	Targeted Energy Source	Targeted Stage	2015 Estimate (in millions)	2016 Estimate (in millions)	Estimated Annual Average, 2015-2016 (in millions)	Source
Multi-State							
Corporate Tax Exemption for Master Limited Partnerships	Tax expenditure	Oil & Gas	Cross-cutting	119	391	255 ^c	D. Koplow, Earth Track 2017
Texas							
Road Damage from Oil and Gas-Related Infrastructure and Support	Insufficient bonding or user fees	Oil & Gas	Remediation	2,000	2,000	2,000	Texas A&M 2012 ; Academy of Medicine, Engineering and Science of Texas 2017
Severance Tax Exemptions for Gas	Tax expenditure	Gas	Extraction	764	561	662.5 ^c	Estimate based on data from: Texas Railroad Commission; Texas Legislative Budget Board; EIA
Severance Tax Exemptions for Crude Oil	Tax expenditure	Oil	Extraction	105	117	111 ^c	Estimate based on data from: Texas Railroad Commission; Texas Legislative Budget Board; EIA
Sales Tax Exemption for Oil & Gas Equipment	Tax expenditure	Oil & Gas	Cross-cutting	128	135	131.5	Texas Comptroller of Public Accounts 2015
Sales Tax Exemption for Tangible Property Used in CO ₂ Sequestration	Tax expenditure	Oil & Gas	Extraction	NQ	NQ	NQ	Texas Comptroller of Public Accounts 2015
Sales-Tax Exemption for Offshore Spill Response Containment Property	Tax expenditure	Oil & Gas	Remediation	Negligible	Negligible	Negligible	Texas Comptroller of Public Accounts 2015
Texas Annual Average (2015-2016): \$2.9 billion							

^c This inventory does not fully reflect all of tax expenditures written into state laws, but rather those for which there was a revenue effect during the time period analyzed, or for which the revenue effect was reported as non-quantifiable or confidential.

Alaska							
Qualified Capital Expenditure Credit	Tax expenditure	Oil & Gas	Cross-cutting	597	-	597	Alaska Department of Revenue 2016
Per-taxable Barrel Credit for North Slope Production	Tax expenditure	Oil	Extraction	523	-	523	Alaska Department of Revenue 2016
Alternative Credit for Exploration	Tax expenditure	Oil & Gas	Exploration	46	-	46	Alaska Department of Revenue 2016
Small Producer Credit	Tax expenditure	Oil & Gas	Extraction	45	-	45	Alaska Department of Revenue 2016
Royalty Modification for Oooguruk Unit	Relief on royalties	Oil & Gas	Extraction	26.2	-	26.2	Alaska Department of Revenue 2016
Royalty Relief for Cook Inlet Platforms	Relief on royalties	Oil & Gas	Extraction	6.4	-	6.4	Alaska Department of Revenue 2016
Alaska Total (2015): \$1.2 billion							

Oklahoma							
Gross Production Tax Rate Reductions for Horizontally Drilled, Ultra-Deep, & New Wells	Tax expenditure	Oil & Gas	Extraction	-	433	433	Oklahoma Tax Commission 2016
Gross Production Tax Rebates for: Economically At-Risk, Production Enhancement, Horizontally Drilled, Reestablished Production, 3-D Seismic, Deep, New Discovery, & Ultra-Deep Wells	Tax expenditure	Oil & Gas	Extraction	-	27.8	27.8	Oklahoma Tax Commission 2016
Oil & Gas Depletion Allowance	Tax expenditure	Oil & Gas	Extraction	-	19	19	Oklahoma Tax Commission 2016
Gas Marketing Deduction	Tax expenditure	Gas	Distribution	-	14	14	Oklahoma Tax Commission 2016
Lease Interest Exemptions for Oil & Gas Owned by Government	Tax expenditure	Oil & Gas	Extraction	-	6	6	Oklahoma Tax Commission 2016
Oklahoma Coal Production Credit	Tax expenditure	Coal	Electricity Production	-	4	4	Oklahoma Tax Commission 2016
Sales Tax Exemption for Electricity Used in Enhanced Oil Recovery	Tax expenditure	Oil	Extraction	-	2	2	Oklahoma Tax Commission 2016
Gross Production Tax Exemption for Enhanced Oil Recovery	Tax expenditure	Oil	Extraction	-	0.2	0.2	Oklahoma Tax Commission 2016
Oklahoma Total (2016): \$506 million							

Louisiana							
Gas Severance Tax Suspension for Horizontal, Deep & Inactive Wells	Tax expenditure	Gas	Extraction	210.8	94.8	152.8	Louisiana Department of Revenue 2017
Oil Severance Tax Suspension for Horizontal, Inactive, Tertiary Recovery, & Deep Wells	Tax expenditure	Oil	Extraction	87.3	42.1	64.7	Louisiana Department of Revenue 2017
Oil Severance Tax Special Rates for Stripper, Incapable, Salvage, & Horizontal Drilling Wells	Tax expenditure	Oil	Extraction	46.5	24.9	35.7	Louisiana Department of Revenue 2017
Ad Valorem Exemption on Offshore Vessels	Tax expenditure	Oil & Gas	Cross-cutting	41.6	28.7	35.2	Louisiana Department of Revenue 2017
Gas Severance Tax Special Rates for Incapable Oil & Incapable Gas Wells	Tax expenditure	Oil & Gas	Extraction	22.8	22.7	22.8	Louisiana Department of Revenue 2017
Gas Severance Tax Exclusions for: Gas Consumed in Field Operations or Production, Injection, Flared or Vented, Used in Carbon Black Manufacture, & Produced Out-of-State	Tax expenditure	Gas	Extraction	10.5	10.7	10.6	Louisiana Department of Revenue 2017
Oil Severance Tax Deduction for Trucking, Barging, and Pipeline Fees	Tax expenditure	Oil	Distribution	0.7	0.4	0.6	Louisiana Department of Revenue 2017
Ad Valorem Exemption on Natural Gas	Tax expenditure	Gas	Distribution	Negligible	0.1	0.06	Louisiana Department of Revenue 2017
Excess of Percentage Over Cost Depletion	Tax expenditure	Oil & Gas	Extraction	NQ	NQ	NQ	Louisiana Department of Revenue 2017

Louisiana Annual Average (2015-2016): \$322 million

Colorado							
Oil and Gas Ad Valorem Credit Against Severance Tax	Tax expenditure	Oil & Gas	Extraction	135	-	135	Colorado Department of Revenue 2016
Severance Tax Deduction for Stripper Well Production	Tax expenditure	Oil & Gas	Extraction	74	-	74	Colorado Legislative Council 2017
Severance Tax Deduction for Oil and Gas Transportation Costs	Tax expenditure	Oil & Gas	Transport	NQ	-	NQ	Colorado Department of Revenue 2016
Severance Tax Deduction for Oil and Gas Processing and Manufacturing Costs	Tax expenditure	Oil & Gas	Processing	NQ	-	NQ	Colorado Department of Revenue 2016
Impact Assistance Credit	Tax expenditure	Oil & Gas	Extraction	NQ	-	NQ	Colorado Department of Revenue 2016
Tax Exempt Coal Tonnage	Tax expenditure	Coal	Extraction	NQ	-	NQ	Colorado Department of Revenue 2016
Underground Coal Production Credit	Tax expenditure	Coal	Extraction	NQ	-	NQ	Colorado Department of Revenue 2016

Colorado Total (2015): \$209 million

North Dakota*							
Oil and Gas Impact Grant Fund	Direct spending	Oil & Gas	Remediation	120	39	79.5	North Dakota OMB 2015 & 2017
Abandoned Oil and Gas Well Plugging and Site Reclamation Fund	Direct spending	Oil & Gas	Remediation	5	7	6	North Dakota OMB 2015
Oil and Gas Research Fund	Direct spending	Oil & Gas	Cross-cutting	5	5	5	North Dakota OMB 2015 & 2017
Lignite Research Fund (including Lignite Research Council)	Direct spending	Coal	Cross-cutting	3	5.5	4.3	North Dakota Industrial Commission; North Dakota OMB 2015
Coal Development Trust Fund	Direct spending	Coal	Remediation	1	1	1	North Dakota Department of Trust Lands 2015
Litigation Funds to Challenge Federal Fracking Regulations	Direct spending	Oil & Gas	Cross-cutting	0.5	1.3	0.9	North Dakota OMB 2015 & 2017
Reduced Tax Rate for Certain Wells Outside the Bakken and Three Forks Region	Tax expenditure	Oil & Gas	Extraction	NQ	NQ	NQ	OECD 2014
CO ₂ for Enhanced Oil and Gas Recovery Equipment Sales Tax Exemption	Tax expenditure	Oil & Gas	Extraction	NQ	NQ	NQ	North Dakota Office of State Tax Commissioner 2016
CO ₂ for Enhanced Oil and Gas Recovery Sales Tax Exemption	Tax expenditure	Oil & Gas	Extraction	NQ	NQ	NQ	North Dakota Office of State Tax Commissioner 2016
Liquefied Gas Processing Construction or Expansion Sales Tax Exemption	Tax expenditure	Gas	Processing	NQ	NQ	NQ	North Dakota Office of State Tax Commissioner 2016
Gas Processing Facilities Equipment Sales Tax Exemption	Tax expenditure	Gas	Processing	NQ	NQ	NQ	North Dakota Office of State Tax Commissioner 2016
Oil Refinery Construction or Expansion Sales Tax Exemption	Tax expenditure	Oil	Processing	NQ	NQ	NQ	North Dakota Office of State Tax Commissioner 2016
Privilege Tax Exemptions for Coal Conversion Facilities	Tax expenditure	Coal	Electricity Production	NQ	NQ	NQ	North Dakota Office of State Tax Commissioner 2016
Coal Gasification By-Products Sales Tax Exemption	Tax expenditure	Coal	Processing	NQ	NQ	NQ	North Dakota Office of State Tax Commissioner 2016
Coal Mine Machinery or Equipment Sales Tax Exemption	Tax expenditure	Coal	Extraction	NQ	NQ	NQ	North Dakota Office of State Tax Commissioner 2016
Coal Power Plant Construction or Expansion Sales Tax Exemption for Related Equipment and Materials	Tax expenditure	Coal	Electricity Production	NQ	NQ	NQ	North Dakota Office of State Tax Commissioner 2016

Coal Severance Tax Exemptions	Tax expenditure	Coal	Extraction	NQ	NQ	NQ	OECD 2014
North Dakota Annual Average (2015-2016): \$97 million							
Wyoming*							
Cap on Coal Severance Tax	Tax expenditure	Coal	Extraction	80	80	80	Carbon Tracker et. al. 2015
Enhanced Oil Recovery Commission	Direct spending	Oil & Gas	Cross-cutting	3	3	3	Wyoming Department of Administration and Information 2014
Wyoming Pipeline Authority	Direct spending	Oil & Gas	Distribution	0.5	0.5	0.5	Wyoming Department of Administration and Information 2014 ; Wyoming Pipeline Authority 2016
Wyoming Total (2015): \$84 million							
Kentucky							
Sales Tax Exemption for Coal Used in the Manufacture of Electricity	Tax expenditure	Coal	Electricity Production	55	33.8	44.4	Kentucky Office of State Budget Director 2014 & 2015
Mine Safety and Licensing	Direct spending	Coal	Cross-cutting	10.4	10.6	10.5	Kentucky Office of State Budget Director 2014
Coal Incentive Credit	Tax expenditure	Coal	Electricity Production	4.1	3.5	3.8	Kentucky Office of State Budget Director 2014 & 2015
Excess of Percentage Over Cost Depletion	Tax expenditure	Coal	Extraction	3.7	3.5	3.6	Kentucky Office of State Budget Director 2014 & 2015
Coal Academy Mining Workforce Development	Direct spending	Coal	Cross-cutting	3	3	3	OECD 2014
Coal Transportation Expense	Tax expenditure	Coal	Distribution	3	2.7	2.9	Kentucky Office of State Budget Director 2014 & 2015
Thin-Seam Tax Credit	Tax expenditure	Coal	Extraction	2.3	2.2	2.3	Kentucky Office of State Budget Director 2014 & 2015
Clean Coal Incentive Credit	Tax expenditure	Coal	Electricity production	1.9	2.1	2	Kentucky Office of State Budget Director 2014 & 2015
Railroad Improvement Tax Credit	Tax expenditure	Coal	Distribution	0	2.7	1.4	Kentucky Office of State Budget Director 2014 & 2015

Department for Energy Development and Independence	Direct spending	Coal	Cross-cutting	0.4	0.4	0.4	Kentucky Office of State Budget Director 2016
Inactive Crude Oil & Natural Gas Wells	Tax expenditure	Oil & Gas	Extraction	0.2	0.2	0.2	Kentucky Office of State Budget Director 2014 & 2015
Coal Conversion Credit	Tax expenditure	Coal	Electricity production	Negligible	0.2	0.1	Kentucky Office of State Budget Director 2014 & 2015

Kentucky Annual Average (2015-2016): \$74 million

West Virginia

Reduced Tax for Thin-Seamed Coal	Tax expenditure	Coal	Extraction	60	-	60	West Virginia State Tax Department 2015
Exclusion of Low-Volume Oil & Gas Wells	Tax expenditure	Oil & Gas	Extraction	4.5	-	4.5	West Virginia State Tax Department 2015
Credit for Severance Tax Payment	Tax expenditure	Coal	Extraction	1.3	-	1.3	West Virginia State Tax Department 2015; West Virginia Department of Revenue 2015
Coal Loading Facilities Credit	Tax expenditure	Coal	Transport	1.1	-	1.1	West Virginia State Tax Department 2015
Credit for Severance Tax Payment	Tax expenditure	Oil & Gas	Extraction	0.7	-	0.7	West Virginia State Tax Department 2015; West Virginia Department of Revenue 2015
Reduced Tax for Extracting Coal from Refuse or Gob Piles	Tax expenditure	Coal	Extraction	0.2	-	0.2	West Virginia State Tax Department 2015
Exemption for Gas Consumed and/or Recycled in a Gas Storage Operation	Tax expenditure	Gas	Distribution	NQ	-	NQ	West Virginia State Tax Department 2015
Exclusion for Gob or Coal Refuse	Tax expenditure	Coal	Extraction	NQ	-	NQ	West Virginia State Tax Department 2015

West Virginia Total (2015): \$68 million

Montana

Oil New Production Holiday	Tax expenditure	Oil	Extraction	36	9	22.5	Montana Department of Revenue 2016
Stripper Oil Well Production Severance Tax Deduction	Tax expenditure	Oil	Extraction	0.9	1.5	1.2	Montana Department of Revenue 2016

Natural Gas Pre-1999 and Less than 60 MCF/day Severance Tax Deduction	Tax expenditure	Gas	Extraction	1	0.5	0.7	Montana Department of Revenue 2016
Natural Gas New Production Tax Holiday	Tax expenditure	Gas	Extraction	1.1	0.3	0.7	Montana Department of Revenue 2016
Montana Annual Average (2015-2016): \$25 million							
California (2015-2016)							
Percentage Depletion of Mineral and Other Resources	Tax expenditure	Oil & Gas	Cross-cutting	19	19	19	California Department of Finance 2016
Enhanced Oil Recovery Credit	Tax expenditure	Oil & Gas	Extraction	NA	NQ	NQ	California Franchise Tax Board
California's Zero Severance Tax on Oil and Gas Production	Tax expenditure	Oil & Gas	Cross-cutting	NQ	NQ	NQ	
New Mexico (2015)							
Coal Exemption from Severance Surtax	Tax expenditure	Coal	Extraction	17.2	-	17.2	New Mexico Taxation and Revenue Department 2016
Arizona (2015-2016)							
Reduced Tax for Non-metal Mining; Oil and Gas Production	Tax expenditure	Coal, oil and gas	Extraction	2.1	2.9	2.5	Arizona Department of Revenue 2015 & 2016
Arkansas (2015)							
Coal Mining Tax Credit	Tax expenditure	Coal	Extraction	0.3	-	0.3	Arkansas Department of Finance 2016
Ohio							
Sales Tax Exemption for Property Used or Consumed in Agriculture or Mining (including minerals, oil and gas)	Tax expenditure	Oil & Gas, Coal	Extraction	NQ	NQ	NQ	Ohio Department of Taxation 2016
Pennsylvania							
Expensing of Intangible Drilling Costs	Tax expenditure	Oil & Gas	Exploration	NQ	NQ	NQ	Penn Future 2015
Zero Severance Tax on Oil & Gas Production	Tax expenditure	Oil & Gas	Extraction	NQ	NQ	NQ	
Other States Annual Average (2015-2016): \$39 million							
States Total: \$5,827 million							

* These states have a biennial budget process, so budget or expenditure figures represented biennially were divided in half for the given single fiscal year.

† The methodology for estimating these subsidies is detailed in Appendix II.

APPENDIX II: METHODOLOGY FOR CALCULATING SELECTED U.S. FOSSIL FUEL EXPLORATION AND PRODUCTION SUBSIDIES

This report uses an inventory approach to assess federal and state government subsidies that benefit fossil fuels – oil, gas, and coal. Inventories use a bottom-up method, where policies and measures that may impact a particular industry or sector are assessed, and those with a subsidy component are then included in a list of measures, with the amount of the subsidy estimated or calculated where available data allows. The approach is used by a number of international organizations, including the OECD, to assess government support measures for fossil fuel production and consumption.

The main drawback of the inventory approach is that it is largely dependent on the availability and transparency of data and information on policies. This approach may miss certain subsidies entirely and may undercount the value of the subsidies identified, as many cannot be quantified based on available data, especially at the state level.

To inventory federal subsidies, this report relies heavily on estimates and historical data published by the federal Office of Management and Budget, the Joint Committee on Taxation of the U.S. Congress, individual federal agencies, and, in some cases, the Government Accountability Office and the Congressional Research Service. For tax expenditures and direct spending, we use historical data for the actual amount of money foregone or spent in a given fiscal year where possible. Where historical data is not available, we use prospective estimates of the given expenditure or budgetary item.

State-level data is drawn primarily from tax expenditure reports and budget documents published by state agencies. OECD's inventory of sub-federal U.S. subsidies (updated through 2014 as of August 2017) heavily informs the items tracked in this report.⁹⁸ Unfortunately, the frequency and quality of tax expenditure data published by state agencies varies widely, leading us to carry certain state estimates over across

two years and to list many others as “not quantifiable.”

In defining subsidies, this report relies primarily on an internationally agreed definition established by the World Trade Organization (WTO) in its Agreement on Subsidies and Countervailing Measures, which considers subsidies to include any financial contribution by a government, or agent of a government, that is recipient-specific and confers a benefit on its recipients in comparison to other market participants.⁹⁹

This includes direct transfer of funds (such as grants and concessional loans); potential transfers of funds or liabilities (such as loan guarantees or government assuming reclamation and cleanup liability); government revenue that is otherwise due is foregone or not collected (such as targeted tax credits), as well as government provision of goods or services, and an income or price support.

This definition of subsidies has been accepted by the U.S. government as well as the other 163 members of the WTO, and this analysis uses this definition as a basis for identifying U.S. subsidies for the production of coal, oil, and gas.

EXPLANATION OF METHODOLOGY FOR CALCULATING INDIVIDUAL SUBSIDIES

Most of the subsidy figures reported in the inventory are taken directly from published sources. Where published estimates are not available, some are calculated using a set of assumptions to produce an estimate of the subsidy value. The assumptions used to estimate subsidy values are described below:

CORPORATE TAX EXEMPTION FOR MASTER LIMITED PARTNERSHIPS (FEDERAL AND STATE)

Master Limited Partnerships (MLPs) are a corporate form open primarily to natural

resource firms that allows them to avoid corporate income taxes on all qualified revenue streams. Use of the MLP structure has grown sharply over the past ten years, primarily benefiting the oil and gas industry (fossil fuel companies accounted for 70 percent of market capitalization of MLPs in 2016).¹⁰⁰ The federal subsidy to MLPs also provides incremental subsidies at the state level. While the Joint Committee on Taxation (JCT) began providing forward-looking estimates of federal revenue losses from MLPs in 2008, detailed review of industry data has previously indicated that revenue losses are significantly higher than JCT estimates.¹⁰¹ Accordingly, Oil Change International contracted with Doug Koplou of Earth Track, an expert in the field, to analyze federal and state revenue losses from MLPs for the 2015-2016 period.¹⁰²

To arrive at the estimate, Earth Track reviewed income statements for each energy-focused MLP, extracting relevant pre- and after-tax income values. Koplou then applied tax rules for a corporation versus an MLP, and compared resultant state and federal tax liabilities. This approach follows a simplified comparison example developed by the Master Limited Partnership Association (MLPA) to illustrate the tax benefits of the MLP structure.¹⁰³ It assumes that all distributable income within an MLP is paid out to shareholders or unitholders, and subject to immediate taxation. This analysis estimated that fossil fuel-related MLPs were responsible for \$1,614 million and \$255 million in average annual federal and state revenue losses respectively from 2015-2016.

BP DEDUCTION FOR OIL LEGAL SETTLEMENT

In the wake of its oil spill disaster in the Gulf of Mexico, BP was able to deduct from its tax liability billions of dollars in clean-up costs as well as a large portion of its \$20.8 billion legal settlement with the U.S. government. The U.S. tax code allows corporations to deduct nearly all business expenses from their taxable income, regardless of whether that expense involved

cleaning up a shop floor or cleaning up from the worst oil disaster in U.S. history. Given this broad leeway in the tax code, we do not include BP's reported \$9.9 billion tax deduction for clean-up costs as a fossil fuel subsidy in this report.¹⁰⁴ However, we include an annual average estimate (\$334 million per year) of BP's allowable tax deduction resulting from its legal settlement with the U.S. government.

When federal agencies reach legal settlements to hold corporations responsible for wrongdoing, they can stipulate that the settlement is not tax-deductible. Allowing large write-offs for corporate penalties perversely lessens the companies' liability for their own wrongdoing and pushes part of the burden back on to U.S. taxpayers. While some federal agencies have increasingly limited tax deductions from legal settlements, the Department of Justice allowed BP to deduct the majority of its legal settlement for the 2010 Gulf oil spill. As the U.S. Public Interest Research Group (U.S. PIRG) has analyzed, only \$5.5 billion of the settlement was explicitly non-deductible. Assuming a 35 percent corporate tax rate would have otherwise applied to the remaining \$15.3 billion, the corresponding tax write-off available to BP was \$5.35 billion.¹⁰⁵ Given that BP was expected to pay out its settlement over 16 years,¹⁰⁶ we averaged the \$5.35 billion total deduction across 16 years, arriving at an annual estimate of \$334 million per year.

LOST ROYALTIES ON OFFSHORE DRILLING FOR LEASES ISSUED FROM 1996 THROUGH 2000 (OUTER CONTINENTAL SHELF DEEP WATER ROYALTY RELIEF ACT)

This subsidy estimate (\$1,072 million) is based on figures developed by the GAO. In 2007 and 2008, the GAO estimated future foregone revenues from the failure to include price thresholds that triggered royalty payments in leases issued from 1996 through 2000. The GAO estimates were based on several price and production scenarios and estimated foregone royalties over a 25-year timeframe starting in 2006. Given WTI oil prices averaged around or under \$50 per barrel (bbl) in 2015 and 2016, while federal offshore oil production continued to increase, we based our 2015-

2016 subsidy estimate on the lowest-price and high production scenarios.

For 1998 and 1999 lease years, we used the GAO's scenario based on a \$50/bbl oil price and \$6.50 per thousand cubic feet (mcf) gas price, which estimated \$7.4 billion in foregone revenue over 25 years.¹⁰⁷ For 1996, 1997, and 2000 lease years, the lowest-price scenario GAO calculated was \$70/bbl for oil and \$6.50/mcf for gas. That scenario yielded an estimate of \$27.2 billion in foregone revenue over 25 years.¹⁰⁸ However, given \$70/bbl is still significantly higher than 2015 and 2016 average oil prices, we proportioned the GAO's \$70/bbl scenario estimate downward based on a simple ratio calculation. We applied the percent decrease from \$70/bbl to \$50/bbl to the \$27.2 billion figure, which yielded an estimate of \$19.4 billion in foregone revenues for the 1996, 1997, and 2000 lease years.

The analysis then amortized the \$26.8 billion total (combining the \$7.4 billion and \$19.4 billion estimates) across all 25 lease years, yielding an annual figure of up to \$1,072 million in foregone revenues from lost royalties. It is important to note that the GAO estimate is based partially on gas price scenarios that are significantly higher than current prices. If lower oil and gas prices persist, the average annual subsidy amount may fall considerably lower.

INLAND WATERWAYS TRANSPORT FOR PETROLEUM AND COAL

Petroleum and coal accounted for more than half of the tonnage shipped on inland waterways of the United States in 2015 and 2016, which is overseen and maintained by the Army Corps of Engineers. This report counts as a subsidy the proportion of the operations, maintenance, and capital budget for the inland waterways navigation system that supported this petroleum and coal use and which came out of the federal government's general revenues (instead of industry fees). While fuel taxes typically cover 50 percent of the annual construction budget for the inland waterways navigation system, the rest of the budget is covered by general revenues.¹⁰⁹

For 2015, petroleum and coal respectively accounted for 29.1 percent and 24.4 percent of commercial goods shipped through

inland waterways.¹¹⁰ For 2016, petroleum and coal respectively accounted for 28.1 percent and 24 percent of tonnage. The subsidy estimates for each year are derived from the Army Corps of Engineers' Inland Navigation Budget for the given fiscal year.¹¹¹ The parts of the budget not covered by user fees - which is all but 50 percent of the construction budget - was added together (totaling \$744 million in 2015 and \$854 million in 2016). Those totals were then proportioned to the share of petroleum and coal tonnage shipped through the inland waterways system for the given year. This yielded an annual 2015-2016 average of \$229 million for oil and \$194 million for coal.

POWDER RIVER BASIN LEASE SUBSIDIES

The Powder River Basin, a mostly federally owned coal-producing region, had its official status as a 'Coal Production Region' annulled in 1990, greatly loosening the regulatory framework for coal leasing. A 2012 report by the Institute for Energy Economics and Financial Analysis estimates \$28.9 billion in foregone revenues over 30 years due to non-competitive bidding and subsequent below-market valuation of coal produced on federal lands.¹¹² Considered annually, this figure would be approximately \$963 million. The \$963 million annual subsidy estimate includes \$700 million based on assessing a portion of coal sale values, currently paying no royalties, at the established royalty rate of 12.5%. The remainder - \$263 million - results from lost bonus payments on leases.

A 2015 report comparing thermal coal production subsidies in the Powder River Basin and Australia also found that insufficient bonding requirements have led to shortfalls in financial assurance for mine reclamation, a subsidy valued at \$0.78 per ton of coal produced.¹¹³ The insufficient bonding subsidy estimate in this report (\$282 million) is derived from this per ton value and EIA 2015 coal production data, showing 398,577,000 short tons (361,583,000 metric ton) of coal production in the Powder River Basin.¹¹⁴ That tonnage was multiplied by the \$0.78/t subsidy rate to yield an annual estimate of \$282 million per year.

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