

CLI BACKGROUND PAPER NO. 5

Subsidization of Non-Renewable Energy Resources in the United States

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I. Introduction

Many United States statutes and administrative practices affecting the energy industry today are measures that reduce the costs of doing business in the industry. Some of these measures are in the form of tax relief, some are in the form of exemptions from environmental regulations. No matter what their form is, the resulting industry savings are then reflected in the market prices for the energy produced. As with most other goods, reduced prices lead to greater levels of consumption. In sum, one of the main effects of current U.S. statutory and administrative law with respect to the energy industry is to increase energy consumption above the level it would be without government intervention. All of these consumption-increasing measures are government subsidies to the energy sector.

A subsidy occurs when the government provides “support to an economic sector (or institution, business, individual), generally with the aim of promoting an activity that the government considers beneficial to the economy overall and to society at large.”¹ Subsidies can also be defined as “any government expenditure that makes a resource such as energy or water cheaper to produce than its full economic cost, or makes a product . . . cheaper to consumers.”² In other words, a subsidy occurs either through the expenditure of public funds or through some less direct form of government support to an industry, with the aim of obtaining a social benefit. The beneficial result of a subsidy should be that the subsidized good can be consumed in greater quantities, either because a broader cross-section of society can afford the good, because consumers can afford to consume greater amounts of the good, or because producers can afford to produce more than they were able to produce without the subsidy, or all three.

As described above, subsidies represent governments’ choices to “transfer economic resources to market participants”³ on the belief that the transfers to certain industries will promote social well-being. All subsidies are thus the result of time-specific, fact-specific judgments that balance the direct and indirect costs of providing government support to the private sector with the perceived and predicted social benefits of the subsidized industry. Some of the general rationales that support institution of subsidies are to “overcome deficiencies of the marketplace . . . [to] support disadvantaged segments of society, and . . . [to] promote environmentally friendly technologies.”⁴ Indeed, certain U.S. government energy subsidies support renewable energy and the technology to clean up some of our most polluting

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¹ Norman Myers with Jennifer Kent, *PERVERSE SUBSIDIES: TAX \$S UNDERCUTTING OUR ECONOMIES AND ENVIRONMENTS ALIKE*, 2–3 (International Institute for Sustainable Development 1998).

² *Id.* at 3.

³ Doug Koplow & John Dernbach, *Federal Fossil Fuel Subsidies and Greenhouse Gas Emissions: A Case Study of Increasing Transparency for Fiscal Policy*, 362, *ANNU. REV. ENERGY ENVIRON.* 26:361–89 (Nov. 2001).

⁴ Myers, *supra* note 1, at 2.

energy sources. Other subsidies, such as those to promote domestic fossil fuel production, are instituted to promote the social good of national security.

In addition to the social goods that subsidies can produce, subsidization carries certain dangers. One danger is that governmental measures tend to be static and simplistic relative to the highly dynamic and complex market system into which they are injected. Because the government is not set up to adapt quickly to changing conditions, the laws, regulations, or administrative decisions that subsidize an industry are unlikely to adapt well to even those market changes that they cause, not to mention those resulting from external forces. A second danger is that by instituting a subsidy, the government immediately creates private interests that will benefit by sustaining the subsidy. Those who benefit from subsidies have a strong incentive to make governmental decision-makers acutely aware of their interests. The result is often that those same decision-makers have only a limited sensitivity to the interests of the broader public, which bears the hidden, deferred, or transferred costs of the subsidies. These aspects of subsidies are dangerous because they can result in the continuation of government resource expenditures to subsidize industries long after the costs of the subsidies outweigh their intended social benefits.

In his work addressing international subsidization of a variety of environmentally harmful sectors, Norman Myers uses the term “perverse subsidies” to describe those whose social benefits, if they exist at all, are outweighed by the fact that the subsidies are “exerting adverse effects of both environmental and economic sorts.”⁵ This paper adopts the term to describe the U.S. system of non-renewable energy sector subsidization and emphasizes another perverse effect of those subsidies: they support the accelerated consumption of finite sources of energy. Subsidizing non-renewable energy is thus perverse not only because of the damaging environmental effects of the industry, including climate change, and the economic impact of the subsidies on the federal budget and the general public, but also because it is an unsustainable approach to serving the energy needs of the United States and is directly opposed to the interests of future generations.

In the following sections, we examine some representative examples of non-renewable energy subsidies that have become (or perhaps started out) “perverse.”⁶ The extent of subsidization of any given industry is frequently subject to disagreement among different researchers because “there is fairly wide divergence in how this general concept is applied in practice.”⁷ The disparities in subsidy calculations arise both from how a given researcher defines the term and from how they measure the magnitude of the subsidy.⁸ Subsidies can be defined to include only direct subsidies, which are generally those resulting from “agency outlays or through tax relief” given to the specific industry. This paper uses the term “direct subsidies” to refer to government actions which result in pay outs from, or revenue not collected for, the federal budget. In addition to direct subsidies, there are also indirect subsidies, which include “subsidized lending, loan guarantees, and indemnification programs.”⁹ Indirect subsidies come in the form of statutory and regulatory provisions that encourage investment in, or reduce the costs of, certain industries, but are not taxing or spending provisions linked to the federal budget. Some researchers include “implicit” subsidies, those costs that industries are able to externalize due to lack of

⁵ Myers, *supra* note 1, at 1.

⁶ It should be emphasized that these examples are only representative, not at all comprehensive, and are likely only the tip of a very large iceberg of governmental support for non-renewable energy.

⁷ Koplów & Dernbach, *supra* note 3, at 362.

⁸ *Id.* at 362–63.

⁹ *Id.* at 362; *see also* Myers, *supra* note 1, at 56.

government regulation, as subsidies.¹⁰ External costs are subsidies insofar as they are costs caused by an industry, but are paid by society at large because they are not included in market transactions.¹¹

Subsidy examples in this paper are examples of direct and indirect subsidies, not the implicit subsidies that arise from the government allowing industries to externalize certain industry-caused costs on all of society. Instead of attempting to quantify the external costs of non-renewable energy as subsidies, we recognize their existence as socialized costs that simply add another aspect to the perverse nature of providing subsidies to these sectors. Some externalized costs come in the form of respiratory illnesses and premature deaths due to pollution from coal-fired power plants.¹² Others exist in U.S. Department of Defense spending to protect oil supplies.¹³ Although these implicit subsidies could easily be much larger than the direct and indirect subsidies, they are subject to enough debate and uncertainty that they would distract from the main point: governmental subsidy choices have created a system where we spend taxpayers' money on industries that accelerate unsustainable resource use. The present system impedes change that would protect the environmental, economic, health, and welfare interests of future generations.

II. Key Examples of Direct Subsidies: Accelerated Depreciation, Depletion Allowances, and Royalty Relief

The federal government has given preferential tax treatment to the fossil fuel industries for at least the past ninety years.¹⁴ Some of the government's decisions were in response to historical events, at times when perceived or projected energy need was higher than energy supply. Other decisions seem to have no clear relationship to social needs, but instead are a result of the lobbying power of the fossil fuel interests.¹⁵ Unfortunately, even in those cases where the decision to incentivize fossil fuel development appeared to be made with society's best interests in mind, preferential tax treatment for fossil fuel industries tends to far outlive the events and conditions that justified it.¹⁶ Ultimately, of course, such costs are borne by U.S. citizens, either i) in the form of higher taxes in other area to offset the foregone energy-tax revenues, or ii) in the form of higher interest charges necessary to finance the increased federal debt associated with foregoing the business-normal revenues from energy providers.

¹⁰ Myers, *supra* note 1, at 3; *see also* Koplow & Dernbach, *supra* note 3, at 362.

¹¹ Myers, *supra* note 1, at 3–4. Conceptualizing externalities as subsidies recognizes the fact that “internal” and “external” costs are largely the result of government regulatory choices, and not inherent properties of a given industry or product. Myers points out that “just as subsidies are a case of government intervention, externalities are a case of what happens when governments do not intervene.” Myers, *supra* note 1, at 6, Box 1.2. No matter whether the government subsidizes, regulates, or fails to regulate, all of the costs of an industry are borne by society. When properly regulated, industry costs are borne by the industry causing the costs, which costs may be passed on to the industry consumers. The problem with direct, indirect, and implicit subsidies is that they socialize the true costs of industry so that consumers do not receive the appropriate price signals to guide their behavior with respect to the subsidized products.

¹² Myers, *supra* note 1, at 70 (estimating the “putative ‘life value’” of the premature deaths at \$240 billion).

¹³ The total cost of military safeguards for oil alone was estimated at \$50 billion in 1991, and another researcher estimated that oil protection cost \$73–227 billion in 1994. Myers, *supra* note 1, at 84. These estimates occurred well before the beginning of the current war in Iraq, and if one were to consider that war (or its continuation) to be even halfway motivated by oil protection concerns, then the additional cost of oil protection would dwarf the pre-war spending on oil protection. *See* “As War’s Costs Rise, Congress Demands that Iraq Pay Larger Share,” *The New York Times*, David M. Herszenhorn and Eric Lipton (April 18, 2008) (quoting Senator Harry Reid as estimating the cost of the Iraq war at \$12 billion per month, which would mean that the war alone costs the Department of Defense an additional \$144 billion per year).

¹⁴ *See infra*, the oil depletion allowance was originally enacted in 1926.

¹⁵ Roberta Mann, *Another Day Older and Deeper in Debt: How Tax Incentives Encourage Burning Coal and the Consequences for Global Warming*, 20 PAC. MCGEORGE GLOBAL BUS. & DEV. L.J. 111, 132 (2007) (citing the synthetic fuel lobby’s \$5 million effort to continue the synfuel tax credits in 2004–2005).

¹⁶ *See infra*, discussing the oil depletion allowance allowed from 1926 until 1975.

In the most recent major federal energy bill, the Energy Policy Act of 2005 (EPAAct05), the Legislature decided to once again impose billions of dollars of costs on the federal government in the form of tax incentives for fossil fuel producers. In other words, EPAAct05 continues the practice of allowing fossil fuel businesses to play by different tax rules than other businesses, and “[b]enefits received by a taxpayer through a special departure from the ‘normal’ income tax system are economically equivalent to a direct transfer of government funds to that taxpayer.”¹⁷

A very basic representation of a taxpayer’s tax liability is that liability equals gross income, minus all applicable deductions, multiplied by a certain tax rate.¹⁸ Tax credits, where available, are subtracted from the resulting product.¹⁹ Tax breaks can occur when the government allows a taxpayer to reduce gross income, increase the amounts of deductions, use a lower tax rate, or take greater amounts of tax credits. Tax breaks distort the energy market because they allow the affected fossil fuel producers to avoid taxes paid by others, which in turn makes fossil fuels relatively less expensive to the consumer, thus causing the market to consume more fossil fuels than it would without the market distortion. By accelerating the consumption of fossil fuels, these tax breaks impose not only great federal budget costs on the present generation, but also greater costs from the externalities of fossil fuel use. This section examines two forms of tax breaks and another form of more direct government hand-out to the non-renewable energy sector and estimates the ongoing costs to the federal budget resulting from these incentives to the fossil fuel industries. Again, we emphasize that these examples, while themselves significant, are only part of an entire web of subsidies that distort (downwards) current users’ perceptions of the true costs of the energy resources they consume.

A. Accelerated depreciation of assets costs the government tax income because it allows the taxable value of an asset to decrease more quickly than it otherwise would.

Depreciation is an accounting method used by businesses to allocate “the cost of a long-lived asset to consecutive accounting periods as expenses to reflect the gradual using up of the asset.”²⁰ Depreciation thus accounts for the loss in the value of a business’ equipment each year by allowing the business to deduct a certain amount from its reported earnings.²¹ The amount deducted reflects the proportion of the original cost of the equipment that the equipment lost in value during that year of its life in the business. Thus, if a piece of equipment cost \$ 30 million and had an expected usable life of thirty years, the business would deduct \$ 1 million from its revenue annually during the first thirty years that it owned the equipment. Depreciation is related to taxes because the Internal Revenue Code allows businesses to make certain depreciation deductions from their taxable income,²² which then lowers the income tax liability of a business.²³

Accelerated depreciation is a special method of depreciation that either shortens the time period over which a business depreciates the value of a long-lived asset or that allows a business to take proportionally larger depreciation deductions during the earlier years of the depreciation period.²⁴ Using the previous example, accelerated depreciation might allow the \$ 30 million equipment to be deducted from the business’ revenue over fifteen years at a rate of \$2

¹⁷ Mann, *supra* note 15 at 126.

¹⁸ *Id.* at 127.

¹⁹ *Id.*

²⁰ ROBERT W. HAMILTON & RICHARD A. BOOTH, BUSINESS BASICS FOR LAW STUDENTS, 137 (4th ed. 2006).

²¹ *Id.* at 138.

²² 26 U.S.C. § 167.

²³ *Id.*

²⁴ HAMILTON & BOOTH, *supra* note 20, at 139.

million per year. The Internal Revenue Code contains a section devoted to the kinds of assets for which businesses may accelerate depreciation and to the methods for accelerating their depreciation.²⁵ Accelerated depreciation methods result in businesses paying less in income taxes than they would have to under depreciation schedules that more accurately matches the life of the asset.²⁶

EPAct05 contains several accelerated depreciation provisions for the natural gas and oil industries. One provision allows natural gas distribution pipelines to depreciate over a fifteen-year period instead of the former twenty-year period.²⁷ The Joint Committee estimated that this provision will cost the federal government over \$1 billion between 2005 and 2015.²⁸ Similarly, natural gas gathering pipelines are allowed to be depreciated on a seven-year time scale at a cost to the federal government of \$ 16 million over ten years.²⁹ A provision for the oil industry allows each refinery that increases capacity by at least five percent, or increases certain fuel output by twenty-five percent, to immediately depreciate fifty percent of the costs of the investments that made the capacity increase possible. This depreciation provision is estimated to cost the federal government \$406 million in lost tax revenue.³⁰

A similar kind of accounting method to accelerated depreciation that is allowed by the federal government is the intangible drilling cost deduction.³¹ This deduction allows companies to deduct a variety of expenses, such as wages, fuel, research, site preparation, and drilling costs associated with new wells at a much faster rate than other businesses are allowed for similar expenses associated with income producing property.³² The intangible drilling cost deduction allows oil producers to deduct seventy-five percent of those expenses from their gross income in the first year that the drilled well is in production, while the deduction for other businesses must be spread out over the useful life of the income producing property.³³ The effect of accelerating the deduction of these expenses is similar to allowing assets to undergo accelerated depreciation: the oil industry is given a pass from the normal rules of income taxation so that the companies avoid tax liability, thereby avoiding costs.³⁴ The avoided costs allow oil to be less expensive than it otherwise would be in the market.³⁵ By lowering costs, the government encourages the market to consumer more fossil fuels, which simultaneously drives up the present and future social costs of fossil fuel consumption and reduces the fuel available to future generations.

²⁵ 26 U.S.C. § 168.

²⁶ HAMILTON & BOOTH, *supra* note 20, at 139.

²⁷ Natural gas distribution pipelines are any lines that are not transmission lines (those that transport gas between storage facilities or to distribution centers) or gathering lines (*see infra* n.29); distribution lines include mains (those that serve as a common supply source for more than one end user) and service lines (those that carry natural gas from transmission lines or mains to end users). 49 C.F.R. § 192.3 (May 6, 2005).

²⁸ Estimated Budget Effects of the Conference Agreement for Title XIII. of H.R. 6, The “Energy Tax Incentives Act of 2005,” Provision B(5), JCX-59-05 (July 27, 2005).

²⁹ *Id.* Provision B(6). Natural gas gathering pipelines are used to move natural gas from production facilities to main lines or transmission lines. 49 C.F.R. § 192.3 (May 6, 2005).

³⁰ *Id.* Provision B(3); *see also* Senate Committee on Energy and Natural Resources report on EPAct05 at 13.

³¹ 26 U.S.C. § 263(c) (2007).

³² S. COMM. ON THE BUDGET, 108th CONG., TAX EXPENDITURES: COMPENDIUM OF BACKGROUND MATERIAL ON INDIVIDUAL PROVISIONS 70 (2004).

³³ 26 U.S.C. § 263(C) (2007); *see* SALVATORE LAZZARI, CONG. RESEARCH SERV., ENERGY TAX POLICY: AN ECONOMIC ANALYSIS 27 (2005).

³⁴ TAX EXPENDITURES, *supra* note 32, at 70.

³⁵ *Id.*

B. Use of percentage depletion for natural resource extraction allows taxpayers to recover more for the property used in resource extraction than the costs they paid for the property.

The percentage depletion tax subsidy (also known as a “depletion allowance”) falls under the “deductions” term of the tax liability equation.³⁶ As explained above, all businesses have the ability to deduct a certain portion of the value of their assets from their taxable income each year to reflect the diminution in value of the asset over time.³⁷ Percentage depletion is a way to depreciate the value of an asset whose value cannot be estimated with any accuracy, such as oil wells or coal mines.³⁸ The values of these assets are unpredictable because the value is in the oil or coal, which is hidden underground. A given well or mine could fully depreciate in value in two years or in thirty years, depending on how much of the underground resource is available for extraction. Percentage depletion accounts for this uncertainty by allowing a well or mine owner to automatically deduct a certain percentage of the gross income produced by the well or mine from her taxable income every year that the well or mine is in operation.³⁹

Commentators classify percentage depletion as preferential tax treatment for fossil fuel extractors and producers because the deduction method allows these businesses to deduct values that far exceed their expenditures on the property.⁴⁰ Percentage depletion allows producers to deduct a percentage of their income for every year that the well or mine is operational, which means that those taxpayers can continue to make a deduction from their taxable income (ostensibly to reflect the cost of the asset) far after they have accounted for the value that the property cost them. This method of deduction stands in stark contrast to standard, or even accelerated, depreciation under 26 U.S.C. §§ 167 and 168, whereby the limit on the total value of the deduction is the cost basis of the asset. An alternative to the percentage depletion method for dealing with the uncertainty is “cost depletion.” Using cost depletion, a mine owner would calculate her income deduction according to a formula set out by Treasury Department regulation that spreads the cost of the property over the estimated units of coal or oil available to be extracted or sold.⁴¹ Cost depletion thereby attempts to accurately represent the depreciation in value of the mine according to the real qualities of the property⁴² instead of assigning an arbitrary value to deduct each year. But at the same time, the total amount of the deductions is limited to the cost of the property.

An oil depletion allowance was initially offered to the oil industry in 1926 and the percentage depletion was set at 27.5% of gross income for oil producers.⁴³ As the oil industry grew, and producers became more and more profitable, there was increasing pressure to roll back the percentage depletion. However, the oil industry argued that the allowance was necessary to encourage the risky business of oil exploration because the country needed to ensure a reliable domestic supply of the fuel.⁴⁴ By 1975, Congress overcame the political pressure of the industry and rolled back the percentage depletion for the largest oil companies.⁴⁵ The estimated loss to the federal budget is \$11.9 billion over the fifty years of

³⁶ 26 U.S.C. § 611 (2007).

³⁷ 26 U.S.C. § 167 (2007).

³⁸ Roberta Mann, *Waiting to Exhale? Global Warming and Tax Policy*, 51 AM. U. L. REV. 1135, 1164 (2002).

³⁹ *Id.* at 1165; see 26 U.S.C. § 613 (2007).

⁴⁰ Mann, *supra* note 15, at 130.

⁴¹ Mann, *supra* note 15, at 130 (citing Treas. Reg. § 1.611-2(a)).

⁴² 26 U.S.C. § 611(a) (stating that the general rule is that the deduction will be “a reasonable allowance for depletion . . . according to the peculiar conditions in each case”).

⁴³ ROBERT BRYCE, *CRONIES: OIL, THE BUSHES, AND THE RISE OF TEXAS, AMERICA’S SUPERSTATE* 47 (2004).

⁴⁴ TAX EXPENDITURES, *supra* note 32, at 78 (“Congress viewed oil and gas as a strategic mineral, essential to national security, and wanted to stimulate the wartime supply of oil and gas, compensate producers for the high risks of prospecting, and relieve the tax burdens of small-scale producers.”).

⁴⁵ *Id.*

the allowance.⁴⁶ Today, “independent” oil refiners are still able to use percentage depletion, at a rate of fifteen percent,⁴⁷ and the impact on the federal budget is much smaller than when all oil companies received the tax break. EPLAct05, however, expanded the class of “small” refiners from the group who produced 50,000 barrels per day or less to a group that produces up to 75,000 barrels per day. The Joint Committee on taxation estimated that the redefinition of small refiners alone would cost the federal government \$158 million between 2005 and 2015.⁴⁸

The coal mining industry and the uranium mining industries both are allowed to participate fully in percentage depletion.⁴⁹ Uranium mines can deduct twenty-two percent of their gross income from the taxable income base.⁵⁰ Coal producers are allowed a ten percent rate of depletion from their gross mining income.⁵¹ A 2001 I.R.S. Statistics Bulletin estimated that depletion deductions save fossil fuel producers \$10 billion every year.⁵² That \$10 billion is passed through to fossil fuel consumers in some form, thereby making those fuels appear \$10 billion per year less expensive than they would be if they were subjected to the same kind of tax treatment as other industries. Thus, instead of allowing the market to adjust to fossil fuel costs, the current system socializes some of the fossil fuel industries’ costs. Further, for every dollar that a taxpayer saves via preferential tax treatment, the government either looks to another tax source to meet federal budget needs or loses out on revenue available to pay for social goods. In sum, the depletion allowance encourages increased fossil fuel use by holding costs down and simultaneously costs the federal government in lost tax revenue, which revenue might otherwise be used to pay for some of the externalized costs of the fossil fuel industry.

C. Royalty relief for resource exploration and extraction allows oil and gas companies free use of federal land.

About one-third of all domestic oil and gas exploration and extraction occurs on property, including offshore areas, that are federally owned or controlled.⁵³ When private companies use federal land, they typically pay a lease fee, known as a royalty, to the federal government. The royalties tend to be based on “a percentage of the oil and gas” that the companies produce.⁵⁴ The GAO estimates that oil and gas companies paid about \$10 billion in royalties to the federal government on an income of about \$77 billion from production off of federal lands in fiscal year 2006.⁵⁵ As with its tax treatment of the fossil fuel industries, the federal government does, from time to time, subsidize the oil and gas industries by granting royalty exemptions or by decreasing the amount of royalty payments required.⁵⁶ We explore the effects of two recent congressional decisions regarding “royalty relief” for the oil and gas industry: the Outer Continental Shelf Deep Water Royalty Relief Act of 1995 (DWRRA) and the Energy Policy Act of 2005 (EPLAct05).

⁴⁶ BRYCE, *supra* note 43, at 92 (citing Philip M. Stern’s THE GREAT TREASURY RAID).

⁴⁷ 26 U.S.C. § 613A(c).

⁴⁸ Estimated Budget Effects of the Conference Agreement for Title XIII. of H.R. 6, The “Energy Tax Incentives Act of 2005,” Provision B(8), JCX-59-05 (July 27, 2005).

⁴⁹ 26 U.S.C. § 613 (2007).

⁵⁰ *Id.* § 613(b)(1)(a).

⁵¹ *Id.* § 613(b)(4).

⁵² Wendy B. Davis, *Elimination of the Depletion Deduction for Fossil Fuels*, 26 SEATTLE UNIV. L. R. 197 (2002) (citing I.R.S., Pub. No. 1136, 21 Statistics of Income Bulletin 79, 122 (2001)).

⁵³ Oil and Gas Royalties: Royalty Relief Will Likely Cost the Government Billions, but the Final Costs Have Yet to Be Determined, GAO-07-369T, 1 (January 18, 2007) (estimating thirty-five percent of domestic oil and twenty-five percent of natural gas in 2005).

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ *Id.*

Royalty relief implemented through DWRRA came in response to conditions in the mid-1990s where there were domestic declines in on and offshore oil and gas production as well as relatively low oil and gas prices.⁵⁷ Congress decided to encourage more oil and gas exploration and production from the Gulf of Mexico, particularly in deeper waters, by applying royalty relief to all leases formed with the federal government during the time period from 1995 to 2000. When royalty relief is provided, the government typically sets limits on the conditions under which the relief will apply. These limits are set in volumes of oil and gas produced (“suspension volumes”) and in prices received for the fuels (“price threshold”). Thus, if producers are able to extract large volumes of fuels, the royalty payments will apply, or if market prices reach a certain threshold, the producers must pay the government royalties. Under the DWRRA, the government failed to adequately implement these typical limiting measures. The result is that the oil and gas companies are extracting and selling large volumes of fuels at high prices, while the federal government loses tens of billions of dollars in unpaid royalties.

Government reports on these issues quantify only the royalties lost due to adequate limiting language. These reports give the impression that the losses of federal revenue under the DWRRA is due to the government’s statutory or lease drafting errors. While the lack of adequate limits might be attributed to government error or mistake, the fact remains that the entire act is itself a direct government hand-out to the fossil fuel industries. Even if the government had applied tight limits to the royalty suspensions, the DWRRA amounts to a government grant of free land use for fossil fuel producers, which subsidizes increased extraction of the resources, and distorts the market price of fossil fuels downwards. Because the only estimated revenue losses under the DWRRA are available from the lack of the Act’s limits on the royalty suspension, we examine those to get a picture of the extent of financial losses incurred by the government when it decides to suspend royalty payments.

According to a GAO report, the DWRRA did not contain language adequately specifying “how royalty suspension volumes would apply.”⁵⁸ Officials at the Department of the Interior reported they recommended to Congress “that the act should state that royalty suspension volumes apply to the production volume from an entire field.” This specification would be important because one field could contain many leases and if the suspension volume applied on a lease-by-lease basis, then the entire field could far surpass the volume, but no leases would surpass the volume. If suspension volumes applied to each individual lease instead of to the field as a whole, then no leaseholders would pay royalties to the government even though the field was producing substantial volumes of fuel. Although the DWRRA never specified whether suspension volumes applied on a field or lease basis, the administering agency tried to apply them on a field basis.⁵⁹ Leaseholders then sued the Department of the Interior and won at the Fifth Circuit Court of Appeals.⁶⁰ Consequently, this lack of adequate limiting language in the statute will cost the federal government \$10 billion in lost royalty revenues, in addition to the revenue that the government lost by deciding to suspend royalty payments at all under the DWRRA.⁶¹

The DWRRA was passed with a provision allowing the implementing agency to suspend royalties based on prices of production, and the agency established price threshold limits for oil and gas.⁶² However, between 1998 and

⁵⁷ *Id.* at 5.

⁵⁸ *Id.* at 6.

⁵⁹ *Id.*

⁶⁰ *Id.* (citing *Santa Fe Snyder Corp. v. Norton*, 385 F.3d 884 (5th Cir. 2004)).

⁶¹ *Id.*

⁶² *Id.* at 7.

1999, none of the 1,031 leases consummated during that time included those price thresholds.⁶³ The agency now estimates that this omission will cost the government \$10 billion over the life of the leases.⁶⁴ While this blatant omission on the part of the agency will be extremely expensive, a larger problem looms in the courts. Namely, some of the leaseholders whose leases contain the price thresholds are suing the government, claiming that the DWRRA does not give the implementing agency the authority to implement price thresholds.⁶⁵ If these lawsuits are settled in favor of the oil and gas industry, the DWRRA will end up costing the federal government an additional \$60 billion.⁶⁶

In sum, the federal revenue lost as a part of the mistakes contained in DWRRA alone are estimated at \$80 billion. These estimates are based on the amounts of royalty payments that would have been due to the government if the limits that traditionally take effect under royalty suspensions had been effective under DWRRA. However, even with limits, every royalty suspension decision is a decision by the government to suspend the normal costs of doing business for the fossil fuel industries, which results in enormous losses in federal revenue while aiding in the acceleration of non-renewable resource extraction and consumption. Although DWRRA royalty relief expired in 2000, EPAAct05 extends the same kind of program for leases in the Gulf of Mexico that are issued for 2005–2010.⁶⁷ Further, the Secretary of the Interior has discretionary authority to issue royalty relief, and the agency in charge of offshore leases “intends for these discretionary programs to provide royalty relief for leases in deep waters that were issued after 2000, deep gas wells located in shallow waters, wells nearing the end of their productive lives, and special cases not covered by other programs.”⁶⁸

III. A Key Example of Indirect Subsidies: Statutory Indemnification

In addition to the direct subsidies available to the non-renewable energy sector in the form of tax relief measures and royalty relief, the U.S. government has subsidized the same sectors in indirect ways. Indirect subsidies are granted in the form of statutory and regulatory measures that reduce the cost of doing business or encourage investment in an industry, but are not strictly related to the federal budget in the way that tax and royalty subsidies are. Despite this difference, indirect subsidies have the same effect as direct subsidies in that they skew the market price of non-renewable energy below what it would be without these forms of government support. By distorting the price signal to consumers in the downward direction, indirect subsidies encourage greater levels of consumption of finite energy resources. Increased energy consumption from fossil fuels and nuclear power plants, and the dangerous effects of consuming these fuels, represent how current government practices and policies are entrenched against the interests of future generations. This paper offers two examples of how the federal government supports non-renewable sources of energy through indirect subsidies, but, as with direct subsidies, a full survey of indirect subsidies is beyond the scope of this paper.

A. The Price-Anderson Act caps the liability of nuclear power generation facilities.

Nuclear power is unlike fossil fuel energy in that its carbon dioxide costs are much lower than those produced from coal or oil; thus, the subsidization of the industry does not have the same implications for future generations in terms of climate change.⁶⁹ However, nuclear power is analogous to the fossil industries in that it depends on uranium

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ *Id.* at 8.

⁶⁷ *Id.* at 9–10.

⁶⁸ *Id.* at 9.

⁶⁹ The carbon dioxide costs of nuclear power are being heavily debated among those planning an energy future that can provide both reliable electricity and reductions in our greenhouse gas emissions. While nuclear power does not produce carbon dioxide

for fuel, which is a limited, non-renewable resource. Further, nuclear waste carries its own serious environmental and health risks.⁷⁰ Thus, when the government subsidizes the nuclear industry, it thereby encourages accelerated use of a finite resource that future generations may need for power supply (especially lower greenhouse gas-emitting power), and a resource that has the toxic potential to be highly destructive to current and future generations. The Price-Anderson Act is an indirect subsidy that provides the nuclear power industry with a statutory limit on its liability for any nuclear accidents. This limit provides investors with the stability they needed to invest in nuclear power, and thus enabled the nuclear industry to blossom in the United States.

Nuclear energy first began to be a viable option for the private industry to provide electric power in the mid-1950s, after the Atomic Energy Act of 1954 “eliminated the Federal government’s monopoly over nuclear materials and their use, and sought to encourage private industry to become involved in the development of nuclear technology for peaceful purposes.”⁷¹ At the time, there was so little experience with nuclear technology that the insurance companies to whom private investors turned for liability coverage could not sufficiently quantify the risks.⁷² Consequently, those private insurance companies would only provide a small fraction of the coverage that investors considered necessary to cover the potential harm that could result from a serious plant accident. Without sufficient insurance, the risks of operating a nuclear plant were too large to attract investment.⁷³ Investors were unwilling to expose themselves to the enormous liability that could result from a serious nuclear accident. Several representatives of companies that manufactured nuclear power technology in the 1950s testified to Congress and stated that their companies “ ‘could not proceed as a private company’ ” without some form of governmental support to cover the risks of nuclear power accidents.⁷⁴

In response to private industry concerns, Congress passed the Price-Anderson Act of 1957.⁷⁵ Although Price-Anderson is a liability scheme, and thus might seem to be focused on victim protection and compensation, its original purpose was very clearly “ ‘to remove a roadblock that has been said to interfere with people getting into this [the nuclear power] program.’ ”⁷⁶ The Act removed that roadblock by establishing a scheme whereby nuclear plant owners were required to obtain the maximum amount of private insurance that they could get in the market, but then limiting the liability of nuclear owners to that level of insurance.⁷⁷ Thus, no nuclear plant owner could be held liable for damages that exceed the amount of insurance they were required to maintain under the Act. The federal government then assumed liability for damages of up to \$ 500 million over the amount covered by the nuclear owners’ insurance.

Congress continues to re-authorize Price-Anderson and today the scheme is slightly different. Owners are required to purchase a maximum level of primary insurance, which is now \$300 million. But today, instead of the

emissions at the power plants’ “stacks” as coal, oil, and natural gas power plants do, the life-cycle cost of a nuclear plant, including uranium production, plant construction, waste storage, and plant decommissioning, certainly includes some non-negligible carbon costs. However, as the United States seeks an electricity supply that is reliable enough to provide baseload electricity, the lower carbon costs of nuclear power may justify subsidization of the industry.

⁷⁰ Joseph P. Tomain, *Nuclear Futures*, 15 DUKE ENVTL. L. & POL’Y F. 221, 228 (2005) (noting that “[n]uclear power, although carbon-free, is not free from environmental impact”).

⁷¹ Dan M. Berkovitz, *Price-Anderson Act: Model Compensation Legislation? The Sixty-Three Million Dollar Question*, 13 HARV. ENVTL. L. REV. 1, 6 (1989).

⁷² *Id.*

⁷³ Tomain, *supra* note 70, at 227–28.

⁷⁴ *Id.* at 228 (quoting Charles Weaver, then-CEO of Westinghouse, a manufacturer of nuclear reactors).

⁷⁵ Pub. L. No. 85-256, 71 Stat. 576.

⁷⁶ Berkovitz, *supra* note 71, at 10 (quoting testimony of Harold L. Price, Director, Atomic Energy Commission, Division of Civilian Application, at the 1956 Joint Committee on Atomic Energy Hearings, 84th Cong., 2d Sess., 1–99).

⁷⁷ *Id.* at 7.

federal government assuming liability, plant owners are required to supplement their primary insurance with secondary insurance.⁷⁸ This secondary insurance is self-funded and is charged only when an accident occurs.⁷⁹ Primary and secondary insurance coverage now totals over \$10 billion,⁸⁰ but that is the full limit of liability for nuclear plant owners. When an accident occurs in which the damages exceed the primary and secondary insurance coverage, the federal government assumes liability for the remaining amount, but without any established fund. Instead, there is a complex process by which the Nuclear Regulatory Commission surveys the causes and extent of damage and submits a report to Congress and the courts. The court determines whether public liability exceeds the limits available in the primary and secondary insurance. If the limits are exceeded, the President would then “submit to the Congress an estimate of the financial extent of damages, recommendations for additional sources of funds, and one or more compensation plans for full and prompt compensation for all valid claims.”⁸¹

The Price-Anderson Act is a subsidy because it provided (and continues to provide) investors the necessary financial security to build reactors and plants, and thereby institute nuclear power as a piece of the United States energy mix. Without the Act, investment in the industry would not have occurred. Price-Anderson is an indirect subsidy because it does not involve any transfers of federal funds to the industry, instead, it sets up a statutory scheme that reduces the cost of doing business for the nuclear industry. Because the nuclear industry only operates with the aid of Price-Anderson, many commentators are aware that the “persistently troubling point about nuclear power is that it does not operate in a workable market. Financially, nuclear power does not function without government support.”⁸² This kind of subsidization is another example of the perverse system of reducing the costs of producing power from non-renewable resources. The results are an unsustainable energy system, which has the additional adverse effects of producing wastes and by-products that are costly and harmful, both environmentally and economically, to present and future generations.

B. Oil and gas exemptions from federal environmental laws reduce the costs of doing business for those industries.

Another indirect subsidy that the federal government grants the non-renewable energy industry is in the form of exemptions from environmental laws. The expenses of environmental compliance, or liability for non-compliance, are significant pieces of the cost of doing business in the United States. However, many environmental laws contain specific provisions that allow the oil and gas industries to avoid these costs. For example, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), which imposes strict liability for “hazardous substance” releases on parties who own, operate, transport, or dispose of hazardous substances, excludes petroleum and natural gas from the hazardous substances category.⁸³ Similarly, the Resource Conservation and Recovery Act of 1976 (RCRA) exempts wastes associated with oil and natural gas exploration and extraction from its extensive and environmentally

⁷⁸ Secondary insurance is also known as a “retrospective premium” and is subject to adjustment for inflation at five-year intervals. See United States General Accounting Office, Nuclear Regulation, NRC’s Liability Insurance Requirements for Nuclear Power Plants Owned by Limited Liability Companies, 5, May 2004.

⁷⁹ United States Nuclear Regulatory Commission, Fact Sheet on Nuclear Insurance and Disaster Relief Funds, Nuclear Insurance: Price-Anderson Act, available at <http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/funds-fs.html> (last visited on Feb. 26, 2008).

⁸⁰ American Nuclear Society, The Price-Anderson Act, Background for Position Statement 54, 1, November 2005.

⁸¹ United States General Accounting Office, Nuclear Regulation, NRC’s Liability Insurance Requirements for Nuclear Power Plants Owned by Limited Liability Companies, 5, May 2004.

⁸² Tomain, *supra* note 70, at 228.

⁸³ 42 U.S.C. § 9601(14)(F).

protective statutory and regulatory scheme for hazardous waste disposal.⁸⁴ Congress passed both of these exemptions “to protect America’s oil and gas industry from regulations that were perceived as a threat to the continued existence of domestic producers at a time when America was perceived to be dangerously dependent on foreign oil.”⁸⁵

This kind of statutory exclusion has not been limited to the period immediately following the oil crisis of the 1970s. EPAAct05 provided a new subsection in the Clean Water Act,⁸⁶ which was added to the Clean Water Act to clarify that the U.S. EPA “shall not require NPDES permit coverage” for “construction activities at oil and gas sites.”⁸⁷ NPDES permits are those required by the Clean Water Act for any discharge of any pollutant to any waters of the United States. The Clean Water Act strictly prohibits any pollutant discharges without a permit, with certain narrow exceptions, including an exception for storm water runoff from oil and gas exploration, extraction, treatment, and production.⁸⁸ Congress shored up this exemption with the new definition of “oil and gas exploration, production, processing, or treatment operations or transmission facilities” contained in EPAAct05.

By increasing the level of certainty in their exemption from environmental laws, laws that are applicable to almost every other business in the United States, Congress has provided oil and gas investors with many indirect subsidies. The fact that EPAAct05 contained a Clean Water Act provision demonstrates the extent and entrenchment of oil and gas interests in the entire statutory scheme of the federal government. The original exemption from NPDES permitting was a substantial subsidy in itself, and that subsidy then created interest group which is now able to ensure that the industry will continue to receive favorable government treatment. These kinds of favors continue to make non-renewable fuels appear less expensive in the marketplace, which accelerates consumption and the associated adverse impacts on sustainability.

IV. Conclusion

In seeking to create a system that protects future generations, we must be aware of the current obstacles to such change. The present system of subsidies is one of the more important and difficult to surmount obstacles. The foregoing examples of direct and indirect subsidies document an established federal government pattern of lowering the costs of business for the non-renewable energy industries. This pattern causes a downward distortion of the price signal for non-renewable energy consumption, and thus accelerates our use of these fuels. Accelerated consumption of finite resources is unsustainable, and accelerated fossil fuel consumption also accelerates the rate at which we move toward irreversible climate change and the concomitant damages of floods, droughts, disease, and extinctions. All of these outcomes are directly contrary to the environmental, health, and economic interests of future generations.

Two of the potential dangers of government subsidies have come to fruition in the examples outlined above. First, the subsidies themselves created powerful and entrenched interests in continuing the subsidies. These interests have opposed any decrease in their subsidies, which has resulted in continuing subsidization even when the subsidies are no longer warranted by current circumstances. Because non-renewable energy interests benefit from the subsidies that accelerate consumption of those finite sources energy, they will likely oppose any movement toward a system that better protects the interests of future generations. The second danger of subsidies is that the government can be a very clumsy

⁸⁴ 42 U.S.C. § 6921(b)(2)(A).

⁸⁵ Daniel L. McKay, *RCRA’s Oil Field Wastes Exemption and CERCLA’s Petroleum Exclusion: Are they Justified?* 15 J. ENERGY, NAT. RESOURCES, & ENVTL. L 41, 41 (1995).

⁸⁶ 33 U.S.C. § 1362(24).

⁸⁷ 40 C.F.R. § 122.26(a)(2)(ii) (2006).

⁸⁸ *Id.*

tool to apply to markets. When the government begins to entangle itself in measures that change the equilibrium point of supply and demand, there is a substantial risk of mismanagement and complications that can increase the cost of the subsidies to the federal government and the public and decrease the social benefits. This danger has been realized most prominently in the royalty relief examples where the extent of the subsidy has increased dramatically and is costing the current generation many billions of dollars in lost federal revenue while simultaneously allowing more oil and gas to enter the marketplace at lower prices.

As subsidies to the non-renewable energy industries have fallen into these patterns, the prospects for future generations become dimmer. The entrenched interests that are working to prevent or slow government action to end these perverse subsidies are simultaneously promoting the accelerated consumption of fossil fuels and the economic, health, and environmental damages that will adversely impact many generations in the future. Further, the complications in managing some of these subsidy programs have led to the kind of growth in the subsidies and the subsidized industries that will cost not only this generation of the U.S. public, but future generations as well.