

# ELIMINATING TAX EXPENDITURES WITH ADVERSE ENVIRONMENTAL EFFECTS

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## SUMMARY

Tax expenditures are provisions in the U.S. federal tax code that provide special tax benefits for selected economic activities or taxpayers. A number of tax expenditures add to greenhouse gas emissions by encouraging production and consumption of fossil fuels.

This policy brief examines four tax expenditures listed by the Joint Committee on Taxation—each with an annual revenue loss of over \$1 billion—that increase consumption of fossil fuels. The first three—expensing of exploration and development costs, percentage depletion, and the alternative fuel production credit—encourage domestic production of fossil fuels. The fourth—exemption

of qualified parking expenses—encourages commuting by automobile.

Eliminating or scaling back these and other tax expenditures that promote production and consumption of fossil fuels would reduce the budget deficit, promote economic efficiency, and be a first step toward making the tax law more environmentally friendly. However, the effects of the proposed tax reforms on greenhouse gas emissions would be small—so addressing tax expenditures, while desirable for a number of reasons, can be only one part of a broader strategy to reduce climate change.

## I. HOW TAX EXPENDITURES AFFECT THE ENVIRONMENT

In the past few years, we have witnessed a growing concern about global warming resulting from increased worldwide consumption of fossil fuels. Policy responses to address global warming include higher taxes on fossil fuel use, limits on carbon emissions (possibly in the form of tradable permits), and increased subsidies for the development and deployment of new energy-saving technologies. As these broader policy responses are debated, an overall strategy to reduce climate change should also review current tax expenditures that promote fossil fuel use. This brief examines four tax expenditures that directly encourage production

and consumption of fossil fuels. Eliminating or reducing them could reduce the budget deficit, increase economic efficiency, and be a first step toward a more environmentally friendly tax code.

The Congressional Budget Act of 1974 defines tax expenditures as “revenue losses attributable to provisions of the federal tax laws which allow a special exclusion, exemption, or deduction from gross income or which provide a special credit, a preferential rate of tax, or a deferral of liability.” The Treasury Department and congressional Joint Committee on Taxation (JCT) prepare annual lists of tax expenditures.<sup>1</sup>

Some tax expenditures have direct adverse effects on the environment by encouraging more production and consumption of fossil fuels than would occur under a neutral tax system. Others may indirectly affect the environment by changing patterns of production or consumption in ways that increase the use of fossil fuels, even though they do not directly affect energy prices or the cost of producing energy. Eliminating or reducing tax expenditures with adverse environmental effects can improve the environment, increase economic efficiency, and reduce the federal deficit.

## Using Tax Expenditures to Promote Policy Goals

### *Tax Subsidies for Selected Assets and Industries*

A neutral tax system promotes an efficient allocation of investment because it enables business and household decisions to reflect the social productivity of assets instead of their tax benefits. Tax subsidies for selected assets and industries distort markets and cause too much output of favored goods and too much investment in favored assets or technologies.

Private market decisions will be inefficient, however, if market prices fail to reflect the true costs and benefits of resources used and outputs produced. Prices of fossil fuels, for example, do not reflect the long-term environmental harm from releasing more carbon dioxide into the atmosphere or the adverse effects on air quality from fossil fuel use in transportation, electric utilities, and other sectors. Taxes on fossil fuels that align prices with social costs could contribute to improving the environment.

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Because policies that raise prices are unpopular, however, one response to the underpricing of fossil fuels has been to subsidize activities that reduce fossil fuel consumption, such as investments in energy conservation or the use of alternative energy sources. These subsidies can themselves create inefficiencies by distorting choices among competing technologies and are in general less cost-effective in reducing fossil fuel use than policies that raise the cost of fossil fuel

use directly, allowing households and businesses to select the best ways to respond.

### *Environmentally Harmful Tax Subsidies*

The tax code currently contains incentives that increase pollution and greenhouse gas emissions by encouraging production of fossil fuels or consumption of energy with a high fossil fuel content. **Production subsidies** directly encourage domestic production of oil, gas, and coal, contributing to increased air pollution and greenhouse gas emissions. The overall harmful effect on global warming of some incentives will be mitigated, however, to the extent domestic output simply displaces imports or increases U.S. exports. With import or export displacement, the subsidies will primarily affect the location of production, instead of world prices and global energy use. **Consumption subsidies** for energy-intensive activities, such as automobile use or electricity consumption, however, do raise consumption of fossil fuels in the United States, with only minor offsets from reduced consumption in the rest of the world.<sup>2</sup>

### *Tax Incentives, Environmental Policy, and Energy Security*

The ongoing and intensifying conflicts in the Middle East have once again elevated concerns about U.S. reliance on imported oil and led some people to advocate policies to reduce oil consumption or imports. Policies to encourage conservation or more use of renewable energy simultaneously advance the goals of environmental quality and reduced dependence on oil. But some policies to reduce oil dependency, in particular tax provisions that subsidize production or use in electricity generation of coal or coal-based synthetic fuels, reduce oil and gas consumption at the cost of increased pollution and greenhouse gas emissions.

## II. FOUR HARMFUL TAX EXPENDITURES

One part of a strategy to make the tax law more environmentally friendly is to eliminate or cut back tax expenditures that are harmful to the environment. Among the production subsidies worth review are expensing of exploration and development costs, percentage depletion, and the alternative fuels credit. A subsidy that encourages fuel consumption is exemption of the fringe benefit for parking.

These four subsidies were selected for review based on their cost—all cost over \$1 billion per year between 2006 and

**Table 1 Four tax expenditures to consider for elimination**

Tax expenditure	Revenue loss to federal government (2006-2010)	
	JCT estimate	U.S. Treasury estimate
Expensing of exploration and development costs of fuels	\$5.6 billion	\$3.7 billion
Excess of percentage depletion over cost depletion for fuels	\$5.3 billion	\$3.2 billion
Alternative fuel production credit	\$8.8 billion	\$6.1 billion
Tax-exemption of qualified parking expenses	\$22.1 billion	\$15.2 billion

Note: for the first three expenditures, the JCT and Treasury estimates differ due to the use of different economic assumptions, different characterizations of cost recovery rules under the baseline income tax, and changes in taxpayer behavior that occurred between the time when the JCT estimates were published (April 2006) and the time when the Treasury estimates were published (February 2007). For tax-exemption of qualified parking expenses, the JCT estimate also includes the costs of subsidies for mass transit and commuter highway vehicles. Treasury separately estimates that the exclusion of employer-provided transit passes costs \$3.6 billion between 2006 and 2010.

Sources: Joint Committee on Taxation, Estimates of Federal Tax Expenditures for Fiscal Years 2006–2010, available at <http://www.house.gov/jct/s-2-06.pdf>, Office of Management and Budget, Budget of the United States Government, Fiscal Year 2008, Analytical Perspectives, pp. 287–290, available at [www.house.gov/jct/s-2-07.pdf](http://www.house.gov/jct/s-2-07.pdf)

2010 according to JCT estimates—and the fact that they encourage additional production or domestic consumption of fossil fuels (Table 1). The tax law also contains many smaller and more targeted subsidies with adverse effects that this review does not consider.<sup>3</sup>

### Selected Production Tax Expenditures

This section considers a few key production tax incentives: (1) expensing of exploration and development costs of fuels; (2) percentage depletion; and (3) the alternative fuel production credit.

#### *Expensing of Exploration and Development Costs of Fuels*

Independent oil producers can deduct immediately intangible drilling costs (IDCs) for investments in domestic oil and gas wells and exploration and development costs for other fuels. IDCs consist of wages, machinery used for grading and drilling, and unsalvageable materials used in developing the wells. Integrated oil companies may deduct 70 percent of such costs and recover the remaining 30 percent over 5 years with cost-depletion deductions. Because these expenses occur prior to production and are properly attributable to future output, normal income tax rules would treat them as capital costs and allow deductions for depletion only as the resources from the well are extracted. Accordingly, both Treasury and JCT consider expensing of exploration and development costs as tax expenditures, relative to a baseline

tax law that allows the costs to be capitalized and recovered over 5 years.

Expensing of intangible drilling costs has been part of the tax law since 1916.<sup>4</sup> The Treasury Department’s 1984 Tax Reform proposal recommended replacing expensing of IDCs with cost depletion over the estimated life of the property, with deductions indexed to changes in the price level, but President Reagan’s subsequent 1985 proposal and the Tax Reform Act of 1986 retained expensing.<sup>5</sup>

The Treasury Department in 2007 estimated that the expensing of exploration and development costs will reduce revenues by \$3.7 billion between 2006 and 2010. For the same period, JCT in 2006 estimated a revenue loss of \$5.6 billion—slightly over \$1 billion per year. The revenue effect consists of two parts. First, there is a revenue loss on new investments because the full cost is deducted immediately, instead of 20 percent being deducted if the cost were to be recovered over 5 years. Second, there is an offsetting gain because the taxpayer has no further deductions on investments made in the previous four years. Because the taxpayer can ultimately deduct the full investment under both current law and a rule allowing a 5-year recovery, there would be no revenue effect if the amount of investment were the same in every year. With investments growing, however, the additional amount deducted from expensing of new properties exceeds the reduction in cost depletion deductions from

older properties, leading to a permanent net annual revenue loss from the acceleration of deductions.<sup>6</sup>

The Congressional Budget Office (CBO) reported in February 2005 that repealing expensing for productive properties and replacing it with 5-year amortization would raise \$17.1 billion between 2006 and 2010, based on a JCT estimate. The estimated gain from repeal is higher than the tax expenditure because repeal would apply only to *new* investments, so there is no offset in the first few years from lower depletion deductions on prior-year investments. After the first 5 years, the annual revenue gain from repeal is similar to the estimated annual loss from the tax expenditure.

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### **Percentage Depletion**

Under normal income tax treatment, all expenses in developing energy and mineral properties would be capitalized into the basis of the properties and recovered over time as output is extracted from the wells or mines. IDCs (see above) can be expensed for many producers; the remaining costs are those incurred in locating and acquiring properties. Under percentage depletion, producers can recover these remaining costs by claiming as a depletion allowance a fixed percentage of gross receipts from the property. Over time, the sum of these deductions can be several times the original cost of the investment.

Congress enacted percentage depletion in 1926 to encourage development of oil and gas. Until 1969, the percentage depletion rate was 27.5 percent for oil and gas. Percentage depletion was also allowed for other fuels and non-fuel minerals at varying rates.

Between 1969 and 1976, Congress enacted several tax reform bills that reduced percentage depletion rates and eliminated percentage depletion for integrated oil producers. These changes occurred during a period of sharply rising world oil prices, supply interruptions, and public resentment of oil industry profits. Currently, percentage depletion is

available only to independent producers with output of less than 1,000 barrels per day and royalty owners. (Independent producers are firms without refining and distribution operations.) Percentage depletion rates are 22 percent for uranium; 15 percent for oil, gas, and oil shale; and 10 percent for coal. The deduction is limited to 100 percent of net income from the property for oil and gas and 50 percent of net income for most other energy resources, but deductions can still exceed the taxpayer's investment in the property.

Both Treasury and JCT measure the value of the preference by assuming all costs that are not currently expensed would otherwise be recovered through cost depletion. Treasury estimated in 2007 that the excess of percentage depletion over cost depletion will reduce revenues by \$3.2 billion between 2006 and 2010, while JCT in 2006 estimated the cost over the same period at \$5.3 billion.

### **Alternative Fuel Production Credit**

The Windfall Profit Tax Act of 1980 established a production credit of \$3 per barrel of oil-equivalent for production of alternative fuels. Qualified fuels available for the credit are oil produced from shale and tar sands; gas from geo-pressured brine, Devonian shale, coal seams, tight formations and biomass; liquid, gaseous or solid synthetic fuels produced from coal; fuel from qualified processed formations or biomass; and steam from agriculture products. The credit is indexed to changes in the GDP deflator. In 2006, it was worth about \$7.05 per barrel, but it phases out as the price of crude oil rises between \$23.50 and \$29.50 per barrel in 1979 dollars (\$55 and \$69 in third quarter 2006 prices).

The credit is not available for investments after July 1, 1998, or production from those facilities after January 1, 2008, so without further extension most of it will expire. Treasury estimates the credit will cost \$6.1 billion between 2006 and 2008 and cost another \$2.3 billion in 2005. JCT in 2006 estimated the credit will cost \$8.8 billion between 2006 and 2008, excluding the effects of changes in the Energy Policy Act of 2005.

The Energy Policy Act of 2005 made the alternative fuels credit subject to the limitations applicable to the general business credit and added a production credit for qualified facilities that produce coke or coke gas. The credit for coke and coke gas is indexed to inflation beginning in 2004, so it is

lower than other credits (close to \$3 per barrel), but also less likely to phase out. JCT estimated the changes in the credit in 2005 would cost \$0.5 billion over 5 years and \$0.1 billion over 10 years.

### Rationales for Eliminating or Scaling Back Production Subsidies

The incentives for oil and gas production provide much more favorable tax treatment to oil and gas extraction than is generally afforded to capital investment in other industries. They tilt the allocation of capital toward fuel development and away from other investments with a higher pretax return and higher economic productivity.

For example, a recent CBO study estimated that the corporate effective tax rate on oil and gas investments is only 9.2 percent, compared with an effective tax rate of 26.3 percent on all corporate assets. Petroleum and natural gas structures (e.g., wells) have the lowest effective tax rate among all the assets that the CBO study lists.<sup>7</sup> One study estimates an effective tax rate on mining structures (including oil and gas wells) of 7 percent, compared with 30 percent for all assets.<sup>8</sup> Another study has estimated a 16.9 percent effective tax rate for mining shafts and wells, compared with a 34.5 percent effective rate for all corporate assets.<sup>9</sup>

The preferences may increase development of oil, gas, and other fuels in the United States, but the extent of the increase is unclear. U.S. crude oil production has been declining steadily over the past two decades, reflecting both low oil prices and reduced reserves, but the incentives may have made the decline in production less than it would otherwise have been. To the extent the incentives do increase domestic oil and gas production, this mostly substitutes domestic production for imports. The United States now accounts for less than 10 percent of world crude oil production,<sup>10</sup> so small percentage changes in U.S. production would not affect world oil prices or consumption of fossil fuels very much. Based on estimates from different studies about supply and demand responses to changes in the world oil price, Gilbert Metcalf estimates that a 10 percent reduction in the cost of domestic oil would reduce the world oil price by between 0.1 and 0.7 percent, with a central estimate of 0.4 percent.<sup>11</sup> Metcalf further notes that GAO estimates that all the production incentives are worth only about 2 percent of the value of domestic crude oil, so

that the effect of the incentives on the world oil price is probably less than 0.1 percent.<sup>12</sup>

In addition to subsidizing additional output, expensing and percentage depletion also tilt the playing field toward independent producers, so they develop a higher share of U.S. oil and gas resources than they otherwise would. This could reduce production efficiency in cases where the independents are not the lowest cost producers. It makes the effect on domestic output per dollar of revenue loss smaller than the effect of a more widely available subsidy, with some of the revenue loss reflecting an income transfer to favored producers. The limitation to independents makes the subsidy more politically sustainable, however, because the principal beneficiaries are U.S. domestic businesses instead of large multinational corporations.

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Several arguments have been advanced in defense of retaining the incentives for domestic oil and gas production. Proponents of maintaining expensing of IDCs sometimes claim these costs are more analogous to R&D expenses than investments in machinery and buildings and therefore should receive the same treatment (expensing) as R&D. (The Treasury and JCT, however, also list expensing of R&D as a tax expenditure line item). Proponents of the subsidy also claim that increased domestic production reduces U.S. dependence on oil imported from insecure sources, although a counterargument is that more rapid exhaustion of domestic supplies reduces security in the long run.

Removal of any tax subsidy imposes capital losses on investors in the subsidized industry, some of whom may not have benefited from the preference because the price they paid for shares incorporated the capitalized value of the tax benefit.<sup>13</sup> Because capital losses of removing percentage depletion would fall mostly on domestic producers and investors in selected regions instead of on owners of large multinational corporations with widely diversified invest-

ments and share ownership, eliminating it would likely encounter larger resistance than cutting back on expensing for integrated producers.

The credit for alternative fuels was meant to reduce U.S. dependence on imported oil by encouraging production of oil and gas from other resources and in particular by utilizing the large coal reserves available in the western United States. There is some evidence that the credit did stimulate some additional production from alternative sources in its early years, especially of non-conventional gas wells, but the subsidized output never accounted for more than 5 percent of U.S. natural gas production.<sup>14</sup> The additional output also contributed to environmental degradation in the western states.<sup>15</sup> Further, recent press reports have exposed substantial abuse in the use of the credits. Although the credit is supposed to induce substitution of coal for oil, some taxpayers have claimed the credit based on minor changes in the chemical composition of coal. Some companies simply spray newly mined coal with diesel fuel or other substances and then claim the synthetic fuels credit—a process referred to as “spray and pray” because users “hope no one will peek closely.”<sup>16</sup>

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Overall, the credit supports output that does not meet a market test, produces adverse environmental effects, and has been a source of considerable abuse. Today, the credit is mostly ending, with remaining credits losing value because of rising oil prices and the rising prices making alternative technologies more attractive without a subsidy. Given the persistence of this credit beyond its original expiration date, however, this might be an opportune time to get the credit off the books once and for all.

In conclusion, the production subsidies treat investments in oil and gas extraction more generously than investments in other industries, encouraging investments that would not

meet a market test under a neutral tax policy, and subsidize synthetic fuel production that fails to meet a market test and often has adverse environmental effects. Eliminating the subsidies would improve economic efficiency, reduce the budget deficit, and be consistent with an environmentally friendly tax code, although the gains in lower greenhouse gas emissions would be modest. The current high oil prices provide an opportunity to get these tax incentives off the books at a time when economic dislocations in affected industries would be minimal.

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#### **Tax Exemption for Qualified Parking Expenses**

Federal tax law excludes from income and payroll tax certain employer-paid transportation benefits. For tax year 2007, these benefits included employer-provided parking expenses of up to \$215 per month and mass transportation expenses (for transit passes and qualified vanpools) of up to \$110 per month. The monthly limits on these benefits are indexed to changes in the CPI.

Generally, fringe benefits are taxable as employee compensation. This equalizes the tax treatment of employees who receive cash compensation and those who receive in-kind benefits, such as employer-provided cars and housing. But there have always been exceptions in the tax law, most notably the longstanding tax-free status of employer-paid health care and health insurance benefits.

Beginning in 1984, Congress enacted legislation to clarify the tax treatment of numerous forms of fringe benefits, including transportation subsidies. In the Energy Policy Act of 1992, Congress broadened the definition of *qualified* transportation fringe benefits to include transit passes and transportation in commuter highway vehicles (vanpools) in addition to parking and imposed tax-free limits of \$60 per month (now \$110) on transit/vanpool benefits and \$155 per month (now \$215) on parking.<sup>17</sup>

The Taxpayer Relief Act of 1997 allowed employers to offer qualified parking to their employees in lieu of salary. Previously, employers could offer tax-free parking to all or some employees, but could not offer employees the choice between tax-free parking and (taxable) cash compensation. Based on experience in California, advocates predicted that this “parking cash-out” proposal would induce some people to give up parking benefits, leading to less vehicle use, congestion, and pollution.<sup>18</sup> The 1998 Transportation Equity Act for the 21<sup>st</sup> Century extended the ability to exchange transportation fringe benefits for cash to transit passes and commuter highway vehicle benefits.

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JCT estimated in 2006 that the exclusion of employer-paid transportation benefits would reduce income tax revenue by \$22.1 billion between 2006 and 2010, but did not supply separate estimates of the costs of subsidies for parking, mass transit, and commuter highway vehicles. Treasury estimated in 2007 that the exclusion of reimbursed employee parking benefits would reduce revenue by \$15.2 billion between 2006 and 2010. The Treasury estimate includes only the exclusion of tax on the value of parking expenses purchased or reimbursed by the employer. Treasury reports they are unable to estimate accurately the exclusion of the value of parking on premises the employer owns.

### ***Analysis and Policy Options***

Compared with full taxation of the fringe benefit, exclusion of a portion of employer-paid parking expenses encourages commuting by vehicles and contributes to more fossil fuel use, global warming, and more pollution and congestion. The effect on car use of the subsidy to parking is offset only to some degree by the smaller tax subsidy available to mass transit and vanpools. Inclusion of all fringe benefits in the tax base would be neutral in the treatment of different types of compensation, improve fairness in the relative tax treatment of employees who receive compensation in different forms, and improve economic efficiency and the efficiency

of urban land use by making employees confront the full resource cost of parking facilities.

Allowing individual employees to choose between cash and tax-free parking benefits may reduce private automobile use by encouraging employees with other commuting alternatives to give up their employer-provided parking space in exchange for an equal (pretax) value of cash. But allowing tax-free parking to be a voluntary fringe benefit at the individual employee level (similar to cafeteria plans for uncovered medical expenses and child care) may also cause some employees who would not otherwise have received subsidized parking to choose the benefit. When “parking cash-out” was enacted in 1997, JCT estimated it would on balance increase revenue, based on an estimate that the number of commuters who cash out their parking subsidies would exceed the additional number who would pay for parking with pre-tax dollars.<sup>19</sup> There have been no published estimates of the net effects of parking cash-out on automobile use since then; its net effect is unknown.

The most direct ways to reduce the current subsidy to automobile use would be either to make the cash value of all parking benefits taxable or to reduce the monthly exemption amount. This would be politically unpopular, however, because most employees in the United States receive employer-provided parking benefits and do not consider them income. Furthermore, many lack alternatives to driving to work. In addition, there could be administrative and valuation issues where employers supply parking on their premises, and taxing only purchased parking would discriminate between employers who supply parking on-site and those who purchase commercial parking.

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An alternative is to require firms who supply purchased parking to allow parking cash-out as a condition for retaining the tax-free fringe benefit. Current law does permit firms to allow their employees to cash out parking benefits, but also

enables firms who otherwise would not have provided parking to their employees to allow them to purchase parking as a tax-free fringe benefit. If all firms that currently supply tax-free purchased parking benefits to employees are required to allow cash-out as a condition for retaining the fringe benefit, this would encourage more employees to stop driving to work, compared with current law, because it would raise cash compensation for those who do not drive to work, without offering additional tax benefits for those who do.

### III. OTHER TAX EXPENDITURES AFFECTING ENERGY USE AND THE ENVIRONMENT

The federal tax law contains numerous tax incentives that directly affect energy markets beyond those discussed in this paper. In addition, other provisions of the tax code that are not directly related to energy production or environmental technologies could affect greenhouse gas emissions by altering the composition of economic activity.

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*Eliminating or reducing these incentives would improve the environment, reduce the budget deficit, and improve economic efficiency by making the tax law more neutral in its treatment of investments.*

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#### Other Tax Incentives for Energy Production, Alternative Energy Technologies, and Conservation

The tax law contains other subsidies for domestic energy production as well as incentives for the use of alternative sources of energy and for energy conservation. These incentives have complex and varying objectives. Some of them encourage a variety of coal production technologies to reduce U.S. dependence on oil and promote less polluting forms of coal use, others subsidize renewable energy in electricity production, and still others encourage conservation. Tax incentives are generally a complex and inefficient way to promote the sometimes parallel and sometimes conflicting goals of advancing energy security and reducing global warming, especially compared with policies that raise energy costs directly, either through taxes on consumption of fossil fuels or a system of limitations on fossil fuel use combined with tradable permits.

Recently, the Energy Policy Act of 2005 added numerous tax benefits for investments in alternative energy facilities, domestic energy production, energy conservation equipment, and alternative motor vehicles. JCT estimated the incentives in total would reduce revenue by \$8.4 billion in 2006–10 and \$14.5 billion in 2011–15, offset in part by extensions of trust fund excise taxes that raise \$1.5 billion in 2006–10 and \$3.0 billion in 2011–15. The largest provisions in revenue terms are those that:

- Extend and modify credits for production of electricity from a variety of renewable energy sources, including hydropower (\$1.1 billion over 5 years)
- Allow individuals to claim tax credits for qualifying vehicles using alternative motor fuels, including qualified fuel cell vehicles, dedicated alternate fuel vehicles (those using only alternate fuels), hybrid vehicles, and lean-burn technology motor vehicles (\$0.8 billion over 5 years)
- Allow firms to deduct immediately 50 percent of the cost of certain qualified refining property (\$0.7 billion over 5 years)
- Create two new credits for investments in technologies used in clean coal facilities and a credit for certain gasification projects that convert coal, petroleum residue, biomass, and other materials into a synthetic gas for direct use or subsequent conversion (\$0.6 billion over 5 years)
- Allow individuals to claim a tax credit of 30 percent of expenditures up to \$2,000 for photovoltaic and solar heating property not used for heating swimming pools and hot tubs (\$0.6 billion over 5 years)
- Allow oil and gas producers to amortize geological and geophysical expenditures over 2 years (\$0.3 billion over 5 years and \$1.0 billion over 10 years)

These and other proposals in the legislation are a mixed bag in terms of their effects on the environment and greenhouse gas emissions. The proposals to promote renewable energy use in electricity and solar equipment in homes are beneficial, while proposals to subsidize new refining property, allow oil and gas companies to amortize geological and geophysical expenditures, and expand the alternative fuels credit (the latter is discussed in the previous section) work in the opposite direction.

Other provisions have mixed effects on improving the environment and reducing greenhouse gas emissions. The subsidy for alternative fuel vehicles encourages more purchases of alternative vehicles within any weight class (beneficial), but also subsidizes heavier vehicles (harmful). Subsidies for clean coal technology encourage substitution of clean coal for dirty coal (beneficial for pollution reduction), but also encourage substitution of coal for natural gas (harmful). Although the use of new technologies that “sequester” the carbon emissions from coal could reduce greenhouse gas emissions, the legislation supports but does not require the use of sequestration techniques. As Martin Sullivan notes, “by promoting coal, which has the highest carbon emissions of any fossil fuel, the coal credits, which have no sequestration requirements, might actually be promoting global warming.”<sup>20</sup>

### Broader Effects of the Tax Code

The U.S. federal income tax generally affects the composition of economic output in ways that could either increase or decrease greenhouse gas emissions. For example, tax provisions that favor investment in owner-occupied housing (e.g., the mortgage interest deduction) increase demand for electric power, home heating oil, and motor fuels by subsidizing bigger homes and by so doing also help to foster urban sprawl. Analysis of the net effect of the tax code on greenhouse gas emissions is beyond the scope of this policy brief, but the effects of broader tax provisions on greenhouse gas emissions could exceed the effects of more narrowly targeted subsidies for fossil fuel production.

## IV. CONCLUSIONS

U.S. federal tax law contains several tax subsidies for fossil fuels, including expensing of exploration and development costs, percentage depletion, and an alternative fuel production credit. Eliminating or reducing these incentives would improve the environment, reduce the budget deficit, and improve economic efficiency by making the tax law more neutral in its treatment of investments. The tax law also subsidizes automobile commuting by allowing tax-free benefits for parking. The revenue cost of the tax-free parking benefit exceeds the cost of the production incentives and the additional automobile use the benefit encourages also adds to greenhouse gas emissions. Reducing the annual limit on the exempt benefit or requiring employers who supply the benefit for off-premises parking to give their employees the option to cash it out would reduce automobile commuting and help level the playing field among transportation options.

Eliminating these incentives by themselves can be only a small part of any overall strategy to reduce climate change. The effects of current production incentives on global warming are small because the incentives do not stimulate much additional fossil fuel production, and most of any increased production the subsidies do induce displaces imports instead of increasing total worldwide fossil fuel use. Politically feasible approaches to reducing the tax benefit for parking, such as requiring mandatory parking cash-out, will still leave most workers commuting by car. Even so, eliminating or reducing the production subsidies and modifying the fringe benefit for parking would improve economic efficiency, reduce the federal budget deficit, and be a good first start toward a more environmentally friendly tax policy.

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For more information about this or other *Tax Reform, Energy and The Environment* policy briefs, please contact Craig Hanson at WRI or David Sandalow at The Brookings Institution.

## NOTES

1. The Treasury tax expenditure lists are reported annually in the federal budget. See Executive Office of the President of the United States, 2007. *Analytical Perspectives, Budget of the United States Government, Fiscal Year 2008*. Washington, DC: U.S. Government Printing Office, pp. 285-328.
2. To the extent higher U.S. demand raises energy prices, there could be some reduction in consumption outside of the U.S. but also some increased energy production.
3. The tax law also includes broader incentives that benefit energy extraction as well as other industries. One example is the deduction for domestic manufacturing activities in the American Jobs Creation Act (AJCA) of 2004. The new House Democratic majority has proposed to eliminate the deduction for oil and gas extraction under the AJCA. While the deduction does reduce taxes on the oil industry, it does not favor the oil industry relative to other domestic manufacturing activities.
4. See Salvatore Lazzari, "Energy Tax Policy." CRS Issue Brief for Congress, Washington, DC: Congressional Research Service. May 25, 2006.
5. The Tax Reform Act increased the *relative* preferential treatment for domestic oil and gas production, by reducing preferential treatment of other investments, while retaining most oil and gas preferences. See Robert Lucke and Eric Toder, "Assessing the U.S. Federal Tax Burden on Oil and Gas Extraction," *Energy Journal* 8-4, October 1987.
6. The Treasury and JCT revenue estimates include only the effects of expensing investments in successful properties. The tax law allows the expensing of the costs of unsuccessful or abandoned properties (dry holes). This provision would also be considered a tax subsidy if one viewed the costs of dry holes as part of the overall cost of searching for oil and gas, and therefore properly attributable to the output of successful properties. But the agencies do not include expensing of dry holes on their tax expenditure lists.
7. See Congressional Budget Office, *Taxing Capital Income – Effective Tax Rates and Approaches to Reform*, CBO Paper, Washington DC. October 2005, Table 2, pp. 10-11.
8. Jane Gravelle, "Capital Income Tax Revisions and Effective Tax Rates," CRS Report for Congress, Washington DC: Congressional Research Service. January 5, 2005, Tables 1 and 2.
9. James Mackie, "Unfinished Business of the 1986 Tax Reform Act: An Effective Tax Rate Analysis of Current Issues in Corporate Taxation," *National Tax Journal* LV-2, June 2002, pages 293-338.
10. Author's calculation, based on Energy Information Agency, Table 2.1, World Oil Balance, 2002-2006 at <http://www.eia.doe.gov/emeu/ipstr/t21.xls>
11. Gilbert Metcalf, "Federal Tax Policy Towards Energy," prepared for National Bureau of Economic Research conference, Tax Policy and the Economy, Washington, DC, September 14, 2006.
12. Government Accountability Office, "National Energy Policy: Inventory of Major Federal Energy Programs and Status of Policy Recommendations," GAO-05-379, 2005, cited in Metcalf, above.
13. For a discussion for the case that removing tax preferences creates unfairness, even as it improves efficiency, see Martin Feldstein, "On the Theory of Tax Reform," *Journal of Public Economics*, vol. 6, 1976, pages 77-107.
14. U.S. Department of Energy, Energy Information Agency, Office of Integrated Analysis and Forecasting, *Federal Financial Interventions and Subsidies in Energy Markets 1999: Primary Energy*, Article 29, The Fuel Production Credit.
15. Friends of the Earth, "Paying for Pollution – a Green Scissors Report." <http://www.foe.org/camps/eco/payingforpollution/non.html>.
16. See Donald L. Bartlett and James B. Steele, "The Great Energy Scam: How a Plan to Cut Oil Imports Turned into a Corporate Giveaway." *Time*, October 6, 2003. See also Martin A. Sullivan, "Multibillion Dollar Coal Credit: Lots of Form, Little Substance." *Tax Notes* vol. 101, Number 1, page 34. October 6, 2003, page 34.
17. Professor Donald C. Shoup reports being told that the value of the cap set in 1992 was equal to the average cost of commercial parking on Capitol Hill and thereby exempted from tax the parking subsidies of members of Congress. See Donald C. Shoup, *Parking Cash Out*. Chicago Planning Authority Service, 2005, chapter 24, p.3.
18. California Air Resources Board, "Evaluating the Results of Parking Cash-Out: Eight Case Studies." Principal Investigator: Donald C. Shoup. University of California at Los Angeles. September 1, 1997.
19. See Donald C. Shoup, *op. cit.*
20. See Martin Sullivan, "Tax Credits Ease Economy's Shift to Coal." *Tax Notes* vol. 112, Number 11, page 907, September 11, 2006.

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