

# **Federal Oil Subsidies: How Can They Best Be Targeted?**

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**Prepared for the National Commission on Energy Policy**

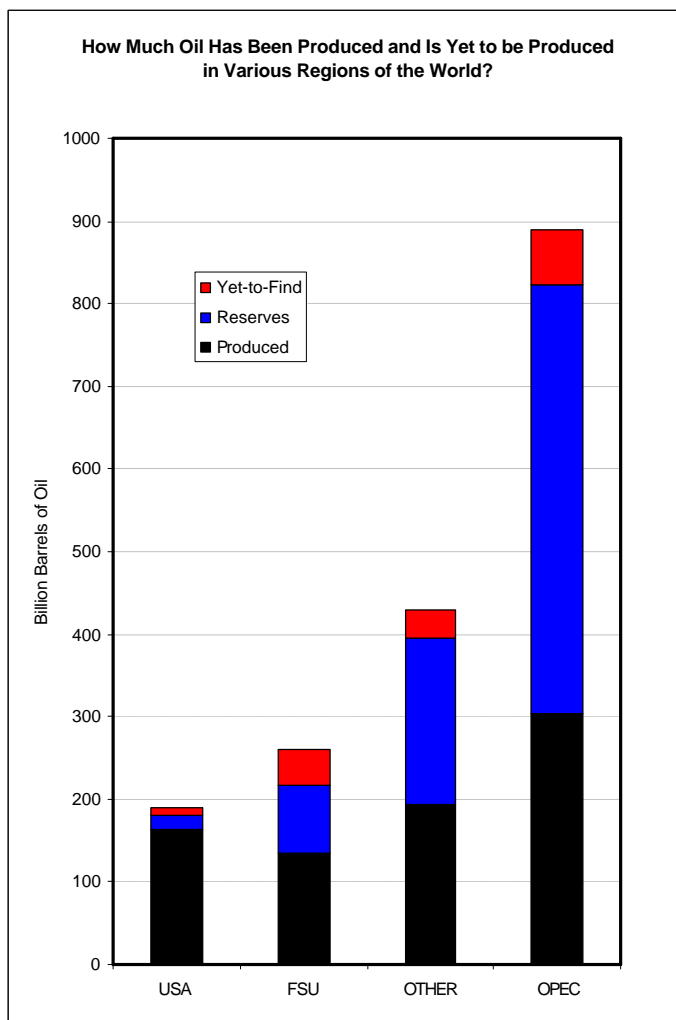
**May 20, 2004**

## Introduction

Much of federal petroleum policy is propelled by the stated desire to reduce dependence on oil imports and increase domestic supplies. The notion is that substantial domestic oil resources remain untapped, and, once developed, could displace imports barrel-for-barrel. In reality, this is not always the case, since the world's largest oil producers can profitably extract and transport oil to the U.S. at prices far below those needed to make many marginal or remote oil fields in the U.S. profitable to drill.

The U.S. also faces the stark reality (see Figure 1) that about 80% of all the oil that will ever be found within its borders has already been extracted and burned, while many OPEC countries are only just beginning to tap their substantial reserves.

**Figure 1**  
**Less than 3% of the World's Remaining Oil Resources are within U.S. Borders**



On the other hand, U.S. opportunities to cost effectively reduce oil consumption are among the largest and most lucrative in the world. The U.S. is the world's largest single oil consumer, and burns most of its oil in a fleet of vehicles that has grown steadily less efficient over the last two decades. Average number of vehicles per person and number of miles driven per vehicle also continue to rise steadily.

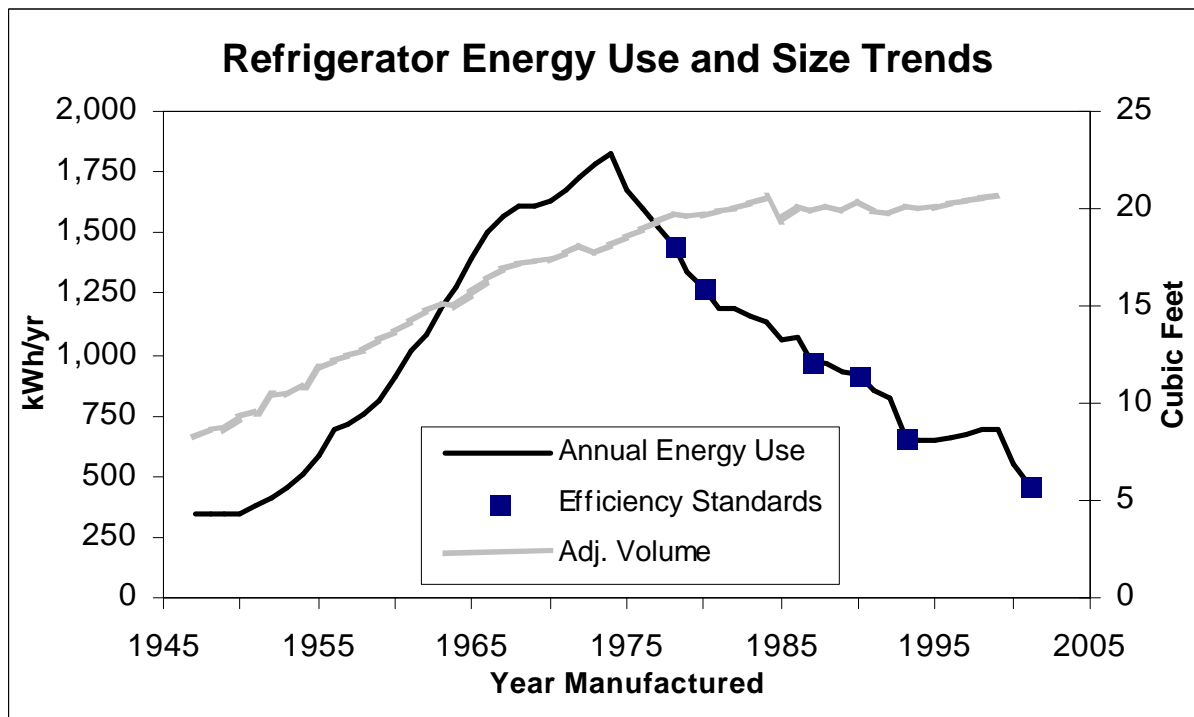
In response, many in the environmental community have called for mandatory improvements in the fuel economy of new vehicles. Indeed, there appear to be a number of technological means of improving new vehicle fuel efficiency whose incremental costs are cheaper per gallon of gasoline saved than the cost of domestically finding, refining, and selling a gallon of gasoline at the pump.<sup>1</sup>

However, it is unusual to expect mandatory fuel economy standards to *lead* the market to new fuel economy

<sup>1</sup> John DeCicco, Feng An, and Marc Ross, ACEEE, *Technical Options for Improving the Fuel Economy of U.S. Cars and Light Trucks by 2010-2015*, June 2001.

technologies instead of *following* the market to lock in savings already achieved by market leaders. This historical sequence is perhaps easiest to see by analogy in the refrigerator market (Figure 2).

**Figure 2**  
**Average Refrigerator Size Continued to Grow from 1975 to 2000,**  
**While Average Refrigerator Energy Use Fell by 70%.**



### Market Based Approaches

In this oft-cited example, it is evident that mandatory efficiency standards have helped push average refrigerator energy usage downward. What is not shown here but is equally true, however, is that tens of millions of dollars of utility energy efficiency programs lured manufacturers to develop the new technologies needed to achieve higher efficiency. At the same time, labeling efforts like EnergyGuide mandatory labels and ENERGY STAR voluntary labels made it easy for consumers to determine which choices would save the most money on energy bills. Together, these market tools were instrumental in enabling and encouraging successive technological leaps by leading manufacturers. Standards came along afterward to mop up, compelling lagging manufacturers to achieve what the leaders had already shown was possible. More importantly, ever-tighter standards were politically *possible* because voluntary programs had already proven that more efficient refrigerators could be made and sold profitably, reducing manufacturer opposition to tighter standards.

Financial incentives have been employed in very limited ways in the vehicles market to discourage the sale of the most gas guzzling cars and encourage the sale of hybrid vehicles. But perhaps 90 to 95% of the vehicles sold in a given year are subject to no differential

government financial incentive, positive or negative, tied to their fuel economy. Moreover, no federal or state sources of funding are routinely deployed to help consumers reduce their fuel consumption through measures to make their existing vehicles more efficient, even though such savings opportunities are even larger than near term savings from improving new vehicles.

This paper explores three scaleable, market-based program options for reducing gasoline use in motor vehicles, estimating costs per saved gallon of gasoline for each. It also examines a handful of past and present federal subsidies to the oil industry, assessing annual expenditures, resulting increases in domestic oil supply (where they can be estimated), and average cost per additional gallon of gasoline contributed to U.S. supply. Lastly, it compares the cost per saved gallon of various demand side program options to the cost per produced gallon of various federal oil subsidies, suggesting the idea of a fair and open competition between the two for future federal dollars. We argue that federal money spent to reduce dependence on imported oil should flow to those options that can deliver the largest number of gallons per dollar through supply additions or demand reductions.

### **Federal Oil Subsidies**

In general, U.S. oil subsidies are not tied to incremental increases in oil supplies or assessed by Congress for cost effectiveness on a dollars per gallon basis. According to the Energy Information Administration, “programs that offer small subsidies for products for which there are huge existing markets tend to function mostly as transfer programs; that is, their market impacts are negligible, and for the most part they simply redistribute funds from one part of the economy to another, with the Government acting as the intermediary.”<sup>2,3</sup>

Although oil subsidies do not result in substantial increases in oil production, they are significant public spending programs. Four examples of these spending programs are discussed in this report. They include: (1) excess of percentage of cost depletion; (2) expensing of exploration and development costs; (3) oil and gas exception from passive loss limitation; and (4) credit for enhanced oil recovery costs. Estimates of federal revenue losses for each of these petroleum industry incentives are detailed in Table 1 below.

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<sup>2</sup> Energy Information Administration, “Federal Financial Interventions and Subsidies in Energy Markets 1999: Primary Energy,” SR/OIAF/99-03, September 1999.

<sup>3</sup> Note: Taxpayers for Common Sense, the non-profit organization that analyzes tax subsidies and runs the “Green Scissors Campaign”, supports EIA’s claim in its own publications and analyses.

**Table 1**  
**Estimates of Costs of Petroleum Industry Tax Incentive Programs**

<b>TAX INCENTIVE</b>	<b>DATE INITIATED</b>	<b>CUMULATIVE TOTAL THROUGH 2000</b> (adjusted to \$2000)	<b>PROJECTED 2004 ANNUAL COST</b> (million \$ in 2004)
Excess of percentage over cost depletion	1968	\$82 billion	\$400 to \$620
Expensing of exploration and development costs <sup>a</sup>	1968	\$43 to \$55 billion	\$270 to \$500
Oil and gas exception from passive loss limitation	1988	\$8 to \$11 billion	\$20 to \$25
Credit for enhanced oil recovery costs	1994	\$0.5 to \$1 billion	\$200 to \$400
<b>TOTAL</b>		<b>\$134 to \$149 billion</b>	<b>\$890 to \$1,540 million</b>

Sources: "Tax Incentives for Petroleum and Ethanol Fuel," GAO/RCED-00-301R, September 25, 2000; Energy Information Administration, "Federal Financial Interventions and Subsidies in Energy Markets 1999: Primary Energy," SR/OIAF/99-03, September 1999; Joint Committee on Taxation, "Estimates of Federal Tax Expenditures for Fiscal Years 2004 – 2008," December 22, 2003, <http://www.house.gov/jct/s-8-03.pdf>; Office of Management and Budget, "Budget of the United States Government," Fiscal Year 2005, <http://www.whitehouse.gov/omb/budget/fy2005/pdf/spec.pdf>

a. This estimate of the cash flow into the government for this tax provision does not necessarily reflect the true economic cost of this provision. A feature of tax deferrals is that they can cause the cash-basis tax expenditure to be negatively valued in some years. However, in present-value terms, current deferrals do have a real, positive cost to the government.

Excess of Percentage Over Cost Depletion, for Oil and Gas

Depletion, like depreciation, is a form of cost recovery for capital investments. Normally, capital assets are deducted from taxable income over a period of years, until the entire investment is written off. Percentage depletion allowances for oil allow the industry to write off a percentage of the gross income from oil production each year, as opposed to a percentage of the gross investment. As a result, deductions can actually exceed the original investment. While this tax provision was supposed to have primarily benefited smaller, independent oil companies, since 1990, percentage depletion has been allowed on transferred properties (even if the new owner is a large oil company) and exempted from the Alternative Minimum Tax.<sup>4, 5</sup>

Expensing of Exploration and Development Costs for Oil

This tax provision allows oil companies to immediately deduct many types of expenses from their taxable income that other industries must deduct over multiple years. Tax benefits apply whether the wells are productive or not. This scheme allows oil producers to deduct their expenses from gross income in the period incurred rather than over the productive life of the oil property. Larger oil producers can expense 70% of such costs and must deduct the remaining 30 percent over 5 years for wells that are successful, but can expense 100% of such costs for wells that are unsuccessful. Curiously enough, this encourages oil companies to look for oil, but not necessarily to find it.

<sup>4</sup> Congressional Research Service, *Tax Expenditures: Compendium of Background Materials on Individual Provisions*, Senate Committee on the Budget, December 1996 and [www.greenpeace.org/~climate/oil/fdsuiboil.pdf](http://www.greenpeace.org/~climate/oil/fdsuiboil.pdf)

<sup>5</sup> For a more detail discussion see: "Tax Incentives for Petroleum and Ethanol Fuel," GAO/RCED-00-301R, September 25, 2000.

### Oil and Gas Exception from Passive Loss Limitation

Owners of working interests in oil and gas properties are exempt from the passive income limitations.<sup>6</sup> These allow partnership and individual owners of oil and gas wells to offset financial losses from passive activities against active income. Exceptions to the passive loss rules have the effect of restoring the magnitude of the tax incentives to which they apply.

### Credit for Enhanced Oil Recovery Costs

A tax credit of 15% is provided for qualified tertiary oil recovery costs incurred in the production of oil on U.S. projects. Qualifying costs include tertiary injectant expenses, intangible drilling and development costs on a qualified EOR project, and amounts incurred for tangible depreciable property.<sup>7</sup>

While oil subsidies have had a long history as U.S. energy and tax policy, these expenditures have not been justified on the grounds that they increase marginal oil production. The U.S. Energy Information Administration and the U.S. General Accounting Office, the two agencies that have undertaken most of the analysis in this field, do not cite any increased oil production as a result of the aforementioned tax subsidies.<sup>8</sup> The Congressional and Senate Committees who are responsible for writing the laws affecting oil subsidies – House Ways and Means, Joint Committee on Taxation, and Senate Energy Committee – have not been provided with oil production estimates in the testimony delivered to them. The oil industry has testified repeatedly before Congress about continued oil subsidization, but has not estimated the volume of increased oil production as a result of tax subsidies.<sup>9</sup> As such, oil industry testimony on these subsidies is qualitative in nature, stating that “tax rules...encourage the tremendous capital investment that will be needed to meet U.S. and global energy demand growth.”<sup>10</sup>

Research on these programs has consistently failed to find evidence that the subsidies increase domestic oil supply, reduce imports, or cut oil prices. However, given the goal of this paper – to identify the most cost-effective means of meeting the nation’s oil needs – we turned to the American Petroleum Institute (API). Although API did not have these figures available, they were willing to make assumptions and calculate estimates of marginal oil production resulting from these subsidies. Their assumptions and calculations follow in italics below.

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<sup>6</sup> Information on exceptions to the passive activity rules for working interests in oil or gas properties can be found in IRC section 469.

<sup>7</sup> Information on the tax credit for enhanced oil recovery costs can be found in IRC section 43.

<sup>8</sup> Ecos’ conversations with EIA staff confirm that the Agency does not have any estimates for oil production resulting from oil subsidies, nor do they necessarily believe that significant oil production results from these tax provisions.

<sup>9</sup> See [www.api.org](http://www.api.org) : “Statement of the American Petroleum Institute, The Domestic Petroleum Council, and the US Oil & Gas Association, on the Role of Tax Incentives in Energy Policy,” Submitted for the Printed Record of the July 11, 2001 Hearing, Committee on Finance, US Senate and “Statement of the American Petroleum Institute, The Domestic Petroleum Council, and the US Oil & Gas Association To Accompany the Testimony of Charles N. MacFarlane, Assistant General Tax Counsel, Chevron Corporation Regarding the June 13, 2001 Hearing on the Effect of Federal Tax Laws on the Production, Supply and Conservation of Energy, Subcommittee on Select Revenue Measures, Committee on Ways and Means, U.S. House of Representatives.

<sup>10</sup> Ibid.

According to API, a very rough analysis of the four oil tax policies discussed in this paper indicates that such provisions would stimulate domestic oil and gas production as follows:

- *Using revenue estimates prepared by the Joint Committee on Taxation and Treasury, the provisions are assumed to result in a revenue cost of roughly \$1.7 billion per year.*
- *In 2002, the most recent year for which cost data is available, an estimated \$54 billion was spent by industry in adding an incremental 6.8 billion barrels of oil equivalent (BOE), implying an average cost of \$7.89 per BOE for these incremental reserves.*
- *Imposed on this cost structure, an annual tax benefit of \$1.7 billion would be equivalent to a 3.4% increase in the marginal value of those incremental resources to producers.*
- *Based on an assumed price elasticity of supply associated with gross reserve additions of between 0.1 (short-run) and 0.3 (long run), and an assumed constant reserve to production ratio of 10, we estimate the supply effect of the provisions to rise to about 100 thousand barrels a day BOE after 10 years, an increase of about 1.1%.<sup>11</sup>*

The volume of oil produced as a result of oil subsidies is heavily determined by the price elasticity asserted by API. However, oil supply tends to be highly inelastic in the short term.<sup>12</sup> That is, production will not increase no matter how high oil subsidies are, given that oil exploration, production, and refining require significant long-term investments. Moreover, as a percentage of industry profits, oil subsidies are not significant. Reports of oil industry profits of over \$30 billion in the first half of 2003<sup>13</sup> and increasing 17 percent in the first half of 2004<sup>14</sup>, place annual oil subsidies at roughly below 3 percent of industry profits and a much smaller share of industry expenditures. Thus, EIA's claim that a small subsidy attached to a huge market will not result in meaningful production volumes, just a transfer of wealth, is likely justifiable.

Likewise, the world oil price has fluctuated between \$17 and \$42 per barrel just since January 2002, a variation of +/- 42% around the midpoint of \$29.50. This suggests that a federal subsidy equivalent in value to the oil industry of a 3.4% price increase is not likely to have a tremendous impact on the long term price forecasting that they do to determine future oil exploration, production, and infrastructure investments. Natural market variations and uncertainties swamp the impact of the subsidies.

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<sup>11</sup> Ed Porter and Mark Kibbe, American Petroleum Institute, email communications to Debbie Gordon, April 2, 2004.

<sup>12</sup> Dr. Mark N. Cooper, "Fueling Profits: Industry Consolidation, Excess Profits & Federal Neglect Domestic Causes of Recent Gasoline and Natural Gas Price Shocks," Consumers Federation of America and Consumers Union, May 2004. See: <http://www.consumersunion.org/pub/oilprofits.pdf>

<sup>13</sup> James R. Healey, "Record Gas Prices Pump up Profits for Oil Companies," USA Today, August 28, 2003.

<sup>14</sup> Cooper, Op. Cit.

**Figure 3 – Oil Price Variations Since January 2002<sup>15</sup>**

### Recent World Crude Oil Price



Nevertheless, if a dollar per gallon price tag is to be put on oil subsidies, API's calculations are illustrative. The API analysis proposes that any short-term impact of the provisions is modest, but that the long-term impact of sustained subsidies of \$1.7 billion per year could be 36.5 million barrels of oil equivalent per year. If the overall cumulative effect of a given \$1.7 billion per year subsidy were to increase the domestic oil supply by 1.1%, this translates into a cost (before discounting) per incremental gallon of gasoline of about \$1.24.<sup>16</sup> Even this cost per gallon is likely smaller than the actual value, since the API analysis valiantly assumes that every federal subsidy dollar received by the industry is plowed into exploration for new domestic oil supplies. This argument strains credibility in a number of ways, perhaps most significantly with regard to the absence of a connection between the amount of incremental oil found and the payments received. It is as if the oil industry agreed to work for the federal government on a commission basis instead of salary, but would like to be paid in proportion to the amount of money it spends instead of the amount of oil it finds. Is the purpose of the subsidies to encourage the finding of oil or the spending of money?

<sup>15</sup> Personal communication, Grant Brummels, Ecos Consulting, May 14, 2004.

<sup>16</sup> 1.1% of 6.8 billion barrels is 74.8 million barrels. ORNL's *Transportation Data Book* indicates that a barrel of oil typically yields 19.2 gallons of gasoline (45.7% \* 42 gallons). 19.2 gallons per barrel \* 74.8 million barrels = 1.44 billion gallons of gasoline. \$1.7 billion / 1.44 billion gallons of gasoline = \$1.18 per gallon.

## The Utility Industry Analogue

A related and comparably massive energy industry – electric utilities – also operated for many decades under a model where public funds were commonly paid in proportion to money expended building new power plants instead of results (kilowatt-hours) delivered. The surest way for utilities in that era to increase revenues for shareholders was to spend money building things like power plants and power lines, and then put those items in the rate base for cost recovery from regulators. This became very costly during a downturn in demand in the 1980s. All the nuclear power plants ordered by utilities between 1974 and 1989 were canceled, leading to costs of more than \$20 billion for 115 abandoned nuclear plants. During the same time period, about two-thirds of coal-fired power plant orders were canceled at various stages of completion, adding further to the disconnection between expenditures and results on the supply side.<sup>17</sup>

In the aftermath arose the notion of least cost planning, which required electric utilities to rigorously compare various options for generating electricity with each other and with demand-side options for reducing energy usage on an equal basis – cost per kWh delivered. Regulators began to allocate public funding to the mixture of new electricity generation and programs to save electricity that could deliver kilowatt-hours for the lowest cost, treating a saved kWh as indistinguishable from one generated in a power plant.

The cumulative impact of utility-funded efficiency programs between the late 1980s and 2003 has been quite significant, though reliable, consistently accounted estimates of costs and savings over that period are still difficult to assemble. EIA-reported utility efficiency program expenditures varied from \$0.92 to \$1.76 billion/year between 1993 and 2000, averaging \$1.15 billion/year. Savings over the same period varied from 43,023 to 61,552 gWh/year, averaging 55,447 gWh/year.<sup>18</sup> Expenditures in one year tend to yield a stream of savings over the subsequent 3 to 10 years, so detailed time series analysis is required at a disaggregated level to accurately estimate the cost effectiveness of past efficiency programs. However, comparing average yearly expenditures to average yearly savings over the 1993 to 2000 period suggests typical costs of about 2.0 to 2.5 cents/kWh saved.

Whether such funding is entirely under the control of utilities as portfolio managers, controlled significantly by public utilities commissions, or collected and dispensed centrally through systems benefit charges (SBCs) is less important than its overall magnitude and impact. Between 1983 and 2003, we estimate that about \$15 to \$20 billion was invested by U.S. electric utilities in efficiency programs that reduced utility bills by roughly \$35 to \$45 billion.<sup>19</sup> These investments also spawned a competitive national industry of efficiency entrepreneurs that employ new technologies, training tools, and marketing strategies to save electricity cheaply. Rigorous measurement, evaluation, and verification efforts follow the implementation

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<sup>17</sup> See Ralph Cavanagh, Chris Calwell, David Goldstein, and Robert Watson, “Toward a National Energy Policy,” *World Policy Journal*, Spring 1989, p. 248.

<sup>18</sup> Dan York and Marty Kushler, ACEEE, *State Scorecard on Utility and Public Benefits Energy Efficiency Programs: An Update*, December 2002.

<sup>19</sup> Assumes average annual funding of \$0.75 to \$1 billion, obtaining savings for an average of 2 to 2.5 cents/kwh, with average retail electric rates of 7 to 8 cents/kwh

cycles of most programs, ensuring that claimed energy savings were achieved and often withholding final payments until such savings can be documented.

### **The Rationale for Public Sector Investment in Transportation Efficiency**

Yet for all of the success of efficiency funding in the utility arena, no comparable mechanism has ever been established in the transportation arena, where environmental impacts of fossil fuel use are even greater and opportunities abound to save gasoline more cheaply than its source, petroleum, can be found. Oil companies already possess ample private sector incentives to prospect for oil domestically whenever and wherever they believe the amount they find will fetch a higher price than what they must spend to find it.

Yet the federal government is now willing to pay at least \$1.24 in subsidies for each incremental gallon of new gasoline added to supply if API's analysis is correct. If, instead, the subsidies act primarily to increase oil industry profits from the amount of exploration they are already planning to pursue, the federal government is paying vastly more per incremental gallon – perhaps \$5 to \$10. Any price between \$1.24 and \$10 per gallon is more than the long term, wholesale, pre-tax price of gasoline and would not be judged cost effective by the metrics employed by public utilities commissions when evaluating proposed new power plants or efficiency programs.

Alternately, and more interestingly, the government could hold a competition between the supply and demand side for its scarce funding. Taking a page from the utility sector, the government would in effect offer to purchase the best bargains first from options put forward for consideration on both the supply and demand sides. In practice, federal energy subsidies that offer relatively large payments to specific energy technologies that would otherwise be uneconomical or confronted with market barriers can have significant impacts on the use of particular technologies.<sup>20</sup> Following is an overview of some of the most promising demand side options and their estimated costs per saved gallon.

### **Low Rolling Resistance Tires**

Tire manufacturers already provide low rolling resistance versions of their most popular tire models to manufacturers of new vehicles, who have a strong incentive to utilize these technologies to help them meet federal fuel economy standards. However, many of these same tire models are not currently offered to the replacement tire market, in part due to a concern that consumers would be unwilling to pay the additional few dollars of cost. Yet the value of the resulting fuel savings (1.5 to 4.5% improvements in overall vehicle fuel economy, depending on driving cycle) is significantly higher than the \$1 to \$2.50 per tire incremental cost required to achieve them.<sup>21</sup> Consumers are largely unaware of the opportunity to purchase more fuel-efficient tires because of the absence of manufacturer and retailer labeling of tires for efficiency. A program to market more fuel efficient tires to consumers and overcome the

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<sup>20</sup> Energy Information Administration, "Federal Financial Interventions and Subsidies in Energy Markets 1999: Primary Energy," SR/OIAF/99-03, September 1999.

<sup>21</sup> Chris Calwell, My Ton, Deborah Gordon, Travis Reeder, Marissa Olson, and Suzanne Foster, Ecos Consulting, *California State Fuel Efficient Tires Report: Volume II*, prepared for the California Energy Commission, January 2003, pp. 13-15.

incremental cost of the tires by paying financial incentives to manufacturers could achieve gasoline savings at a cost of about \$0.20 to \$0.23 per gallon.<sup>22</sup> This is about 85% less than the current retail price of gasoline and at least 60% less than the long-term, wholesale, pre-tax price of gasoline.

### **Low Viscosity Synthetic (LVS) Motor Oil**

This technology, like low rolling resistance tires, reduces friction and improves fuel economy. Recent testing in Germany documented an average improvement in vehicle fuel efficiency of 5.5% across more than 2,100 vehicles of widely different models and sizes driven an average of 2,000 km or more.<sup>23</sup> LVS oil is significantly more expensive than conventional oil per quart, but more than makes up for its higher cost by significantly lengthening recommended oil change intervals, and therefore reducing annual expenditures for the labor, the filter, and the disposal/recycling costs associated with each oil change.<sup>24</sup> As with LRR tires, a program could be fielded to pay manufacturers for most or all of the incremental cost of the better oil, allowing them to sell it for a comparable price to retailers with no loss of profit. Even including costs associated with marketing the program to consumers and processing incentives, this program could save gasoline for approximately \$0.27 to \$0.43 per gallon – about 70 to 80% less than the current retail gasoline price and at least 45 to 55% less than the long term, wholesale, pre-tax price of gasoline.

### **Dealer Incentives for Fuel Efficient Vehicles**

Automotive dealer profits typically correlate inversely with the fuel economy of the vehicles and options packages they sell. This gives dealers a natural incentive to promote vehicles that are less fuel efficient than average and to encourage consumers to select options packages like four wheel drive, larger engines, and automatic transmissions that tend to further reduce fuel economy. Ecos Consulting has analyzed for the National Commission on Energy Policy a proposal to offer financial incentives to auto dealers in proportion to their success at increasing the average fuel efficiency of the vehicles they sell.<sup>25</sup> Because relatively modest gains in miles-per-gallon are needed in trucks to achieve significant lifetime fuel savings, we found that the incentives needed for trucks -- \$0.12 to \$0.22 per gallon -- were significantly lower than the incentives needed for cars – about \$0.30 to \$0.44 per gallon. Including a mixture of car and truck incentives along with associated marketing and administration costs, we estimate that a mandatory, internally funded, national dealer incentive program for fuel efficiency could save

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<sup>22</sup> Calculation assumes fuel economy improvements of 1.5 to 4.5% in a 20 mpg vehicle over a 45,000 mile replacement tire lifetime with incremental costs of \$1 to \$2.50 per tire. This would require manufacturer incentives of \$0.12 to \$0.11 per gallon and program administration and marketing costs of \$0.08 to \$0.12 per gallon.

<sup>23</sup> Castrol, *Cars and Climate – A Transatlantic Coalition*, presentation in Washington DC, June 15, 2001.

<sup>24</sup> Assuming a 5.5% improvement in fuel economy in a 20 mpg vehicle, an average price of gasoline of \$1.50/gallon, an increase in oil change interval from 4,000 miles to 10,000 miles, a retail oil price difference of \$4/quart, and a combined filter/labor/disposal cost of \$20/oil change, the average customer would already save \$113.20 every 20,000 miles of driving by switching from conventional motor oil to LVS motor oil.

<sup>25</sup> Catherine Hardy, Debbie Gordon, Chris Calwell, and My Ton, *Dealer Incentives for Fuel Efficiency: Are They a Cost Effective Way to Save Gasoline?*, prepared by Ecos Consulting for NCEP, March 4, 2004.

gasoline for \$0.24 to \$0.41 per gallon.<sup>26</sup> These costs are nearly identical to those of an LVS motor oil program – about 70 to 80% less than the current retail gasoline price and at least 45 to 55% less than the long term, wholesale, pre-tax price of gasoline.

## **Conclusions**

We have considered three ideas among the many innovative options available to save gasoline, concluding in each case that savings are achievable in the marketplace at prices ranging from \$0.20 to \$0.43 per saved gallon. By contrast, we have noted that the federal government currently subsidizes the domestic oil industry through four tax incentives to the tune of \$900 million to \$1.5 billion per year. If these savings lead to the amount of long term production increase asserted by API, the government is paying at least \$1.24 per incremental gallon of gasoline produced – about 3 to 6 times the cost of the demand side measures noted above. Cumulative federal subsidies to the domestic oil industry between 1968 and 2000 total at least \$134 billion. This is enough money to have saved more than 430 billion gallons of gasoline through demand-side measures like the ones noted above, *or about 10% of all U.S. gasoline consumption over the same time period.*

The purpose of this analysis is not to suggest that the federal government guarantee funding to a particular set of demand side programs to save gasoline. Nor is it to propose a massive new federal gasoline tax to fund efficiency programs. On the contrary, it is to argue for the introduction of rigorous criteria to determine how *existing* federal spending on oil incentives should be allocated. We argue for a fair competition between demand and supply-side options for federal funds. Let the money flow where it can do the most good. In an era of steadily rising gasoline prices and import dependence, we owe the taxpayers at least that much.

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<sup>26</sup> Assumes typical incentives of \$0.19 to \$0.31 per gallon with a 60% truck, 40% car split and program administrative and marketing costs of \$0.05 to \$0.10 per gallon. Also assumes that fees assessed on dealers with below-average fuel economy improvements fund incentives to dealers with above average fuel economy improvements, yielding overall fuel economy averages beyond what CAFÉ standards require.