

45. Energy Policy

Congress should

- resist adoption of any additional government interventions in energy markets and, in particular, any packaged interventions under the rubric of “national energy policy”;
- eliminate all ethanol subsidies and tax preferences;
- eliminate the U.S. Department of Energy and abolish all of the domestic energy programs under its control;
- transfer the National Nuclear Security Administration, which is responsible for managing the DOE’s nuclear-industrial complex, to the Department of Defense;
- sell the oil in the Strategic Petroleum Reserve and eliminate the program;
- spin off the Federal Energy Regulatory Commission, the Energy Information Administration, and the Office of Civilian Radioactive Waste Management as independent agencies within the executive branch; and
- repeal the Price-Anderson Act.

With the exception of electricity markets (see Chapter 44), energy markets are relatively free and only lightly regulated. For instance, the U.S. Energy Information Administration (the analytical arm of the U.S. Department of Energy) reports that federal energy subsidies are relatively inconsequential from an economic standpoint—\$6.2 billion annually, or about 1 percent of total energy expenditures in the United States in 1999 (the last year for which reliable data are available). Oil, gas, and coal markets are freer from government intervention than most. And while most fossil fuel production takes place on federal lands, the federal government has proven to be a relatively disengaged landlord, allowing the industry tremendous operational discretion and refraining from imposing particularly excessive rents for access.

That's not to say that there isn't room for policy improvement. Subsidies for energy technologies are unwarranted, and regulatory intervention probably does more to distort energy prices than do the sorts of direct subsidies measured by the Energy Information Administration. Likewise, while oil and gas markets are allowed to operate relatively unhindered by government, the amount of oil and gas traded within those markets is to some degree constrained by questionable federal land management policies (see Chapter 47). But for the most part, legislators interested in promoting free energy markets will spend more of their time fending off bad policy ideas than eliminating the same from the federal code.

Interventions in energy markets are usually packaged with complementary interventions under the rubric of "national energy strategy." Proponents of national energy strategies contend that federal regulators can make better decisions than market agents concerning what fuels to use, how best to use energy, and which technologies are worth researching and developing. While liberals and conservatives in Washington may differ about exactly how the energy market ought to be managed by federal regulators, faith in government planning and distrust of the free market are characteristic of both camps.

Energy Independence

The most popular justification for intervention in energy markets is the alleged necessity of securing energy independence. Market actors, if left to their own devices, will choose to use the cheapest source of energy available, and foreign oil is more often than not less expensive than domestic oil. Consequently, the American economy is rendered vulnerable to embargoes, supply disruptions, and extreme price volatility. The Washington consensus is that the less Middle Eastern oil we import, the less vulnerable we are to such events.

That policy consensus, however, overlooks the fact that energy independence wouldn't make much difference unless we were to abandon oil use altogether or, alternatively, ban all petroleum imports and exports. That's because it costs little to transport oil or refined petroleum commodities around the world, meaning that a supply disruption anywhere in the world will increase the price for all remaining oil traded anywhere in the global market. That's why Great Britain—which had in fact achieved energy independence in the late 1970s due to its exploitation of petroleum fields beneath the North Sea—experienced the same oil price explosion as a

consequence of the Iranian Revolution in 1979 as did Japan, which was entirely dependent on imports.

The global nature of the oil market also explains why fears about some future oil embargo are groundless. Once oil is in a tanker or refinery, there is no controlling its destination. During the 1973 embargo on the United States and the Netherlands, for instance, oil that was exported to Europe was simply resold to the United States or ended up displacing non-OPEC oil that was diverted to the U.S. market. Consequently, there was no net reduction in oil imports. Saudi oil minister Sheik Yamani conceded afterwards that the 1973 embargo “did not imply that we could reduce imports to the United States . . . the world is really just one market. So the embargo was more symbolic than anything else.”

In sum, reducing or even eliminating oil imports would *not* reduce our vulnerability to OPEC production decisions, lessen the impact of supply disruptions around the world, reduce oil price volatility, or neutralize the risks surrounding some future embargo. Only complete withdrawal from the world oil market would accomplish those ends. Complete withdrawal, however, is not seriously entertained by many politicians or economists for a very good reason—it is a policy of preemptively embargoing ourselves out of fear that our enemies might some day be willing and able to do so.

Promoting Domestic Production

Most elected officials support efforts to increase domestic production of petroleum and natural gas as one way to reduce imports and address upward pressure on energy prices. There are two ways of accomplishing that—increasing industry access to reserves currently off-limits on federal land and providing subsidies to domestic oil and gas producers.

Unfortunately, domestic production is limited by hard geological reality. To wit, there is simply not enough low-cost oil and gas in the United States to meet anything close to current needs. For instance, as of the first quarter of 2004, the United States consumed 20.3 million barrels of oil a day but produced only 5.6 million barrels a day from domestic sources. Because domestic fields have been exploited heavily for decades, reserves are declining and the deficit between domestic production and overall consumption has been growing over time. Even if all public lands currently off-limits to the industry were opened up for exploration and development (particularly the Arctic National Wildlife Refuge, the Rocky Mountain West, and coastal areas off California and the Gulf Coast), an additional

2.0–3.5 million barrels of oil a day might be recoverable in the mid term assuming relatively high oil market prices.

In the natural gas sector, reserves are likewise declining and imports in the form of liquefied natural gas are now the best hope for keeping natural gas prices from embarking on a long-term upward spiral. Under current policy, America is moving from self-sufficiency in natural gas to a condition in which a quarter of its supply will have to come from overseas to meet expected demand. Opening up public lands currently off-limits to the industry would narrow that deficit but probably not close it completely.

Given such constraints, politicians in both parties have been inclined to subsidize domestic production in order to tease more supply from sources that otherwise would prove uneconomic even given current high market prices. While that might be good politics, it's lousy economics. Subsidizing the production of uneconomic commodities would be a net drain on the economy even if those subsidies were capable of increasing supply.

Subsidizing Renewable Energy

Proponents of renewable energy subsidies have offered multiple justifications for government intervention to promote those technologies. The most popular argument at the moment is that government must promote alternatives to fossil fuels if we're ever to reduce our dependence on oil imports and our vulnerability to events in the Middle East.

There is a germ of truth here. As noted above, there is simply not enough domestic oil available to meet current demand, so if we're serious about promoting energy independence, we must find alternative energy sources to meet current needs. The fundamental problem, however, is that only 2 percent of America's oil consumption goes to electricity generation—most oil is used as transportation fuel and feedstock for various chemicals, plastics, and lubricants. Renewable energy, however, is primarily dedicated to electricity production. Accordingly, even if the market for renewables were to grow substantially, it would not reduce oil consumption, or oil imports, very much if at all. The two fuels compete in entirely different markets. The exception is ethanol and various other biofuels, which are discussed below.

Another argument for government promotion of renewables is that they are environmentally cleaner energy sources than are fossil fuels and nuclear power. If the environmental costs of conventional fuels were incorporated

in their market price, the argument goes, renewables would be economically competitive with nonrenewables. Accordingly, subsidies for renewable energy simply correct a market failure and thus enhance overall economic efficiency.

It's unclear, however, whether there are significant environmental costs associated with the consumption of nonrenewable energy that are not incorporated in market prices. If the Environmental Protection Agency is correct about the human health effects of exposure to various pollutants, for instance, Harvard University regulatory analyst W. Kip Viscusi calculates that coal is somewhat undertaxed, natural gas is somewhat overtaxed, and petroleum and gasoline are taxed correctly.

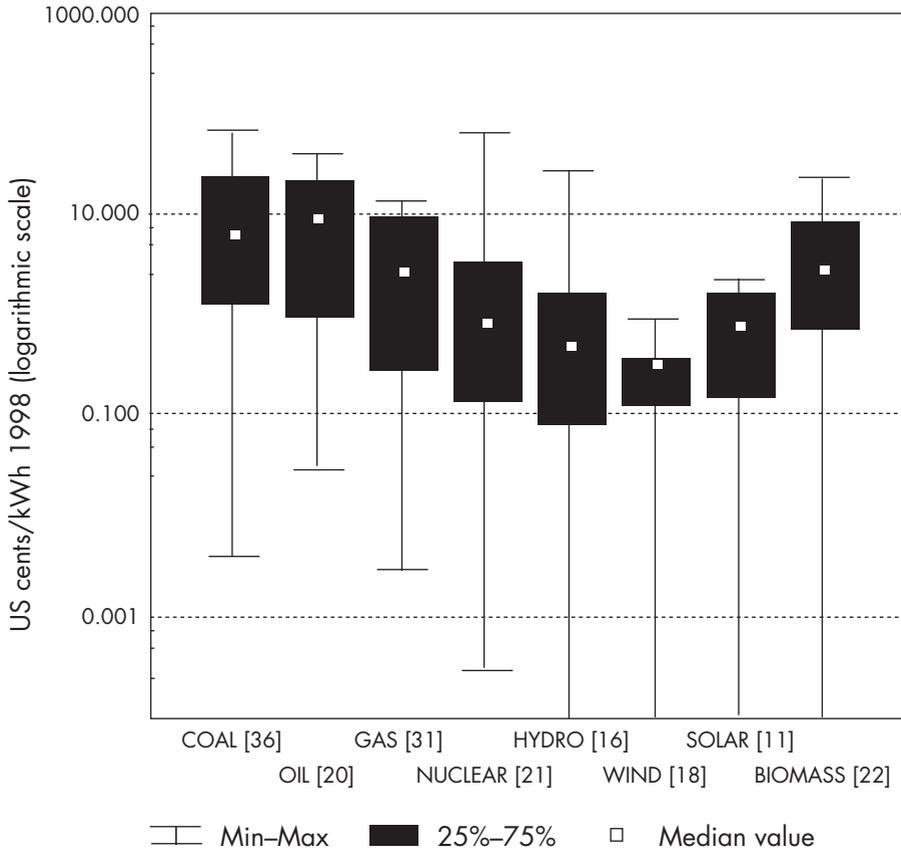
The difficulty, however, is that EPA may not be correct about such things given the vast uncertainty associated with the health effects of exposure to various pollutants. Figure 45.1 illustrates the problem. It is a survey of the published range of external cost estimates associated with the consumption of various fuels for electricity generation. The wide disparity between published estimates in peer-reviewed journals suggests that, whatever the merits of this exercise, it is impossible to conclude scientifically what the correct tax should be. The literature also suggests that renewable energy may not be anywhere near as environmentally benign as proponents believe.

Another argument frequently marshaled for government subsidy of renewable energy is that fossil fuels are unfairly advantaged by their own set of subsidies and that offsetting subsidies would level the economic playing field. Yet with the exception of nuclear power, subsidies to conventional fuels are rather minuscule and are dwarfed by the subsidies already on the books for renewable energy.

Figure 45.2 breaks those subsidies down by fuel and considers them in relation to the size of the industry. Regardless, the best remedy for the market distortions engendered by conventional energy subsidies is to eliminate those subsidies, not to impose a new round of the same.

Finally, proponents of renewable energy subsidies argue upon occasion that fossil fuels are finite and dwindling and that the government would be doing us all a favor by promoting the transition to more sustainable fuel sources. While there is little reason to believe that fossil fuels are growing scarcer in any real economic sense (as measured by finding costs, the sales price of reserves in the ground, inflation-adjusted prices, or known reserves), the argument is irrelevant from an economic standpoint. When fossil fuels begin to become scarcer, their price will rise accordingly,

Figure 45.1
Range of External Cost Estimates



SOURCE: Thomas Sundqvist and Patrik Soderholm, "Valuing the Environmental Impacts of Electricity Generation: A Critical Survey," *Journal of Energy Literature* 8, no. 2, December 2002, p. 19.

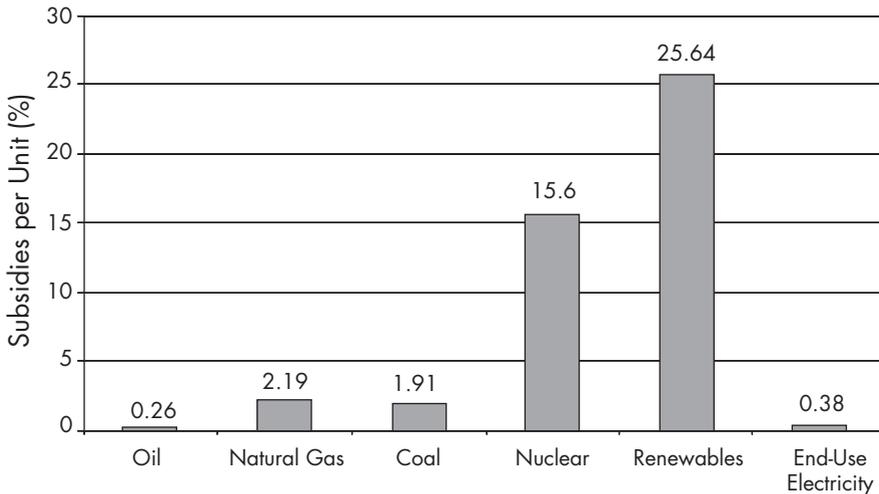
providing all the signals and incentives necessary for market actors to switch to alternatives without government guidance or help.

Ethanol Subsidies

There are ethanol producers in the United States only because of federal subsidies; without exemptions from federal fuel taxes and various production tax credits, the industry would completely disappear. The defenses offered by proponents of those subsidies are quite weak.

First, proponents argue that ethanol is environmentally preferable to gasoline. Yet, as Figure 45.2 indicates, that might not be the case. Ethanol's

Figure 45.2
Magnitude of Energy Subsidies, 1999



SOURCE: Energy Information Administration, "Federal Financial Interventions and Subsidies in Energy Markets 1999: Energy Transformation and End Use," SR/OIAF/2000-02, Table ES1, p. xiv.

major environmental advantage is that its combustion produces less carbon monoxide than does combustion of conventional gasoline. Yet carbon monoxide is a trivial environmental problem; no city in the United States currently in violation of federal standards. Ethanol combustion, however, emits more ozone precursors than does combustion of conventional gasoline, and 110 million people live in counties where the concentration of low-level ozone (smog) violates federal standards upon occasion. Accordingly, almost every major environmental organization in the country opposes ethanol subsidies.

Second, proponents argue that ethanol reduces America's dependence on foreign oil. Yet oil dependence has increased even as ethanol subsidies have done the same. The reason is that ethanol requires nearly as much or even more oil to produce than is saved at the point of combustion in a vehicle's engine. Accordingly, ethanol is a way of processing oil into fuel; it is not a substitute for oil.

Finally, ethanol proponents echo proponents of renewable energy by arguing that subsidies merely offset countervailing petroleum subsidies. Yet, as shown in Figure 45.2, those subsidies are trivial and scarcely affect market prices.

In sum, ethanol subsidies cannot be defended from an economic or an environmental perspective. Their political appeal is the only rationale for federal support.

Encouraging Energy Conservation

Some energy analysts argue that consumers invest too little in energy conservation measures such as insulation, fluorescent lights, and hybrid cars. Even if that's true, empirical analysis suggests that the record of government-directed conservation is rather poor. Between 1989 and 1999, for example, electric utility companies—primarily at the behest of state public utility commissions—spent \$23.1 billion in the United States to subsidize ratepayer energy conservation investments. Yet a recent study found that those expenditures reduced electricity sales by only 0.3 to 0.4 percent and did so at an average cost of 14–22 cents per kilowatt hour—roughly 2–3 times more expensive on average than the energy the conservation effort was attempting to conserve.

Similarly, a recent study found that federal energy efficiency standards for appliances will provide net negative benefits of between \$46.4 billion and \$56.2 billion through 2050 and that those costs will be borne disproportionately by low- and middle-income households.

Federal automobile fuel efficiency standards are likewise rather inefficient measures to encourage conservation. The Congressional Budget Office estimates that increasing the Corporate Average Fuel Efficiency (CAFE) standards to achieve a 10 percent reduction in gasoline consumption would cost producers and consumers about \$3.6 billion a year more than the value of the fuel saved, or about \$228 per new vehicle sold. CAFE standards also reduce the marginal cost of driving a mile and thus, ironically, increase vehicle-miles traveled (economists have calculated that for every 10 percent increase in fuel efficiency, people increase the number of miles they drive by 2 percent). In fact, any efficiency standard that reduces the marginal cost of consuming energy will have an analogous effect, known to economists as the “rebound effect.”

One of the consequences of the rebound effect in relation to CAFE standards is an increase in congestion. Another is a net increase in air pollution. According to one recent study, a 50 percent increase in fuel efficiency standards would reduce gasoline consumption by about 21 percent but would increase net emissions of volatile organic compounds by 1.9 percent, nitrogen oxides by 3.4 percent, and carbon monoxide by 4.6 percent.

Prices provide all the incentives necessary for consumers to use energy efficiency. Government attempts to force conservation where it has been otherwise resisted by consumers are counterproductive, costly, and injurious to consumer welfare.

Subsidizing Energy R&D

Because investors cannot easily capture all the economic benefits associated with a particular technological advance, proponents of government-supported research and development programs argue that government intervention is necessary to ensure that such investments are sufficient to ensure long-term economic growth.

Unfortunately, the government's record of intelligently targeting support across the universe of potential energy investments is rather poor. The fundamental problem is that decisions about public R&D investments are made by politicians, which means that programs are judged by political, not economic, criteria. Accordingly, while there may be a "market failure" to be found in the R&D sector, there is at least an equally serious problem of "government failure" in the prescribed remedy.

Economist William Niskanen reminds us, however, that "the case for government support of civilian R&D is that the return to the economy is greater than the return to the firm, not that government has better information on what R&D has the highest return." Niskanen accordingly suggests that targeted federal R&D efforts be eliminated and replaced with a robust R&D tax credit and matching grants to universities to supplement funds raised from private sources.

Abolish the Department of Energy

The arguments marshaled above provide not only the rationale for resisting the call for "national energy strategies" but also the rationale for eliminating about half the programs undertaken by the U.S. Department of Energy. Most of the remaining programs within the DOE's portfolio concern the nation's nuclear-industrial complex, particularly the nuclear stockpile; various nuclear wastes attendant thereto; some nuclear nonproliferation programs; and the complex of national defense laboratories. Those programs, which are consolidated under the National Nuclear Security Administration within the Department of Energy, should be transferred to the Department of Defense. The Federal Energy Regulatory Commission, the Energy Information Administration, and the Office of Civilian

Radioactive Waste Management (which is responsible for regulating the longer-term disposal of high-level nuclear waste) should be spun off as independent agencies within the executive branch.

Oil in the U.S. Strategic Petroleum Reserve should be sold in the marketplace and the program shut down. The original purpose of the SPR was to ensure that, in case of some future embargo, the United States would have enough oil on hand to weather the economic storm for at least several months. But as we have seen, embargoes are phantasmic events not worth worrying about. Supply disruptions are more likely, but it's unclear when if ever an administration would release oil within the SPR to address supply disruptions. More important, companies can insure against supply disruptions with futures contracts, so the SPR does not do anything for the economy that market actors couldn't do for themselves if they were so inclined. The cost of maintaining the SPR—and the related uncertainty created in the market by the existence of such reserves under government control—necessitate elimination of the program.

Finally, Congress should repeal the Price-Anderson Act, which protects the nuclear power industry against liability for damages above a certain threshold. If nuclear power is as safe as proponents maintain, then nuclear power companies should be able to find liability insurance in the private market. If they cannot, then it tells us that those with the most incentive to get the risk calculations right are not as sanguine as are our elected leaders about the safety of nuclear power plants. Either way, it's a significant subsidy that cannot be defended on economic grounds.

Suggested Readings

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