New Approaches on Energy and the Environment
New Approaches on Energy and the Environment: Policy Advice for the President

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Mr. President, in response to the dependency of the U.S. economy on a volatile and uncertain world oil market, we urge that you support phasing in a modest tax on all oil consumption. In addition, we believe that you should plan to expand the Strategic Petroleum Reserve (SPR) and actively draw it down in the event of severe and prolonged oil supply disruptions. The oil tax would encourage energy conservation measures throughout the economy, promote R&D on alternative fuels, and help gradually reduce our vulnerability to price volatility over the long term. More active use of the SPR would help cushion the effects of short-term upheavals in the oil market. These two measures are more appropriate for reducing the nation's vulnerability to oil price shocks than are policy interventions to expand domestic oil production.

Nature of the Oil Dependency Problem

The United States currently consumes almost 20 million barrels of oil a day, more than half of which is imported, and the share of imports in U.S. oil consumption is projected to increase steadily over the next 20 years to around 70 percent. This trend raises concerns about U.S. dependency on a world oil market that is increasingly dominated by supplies from the Persian Gulf, where about two-thirds of the world's known oil reserves are located.

Fears that politically unstable Middle Eastern countries have the United States by the jugular have led to many calls for drastically reducing U.S. oil dependence and even achieving self-sufficiency in energy production. Although U.S. oil dependence raises legitimate concerns that warrant a well-crafted policy response, it is important that such a response takes account of several key factors.

For one thing, the oil intensity of gross domestic product (GDP) has declined by about 50 percent over the last three decades with improved energy efficiency and structural changes in the economy, and these trends are projected to continue (see Figure 4-1). This means that a given future oil price shock will cause less economic...
disruption, relative to GDP. At the same time, however, anyone who has given serious consideration to the implications of trying to dispense with oil imports altogether recognizes such a goal to be utterly unrealistic—at least for the next decade or so.

Naturally, we would be better off if we could somehow isolate ourselves from the risk of oil price shocks, but reducing oil imports does not automatically reduce our exposure to price volatility. Oil is a fungible commodity, meaning that its price in the United States will be driven by worldwide oil market conditions. The only sure way to reduce the economic disruptions from world oil price shocks is either to reduce the overall oil intensity of GDP through enhanced energy conservation or to lean against oil price volatility itself through more active use of the SPR.

Americans also would be much better off if world oil prices were determined competitively rather than manipulated by Middle Eastern countries acting through OPEC. But again, the ability of the United States to counteract the exercise of market power by OPEC over the long term is limited. Most likely, a reduction in U.S. oil imports would have only a moderate effect on the world price, and it is difficult to reduce oil imports, as opposed to total U.S. oil consumption, or to favor imports from “reliable” suppliers, such as Canada, without running afoul of our international trade obligations. Moreover, a modest reduction in U.S. oil imports may not produce much of a dividend in terms of reduced military spending, given that our Middle Eastern military expenditures serve numerous objectives in addition to oil security, such as attaining peace and stability in the region.

Nonetheless, price shocks still can have substantial macroeconomic effects; recent studies suggest that a 10 percent jump in oil prices reduces GDP by around 0.5 percent, hardly a trivial amount. Is the risk of higher oil prices, and accompanying oil price shocks, likely to increase as production becomes ever more concentrated in the Middle East? There is no sure answer. Although unusually tight market conditions saw mid-year 2004 prices breaching the $45 per barrel level, the long-term demand-supply picture seemed still to point to lower world prices, though
perhaps not as low as within the $25-30 price range. One reason for that less alarming prospect might be that it is in OPEC’s interest to keep a ceiling on prices. Price jumps could encourage a rapid turn to energy-efficient improvements in oil-importing countries, which would weaken OPEC’s market power over the long run. Still, we cannot dismiss the possibility of a political takeover of, say, Saudi Arabia by radical groups determined to harm western economic interests, even though such a move would impoverish their own country.

Given the growing potential for Middle Eastern—and possibly other—governments to harm U.S. economic interests, it seems prudent both to nudge upward the gradual transition to a less oil-intensive economy and to enhance our ability in the near term to respond to oil market disruptions. At least to some extent, the private sector—particularly firms—is aware of the risk of future energy price volatility and already takes into account the benefits of reducing exposure to price volatility when making choices about energy investments, inventory strategy, and conservation measures. But such precautionary steps are unlikely to make the overall economy sufficiently resilient to oil price shocks; for example, firms may not take into account the full costs to society from workers laid off during price disruptions. Hence the case exists for an oil tax and more active use of the SPR.

The Case for an Oil Tax

We advocate phasing in a tax on all oil uses that, within a few years, would rise to at least $5 per barrel. The $5 per barrel figure is not an arbitrary choice. Recent studies estimate that, by encouraging demand restraint and limiting damage from OPEC exercise of market power, a tax of that magnitude would minimize economic harm to the nation. (This leaves aside environmental and other non-oil-dependence considerations that might independently justify higher taxes.) This tax would strengthen incentives to reduce the use and improve the fuel economy of automobiles, trucks, and aircraft; encourage the substitution of gas and electricity for oil in residential heating; and encourage oil-saving initiatives in petrochemical industries. It would also spur R&D into both energy-saving and alternative-fuel technologies.

A broad oil tax would be much more effective at reducing oil dependence than would an increase in the federal gasoline tax alone or higher fuel economy standards for new passenger vehicles. The broader tax would encourage energy conservation measures and innovation throughout the economy, rather than just in motor vehicles, which account for less than half of the nation’s oil uses. A phased-in oil tax of $5 per barrel would ultimately raise gasoline prices by about $0.12 per gallon, so its introduction would not cause any great economic dislocation in the near term; motorists are used to larger fluctuations in fuel prices than this on a year-to-year basis. However, its effect on reducing the oil intensity of GDP, when cumulated over a long period, say 25 years, could be a significant element in overall energy strategy.

An oil tax is a far better approach to reducing our exposure to oil price shocks than supply-side measures, such as tax relief to expand domestic oil production. Increased domestic oil production does not reduce the overall oil intensity of GDP,
and therefore it does not reduce the extent of disruptions to energy-intensive activities and production caused by world oil price shocks. Moreover, OPEC might nullify expanded U.S. production by tightening its own quotas.

Even a modest oil tax will have some harmful economic side effects; for example, businesses will suffer from higher transportation costs, and as a result, we would expect some slight detrimental effects on economywide employment and investment. However, a $5 per barrel tax would raise around $30 billion per year in government tax revenues, far more than the annual expenditure required to actively manage the SPR. If, as we recommend, these revenues financed cuts in income taxes, or deficit reduction that effectively reduces burdens on future income taxes, most (though not all) of the harmful side-effects of the oil tax on employment and investment could be offset.

Households would suffer as oil taxes are reflected in higher prices for gasoline and other products; the typical motorist, for example, would pay around $60 more per year in fuel costs once a $5 per barrel oil tax was fully phased in (leaving aside incentives for improved fuel economy). But this does not account for the potential benefit to the country through income tax or national debt reduction, as suggested above. Even then, the oil tax would increase total U.S. taxes on gasoline from around $0.40 per gallon to just over $0.50 per gallon; the hapless motorist in Britain still would be paying seven times that amount.

Use of the Strategic Petroleum Reserve

Oil stockpiling by private corporations is likely to be inadequate from the perspective of the United States as a whole, because firms do not consider macroeconomic risks from oil price volatility when making their inventory decisions. This provides justification for the government to maintain and make use of a strategic petroleum reserve.

The volume of oil in the SPR in mid-2004 amounted to around 660 million barrels, or around 60 days’ worth of imports (at its peak, coverage amounted to 115 days in 1985, when imports were less than half their current level). In the past, SPR releases have been governed mainly by federal revenue concerns, rather than as responses to oil price shocks, while the opportunity to purchase oil under conditions of depressed prices was pursued only haltingly.

Although a number of practical issues would need to be worked out, the case for making more active use of the SPR to counteract major oil market disruptions, particularly in conjunction with the other main oil stockpilers—Japan and western Europe—seems compelling. Recent research suggests that the economic benefits from using the SPR to counteract short-term oil supply disruptions, thereby lessening periodic GDP losses and additional oil import costs during a disruption, far outweigh the costs of operating and maintaining the reserve. This research also suggests that expanding the capacity of the SPR to 750 million barrels would yield net economic benefits. Some congressional bills have envisaged an expansion of SPR capacity to its authorized volume of a billion barrels. As world oil market develop-
ments and expectations evolve, the rationale for such expansion deserves periodic evaluation.

We emphasize that the SPR should be used only during severe and prolonged price disruptions, and not to counteract year-to-year fluctuations in oil prices. In addition, the more aggressive resort to the SPR that we are recommending does not mean that precise rules governing its release, such as how high and for how long oil prices have to rise to trigger releases, need to be formally spelled out. The particular conditions surrounding a given oil supply disruption will vary. Also, by maintaining a conscious degree of ambiguity about specific trigger points, U.S. policy will make the rewards from deliberate acts of disruption uncertain, perhaps causing those inclined to pursue such acts to have second thoughts about their strategy.

Conclusions

An adequate and affordable supply of energy and resources is a key ingredient in a prosperous U.S. economy, and oil remains one vital component of our energy portfolio. Although we cannot fully insulate ourselves against world oil market upheavals, a modest oil tax and more purposeful use of the strategic petroleum reserve are two important ways of lessening their impact.

I.P.
J.D.