

# Uncle Sam's Energy Strategy

*The nation debates its energy future*

By TIM WALKER

In a July 26, 1989, letter to Admiral James D. Watkins, President George Bush declared: "We cannot and will not wait for the next energy crisis."

Bush instructed his energy secretary to develop a strategy that would decrease U.S. dependence on potentially unreliable sources of foreign oil. In outlining his goals, Bush argued that a successful energy policy should neither slow economic growth nor derail "the successful policy of market reliance" that governs the production and distribution of energy.

Nineteen months later, in the middle of the Persian Gulf war and amidst unstable oil prices, the Bush administration released its "National Energy Strategy," hailing it as "a comprehensive foundation for a cleaner, more efficient and more secure energy future."

But many energy analysts fear Bush's strategy will not avert a future energy crisis because it tilts too heavily toward promoting existing energy sources and technologies, such as oil and nuclear power, while all but ignoring the role that "end-use" measures, such as conservation and energy efficiency, might play in securing a stable and sustainable energy future. Environmentalists also criticize the new energy strategy because its agenda would not significantly reduce emissions of major greenhouse gases, most notably carbon dioxide.

Bush's is not the first presidential attempt to develop an energy policy to guide the United States through perilous times. Soon after the 1973 oil embargo by the Organization of Petroleum Exporting Countries, Richard Nixon announced his "Project Independence Blueprint." In 1977, Jimmy Carter began formulating his "National Energy Plan." Both presidents failed to win congressional support for significant portions of their plans. As a result, the United States remains vulnerable to rapid price increases for foreign oil.

Now, however, both the President and the Congress are moving toward enactment of major energy legislation. In March, Bush sent to Congress the National Energy Strategy Act of 1991, a bill that includes provisions of his energy strategy that require changes in law. Legislators critical of the President's energy plan have responded by introducing

almost 80 bills, most offering a different vision of the nation's energy future.

While energy analysts are not yet willing to forecast what policy changes will emerge after Congress concludes its infighting, dealing and compromising, the resulting national energy strategy is widely expected to have a dramatic effect on most, if not all, sectors of energy use.

For instance, the President proposes increasing the efficiency – and profitability – of domestic energy production and distribution by relaxing government regulations. This emphasis on deregulation has helped garner support for the energy package from the oil, electric, nuclear and coal industries. At the same time, the administration's decision not to tinker overtly with market forces has steered its new strategy away from advocating higher fuel-efficiency standards for automobiles or taxes on polluting fuels – decisions that have elicited sharp criticism from a host of environmental groups.

While U.S. oil consumption peaked in 1989 at 17 million barrels per day, domestic production has remained fairly stable at approximately 10 million barrels per day. Bush's strategy offers several recommendations to relieve the resulting heavy

reliance on imported oil by enhancing domestic production. For instance, it proposes increasing efforts to develop "enhanced oil recovery" technologies – processes to retrieve some of the difficult-to-extract oil in a drilled field, which makes up about two-thirds of the original pool on average. Technologies existing today preclude the economical extraction of an estimated 300 billion barrels of such oil from U.S. fields.

The administration's strategy would further reduce dependence on foreign oil by accelerating the federal government's purchase of alternatively fueled vehicles, ones that can run on ethanol, methanol, methane or propane. Ninety percent of fleets involving at least 10 cars or light-to-medium trucks in the 22 most polluted U.S. urban centers – and heavy trucks in all urban centers – should also run on alternative fuels by the year 2000, the plan concludes. For bus fleets, the switch to alternate fuels would not have to begin until 2000.

The strategy also reintroduces the controversial idea of offering leases for oil drilling on a variety of ecologically sensitive sites, including Alaska's North Slope, the coastal plain of the Arctic National Wildlife Refuge, and the outer continental shelves. The Department of Energy estimates that 7.7 billion barrels of economically recoverable oil reside in these areas

*Environmentalists oppose Bush's proposal to open Alaska's Arctic National Wildlife Refuge (below) to oil and gas drilling, contending that drilling will jeopardize unique ecological habitats, including the safest calving grounds of the caribou. Oil developers counter that the caribou population near Prudhoe Bay increased sixfold during 19 years of oil exploration and drilling on the shore of the bay. In testimony before a House subcommittee last month, biologist David R. Klein of the University of Alaska in Fairbanks attributed that increase to a marked decline of the caribou's principal predators – the wolf and grizzly bear – as a result of habitat changes spurred by oil development.*



— almost 30 percent of estimated U.S. reserves. Leasing the outer continental shelves would also unlock access to 9.4 trillion cubic feet of natural gas, the administration estimates — roughly 5.5 percent of proven reserves.

In areas that have “sufficient” competition from trucks, railroads and other oil pipelines, Bush proposes eliminating wellhead price controls and lowering the maximum price that pipeline companies can charge to transport oil. This, he argues, would stimulate more domestic oil production by reducing government and industry overhead costs. However, the projected savings amount to just \$10 million annually — only 0.6 percent of what the oil industry expects to spend annually developing fields on Alaska’s North Slope.

Because burning natural gas (methane) produces virtually no polluting sulfur oxides and less atmosphere-warming carbon dioxide than other fossil fuels, the President urges switching whenever possible to methane from other fossil fuels. However, even the administration’s estimates indicate that this will provide small pollution savings: perhaps a 3 percent reduction in sulfur dioxide (670,000 metric tons) and an 0.23 percent reduction (11 million metric tons) in carbon dioxide releases.

To foster the switch to methane, Bush proposes eliminating most natural-gas price controls and reducing licensing requirements for building new gas pipelines. To help meet the anticipated increases in gas demand these changes should yield, he calls for research and development on methane-extraction technologies, such as horizontal drilling.

“Nuclear power is a proven electricity-generating technology that emits no sulfur dioxide, nitrogen oxides, or greenhouse gases,” the National Energy Strategy proposal states. And for this reason, it recommends doubling production of nuclear-generated electricity over the next four decades.

But that ambitious goal battles the political reality that nuclear power has lost its economic, technologic and popular charm. Indeed, after decades of rapid nuclear expansion, U.S. utilities have failed to order even one commercial reactor since 1978. In hopes of revitalizing nuclear power’s prospects, the President’s strategy recommends halving the number of steps in nuclear-plant licensing, doubling the license period to 40 years, standardizing reactor design and accelerating the selection of a site to store the nation’s commercial and military nuclear wastes.

It’s a tall order. Each of these concepts has floated around — unsuccessfully — for at least 10 years, notes Nicholas K. Lenssen of the Washington, D.C.-based

Worldwatch Institute. While some of Bush’s nuclear proposals may pass the Senate, most will face tough opposition in the House, he predicts.

Today, slightly more than half of the electricity generated in the United States comes from burning coal. At its current rate of growth, however, coal-fired generation could produce 75 percent of all U.S. electricity by the year 2030. Instead of reducing this reliance on coal, a major source of carbon dioxide, the administration’s plan promotes further development of “clean coal” technologies. Advances in these, together with stricter pollution requirements in the amended Clean Air Act (SN: 11/3/90, p.277), make coal “acceptable as a major energy source,” according to the President’s energy strategy.

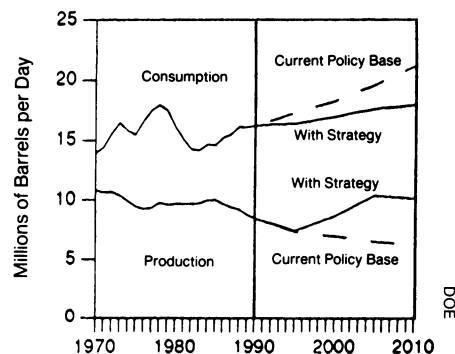
That plan does, however, recommend slowing the nation’s current growth rate in fossil-fuel generation — mainly by building and refurbishing nuclear generating stations — so that coal accounts for no more than about 68 percent of the electricity generated 40 years from now.

No other proposal in the plan has galvanized more widespread environmental opposition than the recommendation to allow oil and gas drilling in the Arctic National Wildlife Refuge (ANWR). While the administration maintains that drillers can tap ANWR’s deposits in an “environmentally sound and responsible” manner, many environmentalists challenge this. “Once you build hundreds of miles of roads and pipeline, production facilities, wells, airstrips and housing for thousands of workers, the refuge is essentially gone,” argues Gaylord Nelson, a senior counselor for the Washington, D.C.-based Wilderness Society.

Moreover, drilling for oil in the arctic refuge won’t come close to satisfying long-term U.S. energy needs, says Christopher Flavin of the Worldwatch Institute. The Interior Department estimates the refuge holds little more than 3 billion barrels of recoverable oil — an amount the United States consumes every six months, Flavin notes. At peak production, he calculates, this oil field would produce no more than 182 million barrels annually — an amount equal to the production losses incurred each year at existing U.S. wells as they dry up. “We would have to find a new ANWR-sized source annually to maintain present domestic production,” he concludes.

Because natural gas produces fewer particulates and carbon dioxide than coal or oil, the strategy’s proposals to increase methane use win general approval from environmentalists. But methane-fueled vehicles still emit some greenhouse gases, especially when their engines are poorly tuned. And that’s why some energy-strategy critics, such as

Strategy’s effects on domestic oil



The administration projects that its proposals to promote advanced oil recovery techniques and to open up arctic and off-shore oil fields would increase domestic oil production 30 percent by 2005, to approximately 10 million barrels per day. It also predicts that switching to alternative fuels would reduce demand for imported oil by 2 million barrels per day by the year 2005.

Deborah Gordon of the Union of Concerned Scientists, see a role for natural gas in powering vehicles *only* if it’s used as a transition to other, cleaner-burning fuels.

However, emissions alone should not dictate which cleaner fuel the nation adopts, Gordon argues. She points to ethanol, one alternative emphasized in the President’s plan. Because of energy-inefficient farming techniques used to produce corn and other vegetative sources of this fuel, ethanol production consumes more energy than this alcohol’s combustion liberates, Gordon says. She would like to see the development of “zero-emission vehicles” that run on hydrogen, fuel cells or cleanly generated electricity.

Many environmental groups, energy experts and conservation activists are as concerned about what the National Energy Strategy does *not* contain as they are about the changes it does advocate. Chief among those “missing” provisions are:

- Measures to increase automotive fuel efficiency. Bush’s strategy would not mandate standards to increase the industry-wide corporate average fuel economy (CAFE) for U.S. cars, now at 27.5 miles per gallon. Boosting fuel efficiency by just 6 percent — to 29.15 mpg — could save the United States energy equivalent to the Arctic National Wildlife Refuge’s oil holdings, says Arthur H. Rosenfeld of Lawrence Berkeley (Calif.) Laboratory.

The energy strategy cites “no particular urgency to move precipitously on fuel efficiency [CAFE] standards,” especially when no one knows whether U.S. automotive engineers can meet newly increased efficiency requirements at the same time

the revised Clean Air Act forces the industry to lower vehicular exhaust emissions.

But in testifying before the House Budget Committee last October, Office of Technology Assessment Director John H. Gibbons reported that the U.S. auto industry already possesses the technology to meet the new Clean Air Act requirements *and* increase the minimum fuel-efficiency standards of its cars—to 31 mpg by 1995, and to at least 36 mpg by 2001. Moreover, Gordon says, “higher CAFE standards have proved themselves to be guaranteed fuel savers.”

• Fuel taxes. Because the Bush administration believes higher energy taxes would slow economic growth, its energy strategy imposes no such increases to discourage fossil-fuel use. However, slowly phasing in taxes over a 10-year period to double gasoline's cost would reduce its consumption by 25 to 45 percent, calculates James J. MacKenzie of the

Washington, D.C.-based World Resources Institute. Making gasoline-tax increases “revenue neutral” — by lowering other taxes to compensate — would not harm the economy, MacKenzie argues.

• Large R&D boosts for renewable energy sources. While the administration advocates greater development of solar and other renewables, the energy strategy does not recommend increasing the Department of Energy's budget for those sources. DOE's 1992 budget request for fiscal year 1992, which begins this Oct. 1, contains \$164 million for these technologies — no increase after accounting for inflation. If the United States expects to successfully “accelerate the development and adoption of clean heating and electric supplies” such as solar energy, the nation must greatly increase R&D funds for renewable energy sources, says Paul Notari, chairman of the American Solar Energy Society in Boulder, Colo.

Currently, renewable energy sources

supply only about 8 percent of the U.S. energy demand, but a March 1990 DOE report calculates that by doubling or tripling renewable energy R&D, these sources could meet 40 percent of U.S. energy demands by the year 2030.

• Appliance efficiency standards. The strategy would not require increases in energy-efficiency standards for appliances such as refrigerators and water heaters, and would require only modest R&D increases to advance efficiency and conservation technology. Rosenfeld contends that adopting standards to raise the minimum allowable efficiency of major appliances would yield “tremendous energy savings.” For example, he calculates that by switching all lights to compact fluorescents — which use up to 75 percent less energy than incandescent bulbs — the United States could save twice the energy equivalent of oil reserves beneath the Arctic National Wildlife refuge.

## Feds accused of energy waste

Environmentalists have roundly criticized the Bush administration for not championing energy conservation and efficiency more strongly in its energy strategy. A new congressional analysis, released in May, also gives the government poor marks for energy conservation, but focuses instead on its day-to-day energy-use practices. According to this study by the congressional Office of Technology Assessment (OTA), the federal government wastes much of the \$13 billion it spends each year on energy.

For example, OTA estimates the government could profitably conserve at least 25 percent of the energy used to operate its buildings without reducing worker comfort or productivity.

“The federal government is the laggard rather than the leader in promoting energy efficiency,” says Rep. Mike Synar (D-Okla.), chairman of the House Subcommittee on Environment, Energy and Natural Resources. By ignoring commercially available energy-efficient technologies such as compact fluorescent light bulbs and efficient heating and air conditioning equipment, Synar argues, the government not only wastes hundreds of millions of taxpayer's dollars but also maintains U.S. reliance on foreign oil.

By adopting these and other technologies, the federal government could continue the progress made between 1975 and 1989, when the government trimmed \$7 billion from its total energy bill with only a \$2.5 billion investment, OTA states in its analysis, titled “Energy Efficiency in the Federal Government: Government by Good Example?” The report points out that investments in

such technologies would begin saving the government money immediately — eventually providing a 30 to 100 percent return on these efficiency-boosting investments.

The administration places a low priority on conserving energy, the report concludes. Federal investments in conservation (such as the installation of higher-efficiency lights and boilers) declined from \$297 million in 1981 to less than \$50 million in 1990, OTA notes.

Other reasons cited for the government's poor energy record include: unstable funding for conservation investments; no incentive for agencies to reduce their energy costs; and the scant data available to government buyers about energy-saving options. However, the report notes, none of these “are fundamental obstacles that cannot be overcome.”

OTA recommends that the federal government adopt an energy policy similar to one already used by the Department of Defense, which allows military facilities to keep two-thirds of any money saved by investing in energy-efficient devices.

Amendments attached to the National Energy Strategy Act would also require that new federal buildings meet strict energy-efficiency codes and would prohibit the government from financing any building that does not meet that code. The bill would also set up a fund to finance energy-efficiency improvements in federal buildings and would direct the government to install energy-efficiency devices that pay back their cost through energy savings in less than 10 years. — T. Walker

On May 23, the Senate Committee on Energy and Natural Resources passed the National Energy Strategy Act of 1991 and sent it to the full Senate.

Majority leader George J. Mitchell (D-Maine) expects the Senate to begin debate on the bill later this month. The legislation contains most of the original provisions outlined in the President's plan — including provisions to open the arctic refuge to oil drilling. It also requires no CAFE increases.

The CAFE and ANWR issues have developed as the major barriers to widespread bipartisan support for a new energy bill. Senators Timothy E. Wirth (D-Colo.) and Richard H. Bryan (D-Nev.) have pledged to try to introduce higher CAFE standards into the bill once it reaches the Senate floor. However, administration officials have raised the prospect that Bush might veto an energy bill that prohibits drilling in the arctic refuge or contains explicit CAFE increases. As a result, Sen. J. Bennett Johnston (D-La.), co-sponsor of the administration's energy bill, expects a “tremendous debate” over arctic drilling and auto-efficiency standards. While no similarly comprehensive energy bill has been introduced in the House, lawmakers there are debating all the same issues as they consider more narrowly focused bills.

Though most players in these debates concede the need for a national energy policy, whether a new blueprint emerges to guide the United States into the next century may hinge on the ability of pro-CAFE and pro-ANWR-drilling factions to work out a compromise. A similar stalemate that Congress resolved last year — after it had held up passage of a new Clean Air Act for seven years — serves as a reminder of how difficult the achievement of such compromises can be. □