Back to the Energy Crisis

Waning U.S. oil output, rising imports, and Middle East tensions are reheating energy policy debates of the 1970s

GASOLINE is still cheap and there are no shortages at the pump, but increasingly, government officials and private energy analysts are sounding warnings about the nation's energy future. For the first time since 1980, U.S. reliance on oil imports has gone up and will rise further by the early 1990s. This expanding dependence is reigniting the energy policy debates of the 1970s. At issue is not only national security, but economic concerns about inflation, slower growth, and a stifling of efforts to slash the nation's staggering $171-billion trade deficit.

The drive to arouse the nation's energy conscience is led by battered domestic oil producers, oil exploration companies, and related service sectors. Wild swings in the price of oil during 1986 have knocked high-cost American production out of the market. Industry executives estimate that 360,000 oil field and related service industry workers lost their jobs in the last year. In response, some domestic producers are seeking tariffs and tax breaks to keep the industry from collapsing further.

Thus far, the Reagan Administration has rejected pleas to impose import fees, noting that consumers have benefited from lower prices. Without presidential support, concedes Senator J. Bennett Johnston (D–LA), chairman of the Energy and Natural Resources Committee, it will be difficult to get through Congress a price floor or tariff to limit oil imports. Whether the Administration will alter its position may become clear in March when it releases an interagency study on the oil outlook and its effect on national security.

With oil imports projected to supply 50% of U.S. needs by the early 1990s, pressure is building in and outside Congress for an overhaul of Administration energy policy. Johnston, who represents an oil-producing state, began hearings on 22 January on the future direction of American energy policy. And barely a year after the poorly managed and scandal-marred Synthetic Fuels Corporation was shut down, there are calls for an expanded research effort on converting coal to petroleum liquids.

Petroleum imports have received little attention in recent years because they have declined steadily. Oil imports averaged 8807 million barrels per day in 1977, but by 1985 they had dropped to 5067 million barrels per day. The average cost of crude oil delivered to the United States in 1985 was $26.66 a barrel, well below 1981's peak of $36.52. The resulting drop in outlays for foreign oil, which was partially achieved with fuel switching and conservation, cut energy consumption per dollar of gross national product (GNP) 27% between 1978 and 1985.

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In 1986 oil prices plunged in the wake of excess production and flat demand. By August, prices had dipped below $10 a barrel. This was triggered by Saudi Arabia's decision to recapture part of its world market share and the collapse of the official pricing structure of the Organization of Petroleum Exporting Countries (OPEC). The upheaval in the world oil market slashed energy costs for consumers and manufacturers, and helped hold the U.S. inflation rate for the year to an amazingly low 1.1%.

"Consumers are very happy right now," says William F. Martin, deputy secretary of the Department of Energy (DOE). "They are not concerned about the long term." When gasoline prices are so low that the cost of operating an automobile in 1986 drops as much as $250, Martin says soberly, it is hard for the public to think about conservation.

The price crash has produced some disturbing effects. Despite continued annual improvements in the fuel efficiency of the U.S. auto fleet, consumption of gasoline shot up 2.6% above 1985 levels. Electric utilities and industry, responding to lower prices, increased their consumption of residual oil by 17.7% during the same period, says the American Petroleum Institute. Overall, imports increased 2.9% over 1985 levels, while the daily production rate for domestic oil fell more than 800,000 barrels to about 8.3 million barrels. By 1995 daily output could slide to 6.3 million barrels.

These trends have led some government policy makers, such as Interior Secretary Donald P. Hodel, to predict that "the United States and the rest of the world are being set up for a major oil price shock." Oil industry analysts generally do not anticipate sudden price hikes like those triggered by supply disruptions in the 1970s. Costs, however, are expected to rise significantly as the gap between production capacity and world demand shrinks in the coming years.

Since the embargoes of the last decade, the United States has diversified its sources of supply. This strategy will become less effective as resources in Canada, Mexico, and other countries diminish. Over the long run, OPEC's Middle East members are expected to be in the driver's seat as production from non-OPEC countries falls.

"Everybody agrees that 10 years from now we are going to have a problem," says Theodore R. Eck, chief economist at Amoco Corporation. U.S. reliance on imported oil could go as high as 12 million barrels a day in 2000. Data Resources Incorporated (DRI) forecasts that U.S. consumption of foreign oil will rise 12.5% from 1985 through 1995 to 17.7 million barrels a day. Imports of petroleum could reach 9.8 million barrels a day then.

At the same time, expanding American demand between 1990 and 1995 (0.8% on average) is expected to help drive free-world prices to $32.15 a barrel for oil, a jump of 4.9% after inflation, DRI says. Growth in domestic consumption is expected to slow to 0.5% yearly in the following 5 years through 2000. This occurs in response to a 7.9% rise in real prices, which DRI pegs at $61.92 a barrel.

For oil-importing countries the challenge is to prove the analysts wrong by containing growth in oil imports. This will forestall increases in world prices. OPEC countries are now producing oil at about 63% of their capacity of 25 to 27 million barrels per day. As non-OPEC production declines and world oil demand grows, shrinking surplus production capacity within OPEC will lead to higher prices.

DOE analysts postulate that if OPEC operates at 70% of capacity, every 1 million barrel per day hike in demand raises world prices by $0.43 to $0.72 (1984 dollars) a barrel. But as capacity utilization reaches 80%, the premium for every 1 million barrels of added demand soars to a range of $1.04 to $1.74.

While domestic outlays for imported oil could rise dramatically in the 1990s because of price hikes and increased purchases, economists appear uncertain about the net effects

for the United States. It seems that increased imports would add to the burgeoning trade deficit and frustrate government efforts to reduce it. But Edward R. Fried, an economist at the Brookings Institution, notes that these higher expenditures for oil may be offset to a large degree by increased trade with OPEC countries. Some Administration economists share Fried's view, but add that they have not examined the matter closely.

Even if the U.S. economy can adapt, Jessica T. Mathews, vice president for research at the World Resources Institute (WRI) in Washington, D.C., says that future price increases will cripple the struggling economies of many developing countries. At present, DRI expects daily crude oil consumption by less developed countries to climb by one-third to 11 million barrels per day by 2000.

The annual growth rate for total U.S. consumption for the 1985 to 2000 period will fall from 1.5% to 0.1%, DRI estimates. But since the United States is by far the world's largest consumer of oil, any significant change in consumption can affect prices. Indeed, in a speech delivered in November to the Council on Foreign Relations, a despondent Hodel said, "Sometimes I despair of the United States ever realizing adequately that what may be only a ripple on the energy shores of the United States, . . . may be a tidal wave on the shores of developing nations."

Beyond the economic implications of American energy policy, says Charles K. Ebinger of the Center for Strategic International Studies in Washington, are strategic considerations. It is time for the Reagan Administration to assess its Middle East policy in light of the world's growing dependence on Persian Gulf oil resources and the political deterioration there. "Serious breaches in relations with Western Europe and Japan" may result, and access to Middle East oil could be endangered unless there is a serious effort to resolve the Palestinian issue, says Ebinger.

Perhaps more worrisome, though, says James E. Akins, former ambassador to Saudi Arabia, is the outcome of the Iran-Iraq war. Should Iran win the war, says Akins, the balance of power in the Middle East would be tilted toward Iran. Countries with small populations, but large oil production capacity—Kuwait and Saudi Arabia—may then defer to Iran on oil-pricing policy. That, says Akins, could lead to a rapid escalation of prices to $34 a barrel, the level advocated by Iran.

The United States' options for dampening the rise of oil prices and related economic upheaval are limited to conservation, expanding production of dwindling domestic petroleum reserves, and adopting substitute energy sources. DOE's Martin notes that unless there is international cooperation to control petroleum consumption, American efforts may have little effect on world oil prices in the 1990s.

Energy Secretary John Herrington says, "Conservation is a fundamental part of energy security. In fact, it could well be our single largest resource." But as late as November, the White House remained opposed to energy conservation if it requires regulation. Despite strong congressional and industry support, Reagan in November vetoed national energy efficiency standards for appliances, which are aimed at cutting electricity use, thereby holding down oil consumption by electric utilities. WRI's Mathews, however, notes that it is mandatory performance standards for vehicles and buildings, for example, that are needed to achieve predictable energy savings.

Despite such arguments, the Administration shows no signs of changing its posture. DOE again proposes to cut funding for energy conservation. Meanwhile, the Department of Transportation is proposing to repeal corporate average fuel economy (CAFE) standards for automobiles. These actions clearly irk some House and Senate members. "Today is not the time," says Senator Daniel J. Evans (R–WA), "to repeal CAFE standards. In fact, we should toughen them." But whether the Congress will prohibit such policy changes is uncertain.

For the moment, Congress and the Administration appear most concerned with the production side of the energy supply equation. Hodel, who formerly served as energy secretary, warns that the United States needs to be doing more exploration and drilling now to delay deep reductions in domestic production capacity. He favors expanding drilling along the California coast and on Alaska's coastal plain, areas where resource development has long been opposed by citizens and environmentalists (*Science,* 12 December 1986, p. 1317).

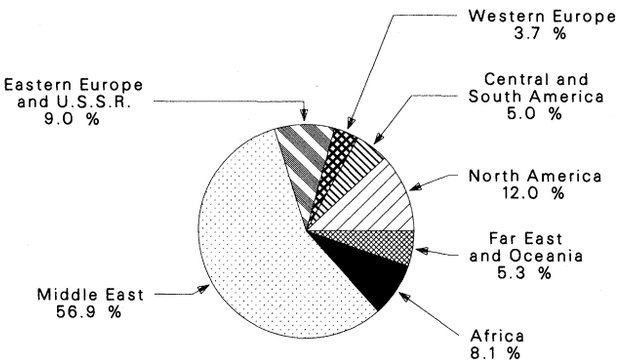
While oil is again selling at around $19 a barrel on the spot market, prices must approach the mid-$20s before substantial amounts of new domestic drilling will be undertaken. And OPEC members, wary of the effects of excess world production on revenues, may not allow prices to climb to a point where higher cost, non-OPEC production can come onstream. Says Stephen A. Smith, vice president of DRI's Energy Products Group, about an $18 to $20 a barrel price, "It's low enough to discourage the development of many major non-OPEC reserves and low enough to assure continued growth in oil demand."

Domestic reserves are estimated at 28.4 billion barrels—about 5% of the world total. It appears to be enough to last another decade at current demand levels. The reserve base has remained relatively level during the 1970s and 1980s because of slumping demand and intense exploration and drilling activity. In 1986 the weekly average of operating rotary drilling rigs plunged to 964 versus 1980 in 1985. Spending on exploration and drilling by 146 oil companies in the United States, Amoco's Eck estimates, was 40% less than in 1985.

As a result, the United States' petroleum reserves are expected to erode more rapidly. James Schlesinger, former energy secretary under President Carter, says domestic oil production must be stimulated to hold down imports. But he adds that "conservation must be embraced" and that the development of new alternative fuels must be pursued. Says Schlesinger, "We are not too far away from the time when we will run out of oil." ■ **MARK CRAWFORD**

U.S. oil deposits

At this time American petroleum reserves account for just 5% of the world's economically recoverable holdings. Additional drilling that yields new discoveries or augments existing wells could slow the depletion of domestic reserves.



Total = 700.7 Billion Barrels

ADDITIONAL READING

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U.S. Energy Security to 2000, Charles Ebinger, Center for Strategic and International Studies, Georgetown University, Washington, DC.

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