

As the new year begins, the major problems look much the same as they did a year ago and the challenges even tougher. But with a new President in the White House and Congress showing signs of rejuvenation there seems a better chance this year that the government will decide to grasp the nettle. Prospective articles follow on energy, the environment, and reform in Congress.

In Energy Impasse, Conservation Keeps Popping Up

As President Ford prepares to unveil a new and apparently sterner plan of attack on the nation's interlocked problems of energy, inflation, and recession, a twinge of *déjà vu* may be inevitable. As was the case with former President Nixon in the fall of 1973, Mr. Ford, having sacked an energy chief who was too aggressively promoting strict conservation measures, slowly has come around to the view that voluntary action alone by business and consumers may not be enough to cure the ills of a complex economy and curb its ravenous appetite for petroleum.

This is the message that a remarkably diverse collection of economists, businessmen, environmentalists, and some of the President's own advisers have been harping on for months—that, more than ever before, the federal government will have to take a direct hand in holding down demand for energy while promoting new sources of supply. It remains to be seen whether the rest of the conservation message has gotten through: to make it at all palatable to Congress, the long-disdained gasoline tax or any other economic restraint on oil consumption will have to be coordinated carefully with palliatives for inflation and recession. Among others, for example, Representative Al Ullman (D-Ore.), the new chairman of the Ways and Means Committee, is saying that a gasoline tax “won’t stand up by itself” in Congress, but instead will have to be considered as part of a broad package of tax reforms.

That the federal government should tinker with energy supply and demand any more than it does already, through its regulatory agencies and partial price controls, is a notion that runs as strongly counter to President Ford's conservative instincts as it did to former President Nixon's. Ford's closest economic advisers, Treasury Secre-

tary William Simon and Alan Greenspan, the chairman of the Council of Economic Advisers, find the thought of a large new bureaucracy systematically manipulating the energy market no less abhorrent. But the ineffectuality of the Administration's pleas for voluntary conservation and a deteriorating supply-demand picture have made some sort of decisive action imperative.

Consumption Creeps Up

As of mid-December, demand for oil had grown to 18 million barrels a day, up a quarter million barrels or 1.5 percent from the same time last year, just before the full force of the Arab embargo was felt. In keeping with a normal seasonal pattern, demand since last September has grown by more than 1 million barrels a day in spite of the President's exhortation in October to drive less, turn down the thermostat, and help save a million barrels a day by late 1975.

Voluntary cutbacks, perhaps motivated initially by patriotism, probably helped restrain the growth rate of oil consumption. But many analysts now seem inclined to give as much credit, or more, to higher prices and the drooping economy. And the fact remains that consumption is still creeping up.

To make matters worse, domestic oil production went down for the third year in a row. During 1974, domestic production fell by 5 percent or about 400,000 barrels a day while imports (averaged over 4-week periods) rose 17 percent to 7.4 million barrels a day. According to the Petroleum Industry Research Foundation in New York, Arab exporters now directly supply 8.2 percent of the United States' crude oil compared with 7.7 percent a year ago. This growing reliance on the least secure sources is attributed to Canada's export cut-back and to Venezuela's decision to

restrict its production and hold its oil income to a manageable \$10 billion a year.

In the meantime the United States this winter faces the possibility of a severe shortage of natural gas. Suppliers in the Washington, D.C., area are bracing for a shortfall of up to 22 percent; parts of Ohio may be in for shortages of 45 percent.

The worsening gap between demand and secure supplies might have been easily papered over with optimistic forecasts had the Ford Administration not committed itself to an understanding with the other major Western importers to reduce oil consumption by 3 million barrels a day. The American share of that cut, equal to its share of consumption, was to be a little over 1 million barrels a day. The 16-nation International Energy Agency, the importers' fledgling response to the exporters' cartel, next meets in February to review progress toward this goal. West Germany, among others, has taken steps to cut its demand by 10 percent. For the United States, laying a firm new policy on the table might at least mitigate the embarrassment of having to report an increase in consumption.

The White House is keeping mum on how it expects to reverse this trend, but its new energy policy will apparently be based on a report of some 70 pages distilled from 2 days of talks among top-level energy and economic advisers at Camp David in mid-December. The policy paper outlines dozens of options that reflect an analysis of alternatives put forward in the massive Project Independence report produced by the Federal Energy Administration (FEA) in November. The option Ford now seems to favor is an excise tax on crude and refined petroleum combined with tax rebates or credits to soften the blow. Tax incentives could also be offered to oil

companies as inducements to build up petroleum stockpiles.

Whatever plan the President settles on, the feeling remains rife that it will be nothing that could not have been justified and acted upon at the end of the embargo last March—that nearly a year has been frittered away.

Obviously Ford and his instincts are not entirely to blame for a year's waffling and muddling. But throughout much of the fall his energy advisers—notably John Sawhill, the former FEA chief—were frustratingly unable to seize his attention for some serious talk about energy. It can be argued that Ford's peregrinations from Vladivostok to Martinique were essential to show that the American government was back on an even keel; and it may have been considered imprudent to make energy policy before the homework was done, as Nixon had in November 1973 with his television speech launching Project Independence, of which less and less is heard these days. But at least the preliminary results of the homework—the FEA's impressive policy analysis published in November—could have been had early in the autumn. And yet it was not until 7 December that Ford's new energy chief, Frank G. Zarb, was able to get the President aside for the first time for two consecutive hours of instruction on the nation's energy problems. Whereupon Ford was reported by his press secretary to have declared that the situation was "complex as the devil."

It is certainly that, and getting complexer. If nothing else, the past year has made the hard realities of the nation's energy bind a great deal plainer. What passed for conventional wisdom a year ago—that soaring prices would stimulate new supplies of conventional oil, make synthetic fuels from coal and oil shale commercially feasible, and shake the exporters' cartel to its foundations—has since taken on the hollow ring of bomb-shelter bravado. The Organization of Petroleum Exporting Countries has managed to keep its income flowing at a tidy rate of \$100 billion a year by lowering production and raising prices, and OPEC shows every sign of being able to continue in this mode without coming apart at the seams at least until 1980.

It is true that drilling is up in the United States by about 20 percent over last year, but discoveries thus far have been nothing to rave about. The Bureau of Mines is predicting

that exploratory drilling will have to accelerate at a rate of 6 percent a year for at least six more years to reverse the downward slide of production, and there is a good deal of skepticism in the oil industry that even this sustained growth will suffice. The U.S. Geological Survey's persistently rosy estimates of recoverable oil and gas left to be found onshore and offshore in the United States have been sharply questioned in the past year, and more than a few leading oilmen are privately doubtful that higher prices will in fact lead to significant new production.

Dim Outlook for Synthetics

Circumstances have also conspired to dim the short-term prospects for the major alternatives to oil—the synthetic fuels and nuclear energy. The current world market price for oil of around \$11 a barrel is probably high enough to guarantee a profit even from the inefficient synthetic fuel technology now available—but only if money can be found to build the plants, and only if there's some assurance that investments will be protected should the world price fall.

So far the only North American beneficiary of higher prices is Great Canadian Oil Sands Ltd., a unit of the Sun Oil Company whose plant at the Athabaska tar sands in Alberta extracts 50,000 barrels of oil a day and is finally turning a profit after some 7 years of operation. But in recent months at least four other companies have pulled out of new tar sands projects, citing rocketing construction costs as the reason. Among the four, Atlantic Richfield Company withdrew from a tar sands consortium planning a 125,000-barrel-a-day plant whose estimated cost had soared from \$400 million in 1972 to "probably over \$2 billion" now, according to an Arco spokesman. At the same time, the company has shelved indefinitely a plan to build a shale oil extraction plant in Colorado. Cost estimates for this plant rose last year from \$450 million to nearly \$1 billion. And there is still the unsettled question of how, if at all, the federal government proposes to protect pioneering investments in such plants, should oil prices tumble. More than a year ago the Administration was mulling a variety of policies—ranging from guaranteed loans to promises to become the "purchaser of last resort" if prices fell—but no decision has yet been made.

Huge increases in construction costs and the shortage of investment capital have also iced hopes for a rapid build-up of coal gasification and liquefaction plants, and so have rising coal costs, which have escalated to \$15 a ton from \$8.53 in 1973.

On top of economic woes, new environmental problems have come to the fore. Water supplies, rarely mentioned 2 years ago as having anything to do with the development of Western coal and shale, are now widely viewed as a limiting factor in energy development. Additional water could be moved to the coal and shale at considerable cost, or the coal and shale could be moved to the water if the necessary rail capacity existed, but it apparently does not. Either way, the rapid development of Western energy resources is likely to bring with it explosive urbanization and other social changes as dramatic as any alteration of the landscape.

Further, oil shale waste—and the carcinogens it contains—present a vast and unresolved disposal problem. And the fact that coal from the Northern Great Plains is contaminated with relatively large trace amounts of uranium raises the possibility of a health hazard not previously associated with burning coal.

The dreary recitation goes on. No other sector of the energy industry is in quite so precarious a financial state as the electric utilities, and their plight is being felt keenly in the nuclear industry. As rapid increases in the cost of conventional fuels have been passed along to consumers, consumption has ebbed and utilities have found themselves strapped for money and forced to revise their demand projections downward. According to the Atomic Industrial Forum, these two factors have led utilities to defer 77 of the 181 nuclear units now under construction or once firmly planned, 11 of them "indefinitely." A few years ago the Atomic Energy Commission projected that nuclear capacity would reach 150,000 megawatts or 22 percent of the nation's electric power by 1980. This estimate has recently been lowered to about 102,000 megawatts, and some authorities doubt even this will be reached by 1980.

Among the casualties in the epidemic of reactor plant deferrals is a joint venture of the Westinghouse Electric Corporation and Tenneco, Inc., set up in 1971 to build offshore nuclear plants as an answer to siting prob-

lems in congested urban areas. The venture, Offshore Power Systems, reportedly has laid off 60 percent of its work force and put off building a manufacturing plant near Jacksonville, Florida, now that its only customer, New Jersey's Public Service Electric and Gas Company, has shelved an order for four reactor units.

Moreover, the nuclear fuel industry continues to be plagued with a series of nettlesome problems. The government's enrichment capacity is fully committed and private companies are developing cold feet over building new plants; there's a shortage of reprocessing capacity; and unresolved questions of waste disposal, although not intractable, continue to provide grist for the critics advocating a moratorium on construction of new reactors.

Against this somber background, energy conservation has begun during the past year to seem not merely attractive and feasible but essential. A year ago, as the FEA points out in its Project Independence report, not much was known about the savings and the economic and social costs that might be incurred from conservation proposals that otherwise seemed technically practical. Recently, however, a number of econometric studies—prompted partly by last winter's abruptly imposed conservation measures—have started to clarify these linkages. The studies have tended to show that energy demand is more sensitive to price than was previously believed, while economic growth appears less dependent on energy growth.

This new perspective has given rise to a surprisingly broad national consensus that energy growth can be reduced substantially, if gradually, without great economic or social hardship. (On the other hand, some thoughtful analysts are convinced that between its sinking economy and shrinking resources the United States will be lucky to achieve *any* growth in energy for an indefinite time and that hardship may be inevitable.)

One of the first proposals that helped dispel the faddishness of conservation and bring it into the realm of serious debate came last March from the President's Council on Environmental Quality. Speaking for itself, not the President, the CEQ's "Half and Half Plan" urged adherence to an average net per capita growth rate of energy demand of 1.4 percent a year, the average rate that prevailed from 1947 to 1972. Half of this restrained growth would be achieved by real expansion of energy production and half by conservation. Allowing for projected population growth, this would correspond to growth in gross energy consumption of 1.8 percent a year compared with the 4.3 percent rate sustained through the 1960's and early 1970's.

The Ford Foundation's Energy Policy Project, reflecting a mostly liberal and academic point of view, later advocated a 2 percent growth rate. Next, the FEA, placing heavy emphasis on conservation, concluded that a 2 percent growth rate could be achieved with government intervention where normal market forces work too slowly

or at counterpurposes. And in December, the Committee for Economic Development, composed of some 200 leading businessmen and educators, advocated a growth target of 2.9 percent a year as part of an energy policy that would make conservation a "full partner," with strenuous efforts to develop new resources.

These studies do disagree on important questions—such as the level of oil imports to be tolerated, priorities for research, and prescriptions for the government's conservation actions—but they are more notable for their reflection of an emerging conservation consensus.

President Ford could do worse than to sanctify this consensus. Achieving a targeted rate of energy growth, however, implies involvement in economic planning and management well beyond what Western governments are used to. Some observers, including physicist Alvin Weinberg, regard the Project Independence study as an historic step in this direction. Imprecise as it may be, Weinberg (who directed the FEA's research policy office until last month) thinks of the study as "the first major use by a Western government of large-scale systems analysis . . . a very important departure in the way government plans its activities."

Although some people have criticized the FEA for failing to present a "blueprint" for national energy security as originally intended, the report's more-or-less impartial analysis of options will probably guarantee it longer and more useful service as a touchstone for policy.

Briefing

Rocky Eyes Science Advice

The White House has announced that Vice President Nelson Rockefeller will study the question of rearranging the machinery for presidential science advising as one of his first assignments. Rocky will thus step into waters already stirred by controversy within scientific circles. Under the present system, the Director of the National Science Foundation also serves as Presidential Science Adviser, but without a White House office or a portfolio for military and security affairs. Two years ago, President Nixon abolished the old science office in the White House, and the

present system has been in effect ever since.

However, a number of scientific organizations, a blue ribbon committee of the National Academy of Sciences, and even the Senate, has come out supporting a different system, in which a council of science advisers modeled on the Council of Economic Advisers would be set up in the White House. On 27 December, the National Council of the Federation of American Scientists (FAS) also endorsed this proposal. At a press conference, FAS chairman Philip Morrison said that the feeling of the council on the matter was that NSF was generically incapable of performing the science advisory function. And in his

own statement FAS executive director and chief lobbyist Jeremy J. Stone went even further and criticized the President's science adviser, NSF Director H. Guyford Stever, for inadequately representing the desire of the scientific community for a council, since Stever has remained publicly vague about which option he has urged the Administration to follow in recent private meetings with high officials.

Where Rockefeller is tending on the issue—toward strengthening the existing system, creating a council, or something else—may be learned if he accepts an invitation to meet on 6 January with the Committee of Scientific Society Presidents.—D.S.

Establishing a measure of control over energy growth may also require a degree of administrative stability and constancy that has so far eluded the top policy-making machinery of government. The creation of an Energy Research and Development Administration promises to bring a new coherence to the research effort; between ERDA's budget and related legislation passed by Congress last year, the government now has on paper an energy research policy. But the flux of new

faces in the top policy spots continues, and many regard the FEA as only an interim step toward consolidation with the Interior Department (and possibly ERDA) to form a long-envisioned Department of Energy and Natural Resources (DENR).

While this possibility hangs in the air, it's still hard to tell who President Ford's chief energy adviser really is. The organization charts show Interior Secretary Rogers Morton to be running a de facto DENR with himself as chair-

man of the Energy Resources Council and FEA chief Frank Zarb as his executive director and subordinate. But some who know both men describe Zarb as an incisive man of less leisurely pace than Morton and likely to take the upper hand.

Now that the homework is done and the search for a policy structure has calmed down, it's up to President Ford to decide who his energy adviser is and to take his advice.

—ROBERT GILLETTE

The Environment, a "Mature" Cause in Need of a Lift

... The environmental movement has matured, and the nation and its environment have benefited in the process. Looking to the future, we can expect further accomplishments in enhancing our environment. . . .—From the message by President Gerald R. Ford in the 1974 report of the Council on Environmental Quality.

Maturity is in the eye of the beholder, and not everyone will share President Ford's apparent satisfaction and optimism about the environmental movement's achievements and prospects. Indeed, one can find reason to believe that the movement is losing its momentum. Further, some will conclude that the momentum will not be regained in the absence of positive national leadership to bring about a new policy synthesis—a synthesis of, on the one hand, the policies necessary to promote growth of energy resources and economic expansion generally, and, on the other hand, the policies aimed at achieving a high quality of life.

For the environmentalist, the year 1974 was one of holding actions and few positive gains. The two most important pieces of environmental legislation, the land use and strip mining bills, failed of enactment; the strip mining measure cleared the Congress but, at this writing, it awaits a veto promised by the President. Moreover, it was only the strong stands taken by Administrator Russell E. Train of the Environmental Protection Agency (EPA) and Russell W. Peterson of the Council on Environmental Quality (CEQ) that stopped moves within the Nixon Administration to weaken severely the Clean Air Act and the National Environmental Policy Act—this to have been done, of course, in the name of coping with the energy crunch. And it is by no means clear yet that President Ford will be any less inclined than his predecessor to sacrifice environmental

goals for the sake of short-term expedients to facilitate energy production.

Perhaps the most that the environmentalist can say for 1974 is that it was a year in which public concern for the environment was shown to be no passing fad. That concern did not dissipate with the onset of energy shortages and economic recession. To judge from the outcome last fall of elections in which environmental issues were important, most people have remained remarkably steadfast in their interest in protecting and enhancing the quality of life.

As the year wore on, there seemed to be increasing recognition that wasteful use of energy resources, environmental abuse, and double-digit inflation are all directly related. Certainly, the arguments by some industry representatives that environmental protection programs are themselves a significant cause of energy shortages and inflation did not go unquestioned.

Such arguments were vigorously challenged by EPA and CEQ. A study by EPA indicated that even in 1980, when EPA programs presumably will be far advanced, its standards and regulations will account for only 1 percent of total U.S. energy consumption. A CEQ study concluded that public and private expenditure for environmental protection was accounting for less than 0.5 percent of the annual rate of inflation.

Although public interest in protecting and enhancing the quality of life apparently has remained strong, environmental programs have not yet of-

fered a clear, unequivocal promise of results in keeping with the large sums that are being expended. According to CEQ forecasts, \$194.8 billion in public and private funds will be spent for environmental protection during the 10-year period 1973 to 1982. To date, the payoff from environmental expenditures—which amounted to an estimated \$6.3 billion in 1973—has been modest, even allowing for the fact that most large-scale cleanup efforts began only a few years ago.

In making public the CEQ annual report last month, Peterson summarized a key finding: "We have slowed the growth in pollution but, with some exceptions, have yet to reverse the tide. And new concerns keep arising which cause anxiety."

The situation with respect to air pollution is such as to dismay anyone who might have believed that clean air was right around the corner. Levels of particulates in urban areas have decreased only slightly in recent years; small particulates are proving especially difficult to control, and these are the ones most hazardous to health.

Although sulfur dioxide levels fell by about 50 percent during the past 7 or 8 years, there are now indications of a change from this favorable trend. As natural gas and low-sulfur oil have become more scarce or costly, the electric utilities serving some cities have shifted back to high-sulfur fuels. Furthermore, ambient concentrations of sulfates, which may be another particularly hazardous type of pollutant, are not de-