Relaxed Energy Outlook Masks Continuing Uncertainties

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Summary. The U.S. energy situation has significantly improved since energy first became a national problem 9 years ago. But easing is not to be confused with solving. Many problems remain and in time might even get worse. The assumptions underlying the prognosis of a carefree energy future merit careful continuing scrutiny. Some do not hold up well. Moreover, in part, greater ease in energy is the mirror image of depressed economic conditions. It is reasonable to relax a little but not to relapse.

It would be foolish to deny that the country's energy situation has improved. A number of things have gone right.

- Homeowners, drivers, industrial users—indeed everybody, as far as statistics allow one to make that judgment—is using energy more efficiently. As a result, energy use has declined far beyond what can be considered merely the consequences of the slowdown in the pace of economic growth. After hitting a peak of nearly 79 quads in 1979, energy consumption declined to less than 73 Q in 1981, less than was consumed in 1973, the last "precrisis" year. Those who have attempted to apportion the cause of the decline, come out with slow growth and response to higher prices being about equally responsible.
- Domestic crude oil production has held up well. It has continued to decline in the U.S. lower 48 states, from a peak of 9.4 million barrels per day (mbd) in 1970 to just under 7 mbd in the spring of 1982, but two-thirds of that decline has been made up by the steep increase in Alaskan oil production, from just over 0.2 mbd in 1970 to 1.7 mbd in early 1982. Thus, it is fair to say that the decline in crude oil production that began in 1971 has been halted.
- In the absence of Alaskan supplies, natural gas production has not come back up to its 1973 peak, but the decline in production was limited to 2 years only: 1974 and 1975. It has been just about level since then—not a bad performance.
- The import share in U.S. oil consumption hit a peak of nearly 50 percent in 1977. It has come down drastically and now, at 36 percent for gross and 34 percent for net oil imports, is smaller than it was in 1973 and continues to fall.
- U.S. reliance on oil imports from members of OPEC (Organization of Petroleum Exporting Countries) has moved along a similar curve: it hit a peak in 1977, when seven out of every ten barrels imported into the United States came from OPEC members (plus some that reached U.S. ports from foreign non-OPEC refineries but could not be tagged as to the origin of the crude). By 1981 only 55 percent came from OPEC. This trend is not wholly unconnected with the fact that the United States has been able to ride out the Iran-Iraq war as well as the Lebanese conflict without any effect on its oil supplies.
- The country's primary energy mix has been moving in a desirable direction: out of oil (47 percent in 1973 to 43 percent in 1981) into coal (18 percent in 1973 to 22 percent in 1981) and nuclear (1.2 percent in 1973 to 3.8 percent in 1981). These changes are not dramatic, but then changes in large aggregates rarely are.
- Prices of petroleum products not only have stopped rising, they have been declining—gasoline at the pump down from $1.37 per gallon in the second quarter of 1981 to $1.16 per gallon (in 1981 dollars) a year later. Prices for residential heating and residual fuel oil have also decreased. (In contrast, prices of both natural gas and electricity continue to climb.) Many people would be astounded to hear that in the first quarter of 1982 the price of leaded gasoline, adjusted for inflation, was only 10 cents per gallon higher than in 1974. But that is a fact.
- The country's energy import bill that came to $6 billion a month in 1980 and 1981, was down to less than $4 billion a month during the first half of 1982.

With such an abundance of good news, it is reasonable to ask whether we have indeed overcome the energy problem and can stop worrying. The bandwagon surely appears to be rolling in that direction. More than anything else, the existence of the "oil glut" (evident in the large overhang of idle OPEC capacity and nominally stable crude oil prices that translate into declining prices when adjusted for general inflation) is increasingly cited as a sign that things are back to normal, or so close to normal that we may turn to solving the next crisis.

This perspective in turn leads to demands for much of the institutional and policy structure for handling energy problems in the last 9 years to be dismantled. This hits especially aid to conservation, the development of alternative energy sources, assistance to those hit especially hard by high energy costs, and the provision of measures to cope with emergencies or sustained perturbations. Combined with federal budget stringency, this perspective also leads to diminished appropriations for research and development. While there is no "right" number, the Administration's proposed cutback in research and development of solar energy, for example, from not quite $300 million in fiscal year 1982 to $72 million in FY 1983 at least suggests a greatly diminished interest in alternative energy sources.

Before the bandwagon has picked up all but a few stragglers, it is well to probe the thesis. Obviously, we will not know for a while where we are heading, but a few cautionary comments seem in order. Above all, the carefree outlook depends crucially on at least these assumptions, the first of which is in itself not especially heartening:

1) The rate of economic growth remains badly depressed in both the industrialized and the developing countries.

2) The Persian Gulf area enjoys political and social stability.

3) Nuclear energy is not further shaken by accidents of the Three Mile Island variety, or worse, here or abroad.

4) Opposition to greatly increased coal-burning, based primarily on environmental grounds, is not boosted by damaging findings, such as regards the origin and effects of acid rain, which would call for cost-raising remedies.

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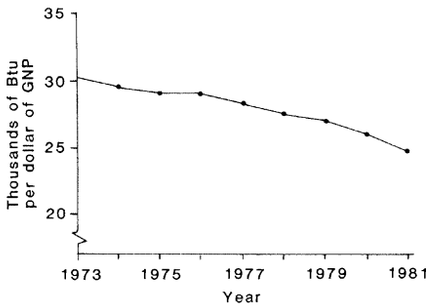

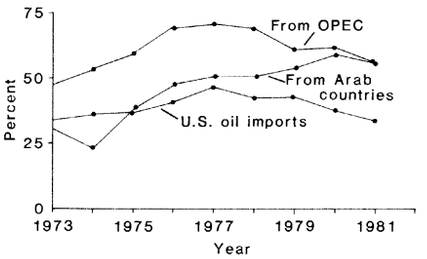

Fig. 1 (left). More output from less energy. Each year since 1973 it has taken less energy (fewer British thermal units, Btu's) to produce a dollar's worth of goods and services. The gross national product (*GNP*) is shown in constant (1981) dollars. Fig. 2 (right). Changes in U.S. dependence on oil imports and in the amount of oil imported from OPEC (Organization of Petroleum Exporting Countries) and Arab countries. U.S. net oil imports are expressed as a percentage of oil consumption. Oil imports from OPEC and Arab OPEC countries are shown as percentages of total U.S. oil imports. The imports from OPEC are understated, since some OPEC oil reaches the United States in the form of products refined from OPEC oil in other countries. The recent decline in U.S. dependence on OPEC oil reflects the increasing diversity in sources.

5) The Soviet Union's internal economic difficulties keep it out of foreign adventures.

Each of these considerations is arguable in terms of validity, timing, and impact. But between them they represent a rather powerful array of conditions that have to be met if we expect to have a tranquil energy future. Potentially the most important impact would flow from sustained trouble in the oil-exporting countries that ship through the Persian Gulf and that contain virtually all the excess production capacity. This could come from a variety of directions both internal and external to the principal oil-exporting countries. Some argue that by now even the disappearance of Saudi oil could be borne without major disturbance to the world's economies. With unused OPEC capacity of more than 10 mbd (including Iraq and Iran), a loss of 6 or 7 million barrels of Saudi oil no longer seems unbearable. Arguments of this kind are highly suspect. Paper arithmetic applied to complex trade patterns is apt to be deceptive. Much smaller reductions have in the past sent oil and energy markets into shock and prices skyrocketing. Moreover, while the United States now draws less than 10 percent of its oil consumption from the Gulf States, for Western Europe and Japan these are the principal suppliers. Also, as of mid-1982, the world's financial system undoubtedly has a much lower threshold of vulnerability in the wake of a major oil disturbance than does the world's energy system. Thus it is hard to believe that any substantial trouble affecting oil exports would not turn out to be a traumatic event. The subject is simply not exhausted by toting up anticipated demand and supply and turning to other matters when the two match. As for the slow pace of growth in coal and nuclear power, this factor would not have any sharp, immediate impact; it would merely allow oil consumption to gradually creep up. In contrast, a crisis of the Three Mile Island type would be a major shock to the energy system.

There is yet another set of questions one must ask: how long are the "good news" items listed in the opening paragraphs likely to be sustained? Take domestic oil production. While the stability of aggregate production is encouraging, its composite parts are not. Despite enormously increased drilling activity, oil production in the lower 48 states, including offshore fields, declined throughout the 1970's, reaching a low point so far of 6.95 mbd in 1981. True, the decline from 1980 to 1981 has been miniscule, but at the same time the increase in Alaskan oil production—which in only the past 5 years had taken it from 173,000 barrels a day to 1,617 thousand barrels a day—has also halted. Offshore oil production, once the anticipated horn of plenty, has declined year after year since reaching a peak in 1971 and now flows at 40 percent below that peak.

What is one to make of these three components that in the aggregate produce a stable output? Alaskan oil will rise only slowly, if at all. The carrying capacity of the pipeline by itself sets a cap. Does the furious drilling pace of the last few years, now sharply down, signify that both onshore and offshore output in the lower 48 states will stop declining? Perhaps so. But do not count on it.

Similar cautions apply to the pace of future changes in the energy mix. One interesting observation is that the rising share of coal has been due wholly to its increased use in power generation. Coal used in coke ovens has been steadily declining, and when one examines statistics on coal consumption by the rest of industry it looks as if someone had frozen the needle: year after year industry burns between 60 and 65 million tons, while utility use has climbed from a little under 400 million tons in 1973 to nearly 600 million tons in 1981. The contrast is striking. It suggests that until nonpolluting ways of coal combustion—such as fluidized bed technologies—are adopted by industry, coal's progress will more intimately than ever be a function of electricity demand. Elsewhere, potential coal consumers cling tenaciously to oil and gas.

To return to the topic at hand: is the energy crisis over? In my judgment we never had an energy *crisis*, but we did and do have an energy *problem*. This is not a semantic nicety. A crisis has a climax, a solution, and ends with a return to "normalcy." The years from 1973 to 1982 do not fit that description. The energy problem—in the sense of situations, developments, tasks, challenges that we need to cope with—is very much with us, oil glut or no oil glut. Not only that. What we have tended to ignore in our fascination with energy is that what is "good" from the energy vantage point (for example, rising prices and declining consumption) is bad, very bad, for the economy and for human welfare. We would all be better off with lower prices and higher energy consumption (even though such a situation could not go on forever). Why? Because energy is an unavoidable ingredient in most goods and services that we *do* want, and with lower prices we would be able to devote more resources to other pursuits.

The central task in coping with the energy problem has always been to adjust to higher costs; to do so in a way least damaging to economic growth, equity, and environmental values, health, and safety; to move toward an energy mix with less oil and gas; and to cushion effects of potentially severe perturbations. That, it seems to me, should remain the agenda and calls for continued sensitivity to the issues of the long run. It is all right to relax but not to relapse.