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Energy Conservation

The series of articles on energy appearing currently in *Science* points up the long-range importance of this topic and many problems connected with it. If we are to solve our energy problems, the public and the government must give these matters an enduring high priority. This is chancy. When there is a dramatic crisis, the public usually behaves well. For example, during some of the recent power shortages, the public responded to pleas for conservation. Once the immediate crisis passed, though, the public returned to its old habits. Consumption of energy continued to grow exponentially. And use of gasoline is growing at a fast rate because emission controls are making automobiles less efficient.

Importation of petroleum and its products has been increasing rapidly. The Bureau of Mines now estimates that by 1985 imports alone will amount to 15 million barrels a day, which is our current total use. Such a volume could only be met by drawing heavily on the Middle East. Demand from Europe and Japan has already created a seller's market. Recently the Oil Producing and Exporting Countries have obtained substantial increases in their take. The most aggressive has been Libya, which in 2 years has doubled its return per barrel.

What will the Middle Eastern countries do with the enormous wealth that they will extract? The example of one is disquieting. Libya has chosen to devote part of its revenues to financing terrorist activities. The largest petroleum reserve is found in Saudi Arabia. That country has a small population and limited demand for goods. It has already begun to move toward controlling interest in some of the great International Petroleum companies. At the moment it seems to be a force for stability in the Middle East. However, who knows for how long? Prudence dictates that we examine alternatives to massive dependence on foreign oil.

One alternative that has not had much attention is conservation of energy. A recent useful 250-page government study* points to many possible measures that could be taken to reduce energy demand without great interference with life styles. It provides data on the various categories of energy consumption—transportation (25 percent), industry (29 percent), electric utilities (25 percent), and residential/commercial (21 percent) as well as the many components of these categories. The report discusses in detail possible short-term and mid-term savings in energy. For example, better insulation of houses provided at nominal cost would save very substantial amounts of both energy and money. The study suggests that energy conservation measures could reduce U.S. energy demand in 1980 by as much as the equivalent of 7.3 million barrels of oil per day. To achieve these economies in energy would require voluntary public cooperation on a scale that has heretofore not been sustained for long.

The surest way of obtaining public cooperation in the expenditure of energy is to make energy costly, and this is likely to occur whether we wish it or not. If present trends continue, a doubling or trebling in cost of oil and gasoline could occur in this decade.

Ultimately we will find that we must rethink our attitude about automobiles. Most of us would be reluctant to part with our mobile castles. But must these castles weigh 2 tons or more? If the government can dictate exhaust standards, safety features and more, why can't it exert pressure for lighter weight and greater mileage. Indeed it is likely that history will record that instead of its push on manufacturers to cut emissions, the government should be pressing now for sharply better fuel economy.—PHILIP H. ABELSON

* "The Potential for Energy Conservation," A staff Study, October 1972 (Office of Emergency Preparedness, Executive Office of the President).