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## THE ENERGY OUTLOOK

by

Stanley B. Farbstein

Energy Conservation Meeting -- B.F. Goodrich Chemical Co. -- May 21, 1974

The dictionary defines outlook as a view of the future. Let's take a view of energy over three future periods -- the near term, say the next 18 months; the intermediate term, 1976-1985; and the long term, 1986 and later.

Mr. Nixon has said that we have passed from an energy crisis to an energy problem. Unfortunately, the American public has little patience with long-term problems. We are willing to get stirred up and work hard over a short period of time, but we soon tire of continuing problems. Despite this, we do have a continuing and severe energy problem in the United States. Even though the Arab oil embargo has ended, the United States does not now, and probably never again, will have the ability to match the past rates of growth in energy use.

### The Near Term

The keys to matching U.S. energy supply and demand during the near term are increased imports of crude oil from the Middle East and reduced energy demand.

There is no way in which we can provide additional supplies of energy from domestic sources of fuel in the near term.

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crease in supply of imported crude oil from that source. However, the political situation in the Arab world is very unstable and it certainly is not out of the question that circumstances could arise which could cause the Arabs to reimpose their oil embargo.

There are very large reserves of oil in the Middle East, particularly in Saudi Arabia and Iran. We can probably expect some expansion in the rate of oil production in this area, but there is a definite concern with conservation of this oil to meet their future needs. Further, these countries have recognized that they can obtain as much income by limiting the production of oil and keeping prices up as by going all out for production and having the prices drop to levels one-half of the present. I do not believe that the rate of oil production from this area will be reduced, but we cannot expect all out future expansion of production to meet U.S. requirements.

I do not believe that we can expect the landed cost of this Middle Eastern crude oil to drop to anywhere near past levels. Presently, this oil landed in the United States costs \$10-\$12 per barrel. I believe that it is possible that this cost might be reduced to a very minimum of \$8 per barrel. A more likely figure is probably \$10 per barrel.

The Arab countries took the lead last year in increasing the price of crude oil to the present level. However, all countries exporting oil to the U.S., including the Canadians,

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energy consumption by the public, primarily in gasoline for pleasure driving and residential energy consumption.

However, political expediency has resulted in a deemphasis of conservation by the consuming public. In recent weeks, gasoline consumption has increased markedly. The United States can reach a balance of supply and demand for energy in the near term only by restrictions in some sectors of demand. I anticipate that because of political pressures, the government will find it expedient to insist on energy consumption cutbacks by industry while giving lip service to energy conservation by the consuming public.

Past energy consumption growth in the United States has been at a rate of 4½-5% per year. There is no way that this kind of energy growth can be supplied in the near term.

In the near term, the key to balancing U.S. supply and demand for energy will be increased imports of Middle Eastern crude oil and refined petroleum products and a reduction in energy consumption by conservation. If this conservation is not accepted on a voluntary basis, we can expect it to be mandated by the government. Energy costs will rise to a price equivalent to crude oil at \$10-\$12 per barrel.

#### Intermediate Term

For the intermediate term, 1976-1985, we can expect an increasing portion of our energy requirements to be supplied by coal with probably some increases in domestic production of

During this period, there will be an acceleration in the construction of nuclear plants to generate electricity. However, these plants will not contribute significantly to the supply of energy until the end of the period.

There will also be a large amount of research and development in efforts to conserve fuel by increasing the efficiency of electrical production. Presently this efficiency is approximately 30%. I would expect the target to be an efficiency of electrical generation of 50%. However, the results of this work also will not significantly contribute to the relief of energy supplies until 1980-85.

During this period, we can expect continued emphasis on energy conservation as a result of both the high cost of fuel and energy and governmental requirements. Building codes will be revised to require certain efficiencies. It is likely that minimum energy efficiencies will be required by the government on most types of machinery, including automobiles, air conditioners, household appliances, motors, steam generation equipment, etc. The government will play a major role in energy conservation.

We can expect the cost of energy to continue to be established by the cost of imported crude oil. This will probably cost somewhere in the range of \$12 per barrel in terms of present-day dollars.

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foreign crude oil will play an important role in our total national energy supply and we will continue to be vulnerable to political pressures from an unstable part of the world. In the period 2-15 years in the future, coal will supply an increasing share of our total energy requirements. Following that period, nuclear energy will provide for an increasing share of the energy requirements. Conservation of energy will continue to be essential in order to meet competitive economic pressures and government requirements.

Despite these problems in the remainder of this century, I believe that with our continuing efforts at conservation of fuels, energy, and feedstocks, led by this group, and by continuing to adjust selling prices of our products to allow for energy costs, our company can remain healthy and continue to grow.

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