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National Security Implications of the Development of Synthetic Fuels

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NATIONAL SECURITY IMPLICATIONS OF THE DEVELOPMENT OF SYNTHETIC FUELS

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I am never sure how much people know about synthetic fuels, so I am going to present a basic overview. The issue with synthetic fuels is the ability to convert solid fossil energy, primarily coal and oil shale, mainly heavy oil and tar sands, into liquids and gases. The United States has solid fossil resources equivalent to five or six times the reserves of the entire Middle East, and we can prove up these solid fossil resources with a modest program and assure the country centuries of energy security.

We began with a program that was designed to spend $88 billion—$88 billion was authorized and $20 billion actually appropriated in June 1980 under President Carter's administration when the Synthetic Fuels Corporation (SFC) was established. We have taken this massive program and scaled it back to 2 to 3 percent of the original $88 billion. I spoke out strongly in 1980 about the lack of need for such a massive program; we did not need it then and we do not need it today. We do need to develop the technology and the infrastructure to use our massive solid fossil reserves efficiently and economically as marketplace or national security needs warrant.

Let me give you a little history. The Synthetic Fuels Corporation was established in June 1980. I came on a temporary basis in November 1980 to head the SFC transition team for the incoming Reagan administration. The transition team recommended that the administration abolish the Synthetic Fuels Corporation because of the enormous potential for abuse in its unnecessarily large $88 billion program. We outlined valid national security reasons for proceeding with just a few synthetic fuels plants on a commercial scale.

The present administration decided to go ahead with the Synthetic Fuels Corporation, and asked me to head it. I agreed because I recognized the importance of a commercial synthetic fuels capability to our national security. This is the basic reason the administration signed off on the program. I feel, however, that all we need are a few plants, about a half dozen, to show we can do this.

Twenty billion dollars had been appropriated to the Synthetic Fuels Corporation. Congress apparently did not think the corporation could spend the money fast enough, so it put $5 billion of the $20 billion in the Department of Energy (DOE), into what it designated the "fast track" synfuels programs. DOE had three projects almost negotiated when I became chairman of the corporation in May 1981. At that time I told Secretary of Energy Jim Ed-

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wards that I was strongly opposed to two of the three projects. One had insufficient design to estimate its costs accurately, and the other was forecasting success on the basis of projected oil and gas prices ten years in the future. DOE nevertheless awarded contracts to all three projects. The two problematic projects indeed had the very problems I predicted.

In 1981 the corporation had more than $15 billion, and we faced a real clamor to sign plants quickly. None of the plants proposed in 1981, however, was mature enough in design, management, or equity to merit federal support. The corporation had to move slowly, set criteria, and give the projects time to mature. Only then would we provide assistance to a few commercial plants (five or six) to show the rest of the world that the United States can use its massive solid fossil resources at a reasonable cost to meet its own energy needs.

Even if we never needed synthetic fuels, these plants would provide stability in energy prices along with the security of knowing that, should another supply interruption occur, the country would be able to expand synthetic fuels production in an orderly, economic, and environmentally sound manner. If the energy-exporting countries see the capabilities of the few commercial plants in the United States and realize that we can replicate these plants in three or four years, providing all the fuels we will need for two or three hundred years, then the exporting countries are likely to think hard about arbitrary price increases or supply interruptions. Synthetic fuels will give this country real leverage that is better than a rapid deployment force.

The corporation proceeded deliberately, set up a process, and began evaluating proposed synfuel projects. To date, we have evaluated more than 160 projects, and turned down about 150, under very strict criteria. First, projects had to have designs that would allow an estimate of costs to within 5 to 10 percent accuracy. In a billion-dollar plant, that may mean the private sector sponsor must spend a hundred to two hundred million dollars in design work, initially, to prove that they were serious about design and management. We want to see the sponsor equity in place and an indication that, in case of cost overruns, extra sponsor equity will also be available. We made the process tough, and that is why a lot of projects failed.

Of course, when we turned down 150 projects, a few people were upset. Every project has at least two senators, one congressman, and a governor unhappy because the project in their state wasn't approved. Under the circumstances, the corporation was pretty unpopular. We were really taking the time necessary to enable the private sector, who wanted these projects, to come up with the design, management, and equity before the corporation committed taxpayer dollars.

Today we have two plants under SFC contract. One is in operation. The Cool Water Project in Daggett, California, is an integrated gasification combined cycle facility, which gasifies coal to produce electricity. The plant is actually burning coal more efficiently and more cleanly than is possible with the most advanced scrubbers. Cool Water's emissions are only one-tenth of the Environmental Protection Agency's allowances for coal-fired plants. The project did not exceed budget and was built on time and offers utilities the ability to power-in small increments of 100 to 200 megawatts. This is signifi-

cant because a few years ago many utility companies overestimated their needs and built big plants which now run far below their design capacity. The resultant inefficiency makes the ability to add power generation in small increments very attractive to utilities. Over a dozen utilities are now seriously interested in replicating the Cool Water technology with their own money—not Uncle Sam's.

The second plant assisted by the corporation is the Dow Syngas Project in Louisiana. It processes low-rank coals, whereas Cool Water processes high-ranking bituminous coal. I point this out because coal has so many different properties and characteristics that different types of gasifiers are needed to process different coals. Therefore, we need several coal projects in the country, whereas we would need fewer plants to process the more homogeneous oil shale.

The Dow Syngas plant is currently under construction, on schedule, and considerably below budget, with operation planned for 1987. The project will gasify coal to produce fuel gas for industrial use. The technology has tremendous potential for replication in the industry-intensive Gulf Coast area. Dow is already planning to expand its own use of the technology, which we believe will handle coal as efficiently and environmentally safe as does the Cool Water plant.

So far, the corporation's insistence that projects have their design well developed before construction has paid off. Design is critical to cost, whether building a synthetic fuels plant or a single-family home. The corporation has operated on this principle. Frankly, I think if the Department of Defense would require similar levels of design before awarding contracts, we would not be faced with the kind of massive overrun problems we see in programs like the M1 tank or the B1 bomber.

What is left in front of us? We have three plants that are ready to be signed in the next few weeks. Two are oil shale plants, using different technologies. The third project is a relatively small heavy-oil plant. All of these projects have spent a lot of their own money to develop design and to put their management and equity in place.

Some have charged that the corporation is trying to push money out the door. Two years ago, many Washington sages were saying we were moving too slowly and accusing us of mismanagement. We were not mismanaging then and we are not trying to push money out the door now. We have told the private sector to spend its money up front and these projects have done so. If we do not sign them now, the corporation would be breaking the commitment set out in the Energy Security Act to assist the private sector to develop domestic synthetic fuels in the national interest. If the government breaks faith with the private sector now, if we have another crisis, the private sector will never get back into a program on anything but a cost-plus basis, just like the DOD programs.

The limited synthetic fuels program that is nearly complete through the contract stage will address all of the key domestic resources at a fraction of the cost originally estimated for a satisfactory program.

In conclusion, I will repeat what I said earlier. As enacted in 1980, syn-

thetic fuels was to be an $88 billion program. As structured today, the program is limited to about six plants, which will provide the benefits the country really needs. We will learn how to build commercial facilities to use all of our domestic resources. We will prove technology and reduce costs and lead times (from eight to ten years to three to four years) for synthetic fuel plants so that, when we need them, we can build plants efficiently and do the country some good. We will, in effect, have given the country a permanent insurance policy against ever again being held hostage by foreign energy producers.