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# Must We Depend on High-Cost Oil?

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*Reporting the consensus viewpoint of a large panel of concerned and expert persons meeting at Mitre Corporation in McLean, Virginia, last year, Dr. Tussing reflects a body of opinion focused on a problem yet to be resolved. In addition to the author, who chaired the session, the panel included: Spencer M. Eberford, Select Committee on Committees, House of Representatives; J.R. Bowden, Conoco Coal Development Company; Norman Brackner, Center for Naval Analyses; Reginald Brown, The Mitre Corporation; Warren B. Davis, Gulf Oil Corporation; Oscar G. Farah, The Mitre Corporation; Harold Glaser, National Science Foundation; Larry Gsellman, The Mitre Corporation; Mariano Gurfinkel, International Monetary Fund; James W. Hanson, Exxon Corporation; Michael D. Hathaway, Office of Senator James McClure; Martin Lobel; Daniel H. Newlon, Center for Naval Analyses; Michael Rusin, American Petroleum Institute; Leo Steg, Space Science Laboratory, General Electric Company; David Sternlight, Atlantic Richfield Company; Gabor Strasser, The Mitre Corporation; James E. Strub, United States Air Force; Michael Telson, Senate Interior Committee; and C.D.W. Thornton, U.S. Atomic Energy Commission.*

Dependence of the U.S. on oil imports during the next 10 years will not, we think, be sensitive to new fuel sources with high capital costs, such as oil shale, gasification or liquefaction of coal, and nuclear energy.

Our relative reliance on imported and domestic fuels depends mostly on three factors: (1) energy conservation; (2) the development of conventional oil and gas resources; and (3) the ability to produce and burn coal, in

an environmentally acceptable way, in electrical power plants.

The largest uncertainty and sensitivity in our domestic energy supply concerns the future amount of economically useful conventional oil and gas. Their discovery will depend principally on U.S. leasing policy and good luck. This means that the supply outlook in 1985 will depend overwhelmingly on whether the U.S. discovers more giant and super-giant oil fields—most likely in Alaska and the outer continental shelf.

This prospect is impossible to predict with any degree of confidence. We could be producing 6 million barrels per day or 17 million barrels per day in 1985, depending on luck. The real resource cost of hydrocarbons from such fields has been very low, usually less than \$2 per barrel.

Thus, the outlook for such discoveries is not highly sensitive to price. On the other hand, high prices will encourage higher levels of drilling activity and advanced recovery from existing wells; therefore, a significant component of the overall oil supply may be responsive to the price level.

Synthetic fuels should not be expected to become a major component of domestic supply in the next decade. They should not, therefore, play a major role in our strategy. A limited number of commercial-scale projects should be undertaken as a means of preparing technological options for later decades.

Because these projects are presently uneconomic, they will probably require public support. We strongly reject the notion that the prices necessary to validate these projects should be maintained as a floor for all energy prices. Certainly the price of conventional crude oil ought not to be pegged, say, at \$12 per barrel just to allow us to produce 200,000 barrels, or half a million,

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(May 1975)

or even a million barrels per day of synthetics by 1985.

These projects should be encouraged by direct subsidies or by a price guarantee to specific projects. Their costs should not become a price floor for the entire energy economy.

Total energy self-sufficiency is not, we feel, a realistic or desirable objective for the foreseeable future. It is conceivable that future breakthroughs, such as the discovery of additional Prudhoe Bays, could make self-sufficiency feasible or even permit the U.S. to become an energy exporter. But such breakthroughs are not sufficiently likely that we should aim now for total self-sufficiency.

The dangers of import dependence should be reduced by the stockpiling of fuel reserves. It is impossible to specify the probability distribution, or the expected costs, of various contingencies that should be met by stockpiling. We cannot determine in any rigorous manner the optimum level of protection and stockpiling. (We have discussed levels of storage which would equal 90 days of total supply or, as an alternative, one year's imports from Eastern Hemisphere oil producers. We also recognize serious capital budget and logistic problems in filling storage capacities. For example, an effort to fill storage stocks now might have the effect of supporting the current excessively-high world oil prices.)

The principal function of storage provides an ability to buy time—to put conservation measures into effect in an orderly way, to implement emergency allocation measures, to negotiate for an end to an embargo, or to reduce the need for a severe curtailment which could not be maintained indefinitely.

The cost of insuring against the insecurity of imports should be made a part of the full cost of these imports. Thus, the costs of a storage program should be assigned to those who import. (We favor a decentralized system of storage: importers would be required to store crude oil or product—whichever they import—in proportion to the quantities which they import from insecure sources. To do this, it will probably be necessary to specify performance standards for stockpiles, as related to industry output, to be controlled by governmental regulations.) It would be inefficient to maintain storage in the form of excess well capacity.

Import controls would not be necessary or desirable at this time—either as quotas or tariffs. However, we do advocate the enactment now of a statutory framework for import controls, in order that any future imposition of controls would not be made on an ad hoc, dis-

criminatory or economically irrational basis as in the past. Import controls might become a substantial possibility in the event of a runaway increase in imports, or a drastic fall in world crude oil prices that would remove the existing price support for domestic production.

Moreover, because import prices are higher than domestic prices and no domestic surplus exists, this is an appropriate time to repeal the Connally Hot Oil Act. In its place, a Federal compulsory unitization law should be enacted, and market-demand prorationing by the states outlawed.

Since quotas and tariffs are functionally equivalent, we felt that either type of control could be used to guarantee a given domestic price, or a certain share of the market for domestic production. Volumetric quotas would be preferable to tariffs because they would provide greater stability for the expectations of domestic producers.

Quota levels should, we believe, be variable, but programmed for some years in advance in order to bring about a diminishing level of import dependence. This would stabilize expectations.

We do not favor the direct participation of the Federal government in negotiations over oil prices or the terms of concessions. Rather, U.S. policy toward oil-exporting countries should extend beyond oil matters. The U.S. government should be willing to assist their general trade and economic development. In many cases, however, the U.S. government should serve as an intermediary for the domestic private companies, because of the inexperience of the oil exporters or their mistrust of foreign private enterprise.

Many actions to reduce energy-import dependence ought to be taken even if our imports would not be insecure or unreasonably priced. Some of these actions include: accelerated offshore leasing, reform of natural gas pricing, and an increase in R&D support for new technologies.

In addition, a concept such as Project Independence is needed as an *indicative plan* to set targets for government and industry. This means that government would act to validate investments made by industry in response to government targets. Industry would therefore have some stability in its investment expectations.

Moreover, an indicative plan could establish a long-term schedule of maximum import levels. Conceivably, our imports would increase for some time, then decline as we were better able to meet our own needs. 