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ENERGY POLICY AND THE MARKET

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INTRODUCTION

For 25 years, the U.S. government has played an increasing role in energy matters, but has pursued an inconsistent policy. On the one hand, it has tried to make energy cheap in order to benefit consumers; on the other hand, it has made energy expensive to benefit producers. For example, natural gas prices have been held at low levels since 1954--for most of the time, on the order of a few cents per million BTU.[1] During the 1960s, however, oil producers were protected from cheaper imports and were able to sell oil at around $3 a barrel, or 50 cents a MMBTU.[2] Had low-cost Middle East oil been allowed to enter without restriction, the price would have been lower by at least a factor or two, and much of U.S. oil production would have closed down.

These contradictory policies of the U.S. government result in political conflict and compromise between oil-consuming states (like Massachusetts) and oil-producing states (like Texas). In trying to please both consumers and producers, the U.S. Congress has produced a quagmire of policies and involved the federal government more deeply in--thus distorting--the energy fuel market.[3]

By 1970, price controls had led to serious shortages of natural gas because of excessive consumption by consumers and

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1 1,000 cubic feet (1MCF) of gas has a heat content of 1 MMBTU, one million BTU, or about one gigajoule.

2 By 1982, prices for gas and oil averaged about $2 and $6 a MMBTU, respectively.

3 For example, wellhead prices for natural gas may range from $0.50 to $9 per MCF, in the same state.

inadequate incentives for producers. Imported oil was needed to fill the demand. In 1971, the Nixon Administration imposed price controls also on crude oil. They remained in effect for ten years, even after world prices rose above the domestic level in 1973. As a result, a domestic market developed which basically had two tiers: cheap, price-controlled domestic oil and expensive, uncontrolled imported oil.[4] Mind-boggling regulations were required to establish some measure of equity; a large bureaucracy was employed to track oil transactions and prices. A special program had to be established to equalize the price of crude oil to all refineries, regardless of the origin of the oil. The overall results of these policies were: greatly reduced economic efficiency; overconsumption of oil because of an effective price subsidy; and a resulting pro-import government policy. Oil imports rose from 23 percent of consumption in 1970 to nearly 50 percent by 1978--partly because of price regulation of both oil and gas.

After the 1973 Arab embargo, President Nixon sought independence from oil imports. But it was soon recognized that independence would also mean excessive costs to substitute fuels--well above the prices set by OPEC for world oil. (By 1980, however, oil prices had risen sufficiently to make many substitutions economic.)

President Carter injected the federal government even more deeply in energy matters. He created a Department of Energy and he plugged hard for conservation and solar energy in his first National Energy Plan of 1977. But because he did not free oil and gas prices, he discouraged conservation and solar energy. By 1979, Carter decided to encourage production. He tried to deregulate (or at least raise) the prices of natural gas and oil and pushed for a large, government-backed $100 billion synthetic fuels program.

The Reagan Administration drastically reversed the policies of the previous administrations. One of Reagan's first acts was to decontrol oil prices in January 1981. He then began dismantling the vast machinery designed to enforce regulation. He even proposed abolishing the Department of Energy, which had become a symbol of government intervention in energy markets.

THE FREE MARKET PHILOSOPHY ON ENERGY

The Reagan Administration's approach to energy is based on the conviction that a free market can allocate scarce energy supplies most economically and efficiently through prices set by

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[4] There were additional categories, such as Alaskan oil, "tertiary" oil (requiring costly recovery techniques), as well as some uncontrolled "new" domestic oil.

market forces. Though the Administration has been trying to apply these principles consistently, it has encountered obstacles for both historic and political reasons.

A free market is well suited to supply energy. This is because energy resources are owned, e.g., by individuals or corporations. The existence of property rights provides incentives for proper management of resources. Under competitive conditions, management for individual profit also benefits the general population--a principle originally set forth by Adam Smith. In contrast, certain other natural resources, such as water and air, which are not owned by individuals or corporations, are not properly managed by them. It is impossible for anyone to own a parcel of air--although an owner of a lake or a pond would probably want to take care of it and not discharge wastes into it. There thus is an argument for government concern about air and water quality since no real incentives come from market forces to control pollution.

While the free market approach denies a governmental role in setting fuel prices, there are still important functions which the federal government must perform for energy resources to be used properly. In aggregate, these functions comprise a government energy policy. They include:

1. Guarantee that a free market exists. The federal government takes action against companies or individuals which inhibit competition. It is also appropriate for government at the state, local and federal levels to regulate certain natural monopolies, such as electric power transmission and natural gas pipelines and distributors.[5] The government, along with private groups, can provide information (for example, about energy efficiency of cars) to inform consumers so that they can participate more effectively in the market.

2. Regulation of interstate transportation of fuels and electric power. The "interstate commerce" responsibility of the federal government also includes preventing energy-rich states from taking undue advantage of energy-poor states by exorbitant taxation or other means of price discrimination. This is a matter of current controversy.

3. Protection of the environment. As the guardian of national public health and safety, the federal government, along with the states, sets appropriate quality standards for the ambient atmospheric and water environment. It also licenses energy facilities, such as power plants and nuclear reactors. Much more can be done to streamline the process of achieving the environmental standards and to speed up nuclear licensing.

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[5] Although a case can be made for deregulation of pipelines, and certainly of electric power generating facilities.

4. Strategic Petroleum Reserve. National security is an important federal function. U.S. dependence on imported oil and the possibility that cutoffs could produce severe economic damage led to legislation for a Strategic Petroleum Reserve operated by the federal government.

5. Management of public lands. When leasing public lands for oil and gas (especially on the outer continental shelf) and for coal and other energy minerals (including geothermal energy), the government acts as a prudent land owner, concerned with maximizing its financial return.

6. Advanced research and development. In areas where no single industry or group of industries can capture all the benefits of its own research and development investments, the government has a role to carry out basic scientific research for future energy sources, such as nuclear fusion.

7. International energy cooperation. The federal government has important functions as a party to various international agreements. For example, the International Energy Agency (IEA) was set up in 1974 to operate under the auspices of the Organization for Economic Cooperation and Development. One of its principal purposes is to provide for oil sharing in case of major interruptions in world oil supply. Another cooperative venture is the International Atomic Energy Agency, concerned with the exchange of atomic information, and with safeguards against the spread of nuclear weapons.

8. Owning and operating energy facilities. Unlike many other nations, the U.S. does not own refineries or purchase oil on the world market. Even the fuels used by the military are provided by private oil companies under government contract.

The U.S. government is involved in owning and operating certain energy facilities, such as naval petroleum reserves, hydroelectric plants in the Far West, as well as the well-known Tennessee Valley Authority which includes hydroelectric, coal and nuclear sources for the production of electricity. (In a sense, these federal involvements are now an anachronism.) The Congress has never approved, however, creation of a Federal Oil and Gas Corporation (FOGCO), although some legislators felt that a federal yardstick should be used to judge the performance of private oil companies.

It is not easy for the federal government to carry out these various energy functions in a consistent manner. The main problem is political: how to satisfy the often conflicting desires and requirements of such different interest groups as energy consumers, environmentalists, owners of oil and gas resources, different kinds of energy companies and other more specialized interests.

CURRENT U.S. ENERGY POLICY: OIL

The Reagan Administration energy policy relies on the laissez-faire approach of a free market. Administration decisions, however, are made incrementally. Though the prices of crude oil and oil products have been decontrolled, the Administration has left undisturbed the "windfall profits tax" imposed by Congress in 1980. This is really an excise tax based on the difference between the world price (i.e., the market price) and a base price corresponding roughly to the production cost plus a "reasonable" profit. For example, oil discovered before 1978 has a base price of $12.89 and a tax of 70 percent above that. On the other hand, post-1978 oil and hard-to-produce "heavy" (high-viscosity) oil is taxed at 30 percent on a base of $16.55. The exact amount of windfall profits tax--likely to exceed $200 billion over the next ten years--and how its proceeds are to be allocated are sure to trigger lively political controversy.

Past administrations have provided special subsidies to so-called small refiners at the consumer's expense. These benefits are no longer available. The changing and shrinking market for oil products is likely to benefit those refiners willing to make capital investments to produce more gasoline and other motor fuels, and less heavy fuel oil. These investments are being made in response to market forces--without any government assistance or direction.

In the leasing of public lands, the Reagan White House has moved more rapidly than any past administration. As a result, the energy industry should be able to make its plans with more certainty--and, therefore, more efficiently. This ultimately benefits consumers. It is ironic that the windfall profits tax has removed the ready cash of oil companies and so decreased the amount of money which they can pay to the Treasury for oil and gas leases. Some would argue that the best way to tax away a windfall profit is simply to offer more public lands for lease and encourage more oil companies to enter into the bidding.

An important energy policy issue is emergency allocation of oil products in case of a "shortage," which usually results from a supply interruption. In a free market this problem disappears. With prices decontrolled, there may be a dislocation but not a long-term shortage. The price will simply rise and dampen the demand to match the available supply of oil. The allocation will also be done automatically, with oil flowing to users who can afford to pay a little more. This is the most <u>efficient</u> method of allocating during a scarcity and requires no government action. The allocations are effected by price and not by political influence. Allocation of the available supply by the free market is also fairly <u>equitable</u>. Even though the poor are pinched by the higher price, they also suffer under other systems of allocation, such as rationing by coupons (whether per car or per driver, and whether ration coupons are kept or resold), or a political method of distribution without a change in price. The fair-

est method is to let the price rise and recycle increased tax revenues to provide general aid to the poor--without regard to their energy purchases.

The legislatively mandated Strategic Petroleum Reserve (SPR) thus may not really be needed. With decontrolled prices, the allocation of any shortfall could proceed automatically. With an SPR, however, the government, as its owner, has to develop policies for releasing the oil: when, how much, and in what manner. This creates uncertainties which discourage oil companies and individual users from maintaining adequate private stockpiles. At present, the SPR exceeds 250 million barrels. Some hard decisions will have to be made before the SPR reaches its announced goal of 750 million barrels, a target which has an annual carrying cost of some $5 billion dollars. National debate can be expected to focus on who should bear this cost and in what manner.

The Reagan Administration has not yet removed the ban on oil exports from Alaska; this restriction was established by Congress in 1973 in the mistaken belief that it would protect U.S. oil security. But with oil prices decontrolled, oil can be bought freely--even though the price of all oil (including Alaskan) would rise in the event of a supply shortfall in the world for whatever reason. Currently, Alaskan oil is creating a glut in California, discouraging production at the margin both in California and Alaska. To avoid a sharp price discount, excess Alaskan oil is shipped through the Panama Canal to the U.S. East Coast at great expense. Permitting export of Alaskan oil, say to Japan, would save nearly a billion dollars per year and would encourage greater development of oil and gas resources in the Arctic.

Import fees on crude oil or higher federal taxes on transportation fuels are being widely discussed. They are viewed as means of enhancing conservation, decreasing oil imports (with attendant benefits to national security and trade balance) and increasing Treasury revenues. Such fees and taxes might become particularly appealing if and when world oil prices should decline drastically--at least for short times. Such price breaks could raise havoc with U.S. domestic energy industry and produce disincentives to energy investments as well as to energy conservation.

NATURAL GAS POLICY

Natural gas poses a difficult problem--some would say, an insoluble problem. The major conflict is between those who would deregulate the price and those who would simply maintain ceilings. Proponents of ceilings include some consumer advocates (who may only be taking a shortsighted view) and gas pipeline owners (who would like to see the price low and demand high to maximize the shipments of gas). Support for ceilings also comes from importers of costly LNG (liquefied natural gas) and producers of expensive "deep" gas who look upon the availability of a large reservoir of price-controlled cheaper gas as an opportunity for

"rolling in" (price averaging) their higher-priced gas. "Old" gas under contract still sells for less than 50 cents at the wellhead in many cases, while gas from the same region, but from a deeper structure, can sell for as much as $9 per 1000 cubic feet.

Under the Natural Gas Policy Act of 1978, about half of all gas, and any "new" gas, will be decontrolled in price by 1985. The consequences of this are difficult to predict. For example, intrastate gas (gas produced and sold within the same state) would not be subject to control after 1985; therefore gas suppliers would prefer to sell to the intrastate market, producing a shortage in the interstate market--just as was the case before 1978.

Another example: The ultimate effects of the existing "fuel pass-through clause" (by which electric utilities can pass on any increases in the price of their fuels) may be to make the electric utilities insensitive to higher gas prices. But if utilities were to stop using higher-priced gas and switch to coal, a large surplus of gas would develop and U.S. gas prices could remain below the equivalent level of oil for many years. Residential and commercial users would then switch to gas more rapidly. The consequences of this sequence of substitutions would be a furthering weakening of demand for oil as a heating and boiler fuel, and a reduction in oil imports.

President Reagan's strategy on natural gas deregulation has not yet been announced. Some members of the Administration would like to deregulate the wellhead prices of natural gas immediately and completely. Others favor deregulation for all natural gas, both old and new, but would like to introduce it gradually to avoid what they fear would be disruptions by 1985. One controversial issue undoubtedly will be the imposition of a windfall profits tax on natural gas, similar to the one imposed on oil. Another may be how to handle existing contracts which set unrealistic prices for old or new gas.

COAL POLICY

Of coal, it used to be said, that it is a great fuel, except that "you cannot mine it and you cannot burn it." The Reagan Administration is likely to move further and faster on coal than previous administrations. For one thing, it will speed up mineral leasing on federal lands. For another, by simplifying strip-mining regulations and by making the Clean Air Act regulations more flexible, Administration actions should make coal much easier to mine and burn.[6] At the same time, land and air resources should not be adversely affected.

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[6] The changes being discussed include:

-- Modifying regulations about land restoration (following strip-mining) to allow regional flexibility; to permit creation of level land rather

Some political battles will have to be fought to achieve these changes. Congress and the public will have to be convinced that environmental regulations can be made more flexible without damaging the land or lowering air quality.

Transportation costs are an important determinant of coal use. Efforts are underway to lower such costs through the use of slurry pipelines, though the railroads oppose this.

Advances in technology undoubtedly will speed the adoption of coal as a boiler fuel. "Fluidized-bed" combustion provides a low-pollution method for the use of coal, without high-cost "scubbers" for flue gas desulfurization. The development of simple, low-cost coal-water mixtures will make it possible to replace higher-cost fuel oil in existing oil-fired boilers without major capital expenditures.

NUCLEAR ENERGY POLICY

Regardless of U.S. nuclear policy, other countries are now fully aware of the advantages of nuclear energy. It is cheaper than coal and much cheaper than oil. Nuclear energy, on the whole, is environmentally benign, provided that strict safety precautions are enforced. The Reagan Administration has changed and reversed drastically the Carter Administration's policies. Reprocessing of used fuel elements and disposal of nuclear wastes are being allowed--finally--to commence. The export of nuclear technology not only will be permitted but also encouraged. In addition, work on nuclear breeder reactors may resume, to stretch the uranium resources of the United States and other countries.

The most significant action that U.S. government can take to revive its lagging nuclear program is to streamline the licensing process. Just two steps are necessary: (1) selecting sites for nuclear and other power plants well in advance of need to build up an inventory of approved sites; and (2) standardizing nuclear plants so that the licensing process can be accelerated. These steps not only will cut the time betwen planning and the date of operation (and thereby lower the cost greatly), but also make nuclear energy safer.

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than recreating the hilly contours where it is economically more useful; and to replace design standards by performance standards, thus improving cost-effectiveness.

-- Permitting the burning of low-sulfur coal without the use of expensive flue gas-scrubbing equipment.

-- Setting appropriate standards for ambient air quality, but leaving the implementation methods to the users to be achieved at lowest cost.

OTHER ENERGY RESOURCES AND CONSERVATION

With respect to other energy sources, the Reagan Administration has used a laissez-faire approach. Solar energy and synthetic fuels from coal have been left largely to the market, although there exist important tax benefits which provide a kind of subsidy.

Two shale oil projects and one synthetic gas project have received federal loan guarantees. The Synthetic Fuels Corporation, set up under Carter, has become less active. It is clear that the government is not going to subsidize the crash program for synthetic fuels which often has been envisioned by high-level policy planners in the past. On the other hand, Reagan is continuing government support for research on fusion energy--a long-term program whose impact will not be felt until after the year 2000.

The Reagan Administration believes that conservation, whether by fuel switching or by using energy more efficiently, is best promoted by market forces. Higher prices are supposed to achieve the appropriate level of conservation. The oft-stated idea of encouraging conservation by legislation--for example, by means of a gasoline tax--has not found much favor in Congress, although an economic case can be made for such a tax based on the negative externalities[7] produced by driving.

INTERNATIONAL OIL POLICY

On the international scene, the Reagan Administration has made some important new departures. As customary, the federal government is staying out of the purchasing of oil and gas, and letting private companies negotiate detailed arrangements with foreign suppliers, both governmental and nongovernmental. An exception to this general policy has been a direct purchase agreement with Mexico for the Strategic Petroleum Reserve.

The new Administration is likely to deemphasize the role of the International Energy Agency (originally conceived as a counterweight to OPEC). Special sharing arrangements of oil supplies during emergencies will undoubtedly be reviewed. Since these sharing arrangements have never been tested, no one knows whether they will really work. With prices deregulated, there may be no need for them at all. In case of supply shortfall, oil will simply flow to individuals willing to pay a premium.

Many "experts" have worried that an oil "shortage" could break up the Western alliance, as countries compete for oil in a

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[7] Harmful and uncompensated side effects, such as accidents, noise, pollution, the congestion of roads in cities, and the need to build and maintain roads.

"beggar thy neighbor" manner. Their concerns are unfounded. Wealthy Europeans can always outbid those Americans who cannot afford the higher price. Individuals--not countries--willing to pay the higher price will get the oil. The U.S. is not likely to provide subsidized oil for its citizens; the policies of other nations have not yet been defined.

A major hope of the West has been to discover oil outside the Middle East, in order to diversify sources and make the supply more secure. From time to time, it has been suggested that oil exploration be subsidized, or even completely financed, by U.N. agencies or by the World Bank.

The Reagan Administration prefers exploration by private companies--without subsidies. Since many Third World nations oppose multi-national companies, particularly those headquartered in the United States, these nations may well prefer other financing arrangements. One possibility may be an organization for oil development in the Third World which accepts money from OPEC nations--particularly Arab nations with surplus funds. It is likely that much new oil will be found in the next few years with or without U.S. government involvement. As far as the Reagan Administration is concerned, it will be without U.S. government involvement.

INTERNATIONAL NUCLEAR ENERGY

With the sharp turnabout in the U.S. government's view on nuclear energy, there will be a freer export of U.S. nuclear technology and of enriched fuel. This is based on the realization that countries wishing to build nuclear weapons are not going to be stopped by the U.S. government. Those countries can build or acquire weapons directly, without first developing nuclear power for electricity production. A number of technically advanced nations are now able to act as suppliers of nuclear technology and fuels, so that the actions of the United States no longer determine what happens to nuclear power in the world community.

Consumers of oil everywhere will benefit from the construction of more nuclear plants anywhere in the world. With world demand for oil thereby reduced, downward pressure will be created on world oil prices.

CONCLUSION

The Reagan Administration is committed to maximum reliance on the forces of a free market and a minimum of government intervention. The price of oil is now so high that oil can be replaced by less expensive gas, coal and nuclear energy. These cheaper fuels can be substituted in many applications--principally for producing heat and steam--which make up about 60 percent of

world oil use. Government policies need not do much more than remove political and institutional obstacles to the use of these alternative energy sources. Economics will do the rest.

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