THE ENERGY CRISIS: HISTORICAL ROOTS AND POLITICAL CONSEQUENCES

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In 1919 there was a serious energy crisis. Government controls during World War I had produced shortages, and everyone was urged to drive less and turn down his thermostat. The U.S. Geological Survey predicted that our petroleum resources were being rapidly depleted, and the Secretary of the Navy suggested—in the national interest—that the nation's crude oil fields be nationalized.

When the war-time regulations ended so did the energy crisis. Crude oil prices increased to $3.50 by 1920 but then fell rapidly throughout the 1920s. A nation that was running out of oil in 1919 was awash with oil by 1922.

In 1945 there was another serious energy crisis. The World War II price controls produced severe shortages and, again, it was announced that the world was running out of oil. Critics argued that deregulation could not get us more supply, but would only produce "windfall" profits for the monopolistic oil industry.

When the war-time controls expired so did the energy crisis. Prices of crude oil jumped from $1.36 in 1946 to $2.57 in 1948, but then fell in real terms almost 30 percent between 1950 and 1972. A nation that was running out of oil in 1945 was awash with oil by 1950.

Now, as we sit in our cars waiting in line for our precious allotment of gasoline, we are being told—again—that the end of the petroleum age is at hand. Again there is a "crisis" with all the attendant events: waiting lines at gasoline stations; arbitrary "allocations" of supplies; talk of windfall profits if we "decontrol"; and, as usual, threats from government to extinguish what remains of our liberty should we fail to heed its conservationist propaganda. And, of course, there is a final consequence of the crisis: total public *bewilderment*.

We will attempt to end that bewilderment here by unraveling the *historical origins* of the present crisis. The fundamental hypothesis to be tested is that to a considerable degree, the industry itself must bear a primary responsibility for our current difficulties. Historically a substantial amount of petroleum regulation and legislation has been supported—in whole or in part—by the industry itself in an attempt to further its own short-run business objectives. And it is this regulation and legislation which has finally—and inevitably—produced the economic chaos that the public calls the "energy crisis."

Now to say that industry is responsible for intervention in petroleum is *not* to say that there is unanimity in the industry concerning the scope of regulation; far from it. Nor is it to say that *all* our current difficulties in energy are fully traceable to industry-supported controls. It is to say that these historical interventions are the *primary* cause of our current energy difficulties and that the industry itself, therefore, must admit serious complicity with respect to present energy conditions.

Before we can properly evaluate business's role in petroleum regulation, it is vital to understand the fundamental nature of the market economy and of the interventionist process. The market economy is an institutional arrangement whereby owners of property voluntarily enter into exchange relationships which they consider to be mutually beneficial. In a free market buyer and seller agree to an exchange because they both expect to gain some advantage from the exchange. If the terms of exchange are *not* determined by buyers and sellers, however, but by the government, then the assurance of mutual advantage breaks down. Indeed, if the government sets the terms of exchange (price fixing, for instance), then some (buyers, sellers) are likely to gain advantages *at the expense of others* (buyers, sellers, consumers). In short, a free market by its very nature tends to ensure mutually advantageous trading relationships; a regulated or interventionist market cannot.

Free markets also tend to be *efficient,* since owners of resources are led by self-interest and competition to adjust their "outputs" and prices so that consumer demand is fulfilled at the least "cost." Enterpreneurial errors are, of course, inevitable in such a system but since mistakes generate surpluses or losses to owners, they quickly induce behavior that tends to correct the initial situation. Profits, on the other hand, tend to encourage suppliers to provide additional output and make investments in areas the market has demonstrated to be worthwhile. Thus, the market economy tends to reward business organizations that correctly anticipate future market conditions and penalize organizations that do not, insuring that scarce resources are allocated toward those uses which consumers indicate they value most highly.

Government intervention upsets both the efficiency and the mutual advantages associated with free market arrangements. When the government restricts entry and competition in production, or when it controls the price of some resource or commodity, it substitutes political (interest group) choice for the voluntary choices of the owners of property. The inevitable result of this substitution is that the mutually beneficial nature of private exchange breaks down and some *benefit* due to the intervention at the expense of others who are *harmed* by it. Price-fixing, for instance, can *temporarily* benefit certain consumers at the expense of other consumers and specific producers (though the shortages engendered in the long run are counter to all consumer interests); entry restriction can benefit specific producers at the general consumer expense as can tariffs or import quotas. Thus the interventionist process has a closer kinship with coercion and theft than with any market processes.

Interventionism is also inefficient (costly) since it hampers the entrepreneurial process whereby scarce resources tend to be allocated toward their most valued uses. Since interventionism necessarily interferes with market pricing, it distorts the information that free market prices are meant to convey concerning actual benefits and costs. Indeed, it is impossible to discover what the highest valued use for resources are (or what the "cheapest" techniques of production are) when government intervention determines prices or when resources are forcibly "allocated" by the State. In short, the production process that occurs in a politically or bureaucratically managed, interventionist industry (or economy) is necessarily arbitrary and inefficient.

Historically, the attitudes of businesspeople toward a free market economy (and toward interventionism) have been ambivalent. On the one hand the market system has sometimes been supported because it has allowed new entry, economic growth, accumulation, and the attainment (based on merit) of social positions of wealth and power within the industrial order. Conversely, however, large segments of business have typically regretted the freedom of the market since that freedom has tended to generate great insecurities for acquired wealth and position. The very same freedom and open entry that some employed to gain wealth is also used *by others* to quickly dislodge established wealth's position. And since pragmatism rules the business house, it is not surprising to see particular business interests opposing the so-called "cruelty" or "inefficiency" of unregulated competition, and instead favoring governmental intervention, especially intervention that lessens competition and/or restricts entry into an established market. Thus many business groups have favored legal interventions such as tariff protection, import quotas and prorationing, governmental enforcement of "codes of ethics" (a typical cover for anti-competitive state regulations), minimum price-fixing, licensing and various other restrictions. Such restraints of trade are especially typical of the political economy of the American petroleum industry.

A free market in energy

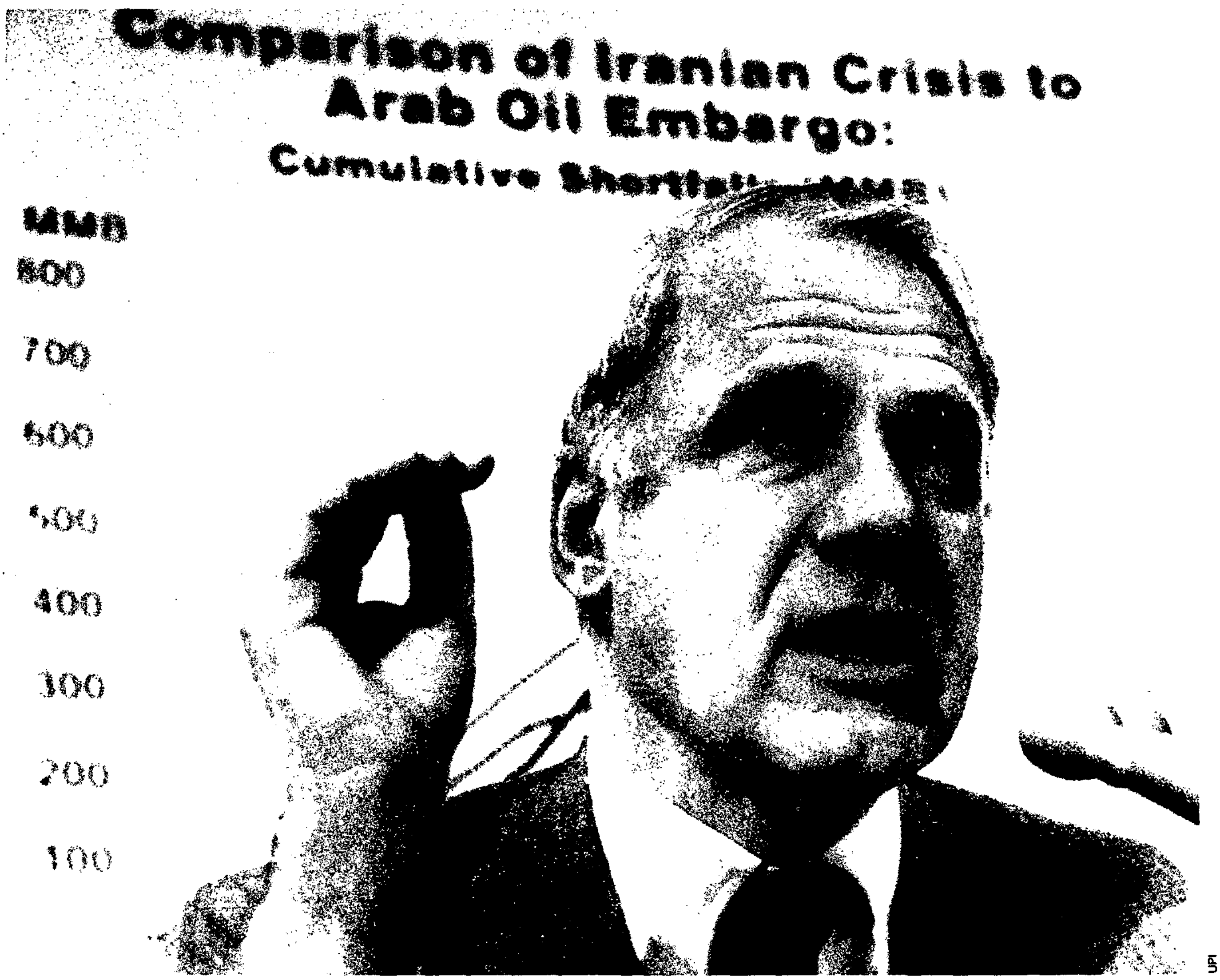
The early years of petroleum industry development (1859-1911) are remarkable in that they represent a virtual textbook example of a nearly *laissez-faire* market economy. There was little governmental regulation or subsidization during this period (no price controls, entry restrictions, or tariffs) and, not coincidentally, the industry experienced a phenomenal growth and development of its resources. Outputs of kerosene and related products were enormously expanded and prices were reduced throughout most of this early period. And even though these years of development were dominated by Standard Oil of New Jersey, the "Oil Trust" was unable to prevent the entry growth of many competitors (Shell, Gulf, Texaco, Sun, etc.) or prevent a substantial decline in its own considerable market share. In short, the early years in petroleum were both unregulated *and* competitive with no public crisis in either the price, supply, or distribution of products. This is not to imply that such conditions existed for other industries.

This early *laissez-faire* era for petroleum ended rather abruptly during World War I. The war needs of the United States and the Allies were such, it was argued, that large and steady amounts of diesel fuel (the U.S. Navy was consuming almost 6-million barrels by 1918) had to be produced and diverted to wartime purposes. Similar reallocations of strategic resources were taking place throughout the oil industry (and, indeed, throughout the economy) and important industry executives agreed to cooperate with the government in the "emergency" wartime planning.

Most of the wartime planning arrangements in petroleum were assigned to the "commodities section" of the Petroleum War Services Committee and to the Oil Division of the United States Fuel Administration. Revealingly, the chairman of the Petroleum War Services Committee was A.C. Bedford, President of the world's largest oil firm, Standard Oil of New Jersey, and the director of the Oil Division was a California petroleum engineer (and protege of Herbert Hoover) Mark Requa. Bedford's appointment was in itself quite a remarkable development since, as historian Carl Solberg has written, only "six years after the dissolution [of Standard Oil] its chief executive officer was in Washington helping direct industry's cooperation with government."

Even more interesting, perhaps, is the fact that when the War Services Committee was dissolved at the end of the hostilities, Bedford became the chairman of the newly formed trade association, the American Petroleum Institute. API was created, in its own words, "to afford a means of cooperation with the government in all matters of national concern." Thus in the short space of less than a decade, petroleum industry and federal government relations had taken a 180 degree turnabout from noninterference, even apathy, to vigorous "cooperation," collusion and accommodation.

Scholars are unanimous in describing these wartime arrangements as "cooperative," as a unique experiment in government and (central) industry planning. The oil division of the U.S. Fuel Administration in cooperation with the War Services Committee was responsible for fixing prices, determining outputs, and allocating crude supplies among various refiners. In short, these governmental organizations, with the coordinating services of leading business interests, had the legal power to operate the various parts of the oil industry as a cartel, eliminating what was described as "unnecessary waste" (competition) and making centralized pricing and allocative decisions for the industry as a whole. Thus, the wartime experiment in



Federal energy czar James Schlesinger, kingpin of a system which "has led to crisis, shortage, and privilege based on political power."

"planning" (i.e., planning by political agents to satisfy political interests rather than by consumers, investors, and entrepreneurs to meet consumer demand) created what had previously been unobtainable in the petroleum industry: a governmentally sanctioned cartel in oil.

When the war ended, a strong sentiment existed among leading oil industry leaders for continuing the National War Service Committee's spirit of cooperation and "supervised competition" with respect to the petroleum industry. For example, most influential oil spokesmen heartily approved of President Coolidge's Federal Oil Conservation Board (created in 1924), and most endorsed that board's early recommendations for compulsory withholding of resources and even state prorationing. The American Petroleum Institute consistently advocated enforced "cooperation" among oil companies and various regulatory schemes to limit production. A majority of the API directors, led by the outspoken Henry Doherty of Cities Service Company, favored federal regulation of production in 1927. More explicitly interventionist, the Independent Petroleum Association of America (IPAA) never even pretended to hide behind the mantle of free enterprise. It consistently advocated strong state regulatory control over crude oil production and a tariff on foreign crude oil, and even sanctioned the declaration of martial law and the use of National Guard troops in order to enforce prorationing by armed force in Texas and Oklahoma during the early 1930s. (Much to the delight of the so-called "independents," by the way. East Texas crude oil prices rose from 10¢ a barrel in August of 1931 to 85¢ a barrel in June of 1932.)

But it was during the Depression of the 1930s, and particularly with respect to the National Recovery Act of 1933 (NRA), that all measure of pretense concerning "free enterprise" was abandoned by oil businesspeople. Under the separate oil code section of the NRA (which was actually written by the American Petroleum Institute), the production of crude oil was to be legally coordinated with demand (as determined by the state and its political clients). State prorationing laws were to receive federal support. Interstate and foreign shipments of oil were restricted to quotas determined by Secretary of the Interior Ickes and a Petroleum Administrative Board. The Reserve Act of 1932 had already imposed duties on crude and even higher duties on refined products mostly at the urging of the IPAA. By the end of 1933, in summary, government and business interests had succeeded in cartelizing crude petroleum production.

There were four "problems" that would have made the producer cartel unstable and they were all eventually "accommodated." In 1935 the Interstate Compact to Conserve Oil and Gas was created (C.B. Ames of Texaco had been a leading industry advocate) to coordinate and dovetail prorationing decisions in the various states. Then when the Supreme Court swept the entire NRA away in 1935, the Congress—without hearings—passed Texas Senator Tom Connally's bill (dubbed the Connally "Hot Oil" Act) that made it illegal to transport interstate oil produced in violation of state prorationing requirements. And finally the courts, including the Supreme Court, declared state prorationing to be perfectly constitutional since its announced intent was "conservation" of resources in the "public interest" with only an incidental effect on price.

The final loophole in the crude oil cartel was closed by President Eisenhower in 1959. At the intense urging of small independent crude oil producers, mandatory import quotas were imposed on "foreign" crude. Import controls were also endorsed by API and the National Petroleum Council. Thus, the last vestige of a dwindling *"laissez-faire"* in crude production and selling was eliminated, and the industry-government arrangement legitimizing control over crude oil supplies was virtually complete.

The World War II and immediate post-war periods were years of intense cooperation and accommodation between the petroleum industry and government. Wartime emergency regulation re-created the militarist central planning and allocation system of World War I. Further, the federal government directly supported the oil industries' war effort with generous tanker subsidies, important pipeline construction, and various other direct and indirect subsidies. In the immediate post-war period, under the auspices of Marshall Plan reconstruction, a substantial portion of the European recovery aid from the United States taxpayers went directly to pay for oil shipped by large American oil companies exploiting "concessions" in several Persian Gulf countries. The oil was sold profitably at prices based on the higher Texas crude oil rates, and not on local market conditions.

Government and industry worked together abroad during those years to control foreign oil sources, especially in the Mideast. With State Department assistance foreign oil concessions were gained by American oil companies in many important Persian Gulf oil countries. This development was encouraged for a variety of reasons. In the first place the domestic prorationing cartel required *worldwide* supply control, and the foreign supplies were cheap and the wells incredibly prolific. Secondly, after 1950, "royalty payments" to foreign governments became "taxes" and were deductible dollar for dollar from domestic tax obligations; such a development greatly encouraged foreign oil investments. And finally, the U.S. (military) strategic thinking in the post World War II period was to "secure cheap foreign oil under American control" and, accordingly, conserve domestic supplies of crude for "national security" purposes. Thus, not surprisingly, the strategy and policy objectives of the government and the oil industry with respect to foreign oil were in remarkable coincidence during this period. And with world oil supplies under fairly tight "control," the price of crude oil remained remarkably (and uncharacteristically) stable between 1947 and 1967.

The energy crisis develops

The era of stability in oil prices ended abruptly toward the end of the 1960s. There were many reasons for this development, and some are *not* unrelated to the previous discussion. For example, after 1969—and culminating in the OPEC boycott period of late 1973—it became increasingly evident that the American oil companies were losing their nearly unilateral power to determine production levels and prices for foreign crude oil.

Although American companies held important "concessions" abroad, foreign host governments increasingly decided to withdraw first one portion, and then eventually all, of these so-called concessionary privileges. They demanded and received an increase in their "royalty," and then, in many important producing areas—Saudi Arabia in particular—assumed strong national control over crude oil production. Thus, in the absence of real property rights, the American oil companies proceeded to lose control over resources which they had never really owned (controlled) in the first place. The result was a sharp increase in the posted price for foreign oil and the beginning of what the public calls the "energy crisis."

A second factor which led to high oil prices (and in some cases, temporary shortages) was the higher costs imposed on the industry (at least initially) by anti-pollution laws and a concern for a cleaner environment. In the short period 1967-1971, emission control equipment on automobiles sharply increased gasoline consumption; the Alaskan pipeline was delayed 5 years due to environmentalist legal challenges; the oil spill off Santa Barbara in 1969 prompted a four year state moratorium on California offshore drilling, and a two year federal moratorium; oil refinery construction was repeatedly delayed (or abandoned altogether) because of environmentalist concern; and, most importantly, the Clean Air Act and various State laws restricting sulfur emissions prompted a massive industry shift from cheaper high sulfur ("dirty") fuel oil to low sulfur oil, especially by electric utilities in the Northeast.

It is *not* being suggested that this concern for a cleaner environment was (or is) misplaced; far from it. Rather, the relevant point is that this sharp shift in environmental concern in the late 1960s tended to increase the demand, decrease the supply, and otherwise increase the cost (and price) of oil and oil products.

Even more deeply, perhaps, it is being suggested that this environmental concern can be understood as a political backlash to the fairly cavalier views on pollution held by most oil executives up to that time. Pollution, after all, is a non-voluntary exchange which—like theft—violates the fundamental property rights assumption of the market economy. It is a market "intervention" in precisely the same respect as the interventions that have been reviewed in this report; *it tends to promote the interests of some at the expense of others.* Unfortunately, the present environmental restrictions are not property rights-based; rather than moving against property violations, the present restrictions on pollution activities are political and bureaucratic, and hence subject to the prevailing political winds, which may well be "anti-environmental" in the future.

Natural gas prices at the wellhead came under Federal Power Commission (FPC) regulation beginning in 1954 (the *Phillips* decision), and rates were effectively "frozen" during the entire decade of the 1960s. Prices for crude oil produced domestically were regulated under the Nixon controls of August, 1971, and have been controlled by the Federal Energy Administration (FEA) and the Department of Energy ever since. As a direct result of the price regulation, both interstate natural gas and "old" domestically produced oil sell well below free market or world market prices.

Price-fixing in crude oil and natural gas resulted in predictable consequences. Shortages brought about by governmental price-fixing in the interstate pipelines prompted the subsequent rationing and federal "allocation" of gas. Shortages in domestic crude prompted refiners to increase their demand for imported crude oil which propped up the OPEC cartel pricing system. In addition, price regulation created cost differences in crude oil to different refiners resulting in important competitive difficulties in the marketplace. Historically many independent refiners had relied on "cheap" foreign crude in order to compete with larger companies that had their own captive domestic supplies. In the 1970s, however, as foreign crude prices skyrocketed and domestic prices remained regulated, independent refiners and marketers began to complain bitterly that the crude cost differentials made effective competition with majors all but impossible. Thus to "fix" the competitive inequities produced by its own crude oil price regulation, the FEA instituted various "buy-sell" and "entitlements" programs to insure independent and crude-short refiners "fair" access.

There is little direct evidence that the entire oil or natural gas industries favored the *initial* system of price controls established in 1954; indeed, there is some evidence that certain segments of these industries bitterly opposed such regulation. What does seem certain, however, is that *after* the oil price regulation was in place for some months, important independent oil refiners and marketers began to lobby frantically for an extension and continuation of the control program and for modifications that would enhance their ability to maintain or increase their market share vis-a-vis the major oil companies. Led in their interventionist efforts by the Independent Refiners Association of America, oil representatives testified before various congressional committees that the very survival of the independent refiner and marketer depended mightily upon continued "government action to allocate crude oil and petroleum products." And although oil men occasionally gave lip-service to the desirability of a return to the free market, such visions were always framed in *very* long-run terms: short-run, the talk was of "working within the control system," offering "improvements," perhaps, in the regulations, and fighting to keep those parts of the system that currently benefited specific companies or specific segments of the industry.

Take, for instance, the almost classic interventionist debate that occurred over the so-called "small-refiner bias" in the entitlements program administered by the FEA. The Justice Department itself had maintained that the small-refiner entitlements bias represented an enormous *subsidy* to small refiners, amounting in the first six months of 1976 to some $211-million. Yet Frank Woods, Jr., chairman of the American Petroleum Refiners Association and Jason Dryer, executive secretary of the Independent Refiners Association of America, testified before the FEA that the small-refiner "bias" ought to be continued in the interest of "fair competition" with larger and more efficient refiners. Several small refiners that directly benefited from the entitlements "bias" also strongly supported the continuation of the program. The larger refiners, as might be expected, opposed the continuation of the entitlement bias and, indeed, of the entire entitlements program itself.

The same sort of industry split occurred with respect to the continuation of the FEA's mandatory "buy-sell" program. Crude oil sellers and the Justice Department argued that the program ought to be abandoned since the conditions that gave rise to it—the oil embargo—had clearly ended. Crude oil buyers, on the other hand, argued before the FEA that the program had to be continued. The Independent Refiners Association of America went on record as strongly favoring continued government mandatory allocation of crude oil, while the IRAA was forced to admit that small refiners had *physical* access to foreign crude, but maintained that such refiners still did not have "adequate access in *economic* terms." Further they argued that since the supplies of domestic crude were shrinking, the foreign oil buy-sell arrangements would become even more necessary—even "critically important"—as time went on.

Interventionist politics has not, of course, been a monopoly of small refiners or trade associations that represent their interests. The larger refiners and the more prestigious trade associations have habitually supported particular governmental energy controls, ERDA subsidies for energy development, forced conservation, and import restrictions. Thornton Bradshaw, Board Chairman of ARCO, has repeatedly championed governmentally enforced "conservation," and has even been totally explicit in recommending *permanent* "national planning" in energy. During the oil boycott period, leading oil executives from Texaco, Exxon, and ARCO supported stern federal "conservationist" measures including gasoline rationing. The American Petroleum Institute, supposedly committed to an unregulated market in petroleum (as a long run goal), has repeatedly adopted public positions at variance with that alleged commitment. The same can easily be said of several other trade associations in petroleum such as the Kansas Independent Producers, the Texas Independent Producers and Royalty Owners Association, and the National Congress of Petroleum Retailers. All have given lip-service to popular support for a return to the "free market" while—at the same time—recommending continued controls or regulations designed to further their own self interest or the self interest of their members.

The predictable result of this process has been the piecemeal creation of a crazy-quilt system of regulatory privileges and punishments that makes no economic sense whatever, but necessarily generates vast uncertainty and misallocation of energy resources. In short, business-generated interventionism has lead inexorably to the permanent and perpetual energy crisis of the 1970s.

Toward a new strategy

Intervention by government has not worked and has led, instead, to crisis, shortage, and privilege based on political power. It is imperative that we now adopt a *new* strategy designed to create a free and competitive market in energy. A free competitive market in energy can no longer be considered a utopian dream: indeed, it is the only practical (and moral) alternative, since interventionism and government planning in energy simply cannot work. If freedom and efficiency are to prevail in this industry, policy-analysts *must act decisively to halt and reverse political intervention* in the field of energy and energy markets. They must adopt a firm and consistent deregulatory philosophy with a totally free market in energy as their ultimate objective.

An essential element of any effective deregulatory philosophy (and strategy) must concern the fundamental *morality* of free market processes and the fundamental immorality of governmental interventionism. For too long supporters of private market exchange have retreated in the face of moral or ethical criticism concerning that system. They have been made to feel ashamed and apologetic concerning the system's major institutions such as private ownership, competition, and profit and loss making and have become, consequently, easy targets for further legislative "reform" and control of private property by political agents in the interests of their powerful supporters and "clients." Somehow government regulation, while not always efficient, has always been portrayed as "virtuous," "right," "fair," and in the "public interest." Nothing, of course, could be more absurd, and concerned parties must recognize and *advertise* this absurdity. It is the market system that is fair and just, since only in the market system are production and trade based on free choice and *mutual consent*—the prerequisites of truly moral behavior. Further, it is government intervention that must be exposed as inherently immoral since it interferes with the natural right of individuals to employ their own energies in ways which they—and only they—intend. It is vitally important that we understand this distinction and employ it as a tactical weapon in our fight for abolition of privilege and creation of an energy market free of political control.

It is unlikely that deregulation in energy will come suddenly and completely. The strategy of deregulation must recognize this political reality and work, instead, for the initiation of a process that results, ultimately, in total market freedom.

A total moratorium on any additional energy regulation must be the starting point for a new strategy. The next step in the deregulatory process would be an attempt to repeal existing interventionist legislation in energy. Certainly the most pernicious regulation in this area has been price-fixing in crude oil and natural gas, and strategically these controls would be the most vulnerable. Opposition here would emphasize the supply-reducing and investment-postponing effect of government price-fixing and the ultimate effect upon consumers of such policies. Further, we should emphasize both the inefficiency inherent in price regulation and mandatory allocation and the fundamental immorality of having bureaucratic and politically powerful interests determine how private property should be employed and at what prices.

We should support *any* proposal by the various energy regulatory commissions to exempt various transactions or products from existing regulation. In some cases it may be politically impossible to repeal legislation; yet market-advocates may be able to achieve the same short-run result *de facto* by an exemption of suppliers from existing controls. Indeed, just such an important exemption, of immediate benefit to consumers, has occurred in the air freight industry, and this deregulatory step should be extended to consumers of other goods and services.

With an end to pro-business interventionism, and with an intensive effort to repeal existing regulation and expand the areas of freedom within existing legislation, we can begin to *reverse the momentum of government control in energy.* The struggle to end interventionism and recreate the free market will not be an easy one; sixty years of industry-government cooperation represents a terribly long and entrenched political policy representing a powerful network of forces interested in preserving or expanding the interventionist system of privilege. But it *can* be done and it *must* be done if a free market of free men and women is to replace the controlled economy of "political-capitalism."

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THE POLITICS OF NUCLEAR POWER

DAVID COLE

It's easy to get bogged down in the technical, scientific aspects of the nuclear power issue. Most of us don't feel qualified to comment on complicated-sounding matters such as core coolants and meltdowns. It may seem to us that only the opinions of scientists are of any relevance to the question. This is certainly the impression given by many nuclear power advocates. The impression is a dangerous one, of course, because the nuclear scientists who would seem to be best qualified to make judgments on this issue may also have vested interests in the promotion of nuclear power. A closer examination of the controversy will reveal that not only scientific questions but also matters of politics and economics are relevant here—aspects which are comprehensible to the well-informed layman. Indeed, an examination of the political and economic aspects of the nuclear power issue reveals questions far too important to be left to the nuclear power "experts."

Political and economic considerations would seem to outweigh scientific ones, for example, when the extent of government involvement in the promotion and development of nuclear power is revealed. In recent weeks the public has become more and more aware of such involvement, especially in the wake of the Three Mile Island accident, when government and industry officials issued essentially identical statements assuring us that there was nothing to worry about. For those interested in examining this government-industry connection, a number of books and reports are available. Irvin C. Bupp, an American nuclear consultant, and Jean-Claude Derian, a French scientist, have written *Light Water: How the Nuclear Dream Dissolved* (Basic Books, 1977), a work which examines the parallel development of the American and European nuclear power industries and emphasizes the U.S. government's promotion of the "light