

Toward a national energy policy

Forging a consensus from a multitude of conflicting interests and policies is proving a monumental task

Gordon D. Friedlander Senior Staff Writer

In the face of anxious voices proclaiming the imminence, if not the presence, of a national energy crisis, President Nixon has announced a series of actions and proposals, which, he hopes, will precipitate a concerted national commitment to avert what he believes threatens to be a "genuine energy crisis."

Even before the President's address was delivered on April 18, some high Government officials—especially those in Congress—felt that whatever he proposed in his message would probably be too late, and that to be effective, "it should have been made by President Johnson in 1967." These were not partisan comments, however, seeking to shift the blame from one Administration to another; rather, they were intended to indicate that there are really no short-term solutions to ensure the United States protection from some unpleasant changes in its life style—and even standard of living. (For highlights of the President's message, see the box on pp. 40-41.)

As early as 1952, a Presidential commission realized the need for a Government-inspired and -coordinated energy policy, but today, with our energy demands spiraling, our internal resources seriously depleted, and our economy weakened by an adverse balance-of-trade deficit that precludes indefinitely increasing fuel purchases from abroad, what energy policies exist are promulgated by 64 different agencies.

One of the most prominent leaders in the halls of Congress, deeply concerned about the fuel/energy situation, is Senator Henry M. Jackson (D-Wash.), chairman of the Senate Committee on Interior and Insular Affairs. On April 10, Jackson's committee released a staff analysis entitled *Federal Energy Organization*, prepared for the Senate National Fuels and Energy Policy Study. We shall explore the substance of that report, as well as some inputs from Congressman Mike McCormack (D-Mass.), Jackson's opposite number in the House, and others expressing the Federal government viewpoint.

Facts come with blunt words

Sen. Jackson is considered by many—both inside and outside of Government—to be the most informed

and open-minded man in Washington on the subject of energy. Thus, he may be taken seriously and literally when he recently stated that the most difficult problem facing the U.S. today is the energy crisis.

For United States citizens who have come to a host of defense, Vietnam, balance of payments, or a view of other ills as having top priority, Jackson's statement probably registered some incredulous reactions. Nevertheless, a very powerful case can be made for its preeminence, because the solution to the energy crisis may be the key to resolving many of our political and economic problems.

In the *Federal Energy Organization* report's "Memorandum of the Chairman," Jackson has this to say:

The well-publicized deficiencies of Federal organization in the energy field have become increasingly apparent in the course of the . . . study authorized by the 92nd Congress. Whether the subject is oil import policy, energy-resource management, or R&D programs, the lack of adequate authority and proper coordination is all too clear. And while no one suggests that better organization by itself will solve our energy problems, there appears to be general agreement that a revamped and strengthened energy organization is a necessary event to more rational energy policies.

The 93rd Congress must give priority to organizational issues as it deals with a broad range of energy problems. Recognizing this . . . I have asked that this memorandum be published at this time as background for the use of this and other Committees which have responsibilities in the field of energy organization.

Too many fingers in the energy pie?

The thrust of the Jackson committee report hinges on the contention that the 64 agencies either administering programs or implementing policies with specific impacts on the energy system, make efficient planning almost impossible.

Tabulation of Federal energy agencies. Tables I and II list the Federal agencies found by Jackson's

Editor's note: This is the introductory article of a series in which detailed authors will present their diverse viewpoints on the fuel and energy crisis. This first article presents an overview of the general situation, including some options representing possible solutions to the problem. Subsequent articles will elaborate upon the views of these authors in the power industry, fuel production, government, and environmental protection. It seems inevitable that the series will generate controversy, which, hopefully, may encourage decisions leading to a positive energy policy and program.

demand, (3) potential supply of coal, and (4) nuclear generating capacity in the U.S. between the years 1970 and 1985.

Other sources of energy. Among the short- and long-term practical sources development possibilities are solar energy, geothermal energy, chemical batteries (such as hydrogen-oxygen), and fuel cells. Their merits have been discussed in some detail in previous *IEEE Spectrum* articles by this writer and other authors. Suffice it to say, these R&D programs generally suffer from either a lack of all-out commitment or lack of adequate funding from both Government and private sources—or both.

However, according to Charles A. Braker of the Mite Corporation, the two options for the long term (year 2000 and beyond) that should be pursued most vigorously include solar energy for large-scale power needs and the possible use of hot dry rock geothermal sources well below the surface of the earth (from 3000 to 5000 meters deep) as a regional supplement for energy. He points out that a solar energy system has already been studied that will produce hydrogen fuel, which can then be used in the "hydrogen economy"—notably for fuel cells.

In the nuclear energy area, he contends that, in addition to the liquid-metal fast-breeder reactor (LMFBR), much more emphasis—for both environmental and economic reasons—should be placed on the high-temperature gas-cooled reactor, the heavy-water reactor, and the molten-salt breeder reactor. Also, more R&D should be given towards fusion reactors, especially laser-fusion.

By the turn of the 21st century, Braker believes that nuclear energy will be used for the base load in the overall energy system—including both electric power needs and as a source for powering electric vehicles and mass transit systems. Finally, he feels that the international implications of the nuclear fuel cycle must be addressed with respect to uranium enrichment and the processing and transportation of fuels and waste.

A queuing game in oil and coal. As long as decisions are being made under the time-provided energy policies that were devised before the present need for a national "master plan" became apparent, the U.S. can neither address nor adequately solve the dimensions of the fuel/energy crisis. Thus, there is an urgency feeling in some quarters that present policies are contradictory, outdated, and outmoded. In the realm of "contamination," we have seen a

editorial reports (action in agreement) from Governmental agencies and private organizations as to whether there is really an energy crisis, a shortage of fuels, and an inevitably upward price curve. In this context, it is interesting to note that last March the Administration reimposed controls on gasoline, re-allocating this fuel to a 1.5 percent maximum price increase to ensure more production of oil for domestic heating and industrial use.

Meanwhile, Sen. Henry M. Jackson (D-Wash.), chairman of the Senate Interior Committee, resumed hearings last February 23 on the committee's examination of the present fuel shortages. The hearings were held as part of the U.S. Senate's National Fuels and Energy Policy Study authorized by the 92nd Congress. In Jackson's words: "There has been an apparent breakdown in our national energy system. . . . These shortages will prevail in many parts of the country. The committee needs to know why it has not been possible to anticipate and meet the demand for various fuels. We are particularly interested in what the Government policies have played in creating the present situation."

On April 18, Sen. Jackson released a staff analysis of Federal energy organization prepared for the Senate's national fuels and energy policy study. At the time, Sen. Jackson expressed surprise that until very recently almost no formal consideration was given to the manner in which the Federal government is organized to administer energy policy. He alleged that when the Senate study began, there was not even a good description of the existing Federal energy organization.

Continuing on this theme, he said, "in the course of my study . . . the staff has identified 64 agencies which administer programs or implement policies that are not oriented to energy oriented. . . . There is little doubt that this multitude of agencies can be better organized and directed that it has been in the past. It is increasingly clear that, as new, more comprehensive national fuel and energy policies are developed, the implementation of these policies will depend upon a more effective organization."

Based on Sen. Jackson's statements, and other critical analyses, there will inevitably be those who will call for a centralized Federal Fuel and Energy Agency, perhaps in Cabinet level, and similar in policy-making authority to the EPA. We undoubtedly will hear more of this and other proposals in subsequent articles in this series.

The source of the specific information shown in this article is: U.S. Department of the Interior, Bureau of Mines, *Energy: The Challenge of the Future*, prepared by the Office of Energy Research and Development, Washington, D.C., 1973.

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Fuel/energy crisis

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In the face of national voices proclaiming the need for a national energy policy, President Nixon has announced a series of actions and proposals which he hopes will precipitate a concerted national commitment to meet what he believes to be a "genuine energy crisis."

i. Federal agencies that administer energy, policy or programs (Category A)*

Table with columns: Agency, Classification (1-7). Lists agencies such as Executive office of the President, Department of Agriculture, Department of Commerce, etc., with corresponding classification codes and 'X' marks in the classification columns.

Notes: Col. 1. Agency was included as an energy agency in an independent survey made by the committee staff from available sources. Col. 2. Agency responded affirmatively to questionnaire concerning fuels and energy goals. Col. 3. Agency was deemed to have energy related programs in an analysis made in 1968. Col. 4. Agency was reported to have prepared or contracted for energy related studies. Col. 5. Agency claims direct statutory authority in the energy field. Col. 6. Agency claimed indirect statutory authority in the energy field. Col. 7. Agency was listed in a 1971 compilation of agencies concerned with oil and gas matters prepared by the Office of Oil and Gas. * Agencies that administer programs...

II. Federal agencies that administer energy policy or programs (Category B)¹

Agency	Classification						
	1	2	3	4	5	6	7
Executive Office of the President:							
Council on Environmental Quality	B.1.a.b.c	X		X	X		X
Office of Management and Budget							
Budget Review Division	B.1.a.b.c						
President's Panel on Oil Spills	B.1			X			
President's Task Force on Air Pollution	B.1			X			
Department of Commerce							
Bureau of Census	B.2.d				X	X	
Maritime Administration	B.2.a	X					X
Department of Defense							
Defense Supply Agency, Central Supply and Maintenance	B.2.a.b.d				X	X	X
Department of Housing and Urban Development:							
Department participation in Urban Transportation R&D	B.2.d						
Department of the Interior:							
Bureau of Indian Affairs	B.2.b	X			X		X
Department of Transportation							
Office of the Secretary—Transportation Planning R&D	B.1.a.; B.2.d				X		
Coast Guard (oil pollution)	B.1.b.; B.2.a.c.d						X
Urban Mass Transportation Administration	B.2.d						
Department of the Treasury							
Internal Revenue Service	B.1.b.c.; B.2.c			X	X		
Civil Aeronautics Board (subsidy of Air service)	B.2.a						
Environmental Protection Agency:							
Office of Water Programs	B.1.a.b.c.; B.2.c.d	X				X	
Interstate Commerce Commission	B.1.b.; B.2.c				X		X
National Aeronautics Space Administration							X
Office of Applications	B.2.d						
National Water Commission	B.1.a.c						

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 - Col. 6. Agency claimed indirect statutory authority in the energy field.
 - Col. 7. Agency was listed in a 1971 compilation of agencies concerned with oil and gas matters prepared by the Office of Oil and Gas.
- * Agencies that administer programs or develop or implement policies that were not specifically intended to have unique impacts upon the energy system but that have proven in practice to have influences upon the energy system that are significantly different than the influences they have on other industrial or social systems.

committee to have specific energy policy roles. Table I includes agencies that administer the specific programs defined in the table's footnote. Table II includes agencies that administer policies or programs that are not specifically "energy oriented," but have unique impacts on the energy system.

Each table is coded to show the types of energy policy activities performed. The alphanumeric coding listed under "Classification I" follows—

- A. Specific energy activities (Table I)
 - 1. Policy formation
 - (a) Planning and forecasting
 - (b) Formation of standards, rules, regulations, and rates
 - (c) Preparation or review of proposed legislation
 - 2. Policy implementation
 - (a) Operations of energy facilities or production or marketing of energy or energy resources
 - (b) Management of energy resources (including purchasing in quantities large enough to effect regional or national supplies)
 - (c) Enforcement of rules and regulations

- (d) R&D, data collection, and technical assistance
- B. Activities having unique impacts upon the energy system (Table II)
 - 1. Policy formation
 - (a) Planning and forecasting
 - (b) Formulation of standards, rules, regulations, and rates
 - (c) Preparation or review of proposed legislation
 - 2. Policy implementations
 - (a) Operation of facilities or production of resources having unique impacts upon the energy system
 - (b) Management of resources
 - (c) Enforcement of rules and regulations
 - (d) R&D, data collection, and technical assistance

Proposed Federal reorganizations for energy
 In this category of constructive recommendations, Sen. Jackson's committee report listed (1) *high-level surveillance of energy systems and provision for policy advice*, (2) *coordination and augmentation of Federal*

operating programs, (3) energy data collection, analyses and dissemination, and (4) coordination and augmentation of federal regulatory functions. (We shall discuss items 1, 2, and 4 in more detail.)

High-level surveillance. Sen. Jackson introduced the *National Resources Planning and Policy Act of 1972* for the purpose of improving the organization, policy-making, planning, and management of our natural resources to meet a new national goal. The act would be concerned with the development of new technologies, better monitoring and data collection, research on new methods to produce more efficient and cleaner energy sources, and better decision-making and coordination of activities within the Federal government.

The proposed Board on Natural Resources Planning and Policy would have three members whose duties would include

- The coordination and improvement of all Federal programs and activities in the natural resources and energy fields.
- Conducting of studies and research.
- The responsibility, where appropriate, to ensure that technical and economic information accompanies environmental impact statements.
- The recommendation of policy changes and new programs or actions.
- The recommendation, jointly with the Council on Environmental Quality, of alternatives to Federal actions enjoined by the courts.

One of the most important assignments of the

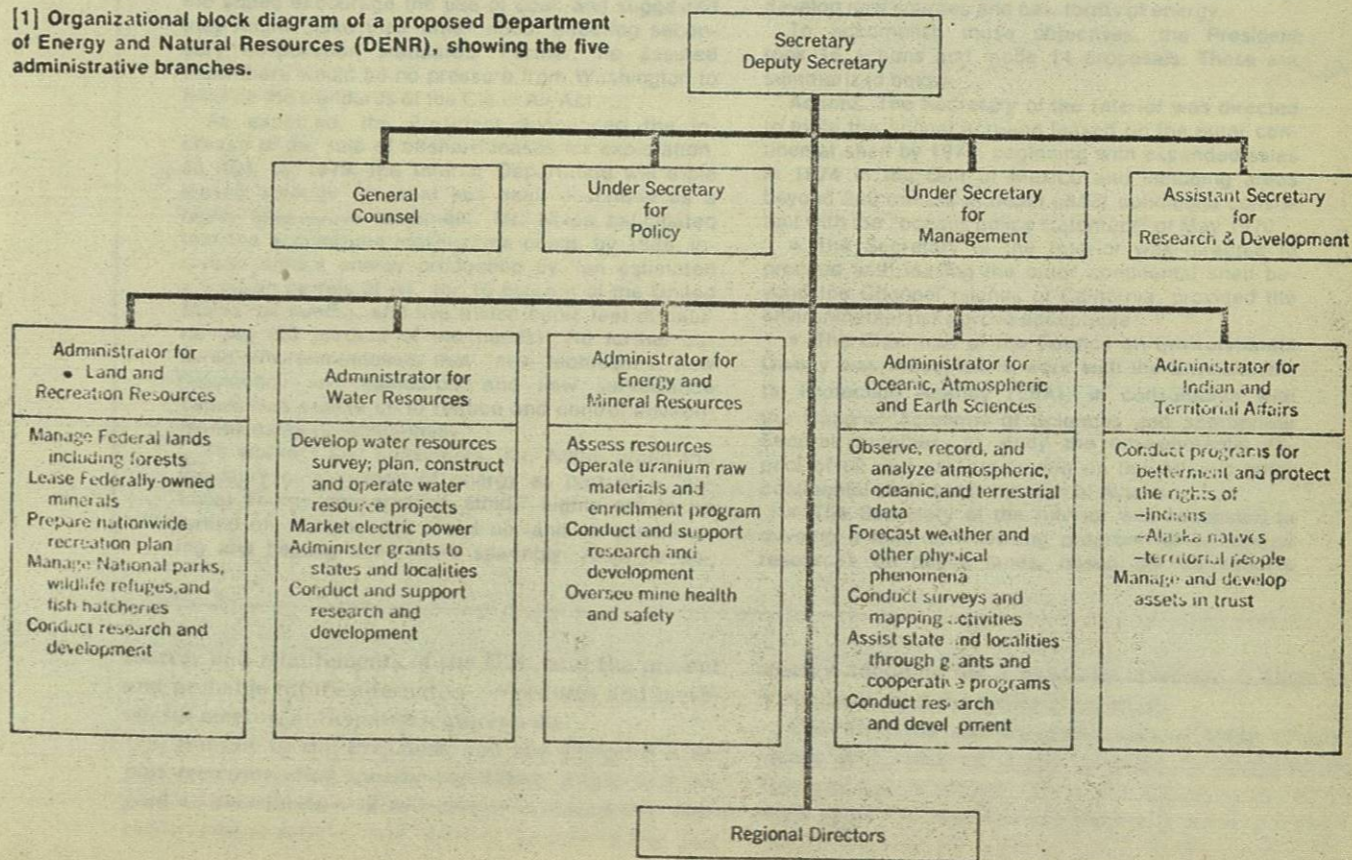
Board would be the preparation and transmittal to Congress of an annual "natural resources report." This report would meet the need for a continuing assessment of present and projected natural resources requirements, R&D efforts, data-collection and monitoring activities, etc. With this information base and annual assessment of problems, Sen. Jackson believes both Congress and the Executive Branch would be greatly assisted in the preparation and implementation of needed policies for the management, conservation, use, and development of fuel resources.

Council on Energy Policy (House and Senate bills). This proposal would, in general, create such a Council within the Executive Office of the President for the purposes of establishing a central point for the collection, analysis, and interpretation of energy statistics and data to assist in securing policies "for wise energy management and to anticipate social, environmental, and economic problems associated with existing and emerging technologies." The Council would also coordinate all energy activities of the Federal government and prepare a long-range comprehensive plan for energy utilization "to foster improvement of the efficiency of energy production and utilization . . . and the conservation of energy resources by reducing energy demands . . ."

National Energy Advisory Board. Another proposal is the establishment of a National Energy Resources Advisory Board as an independent agency in the Executive Branch. Its functions would be to

1. Make a full investigation, on a continuing basis, of the current and prospective fuel and energy re-

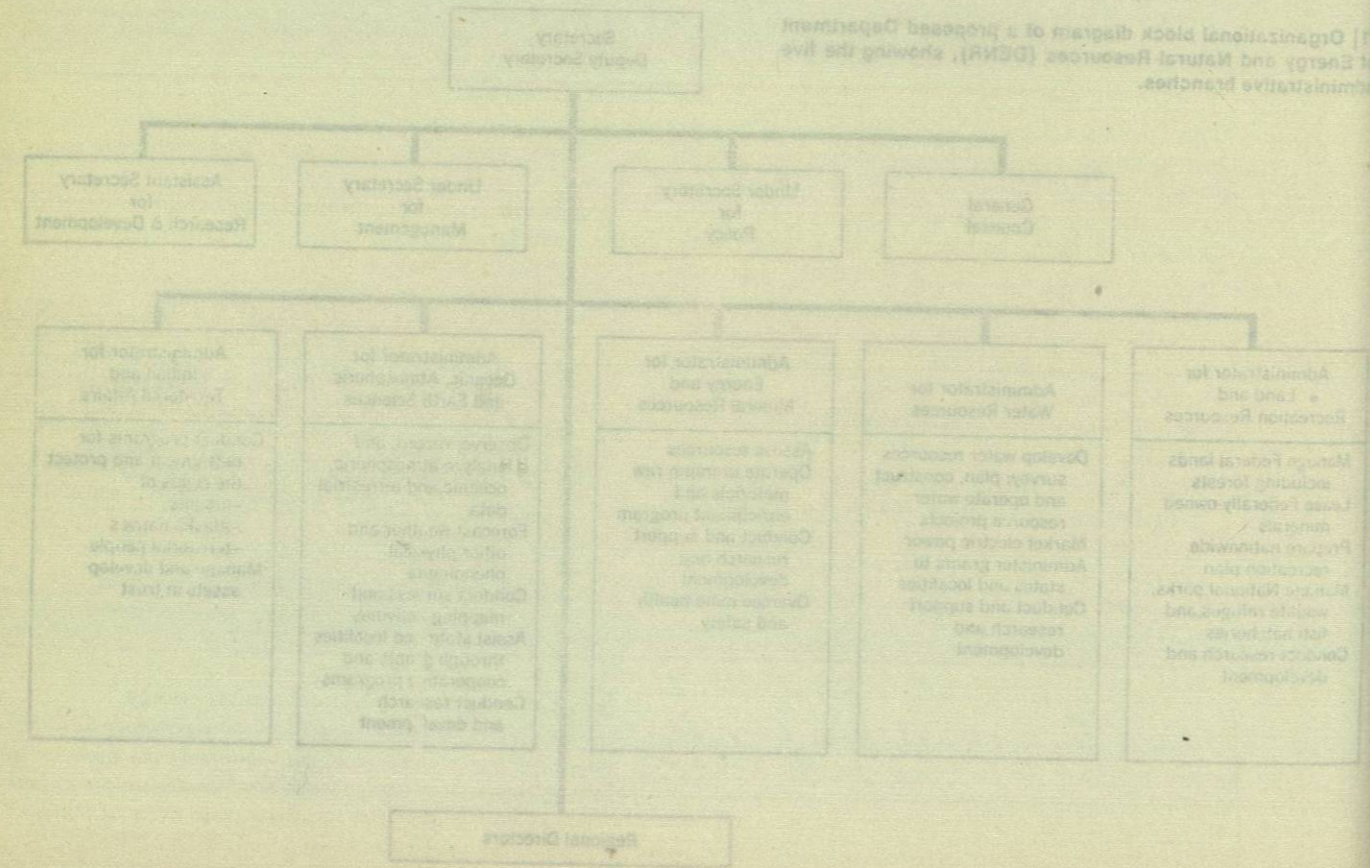
[1] Organizational block diagram of a proposed Department of Energy and Natural Resources (DENR), showing the five administrative branches.



One of the most important assignments of the Department of Energy and Natural Resources (DENR) is to provide the leadership and coordination for the development of a national energy policy. This is a task that requires the cooperation of all Federal agencies and the participation of the States and the private sector.

The DENR is currently conducting a study to determine the most effective way to coordinate the various Federal agencies involved in energy policy. This study is being conducted in cooperation with the National Energy Research Board and the National Energy Conservation Board.

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highlights of the President's message on energy

Of the actions and proposals included in President Nixon's message on energy, sent to the Congress on April 18, and also directed to consumers and industry, the principal executive action disclosed was the termination of oil import quotas. Mr. Nixon announced that the 14-year-old quotas would be replaced by a license fee applied to all oil and gas imports. This action, which was first recommended in 1970 by a Presidential panel commissioned to consider the energy picture in the U.S. (but was subsequently ignored by the President), will serve to ease temporarily oil shortages that have resulted from the rapid depletion of U.S. oil reserves. But to avoid increasing our balance-of-trade deficits—and becoming subject to the whims of the governments of oil-producing nations—Mr. Nixon proposed several additional programs to Congress:

He urged Congress to terminate Federal regulation of wellhead prices of natural gas, our cleanest fuel, as an incentive to exploration. Newly discovered wells and those newly dedicated to interstate markets would be freed of the Federal Power Commission's jurisdiction immediately, and those wells already producing would become free when their present contracts expired. According to the President, "ill-conceived regulation" has served only to keep prices low for "America's premium fuel," but as a direct consequence, industries and utilities have neglected oil and coal—which is less used than other fuels but abundant—thereby depleting natural gas wells faster than new ones can be developed.

In this connection, the President advised Congress to authorize an additional tax subsidy in the form of a tax credit to encourage the oil industry to increase exploration outlays. Further, he urged the Interior Department to authorize the licensing of deepwater offshore tanker terminals. This, he expected, would decrease pollution through the utilization of "fewer but larger" tankers.

In his message, Mr. Nixon also recommended that the states encourage the use of coal, and suggested they might "take their time" about effecting secondary air-pollution standards. Further, he assured them there would be no pressure from Washington to enforce the standards of the Clean Air Act.

As expected, the President announced the increase of the sale of offshore leases for exploration, so that, by 1979, the Interior Department will triple leased acreage in what has been described as a highly speculative statement. Mr. Nixon anticipated that the accelerated leasing rate could, by 1985, increase annual energy production by "an estimated 1.5 billion barrels of oil" (or 16 percent of the United States' oil needs), and five trillion cubic feet of natural gas (20 percent of the needs). He further assured environmentalists that "new techniques, new regulations and standards, and new surveillance capabilities enable us to reduce and control environmental dangers substantially."

To workers and consumers, Mr. Nixon urged the voluntary conservation of energy as part of a "national energy conservation ethic." Lights are to be turned off, automobiles tuned up, and air-conditioning and heating used more sparingly. Also, he an-

sources and requirements of the U.S., and the present and probable future alternative procedures and methods for meeting anticipated requirements.

2. Submit to the President and the Congress a report recommending specific legislative action with regard to coordination of effective and reasonable policies to ensure reliable and efficient sources of fuel and

nounced the establishment of an Office of Energy Conservation in the Department of the Interior, "to educate consumers" by, among other means, labeling products for their relative efficiency of energy use.

Mr. Nixon reaffirmed his commitment to nuclear power-plant development, speaking of producing half the country's electric energy by this means by the year 2000, and promising to propose methods to shorten the time-consuming licensing procedures that have delayed such plants.

Finally, the President reiterated his commitment to early construction of an Alaskan oil pipeline and reviewed the 20 percent increase in Federal funding of R&D programs proposed in the January budget. Although he was enthusiastic about the potential of oil-shale reserves and the harnessing of geothermal energy, he reserved judgment on these programs pending further information. He did, however, direct the Department of the Interior to prepare a leasing program for the development of geothermal energy on Federal lands.

In summary, President Nixon's message to Congress attempted to define a national energy policy. As he saw it, such a policy must have six objectives:

- To reduce excessive regulatory and administrative impediments that have delayed or prevented construction of energy-producing facilities.
- To increase domestic production of all forms of energy.
- To act to conserve energy more effectively.
- To strive to meet our energy needs at the lowest cost consistent with the protection of both our national security and our natural environment.
- To act in concert with other nations to conduct research in the energy field and to find ways to prevent serious shortages.
- To apply our vast scientific and technological capacities—both public and private—so we can utilize our current energy resources more wisely and develop new sources and new forms of energy.

To accomplish these objectives, the President took 16 actions and made 14 proposals. These are summarized below:

Actions. The Secretary of the Interior was directed to triple the annual acreage leased on the outer continental shelf by 1979, beginning with expanded sales in 1974 in the Gulf of Mexico and including areas beyond 200 meters in depth under conditions consistent with the "oceans policy statement" of May 1970.

• The Secretary of the Interior was directed to proceed with leasing the outer continental shelf beyond the Channel Islands of California, provided the environmental risks prove acceptable.

• The Chairman of the Council on Environmental Quality was requested to work with the Environmental Protection Agency (EPA), in consultation with the National Academy of Sciences and appropriate Federal agencies, to study the environmental impact of oil and gas production on the Atlantic outer continental shelf and in the Gulf of Alaska.

• The Secretary of the Interior was requested to develop a long-term leasing program for all energy resources on public lands, based on the nation's

energy adequate for a balanced economy, a clean environment, and the national security.

Coordination and augmentation of Federal operating programs. A major proposal in this category has emanated directly from President Nixon rather than from the Senate committee. This is the President's proposal for a Department of Energy and Nat-