The original documents are located in Box 6, folder: "Energy Policy White Paper (1)" of the Frank Zarb Papers at the Gerald R. Ford Presidential Library.

FEDERAL ENERGY ADMINISTRATION

WASHINGTON, D.C. 20461

December 3, 1976

MEMORANDUM FOR FRANK ZARB

FROM: BRUCE PASTERNACK BAP

SUBJECT: STATUS OF POLICY WHITE PAPER/INITIATIVES WORK

The following represents both a status report on the policy white paper and initiatives, as well as a summary of what I expect to get to you (and Secretary Richardson) in the next two weeks.

Policy White Paper

A first draft of the white paper is now prepared and is being reviewed by Frank Hodsoll/Ed Miller at Commerce (for Darmon). I expect about half of their comments today and the rest on Monday.

I intend to give selected sections of the paper to key staff at FEA in their area of speciaity for review (e.g., Clem Malin will get the international section; Rosenberg the utility, financing, and energy development sections; etc.). These are a few key sections that I would like to give to specific people in other agencies for review:

R&D priorities - Roger Legassie (AA for Planning, ERDA)
Nuclear - Dick Roberts (AA for Nuclear Energy, ERDA)
Financing - John Niehuss (Treasury)
International - Steve Bosworth (State)

There is a real question in my mind about review of the whole white paper by OMB and Schleede prior to release. I need your guidance on whether to give them the drafts quickly.

I will provide you with this first draft today in accord with the attached outline, so that you have a feeling for what the paper will look like, but caution that it is a first draft and has not even been proofed.

Recommendations in White Paper

Prior to our Tuesday meeting with Secretary Richardson, I will prepare a brief policy issue/recommendation paper. It will just contain the issues, options and a tentative recommendation from myself, but will not be a "pro/con type" issue paper. I will review the paper and tentative recommendations with Richardson's staff prior to the Tuesday meeting.

Testimony

We will work over the weekend and early next week to prepare testimony for both Secretary Ricahrdson and you. Although the structure of the testimony has not been finalized, I would expect to have the Secretary talk about the broad energy policy issues (probably highlighting the key issues as major headings in the white paper outline) and discussing how the policy environment has changed in the past two years. You could then discuss the current energy situation, outlook; and more specific policy issues/recommendations.

Tuesday Meeting with Secretary Richardson

I would like to cover two major subjects at the Tuesday meeting:

-- Structure of testimony and review procedure

-- Policy recommendations on key issues

We will probably need at least 1-1 1/2 hours for the meeting.

POLICY WHITE PAPER
WORKING OUTLINE

1. ENERGY PERSPECTIVES

2. FEDERAL REGULATORY POLICY

   Natural Gas
   Crude Oil
   Energy Taxes
   Fuels Policy

3. ENERGY CONSERVATION

4. ENERGY DEVELOPMENT: THE BROAD ISSUES

5. UTILITY REGULATORY REFORM

6. NUCLEAR FUEL CYCLE

7. ENERGY FINANCING

8. ENERGY R&D PRIORITIES

9. INTERNATIONAL CONSIDERATIONS

   Energy Independence vs. Dependence
   Strategy Towards OPEC
   Multinational Companies (and divestiture)
   Protecting Against the Effects of Embargoes

10. FEDERAL ENERGY ORGANIZATION

THE ENERGY PERSPECTIVE

Background

- The oil embargo in late 1973 was a shock to most of the American people and demonstrated the extent to which our energy situation had deteriorated. Until then, the United States had supplied almost all of its own energy and had dominated the world oil pricing system. However, beginning several decades earlier, the roots of our current energy problem were beginning to take shape.

  -- Coal is the United States' most abundant energy resource (about 90 percent of our reserves). During the early part of this century, coal supplied most of the nation's power. As the popularity of the automobile increased, as environmental protection became a national concern, and as railroad travel deteriorated, the demand for petroleum and natural gas grew and replaced coal in many uses. As a result of these trends, coal production has only recently exceeded levels reached in the 1920's and its percentage of total energy demand has fallen dramatically (from accounting for almost 80 percent of our energy in 1920, coal had fallen to less than 20 percent by 1973).

  -- Domestic petroleum production increased initially in response to rising demand. However, beginning in 1966, U. S. oil reserves, excluding those discovered in Alaska, began a decline that has yet to be arrested. This is a direct result of a decrease in oil drilling which commenced in 1959 and continued until 1974. Drilling activity declined primarily for two reasons. First, domestic oil production had become less profitable because of rising costs and depressed prices caused by the availability of inexpensive foreign oil. Second, exploration and development by the oil industry in frontier areas was restricted because of environmental concerns. The decline in reserves, however, was not felt until after 1970, when U. S. production reached its all-time peak of 9.6 million barrels per day (MMB/D), as compared to 8.2 MMB/D this year. At this time, our existing reserves were being produced to full capacity, and this production was not being replaced by additions to reserves.

Thus, domestic oil production began to decline. An encouraging trend this year has been the increase in exploration activity. Drilling in 1976 reached a 14 year high. Crude oil and most product inventories are also at record levels.

-- At the same time domestic oil production was declining, consumption continued to climb in response to declining oil prices, growth in automobile usage, and environmental standards energy consumption grew at a rate of 3.6 percent annually; oil demand at 4.6 percent. After the embargo, petroleum demand was relatively constant in 1974 and 1975, but resumed growth in 1976 as the economy improved. Nevertheless, as a result of relatively flat demand for two years, our petroleum consumption is now about 3 MMB/D less than if pre-embargo trends had continued. MOst of the decline was due to the economy and warm weather, although about 1 MMB/D of the reduction was because of higher prices and conservation.

-- As a result of rising demand and declining supply, U. S. imports grew. Imports were:

- 0 in 1950's
- 3.4 MMB/D in 1970 or 23%
- 6.2 MMB/D in 1973 or 35%
- 7.0 MMB/D (est.) in 1976 or about 40%

-- With rising imports and rising prices came a higher bill for foreign oil. In 1970, the U. S. paid about $2.7 billion for imported oil; in 1975, the bill had risen to $27 billion and it will be about $34 billion in 1976. Most of the increase in imports has come from Arab sources, since those are the sources of extra capacity.

-- While natural gas production rose substantially during the 1960's its growth rate began to decline in 1969, mainly due to price controls on the interstate market. Natural gas production peaked at 22.6 Tcf in 1973 and had declined to under 20 Tcf in 1976. Most of the decline has been in interstate sales, causing growing natural gas curtailments which threaten jobs and households.

-- Although nuclear power has accounted for an increasing share of electricity generation, its growth has been slowed by the lengthy licensing process and siting problems. The United States now has 62 operating nuclear plants, supplying about 9 percent of electric power.

- Other sources of energy, such as solar, geothermal, and hydropower, are growing, but do not contribute a significant share of U.S. energy needs.

The Rise of OPEC

- The domination of the Organization of Petroleum Exporting Countries (OPEC) over world oil production and prices has been largely a phenomenon of increased world demand and abundant OPEC resources. The Middle Eastern and North African members of OPEC possess 70 percent of the world's known, easily recoverable oil reserves. The fact that these reserves are located in the Middle East and North Africa, however, made little difference before 1960 because of the overwhelming dominance of these resources by the major international oil companies.

- In 1960, Venezuela, Saudi Arabia and several other Middle Eastern nations formed OPEC to gain control over the price and production levels of crude oil in their respective countries. Ultimately, OPEC gained such absolute control over its oil that oil company concessions began to be nationalized and the price for their oil was increased sharply. In October 1973, the Arab members of OPEC precipitated an oil embargo.

-- The effect of the embargo was appreciable. GNP dropped by between $10 and $20 billion and approximately 500,000 workers were unemployed. Consumer prices increased by almost 10 percent, one-third of this due directly to higher world oil prices. The embargo demonstrated clearly the need to re-evaluate our domestic and international energy policies.

U.S. Reactions to the Embargo

- Government Energy Organization. An initial reaction to the embargo was to reorganize government energy functions, which until then had been widely dispersed. During the embargo, the President established, on December 4, 1973, the Federal Energy Office (FEO), and delegated to FEO all of his authority under the Emergency Petroleum Allocation Act (which provides for the mandatory allocation of crude oil and petroleum products) and the Defense Production Act of 1950. FEO also took over the authorities of the Cost of Living Council regarding petroleum pricing and allocation controls, and some energy activities from the Department of the Interior.

  -- The Administration subsequently submitted to Congress legislation to create a Federal Energy Administration (FEA) as an independent agency to deal with energy matters, and legislation to re-organize the existing Federal energy structure. The Congress passed these two pieces of legislation. On May 7, 1974, the Federal Energy Administration was created and on October 11, using the authorities of the Energy Reorganization Act, the President issued Executive Order No. 11814, creating the Energy Resources Council; abolishing the Atomic Energy Commission; and creating the Energy Research and Development

Administration, and the Nuclear Regulatory Commission. The ERC brought together the heads of more than 20 Federal departments, agencies and executive offices to develop, coordinate and assure the implementation of Federal energy policy.

- Project Independence. During the embargo, President Nixon announced a program called Project Independence to achieve energy self-sufficiency by 1980. In March 1974, the FEO began work on a report to assess the feasibility of Project Independence. The report was backed up by a major analytical effort to forecast energy supply and demand growth through 1985 and to examine the constraints affecting energy. The Project Independence Report (PIR) indicated that energy self-sufficiency by 1980 was impossible, but that an aggressive program of resource development and conservation could eliminate any adverse impact of future embargoes. It was the first major attempt to integrate available information on supplies of and demand of energy in the United States, and to develop an analytical framework to assess new initiatives and changing conditions.

- Administration Strategy. The fundamental approach taken by the Administration to solve the energy problem was to remove restrictive government controls from the energy marketplace; encourage conservation through pricing and, where appropriate, regulation; and possible standby authorities to deal with a future embargo. The Energy Independence Act of 1975, proposed by President Ford, embodied these principles.

  -- The major efforts to increase domestic supply were the elimination of price controls from crude oil and authorization of production from the Naval Petroleum Reserves; reduction of regulatory lag in the licensing and siting of nuclear plants; conversion of power plants from oil and gas to domestic coal; acceleration of Federal coal and of leasing programs;

and a program of financial support for synthetic fuel commercialization.

-- To encourage conservation, the Administration proposed mandatory thermal standards for all new buildings; appliance labeling; an insulation tax credit; a system of import fees, taxes, and decontrolled prices; voluntary automobile fuel efficiency goals; and a weatherization assistance program for low income families. In addition, programs were adopted to try to make the Nation aware of the critical nature of the energy problem and to provide information to private citizens, industry and commercial concerns on how to more effectively use and conserve energy. The attempt to educate the Nation regarding the seriousness of the energy situation was undermined by public suspicion that the energy crisis was a creation of the oil industry to justify higher prices and generate windfall profits.

-- To protect the United States from the severe impact of another embargo or other supply disruption, the Administration also submitted legislation to the Congress for the creation of a strategic petroleum reserve, and emergency standby authorities to reduce the economic impact of a cutoff.

- Congressional Response. There was an immediate negative reaction in the Congress to the Administration's energy program. With the economy in the midst of a recession and the public not yet ready to adjust to even higher prices, the Congress fought the decontrol/import fee program successfully.

-- The initial approach put forward by the Congress involved increased regulation. There were proposals for further allocation, more stringent price controls, rationing, and import quotas. Each of these programs

had major drawbacks and ultimately were not enacted or were changed radically. In particular, import quotas would drive up the price of petroleum and severely affect areas of the country reliant on oil (such as New England) or require an even bigger cost equalization program than now exists. Allocation and rationing would also affect certain parts of the country disproportionately.

-- The Congress (especially the House Ways and Means Committee) conducted a long debate over energy taxes. Various tax proposals were considered, including taxes on gasoline and all petroleum products. Most of the attention focused on a gasoline tax. The United States' gasoline tax is much smaller than that of almost every other consuming nation. For example, Japan's gasoline tax is about 55 cents per gallon; Italy's is about $1.70; but ours is only about 12 cents. The House considered gasoline taxes varying from 3 cents per gallon to over 30 cents, but all were rejected. This reaction points out the difficulty of imposing higher prices of energy.

-- After a long debate over crude oil pricing stalled most of the pending energy legislation, a compromise was reached in December 1975, when the President signed the Energy Policy and Conservation Act (EPCA). It was a controversial piece of legislation. The oil companies felt that the price rollback in the bill would hamper domestic production and exploration activity, while consumer groups argued that the rollback was not enough. Three major pieces of energy legislation have subsequently been passed in the last year--the Naval Petroleum Reserves Production Act, the Energy Conservation and Production Act (ECPA), and Alaskan Natural Gas Transportation Act. As a result of these Acts, the Federal Government now has the authority to and is in the process of:

Supply

- Exempt the first sale of domestic stripper well crude oil from price controls;

- Implement the 40 month crude oil decontrol plan, providing for domestic crude oil production incentives to reflect the difference between the 10 percent limit and the rate of inflation per month.

- Provide added pricing flexibility to tertiary recovery and California gravity crude.

- Develop at the maximum efficient rate the three Naval Petroleum Reserves in the Lower-48 States; continue exploration of NPR-4 in Alaska, leading to its eventual development.

- Implement an expedited selection process for a transportation route to deliver Alaskan natural gas to the Lower-48 States.

- Dismantle as much of the current crude product regulatory system as possible.

Conservation

- Direct a $2 billion obligation guarantee program for conservation investments by industry, small business, and non-profit institutions.

- Provide conservation grants to States to assist in the development and implementation of energy conservation programs.

- Implement appliance energy efficiency labeling

- Set mandatory automobile efficiency standards for 1980 and 1985.

- Establish industrial energy conservation targets for the ten leading energy consuming industries.

- Developing thermal efficiency standards for all new residential and commercial buildings, which require Congressional approval of sanctions;

- Implementing a three year, $200 million weatherization grant program for the insulation of homes of low-income, elderly, and handicapped persons;

- Establishing a demonstration program to test various mechanisms for encouraging energy conservation improvements or use of renewable resources, such as solar heating or cooling, in existing residential buildings;

- Providing grants to States for testing innovative utility rate structure designs to achieve a higher degree of conservation.

Standby

- Building a strategic petroleum reserve of at least 150 million barrels of petroleum by 1978 and up to a billion barrels by 1982;

- Establishing standby measures to deal with severe energy emergencies that may arise in the future;

- Developing cooperative contingency and planning programs with the International Energy Agency (IEA).

Outlook for the Future

- The precise course of near-term consumption and production of crude oil is uncertain because the effects will be closely related to final implementation of energy legislation enacted by the Congress in the last year. In the short-term, domestic consumption of petroleum products will continue to increase, although at a slower rate than pre-embargo trends, as the economy recovers and before conservation programs take effect. "Lower 48" crude production will continue to decline, until Alaskan North Slope oil comes to market in

late 1977. Imports may reach over 8 MMB/D in this period. It is unlikely that anything can be done in the short-term to alter the supply and demand relationship between OPEC and the consuming nations in order to weaken the oil cartel's exclusive control over oil prices. And it will only be through aggressive resource development and conservation measures that downward pressure can be exerted on the OPEC pricing structure.

- By 1985, however, this Nation can greatly expand its domestic energy production and cut the rate of growth in energy demand, and still meet its economic objectives. But, if we do not establish policies to stimulate domestic energy production and cut energy use, or if because of restrictions on energy development, fewer reserves are developed than expected, or price controls are extended, our dependence on foreign oil could rise immediately above today's level.

- The amount of oil discovered and produced depends upon the extent of reserves and whether oil prices are high enough to justify their production. Domestic crude oil production could increase to considerably over 10 MMB/D in 1985 (from 8.2 MMB/D in 1976), if today's market prices are allowed to stimulate domestic production and if there is an aggressive OCS leasing and development program. While total production will increase from today's level, oil supply from existing onshore reserves could decline to 2.4 MMB/D by 1985, as older fields are depleted. But, more intensive use of secondary and tertiary recovery in current fields and new discoveries can keep onshore production about constant. If aggressive OCS leasing and development schedules are followed, OCS production could increase substantially by 1985.

  -- If world oil prices fall or domestic prices are regulated over a long period, production could be at about today's level in 1985. This decline would occur because

the more expensive enhanced recovery techniques and some frontier area production, such as that from Alaska, would not be economic at lower prices.

- Total domestic supply is forecast to increase substantially between now and 1985, with all major fuels besides petroleum playing a large role:

  -- Coal production could increase to over a billion tons, from current levels of about 670 million tons, unless long-term utility demand alters significantly and environmental and transportation issues are unresolved.

  -- Natural gas production could reach over 22 Tcf, if deregulation occurs, but could decline from current levels if current regulations persist;

  -- Nuclear power could grow from current levels of 9 percent to about 20 percent of electricity generation; however, uncertainty in demand growth, financial difficulties and licensing delays can lower this projection significantly.

- Each of these supply increases, while technically and economically feasible, requires significant growth of the energy producing sectors and will not be forthcoming unless pricing and government regulatory policies encourage it. In addition, if one or more domestic energy sources do not achieve these projected levels, imports will make up the shortage because other domestic fuel sources could not compensate for the loss.

- Higher energy prices should cut energy demand growth during the next ten years, reducing the growth rate to 2.8 percent from the historical rate of 3.6 percent. An active conservation program could further reduce energy demand by the equivalent of 3 million barrels per day, reducing the annual energy growth rate to a

little over 2 percent through 1985. Electricity generation will continue to grow about twice as fast as overall energy demand, but at reduced levels from historical rates. Consumption patterns will gradually shift from oil and gas to coal and nuclear power.

- At current import prices (in real dollars), and with removal of price controls after 40 months, natural gas price deregulation, implementation of the conservation measures in the enacted energy legislation, and no negative energy actions, import needs could be reduced to approximately 4 MMB/D by 1985. If oil and gas price controls remain in effect through 1985, however, imports could be closer to 10 MMB/D and if energy development cannot proceed as planned, imports could be more than 10 MMB/D.

- Emerging technologies will not play a significant role in stabilizing our energy situation in the next ten years. Solar, geothermal and synthetic fuels will make only a small contribution to domestic energy supplies by 1985--about 1 percent of total use. While the technology for these sources exists, they must be proven economically viable on a commercial scale. Since it will take several years to build the first full-size plants, a large industry will not be possible during the next decade. Further, it is likely that few, if any, synthetic fuel plants will be built by 1985 without Federal financial assistance. Unless commercial size plants are started now and proven economic by 1985, it will not be possible for these new sources to replace dwindling supplies of oil and gas in the post-1985 period.

Post-1985 Outlook

- The post-1985 prospects for maintaining independence are less certain unless technological and economic breakthroughs occur. Declining reserves of oil and gas will need

to be offset by significantly increased use of nuclear power, synthetic fuels, solar, geothermal, and other emerging technologies. However, the major contribution from solar, geothermal, and synthetic fuels will not be felt until after 1990.

- Electricity is projected to continue to increase its penetration. It could represent about 37 percent of energy use in 1990, as compared to 28 percent in 1974. The major economic choice in electricity generation by 1990 will still be between nuclear power and coal. However, actual capacity additions will be determined by other factors as well, such as environmental standards, financial health of utilities, and infrastructure to transport coal. Coal and nuclear power could amount to 77 percent of electric generation in 1990, as compared to over 70 percent in 1985 and 50 percent in 1974.

- If electrical energy grows at the anticipated rate, there will be a strong need to increase coal production (to over 1.6 billion tons in 1990) and to resolve the nuclear fuel cycle problems. Nuclear capacity additions will have to occur at greatly accelerated rates in the 1985-1990 period to meet electrical generation needs, and installed nuclear capacity in 1990 could be over 200,000 megawatts.

- Oil and gas production is likely to decline again around 1990; Alaskan production would also decline in this period, unless significant NPR-4 reserves are proved and produced.

- As consumers adjust to higher energy prices, the growth rate of energy consumption could increase once again to over 3 percent in the post-1985 period. Almost half of the total petroleum usage in 1974 was for transportation and this percentage is expected to remain

unchanged through 1990, unless major modifications are made in the transportation system. While automobiles are likely to be made much more efficient over the next decade, gasoline demand will ultimately increase again as the number of autos increase, unless there is a basic change in the pattern of usage or transportation fuel use is shifted, probably to electricity. Both alternatives involve large capital investment, technological uncertainties, and difficult social and environmental decisions.

- With demand increasing and supply of oil and gas either stable or declining, oil imports in 1990 could be over 10 MMB/D, unless synthetic fuels or other new technologies expand more rapidly than anticipated However, by 1990, a number of existing OPEC countries can be expected to have dropped out as exporters of large quantities of oil. Many of the countries will have passed their peak of production and/or will have developed domestic markets of such size that they will not have substantial production available for export. The reduced number of major exporters could present a physical difficulty in meeting U.S. import requirements by 1990, unless major new sources of oil are found in countries that are not currently active as exporters.

- Natural gas appears to be the fuel most likely to be in short supply in the 1985-1990 period. Unless an economically feasible approach can be found for producing synthetic gas from coal in large quantities, either growing quantities of imported liquid natural gas may have to be used or intensive conservation pursued.

FEDERAL REGULATORY
POLICY

NATURAL GAS

Background

Natural gas is a vital fuel that is consumed by over 40 million residences, over 3 million commercial establishments and almost 200,000 industrial users.

- Domestic natural gas production peaked at 22.6 trillion cubic feet (Tcf) in 1973, but has declined to an expected 19.5 Tcf in 1976. Additions to reserves reached a 22 year low in 1974.

- Until recently, the Federal Power Commission (FPC) has controlled prices for natural gas shipped in the interstate market (all but the producing states located mainly in the South) to 52¢ per thousand cubic feet (Mcf)--about one-fourth the equivalent Btu price of oil. Consequently, demand has outstripped supply in the interstate market, and curtailments of supply have grown.

  -- Curtailments have grown from about zero in 1970 to about 25 percent of firm requirements in the current year.

  -- Natural gas along curtailed pipelines is allocated according to FPC guidelines, with residential and small commercial customers getting highest priority; followed by large commercial and industrial feedstock and process users; industrial users without alternate fuel capability; and gas used for boiler fuel or by interruptible customers.

  -- A very cold winter this year could create spot shortages, despite large inventories of alternate fuels.

- The outlook is for continued declines in the interstate market, unless major changes in the pricing or distribution system occur.

Approaches Tried

- In January 1985, the President proposed to Congress that the wellhead price of new natural gas (production started after January, 1975?) be deregulated.

  -- If prices were deregulated, natural gas production could reach over 22 Tcf by 1985; whereas, under continuation of 52¢ per Mcf prices, production would drop below 18 Tcf and the interstate share would decline from about 10 Tcf to 6.6 Tcf.

  -- Since only new gas would be deregulated, the price impacts on consumers would be gradual. Further, if regulated prices continued, natural gas would not be as available to residential users, would have to be replaced by more expensive oil and electricity, and residential fuels bills would be higher than with deregulation.

- The Senate, in 1975, passed a phased deregulation bill (S. 2310, Pearson-Bentsen bill) under which new onshore natural gas prices would be deregulated immediately and offshore gas prices after five years.

- The House came within a few votes of passing S. 2310 (which President Ford had indicated he would sign), but passed H. R. 9464 (Smith bill) which did not remove regulation and instead extended controls to the intrastate market. The House and Senate bills were never brought to conference. Among the reasons cited for rejecting deregulation are:

  -- The price of natural gas would rise considerably to residential users who are already feeling the effects of higher energy prices.

-- Since lead times for new production are long, consumers would be confronted with higher prices and still see rising curtailments for a few years. Additionally, since distributors roll-in (or average) the price of more expensive gas with less expensive existing supply, excess demand would continue. The counter-agreement to this is that averaging the prices reduces the consumer impacts.

-- There is no guarantee that increased production would result from deregulation and, in fact, there were many changes that gas producers were withholding natural gas from the market awaiting deregulation.

-- Natural gas producers do not need the $1.75-$2.00 per Mcf prices that would result from deregulation in order to produce new gas. The agreement was made that allowing such prices would be letting OPEC dominate our domestic gas market.

-- The curtailment situation and discussion of economic effects was manufactured by the Administration and the gas industry to bring pressure for deregulation.

- The National Governors Conference proposed an approach sponsored by Governor Boren under which new gas prices would be deregulated for a test period of five years, after which the question would be reassessed. While this plan provides for deregulation until 1980, the lead times for new production and already declining reserves would make it difficult to show dramatic improvement as a result of this program.

- In July, 1976, the FPC issued Opinion 770 in which the major action was to increase the national base ceiling rate for new gas (wells commenced or dedicated to interstate market after January 1, 1975) from 52 cents per Mcf. to $1.42 per Mcf.

  -- This action could increase natural gas production to over 21 Tcf by 1985 (about 1 Tcf less than with deregulation) and would increase interstate share of market in 1985 from about 6.6 Tcf under the previous controlled price to about 10 Tcf. However, the interstate share would be about 1 Tcf less than with deregulation and there would still be market distortions in favor of selling gas in the intrastate market.

  -- The FPC Opinion 770 was delayed in implementation by court action and can now be implemented only with the provision that refunds would be given if the courts decide the rate was not justified.

- In September, 1975, the Administration proposed temporary emergency legislation to the Congress to alleviate the effects of curtailments. The legislation would have allowed pipelines and high priority users to obtain intrastate gas as unregulated prices for a limited period. This legislation became embroiled in the deregulation debate and was not enacted.

- In the fall of 1976, the Chairman of the FPC wrote to Senator Stevenson indicating that he would welcome temporary emergency authority to allocate natural gas between pipelines. Although such allocation authority would only be used in severe emergencies, the natural gas industry believes it penalizes pipelines and customers who have been prudent and the first step in a Federal allocation system.

Remaining Problems

- The price regulation issue is tied up in the courts and even if resolved by the FPC, still leaves market distortions against interstate users.

- Natural gas curtailments continue to increase. After alerting the public to the problem last year, warm weather, and the economic slowdown reduced the effects of the shortage. However, the Administration was accused of magnifying the problem and distrust continues.

- Natural gas shortages are distributed unevenly, concentrating in the mid-Atlantic and parts of the Midwest.

- Along an individual pipeline, one distrubution may be adding new high priority residential customers, while others may be cutting back. Also, the current priority system provides little incentive for residential conservation, since gas that is conserved by one distribution company can be reallocated by the interstate pipeline for higher priority load in another distribution area.

- The current FPC priority system, based on end-use, does not recognize the possible use of natural gas in boilers to abate hazardous air quality conditions.

New Initiatives

- Two broad philosophical approaches exist to deal with the natural gas price and supply issue. The alternatives are to allow the market price to work by effectively permitting natural gas wellhead prices to reach the market clearing level, or to continue regulating price and/or supply.

  -- The Market Approach. There are several options:

- Deregulate the price of new natural gas. This approach is the current Administration's proposal and the limitation to new gas deregulation is intended to reduce windfall producer profits and to provide for more gradual increases in consumer gas costs. However, there is no guarantee that additional revenues will be used for increased exploration, consumer impacts could be greater than expected due to abrogation of old contracts, and the inherent lag in exploration and development will inhibit near-term increases in gas supplies.

- Complete deregulation at the wellhead coupled with a windfall profits tax. This approach eliminates the problems of defining new gas equitably, encourages recompletion of wells, and produces government revenues. The consumer impacts would be substantial, even if a rebate system is used with the windfall profits tax, designing such a tax equitably is difficult, and the industry's loss of revenues could affect adversely new development plans.

- Five year experimental deregulation of new natural gas. This approach would reduce the impact of uncertainties in production response since it would be reassessed in a five year period and may be more palatable to the Congress than complete deregulation. This approach may not stimulate offshore and frontier area gas production due to the uncertainties in the future price potential; with lag times inherent in the system, five years may be too early to judge accuately future price potential.

-- Federal Regulation

- Maintain current regulations (given upholding of Opinion 770). While this alternative imposes the least consumer impact, it sustains the distribution distortion between the interstate/intrastate market, does nothing to alleviate the curtailments situation, will stimulate less production by 1985 (1Tcf) than under deregulation, and will increase the average annual residential fuel bill by 1985 by over $20 because of substitution of higher priced alternate fuels.

- Maintain current regulations and impose Federal excise tax on wellhead price to bridge gap between interstate and intrastate prices. This alternative allows the free marketplace to operate at the end-user level, thereby reducing curtailments. It reduces the potential for producer windfall profits, as compared to deregulation, and the revenue gain could be rebated to consumers and/or used to finance other energy projects. This approach, however, does not ensure attraction of new onshore gas to the interstate market. In addition, the Congress has showed little inclination to pass excise taxes of this nature and the potential for Congressional disapproval is high given its effect on consumer costs.

- Extension of regulations to intrastate market at recent FPC announced level for new gas (or current intrastate market average price). This alternative would require both State and local distribution priorities to be consistent with Federal priorities and extend Federal pricing and allocation regulations to the intrastate market. It would eliminate the intrastate/interstate market distortion and would not increase consumer impacts over those associated with recent FPC price action. The production increases would be the same or less than with the FPC price increase, but a larger share would move into the interstate market as there would no longer be a price advantage in dedicating new reserves to the intrastate market. This alternative does, however, require government intervention into the intrastate market, and may raise constitutionality questions. It does not eliminate the inherent inequities of the current curtailment priority system, nor does it eliminate the need to allocate available supplies. It will not stimulate as much increased production (1 Tcf less) as under deregulation.

- The Administration and the FPC have sought two emergency measures from the Congress to alleviate curtailments: direct end user purchases from the intrastate market and 180 day emergency purchases by pipelines at free market prices. The new Administration will have to decide whether this approach is still applicable:

-- Direct end-user purchases from the intrastate market are already sanctioned by the FPC, although the issue of its legality has never been tested. Emergency purchases at free market prices are also currently allowed, but only for 60 days. To date, the Nation has been able to handle the curtailments situation without any emergency legislation, and distribution companies and end-users are preparing themselves better to offset potential curtailments by storing a higher inventory of alternate fuels.

-- Nevertheless, severe economic impacts can still be encountered, even with this legislation, as there is no guarantee that individual pipelines will voluntarily assist each other. This legislation could provide only about 200 Bcf into curtailed areas due to the limited spot intrastate market for gas.

- The following other potential measures exist:

-- Seek standby mandatory allocation authority between pipelines. The small volumes of gas needed to be allocated among pipelines would preclude severe impacts of curtailments and would ensure government protection of high priority end-users during an emergency. However, this alternative provides a strong disincentive to pipelines to secure added gas supplies and to take high financial risks for supplemental gas supplies (LNG, SNG). The establishment of equitable criteria for allocation would be difficult and reimbursement problems with pipelines would be encountered.

-- Place a ban on new growth of firm customers, particularly high priority customers at the distribution level, where distributors are served by pipelines experiencing curtailments. While this approach would limit high priority vulnerability to existing customers and would prevent distributors from securing more gas supplies by industrial to residential load switching, it would require Federal pre-emption of State and local authorities. It would also encourage continued use of available gas for existing low priority uses. Further, it would make a business decision that gas companies could not expand markets in the years ahead and thus stifle the free enterprise system.

- Due to increasingly apparent inequities in implementing existing priorities for available interstate gas supplies, and other administrative problems in implementing the Natural Gas Act, several regulatory reform measures are currently under consideration by the FPC:

  -- "Conservation Gas" Distribution. Distribution companies have had success in inducing high priority customers to conserve natural gas. However, under the current FPC priority system, the gas that is conserved ("conservation gas") can be reallocated by the pipeline to another distribution company in order to maintain uniform priority end-use allocations along the pipeline and to prevent use of the conservation gas by lower priority users. This, in effect, stifles the incentive for distributors to induce conservation since the gas will ultimately be consumed by another high priority user. The FPC could adopt a policy of prohibiting reallocation of conservation gas in order to encourage conservation. Such a policy could, however, increase energy "regionalism" and would relinquish conservation gas for lower priority users. This policy can be implemented by FPC rulemaking and does not appear to require new legislative authority.

  -- Pricing of Supplemental Gas. Another issue which must be resolved is how to price higher cost supplemental gas, including synthetic gas from coal, substitute gas from oil products and natural gas liquids, and imported liquefied natural gas. FPC's current pricing authority extends to the prices charged by interstate pipelines to its distributor customers, but not generally to the burner-tip since the prices charged by distribution companies are under the jurisdiction of State and public utility commissions. A new legislative amendment to the Natural Gas Act could be considered to require that distribution companies adopt the same pricing procedure as the interstate pipelines. This approach would ensure conformance by all regulatory bodies and ensure that end-users pay full cost of consuming supplemental fuels where the FPC deems it practicable. It would eliminate the artificially high demand for supplemental fules created by rolling their price with lower cost supplies. The disadvantages to this approach

are that it involves a pre-emption of State and local authorities; it is not yet clear that incremental pricing to the burner tip is administratively feasible, in any case, where curtailments exist; and it may reduce supplemental gas supplies at the same time a natural gas shortage exists.

-- National LNG Siting Authority. Importers, pipeline sponsors and State and local governments have asserted that the current Federal regulatory procedures for determining site selection for LNG facilities are inadequate and have led to long delays. A new legislative initiative could require Federal LNG siting standards and/or criteria for site selection. However, since each project is different, national standards may have little meaning, and could pre-empt local jurisdiction. It is not likely that such a proposal would receive immediate favor by the Congress. However, national siting criteria could be established administratively through FPC rulemaking.

Recommendations

Crude Oil

CRUDE OIL

Background

- Crude oil and petroleum product price controls were imposed by the Cost of Living Council in August, 1973, and were codified by the Emergency Petroleum Allocation Act of 1973.

- Only controls over petroleum prices remain since since the price freeze of the early 1970's; the oil industry claims that controls are inhibiting production incentives, and consumer groups contend that controls are holding domestic prices below cartel prices, while still providing sufficient production incentives.

- Despite price controls, the average petroleum cost to American consumers has risen by ____ percent since 1973.

Approaches Tried

- In January, 1975, President Ford proposed to the Congress a plan to remove price and allocation controls from crude oil and petroleum products by April, 1975, in conjunction with a windfall profits tax.

  -- FEA estimated that immediate decontrol could reduce imports by ____MMB/D by 1977.

  -- There was an overwhelmingly negative reaction to this proposal in the Congress, mainly because Congress feared the economic impact of decontrol during the recession and because of an inherent distrust of the oil industry by much of the public.

- A long, often bitter debate ensued over crude oil prices and after several alternative proposals (e.g., extending the price control phaseout over a 39-month period) were offered by the President and rejected by Congress, a compromise was reached with the signing of the Energy Policy and Conservation Act (EPCA) in December, 1975.

  -- The pricing provisions of the EPCA were its most controversial features.

-- Under the EPCA, average domestic crude oil prices were rolled back to $7.66 per barrel (from over $8 per barrel). This "composite" price was allowed to escalate over a 40 month period at no more than 10 percent annually to keep pace with inflation and provide production incentives. Price controls are due to expire in April, 1979.

- Building upon the EPCA, the President signed the Energy Conservation and Production Act (ECPA) in August, 1976.

  -- The ECPA assured that a 10 percent annual rise in the composite price would be allowed and released stripper wells from price controls. Stripper wells are those wells producing less than 10 barrels per day and represent about 70 percent of the wells in this country, although only about 12 percent of production.

- Using authorities provided in these laws, the FEA has proposed and Congress has allowed price and allocation controls to be removed from residual fuel oil; middle distillates; naphtha jet fuel; and naphtha, gasoils, and other products. Thus, about half of refiners' output has been decontrolled, with gasoline, propane, kerojet fuel, and aviation gasoline being among the products still controlled.

Remaining Problems

- As a result of an error in the estimated prices and proportions of "new" and "old" oil, initial estimates of the composite price were about ____ percent too low. To compensate for "overshooting" the composite price and to account for other regulatory changes made in the past year, FEA has frozen the price of upper and lower tier oil since June, 1976. The extra revenues gained by the oil industry must be returned to the public.

- There is some uncertainty about the ability to hold to the April, 1979 termination date for controls, given the likelihood that domestic prices are likely to be considerably below foreign prices at that time, and the American people may not be willing to accept an immediate price rise of $____ per barrel. Further, the composite price system has proven difficult to administer, as three tiers now exist (upper tier at $11.63 per barrel; lower-tier at $5.18 per barrel; and stripper and Naval Petroleum Reserve oil at market prices of about $12.50 per barrel) and many regulatory changes continue to have to be made.

- While price controls are in effect, the FEA has administered a crude oil "entitlements program" to attempt to equalize regional costs of crude oil. Under this program, refiners with access to lower-tier oil are required to purchase entitlements (worth about $2.80 per barrel) from other refiners to equalize costs. The program has resulted in an income transfer of about $___ million per year, mainly from the southwest to the East Coast.

- With about half of petroleum products still under controls, the ability to decontrol such products as gasoline, jet fuel, and propane is in doubt and failure to decontrol some of these products may cause distortion in the market place.

Possible Initiatives

- New price control phase-out schedule. There are three basic options to modify the current price control formula:

  -- Propose a new phased decontrol schedule of about 2-2 1/2 years, with no composite price formula. A simple phase-out schedule may be more palatable now that economic conditions have changed and in light of experience with the composite price system.

  -- Maintain composite price systems, but provide greater yearly adjustments to move prices closer to world levels in a shorter period of time.

  -- Announce that price controls would be maintained indefinitely and that escalation would continue solely at the rate of inflation.

- Product decontrol. Each of the remaining products under controls must be considered separately if removal of controls is proposed. Initial findings are indicated below:

  -- Motor gasoline can probably be decontrolled without any price increases. The impacts of removal of allocation controls could be mitigated by a form of dealer protection legislation, such as was finally considered by the House of Representatives in the 94th Congress.

-- Kero-jet fuel and aviation gasoline seem to satisfy conditions for decontrol (as set forth in the EPCA). While opposition could be expected by certain groups, standby regulations could reduce objections.

-- Propane, butane, and controls over allocation of naptha to SNG plants may not meet decontrol standards since there appears to be declining supply and rising demand.

Recommendations

Energy Taxes

ENERGY TAXES

Background

- The taxing power of the Federal Government provides an adaptable tool for modifying investment behavior, stimulating conservation, discouraging use of particular fuels, and raising revenues for social redistribution or funding energy development.

Approaches Tried

- In January, 1975, President Ford asked Congress for a variety of energy taxes to reduce consumption immediately. These include:

  -- An excise tax of $2 per barrel on all domestic crude oil production, accompanied by equivalent import fee.

  -- A 37¢/Mcf excise tax on natural gas.

  -- A windfall profits tax on petroleum to be coupled with price decontrol.

  -- A tax credit of up to $150 for homeowners to buy and install insulation in existing residences.

  -- An increase in investment tax credits and changes in accounting rules for utilities.

  -- Rebates of the energy tax revenues.

- Congressional attention focused initially on the import fee and decontrol provisions and after those were defeated or rescinded, the rest of the President's energy tax proposals were not enacted. The opposition stemmed mainly from concern over raising energy prices to consumers during a recession and soon after the OPEC price increases, as well as a failure to be convinced that higher prices really do dampen demand. The homeowner's insulation tax credit was deleted twice in conference.

- The House Ways and Means Committee considered a wide range of energy taxes including various gasoline and petroleum excise taxes, energy conservation trust funds, and a graduated tax on new cars linked to vehicle fuel efficiency. Only minor energy taxes were passed.

- A gasoline tax was considered as a means for discouraging discretionary use of automobiles. For every 10¢ per gallon the tax is raised, consumption would drop by about 150,000 barrels per day. The United States has the lowest (check?) gasoline prices and taxes of any nation in the International Energy Agency.

  -- Any gasoline tax would need a clear rebate formula to reduce regressive effects.

  -- A gasoline tax accounts for only 40 percent of the oil use, thus concentrating on automobile use which may be less elastic than other uses.

  -- A gasoline tax would have imbalanced regional effects (particularly effecting rural and western consumers) and would also affect adversely the recreation/tourism industry and automobile manufacturing.

Remaining Problems

- While there are no significant problems that must be overcome by energy taxes, such taxes can relieve the energy problem.

Possible Initiatives

- Broadly based or Btu taxes. Substantial reductions in energy use could be achieved by a very large tax on all energy use (e.g., $1.00 per million Btu), with offsetting income tax rebates.

  -- While such a tax could raise large revenues and reduce consumption, energy prices would go up dramatically and the whole tax system might have to be revamped.

- Excise taxes for specific conservation objectives. A major defect of the Btu tax--its broad focus--could be corrected targeting a conservation excise tax on specific fuels (e.g., oil and gas); specific fuel using equipment (such as automobiles); or speicifc uses of a particular fuel (e.g., outdoor gas lights; gasoline or taxes for boiler fuel use of oil and gas). Although such taxes would be more specific than a Btu tax, they could be discriminatory against certain users.

- Import fees. Imposition of substantially increased import fees can reduce consumption and discourage imports, but would provide windfall profits for some domestic producers and would affect some regions inequitably.

- Market adjustment taxes. Under continued price regulations, both domestic oil and interstate gas will continue to be sold to end-users at prices substantially below marginal import prices. A basis exists, independent of national energy conservation and import reduction objectives, to correct such distortions by taxing controlled fuels which compete with imports, to bring them into price parity. Revenues from these taxes could be rebated through income tax reductions, used as income transfers and social adjustment factors, or earmarked for specific energy related expenditures (such as R&D or financial assistance).

  -- Although the adoption of such taxes could tend to perpetuate and institutionalize existing price regulations, if controls continue without some adjustment, the cost of the existing distortions will become increasingly substantial with the passage of time. When distorted prices are frozen into the structure of the economy, as in the case of enegy intensive capital goods with long lifetimes, they can have particularly adverse effects. For example, a large car purchased today under controlled gasoline

prices may continue in operation long after the low-price signals which created it are eliminated.

- Investment incentives. Favorable depreciation schedules, tax exemptions and tax creidts can be used for the purpose of providing investment incentives for improved energy-related capital equipment. Potential targets of such policies range considerably in both size and risk. Beneficiaries of previously considered proposals have ranged from individual homeowners to large utilities, and credits have been considered for items ranging from insulation and solar water heating to state-of-the-art desulfurization equipment and nuclear generating facilities.

  -- The basic alternative to tax incentives is the provision of loan guarantees. The advantages of guarantees are that they can stimulate the use of current high risk or non-commercial technologies, they can be secured essentially off-budget, and they can be utilized for non-profit institutions and publicly held utilities. Tax incentives are thought to induce greater program participation in the case of individual homeowners. The disadvantages of investment tax incentives are the lost Treasury revenues, possible funding of unnecessary projects, and increased complexity of the tax system.

Recommendation

Fuels Policy

FUELS POLICY

Background

- While oil and gas account for less than 20 percent of the United States energy reserves, they represent over 75 percent of our energy consumption. The domestic production of both of these fuels is declining and reserves are being depleted.

  -- In contrast, the nation has sufficient deposits of coal to last for several hundred years and substantial uranium deposits.

- The basic disparity between available energy resources and our current utilization prompts consideration of a fuels management policy. The fundamental question is to what extent should the Federal Government have a role in allocating the use of fuels (e.g., substituting coal or electricity for oil or gas) or sectoral distribution of use (e.g., forcing natural gas out of boilers and into residential use) versus allowing the market to operate.

  -- Electricity can be substituted for gas in many industrial processes; for oil and gas in space heating; and for oil in some limited transportation use. Electricity generated from coal or nuclear power uses resources in greater supply, domestically.

Approaches Tried

- The first indirect fuels policy in recent years occurred with the Clean Air Act Amendments of 1970, which led to shifts from coal to oil or gas (utility oil consumption increased by 125 percent from 1969 to 1973).

- Beginning in 1970, declining natural gas supplies forced interstate pipeline curtailments of natural gas. More recently, the shortages have resulted in allocation policy guidelines which generally are based upon particular end-uses of the gas (the FPC policy to date has been to protect residential and small commercial

customers, as well as those industrial uses that are most difficult to convert to alternate fuels).

- The Federal Energy Administration has played a role in fuels management by not granting supplies of feedstocks for new synthetic gas plants, because its analysis shows that the conversion of petroleum products into gaseous fuels is an inefficient use of scarce oil.

- The FEA's coal conversion program is the first direct fuels management policy that has been legislated by the Federal Government. The original legislation authorized the FEA to prohibit any electric power plant and any major fuel burning installation (MFBI), from burning oil as its primary energy source, provided it had the capability to burn coal and met environmental specifications. In the EPCA, the initial ESECA authorities were renewed and extended to cover issuance of construction orders to new MFBI's, and to require the recipients of such orders to burn coal. Under this extension, many more power plants will be candidates for prohibition orders.

- The Congress has considered fuels management in a number of areas:

  -- A modified coal conversion program has been considered by the Senate Public Works Committee (S. 1777). This approach would require all power plants and MFBI's to burn coal by a certain date, unless they were granted exemptions by the FEA. It provides substantial penalties for non-compliance. The bill has not been reported out of Committee.

  -- The Congress has also considered allocation priorities for natural gas, but has yet to develop a program in that area.

Remaining Problems

- To replace dwindling oil and gas use, the greatest potential for near-term fuels substitution is in the electrical generation sector; the least amenable sector in the next 10 years is transportation.

  -- Oil and gas supply about one-half of fossil-fired generating plants, and nuclear power accounts to about 9 percent of electrical generation. Oil-fired power plants are concentrated most heavily in the Northeast, because of availability of previously less expensive imported oil. Utilities using gas are located primarily in the South Central regions, because of locally abundant natural gas (about ___ percent of the natural gas consumed in the United States is in Texas and Louisiana utilities). About 13 percent of the oil and gas used in our country (about 3.5 million barrels per day, equivalent) is consumed by utilities.

  -- In some cases, the same power plants that converted from coal to oil in the early 1970's to meet air quality requirements, are now being forced back to coal. This creates confusion in the business community and a lack of confidence in government.

- Industry uses about 10 Tcf of natural gas and 3 MMB/D of oil. Most of industrial gas use is a boiler fuel or for process heat and could be replaced by coal or electricity (although at considerable expense). About 18 percent of petroleum consumption is in industry and while most use is non-substitutable, there is some potential for conversion.

- In the residential/commercial sector, the primary potential for fuel conversion is in the replacement of electricity for oil and gas for space heating.

- Virtually no fuels management can occur in the transportation sector until and if electric car use is more widespread (Congress recently

overrode a Presidential veto of a bill to increase substantially the R&D effort on electric cars). There is some possibility for replacement of diesel rail by electric rail.

- It is clear that the market is largely indifferent to national security considerations.

Possible Initiatives

- Oil and gas use for electrical generation can be reduced by cutting the rate of construction of new oil- and gas-fired capacity; reducing use of existing capacity; and converting existing units to coal. This policy would reduce dependence on expensive, relatively insecure, and dwindling resources, and is likely to be inevitable as oil and gas are depleted. A program such as S. 1777 could accomplish these objectives, but at significant cost and potential environmental risk. A key question is the time period during which this change occurs and the extent that the Federal Government should regulate such change.

- In the residential/commercial sector the Federal Government could attempt to ban or suggest limitation of new connections of oil and gas for heating purposes and place a stiff fee or replacing furnaces. Such a program would encourage use of natural gas for lower priorities, have lower system efficiencies, and eventually require winter-peak generating capacity. These problems could be mitigated by greater use of heat pumps and home storage systems.

- One cannot minimize the magnitude of the intervention that is implied by a comprehensive fuels management policy. The regulation that would be required to specify so basic and so universal a set of decisions is probably unprecedented in the American peacetime experience.

When the exceptions procedures and the litigation are combined, it is probable that fuels management policies would stimulate a larger procedural process than that already in effect. The implementation of a comprehensive fuels management plan would also be a significant step in the direction of a fully planned economy.

-- However, given the inevitability of increased regulation and the extent of the government's role today, the real choice may well be between a coherent, comprehensive fuels policy that advances national goals, and a disjointed, fragmented, but nonetheless market dominated alternative.

Recommendations

ENERGY CONSERVATION

Background

- Domestic energy consumption is projected to grow at 2.8 percent annually through 1985, as compared to 3.6 percent before the embargo.

- The United States' conservation efforts to date have been rated near the bottom of all consuming Nations in the International Energy Agency. The principal reasons for our low ranking are the continuation of oil and gas price controls, low tax on gasoline, and failure to enact (prior to the ECPA passage in August) most of the Administration's proposed conservation measures.

- The current market price of domestic energy does not fully reflect the true value of energy to the economy and considerable energy is wasted, principally in the transportation and electrical generation and transmission sectors.

- Energy conservation, has become a popular political issue, although it is often difficult to receive widespread support for specific proposals.

- Conservation provides an effective mechanism to imporve use patterns in efficiency of services, to slow the trend of increasing reliance on imported oil, and "buys" time to develop alternative energy supply technologies to meet increased energy demand in the future. However, conservation alone cannot solve our energy problem.

Approaches Tried

- In January 1975, the President proposed to Congress a wide range of conservation proposals encompassing price increases, mandatory and voluntary standards, as well as a comprehensive public education program. The following were requested specifically:

  -- Crude oil price decontrol, accompanied by windfall profits tax

  -- Petroleum and natural gas excise taxes

  -- Voluntary automobile gasoline mileage increases by 1980

-- Mandatory thermal efficiency standards for all new buildings, with strict sanction.

-- A tax credit for homeowners providing up to $150 for purchasing and installing insulation in existing residences.

-- A weatherization grant program to provide grants for low-income and elderly people to install insulation in their residences.

-- Voluntary appliance efficiency standards

-- Mandatory appliance and automobile efficiency labeling to enable consumers to see the cost of operating equipment over a period of time.

-- Mandated reforms of State Utility Commission processes to include the application of conservation practices in establishing rates.

- In December 1975, the Congress passed the Energy Production and Conservation Act (EPCA) which included provisions for:

-- Phasing out price controls on domestic crude oil;

-- Requiring appliance manufacturers to provide energy efficiency labels to consumers on major appliances and establishing voluntary energy efficiency targets for the appliance industry;

-- Establishing mandatory automobile fuel efficiency standards of 20 miles per gallon (mpg) by 1980 and 27.5 mpg by 1985;

-- Establishing voluntary industrial energy conservation targets for the 10 leading energy consuming industries;

-- Providing conservation grants to States to assist in the development and implementation of energy conservation programs;

-- Requiring mandatory conservation standards for Federal agencies.

- The House Ways and Means Committee, in its consideration of energy tax legislation, debated the merits of a range of gasoline excise taxes which were subsequently deleted from its bill (H.R. 6860). Included in the House-passed H. R. 6860 were such conservation measures as tax credits for business and residential insulation, business use taxes on petroleum and natural gas, and recycling tax credits. This bill was never passed by the Senate.

  -- An insulation tax credit for homeowners was passed by the Senate as part of the Tax Reduction Act of 1975 but deleted in Conference. It was also included in H. R. 10612, a general tax reform measure, but was deleted in Conference and remained pending in the Senate upon adjournment of the 94th Congress.

- The Energy Conservation and Policy Act (ECPA) passed in August 1976 included the following conservation programs:

  -- Mandatory energy performance standards for new residential and commercial buildings, but without the sanctions requested by the Administration. The experience with this bill clearly illustrates the difficulty in enacting mandatory conservation legislation;

  -- A $200 million low-income and lederly weatherization grant program;

  -- A $2 billion obligation guarantee program, aimed at conservation retrofit of buildings and industrial plants. This program provides loan guarantees for conservation investments.

  -- Authorization for a $200 million demonstration program to determine the feasibility of a national program of tax credits and/or subsidies to stimulate retrofit of existing dwellings;

  -- A $1 million grant program to State regulatory commissions to demonstrate alternative utility rate forms and related conservation measures.

- A number of other conservation measures have been proposed by various groups or individuals, including mandatory reduction of industrial energy use and

increased funding for mass transit. Most of these measures did not pass because costs exceeded their benefits.

Remaining Problems

- While legislation has been enacted to effect substantial conservation savings (programs enacted are projected to reduce demand by over 2.5 MMB/D by 1985 as compared to otherwise projected demand levels), few savings will be realized unless existing programs are implemented effectively and fully.

- Further savings could be obtained depending upon the level of Federal intervention in the marketplace, and the prices charged for energy consumption.

- A national awareness of the benefits of conserving energy still needs to be instilled.

Possible Initiatives

- Three broad philosophical approaches exist regarding the Federal role in dealing with the conservation issue.

  -- Implement existing conservation authorities and programs effectively, and wait until savings are realized before pursuing further initiatives;

  -- Pursue aggressively Congressional enactment of further conservation initiatives, including direct intervention in the marketplace to change significantly end-use consumption patterns and to ensure greater long term conservation effects;

  -- Redirect emphasis and resources toward energy supply development at the expense of conservation initiatives and minimize direct conservation influence on current American lifestyles.

- There are a number of specific conservation measures which the Federal government can enact or implement administratively to stimulate further conservation and end-use efficiency in all sectors. Some of the measures in the list below are marginal items at best, but have been included for completeness:

-- Transportation

- Gasoline excise tax. As indicated in Section 2, a substantial gasoline tax could save considerable petroleum and has a strong near-term impact.

- Mandatory fuel economy standards for trucks and buses. While automobiles now have to meet mandatory standards, efficiency of trucks and buses could be imporved and save ____% by 1985.

- Investment tax credits for diselization or purchase of more efficient drive-trains or add-on devices for trucks.

- Regulatory modification of the intercity freight industry. Under current regulations, intercity freight carriers are often precluded from making back-haul trips and must return from destinations without a load. Changes in these regulations could save ____B/D.

- Revision of CAB air transport load factor standard. Airplane load factors are now about ___percent; an increase to ___percent, while difficult to achieve, could save ___ B/D.

-- Residential/Commercial

- Insulation tax credit for homeowners. This tax credit reduces the burden of first costs and can save over 100,000 B/D.

- Mandatory thermal efficiency sanctions. This option would attempt to restore the mandatory sanctions from the bill passed in the ECPA.

- Ban of master metering for multi-occupancy buildings. Master metering provides little incentive to conserve and such a ban could save about ___B/D, but would be expensive to implement.

- Mandatory lighting efficiency standards. Efficient lighting standards have been identified, but enforcement of this measure would be extremely difficult.

- Utility insulation financing. Under this proposal, gas utilities would be encouraged to install use improvement devices in homes and investment costs would be capitalized and recovered through a cost of service charge. Such a program could save considerable gas, but raises regulatory and economic issues.

- Mandatory beverage container deposits. A recent FEA study indicates that national legislation in this area could save ___ B/D and leave significant environmental improvements. HOwever, the industry believes there would be adverse economic impacts.

-- Industry/Electrical Generation

- Financial incentives or standards to increase in-plant self-generation of power. Allowing industrial plants to generate their own power may be a desirable way of using waste heat and saving energy.

- Conduct energy audits. Energy audits of major industrial plants could be required and reported. Such a program would be very expensive and may not save much energy.

- Efficiency standards for industrial equipment (e.g., boilers, electric motors). Such standards could save ___B/D, but may occur voluntarily in response to market forces.

- Disallowance of the expensing of energy costs for tax purposes. This program would change tax laws and could provide greater conservation incentives, but possibly at a significant cost.

- Utility rate reform. Such measures as peakload pricing and minimizing use of inefficient peaking generators have considerable potential for reducing peak loads and saving energy. A report on these initiatives is due to Congress in February 1977.

- In general, further initiatives in the area of tax credits (business insulation, installation of more efficient equipment, etc.) and taxes (Btu, business use of petroleum and natural gas, excise taxes on petroleum and natural gas), could be utilizes to induce conservation in all sectors.

Recommendations

ENERGY DEVELOPMENT:
THE BROAD ISSUES

ENERGY DEVELOPMENT: THE BROAD ISSUES

Background

- It is clear that irrespective of whether conservation programs prove successful and domestic energy prices are decontrolled, the nation's use of energy will continue to expand. Even if energy demand growth were held to about 2 percent (an ambitious goal), domestic energy consumption would be about _____ quadrillion Btu (quad) in 1985 and _____ quad in 1990, as compared to ____ quad in 1975 (note that one quad is the equivalent of about one-half million barrels per day or 40 million tons of coal per year).

- There are only two alternatives to meeting our increased energy needs: develop more domestic sources or increase reliance upon imports. To keep imports relatively constant, it is likely that the nation would have to:

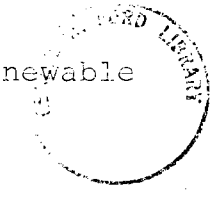
  -- Increase coal production from current levels of about 670 million tons annually to over one billion tons per year by the mid-1980's.

  -- Expand oil production in frontier areas of Alaska and the Outer Continental Shelf (OCS), as well as encourage enhanced recovery from existing fields to replace declining supply.

  -- Increase proportion of nuclear energy in the generation of electric power from about 9 percent to over 20 percent in the next 10 years.

  -- Develop supplemental sources of oil and gas such as coal gasification and liquefaction and shale oil to meet shortages of liquid fuels.

  -- Expand dramatically the use of renewable resources, such as solar energy.



- While considerable progress has been made in enactment of legislation in the conservation and standby areas, little progress has been made to legislate measures to increase domestic supply:

  -- Only the Naval Petroleum Reserves and Alaskan natural gas transportation legislation, and extension of coal conversion authorities have occurred.

  -- Original price deregulation proposals for oil and gas, and most environmental amendments were not accomplished.

- There is a growing recognition of the role that must be played by State and local governments and interest groups in decisions or new energy projects. Cancellation of major energy facilities, such as Kapairowitz (Utah) and several nuclear plants, as well as defeat of legislative proposals to aid the siting process, point out clearly the need to work with local interests.

- There is also a growing regionalism in energy, which often conflicts with national policy interests, but cannot be ignored. Issues such as oil prices in New England; OCS development off the Atlantic Coast; coal and oil shale production in the Rocky Mountain States; oil and gas production in the South Central Region; oil and gas transportation through California, and Alaskan development are all large regional issues.

- There is a continual need to balance energy goals with environmental objectives and economic factors.

Approaches Tried

- The approaches tried by the Executive and Legislative Branches of the Federal Government can be divided into two basic areas: regulatory override/expediting and environmental/energy balancing.

- In the regulatory override or expediting area, there were several legislative initiatives:

  -- Energy Facility Planning and Development Act. In January, 1975, the President proposed to Congress a bill which would encourage States to develop and apply a comprehensive and coordinated process for expeditious review and approval of energy facility siting applications. This bill did not receive much attention in the Congress mainly because it involved a Federal role in an area traditionally under State and local jurisdiction.

  -- Energy Independence Authority (EIA) Act. In the EIA, there was a provision for expediting the regulatory process at the Federal level for projects deemed critical for energy development. It would establish the FEA as the coordinator of a streamlined permit process for all new facilities which require Federal licensing. This portion of the EIA Act did not receive serious consideration as the rest of the EIA bill became stalled.

  -- Nuclear Licensing Act. The Administration asked Congress to pass legislation to reform the nuclear facilities licensing process by providing for early site review and approval, and encouraging standardization of nuclear facilities design. This bill was not enacted.

  -- Outer Continental Shelf Leasing Amendments. The Congress devoted considerable time to a bill which would have altered significantly the current OCS leasing procedures. The bill would have modified the current bonus bidding practice and provided an expanded role for States, but was not enacted before the close of the 94th Congress despite strong Congressional support.

-- Alaskan Natural Gas Transportation Act. In February, 1976, the President asked the Congress to enact legislation to expedite delivery of Alaskan natural gas to the lower-48 States. The Congress enacted and the President signed such legislation.

- In the area of energy and environmental interactions, there were a number of proposals:

  -- Clean Air Act Amendments. The Administration and the Congress developed numerous proposals for amending the Clean Air Act. The key issues concerned the following:

     - Significant deterioration, where courts have ruled that in areas where air quality is superior to national standards, significant deterioration of that air quality must be prevented. This interpretation could preclude much energy development and legislative clarification was sought. It is one of the most serious environmental issues.

     - Compliance date extensions, in which the Administration has sought an extension of the dates in which existing power plants must be in compliance with air quality regulations to allow time to develop permanent control systems.

     - Non-attainment policy, in which the existing Clean Air Act precludes construction of new air polluting facilities in areas where they may interfere with attainment or maintenance of ambient air quality standards. Concern has been raised about the effects on hydrocarbon emitting facilities, such as refineries.

     - Auto emission standards are largely a problem of fuel economy and conservation, rather than resource development, although obvious enmeshed in the Clean Air Act debate.

-- Surface Mining Legislation. Surface mining legislation has been introduced into the Congress every year since 1971; Congress has passed such legislation twice, and has failed to override Presidential vetos (which were argued mainly on grounds of economic impact and production loss) both times. Lack of uniform nationwide minimum reclamation standards has been decried by environmental groups. Although some States have stringent standards, proponents of Federal legislation say that these standards are often weak or not being enforced. The Interior Department has issued new regulations on Federal lands.

-- Impact Assistance. The President, in February 1976, asked the Congress to consider comprehensive Federal energy impact assistance legislation. This one billion dollar program would provide financial assistance to all areas affected by Federal energy resource development in the next fifteen years. The assistance would utilize a variety of financing mechanisms to help plan and finance energy-related public facilities prior to energy production, and assistance would be repaid from future taxes and revenues. The Congress passed legislation that provides assistance for coastal development, but not for inland projects such as coal, oil shale, etc.

Remaining Problems

- There remains a strong need to resolve most of the major resource development and environmental issues raised above. It is particularly important that uncertainty be reduced with respect to coal development (Clean Air Act and surface mining legislation), nuclear power, supplemental sources of natural gas, and synthetic fuel commercialization.

- A major issue is likely to confront the new Administration regarding the disposition of Alaskan oil. Between the time the trans Alaskan oil pipeline legislation was approved and expected delivery next year, conditions changed and it now appears that a surplus of about 500,000 barrels per day may be available for movement from the West Coast.

  -- The surplus was caused by lower demand as a result of much higher prices and greater conservation awareness; the decision to commence production from Naval Petroleum Reserve #1 in California; and greater incentive to use

enhanced recovery techniques at existing California fields.

-- There are several possible alternatives for movement of oil from the West Coast. These include a Trans-Provincial pipeline through Canada; a northern-tier pipeline to Minnesota; the SOHIO project to construct a marine terminal in California and use an abandoned gas pipeline to deliver oil to the Midwest; and a Central American Pipeline project.

- Another key energy development issue will be a decision on an Alaskan natural gas transportation system. Under existing legislation, the President will have to make a recommendation on such a system in 1977 to the Congress for its consideration. There are currently three competing proposals for this multi-billion dollar project.

Possible Initiatives

- Amendments to the Clear Air Act. This issue will be considered again by the Congress and a whole new strategy may be desirable. Among the options that should be considered is a separation of the stationary source and automobile emission provision into two separate bills.

- Surface Mining Legislation. The need for Federal surface mining laws will be reconsidered by the 95th Congress.

- OCS Leasing Amendments. The Congress is likely to take up again possible reforms to the OCS leasing practices of the DOI. Among the alternatives that should be reviewed are changes in the bidding system; greater participation by States and local governments in the decision-making process; and the adequacy of current environmental safeguards.

- Inland Impact Assistance. There may be merit in reconsidering the Administration's proposed impact assistance bill for areas not covered by Coastal Zone Management Act Amendments.

- Alaskan Oil Distribution. Proposals may have to be developed if review of the Alaskan oil distribution study indicates a need for legislative or administrative action.

- Coal Slurry Pipeline. Legislation which would allow the right of eminent domain to coal slurry pipelines may need to be reconsidered by the Congress.

- LNG Siting and Safety. To assure that needed liquefied natural gas projects are expedited, there may be a need for administrative or legislation action. Such action could consist of rational siting standards; Federal regulatory reform; more participation by States; or greater expenditures for safety and risk analysis.

- Siting Programs. There may be an opportunity to streamline Federal regulatory processes for siting new facilities, either through reorganization or incentives to states to develop siting programs. One such incentive might be an energy resource development grant program or modification of the State conservation grant program to include resource development planning.

- Changes in State/Federal Relationships. Since State and local governments and interest groups have such a strong voice in energy development decisions and since attempts at Federal overrides have proven to be a mistake, there could be a further involvement of these groups in the Federal decision-making process. The key questions are whether involvement occurs before or after decisions are made; is involvement in an advisory role or with some veto ability; and if funds should be provided for such participation.

Recommendations

UTILITY REGULATORY
REFORM

UTILITY REGULATORY REFORM

Background

- Electricity consumption has grown at a considerably faster rate than overall energy demand in the past few decades (7 percent annually from 1947-1972 vs. about 3 1/2 percent for all energy), primarily because of its versatility of use and variety of sources. While its use is essentially pollution free, its generating stations often concentrate pollutants in a single and highly visible source.

- Prior to the embargo, the electric utility industry was known for its stability, characterized by rising consumption and declining prices. The embargo, and subsequent price increases, coupled with the 1974 coal strike, led to large fuel cost increases. Consumer reaction to higher prices, energy conservation awareness, and the recession brought about a relatively flat growth rate in 1974-1975.

- The inability of utilities to obtain adequate rate relief to cope with higher fuel prices, escalating capital costs of nuclear and coal plants, uncertainty about demand growth, and environmental problems resulted in major cutbacks in plans for generating capacity in 1974. At one point, more than 75 percent of planned nuclear plants were postponed or cancelled.

  -- In 1975, market conditions improved somewhat and a record $3 billion of rate relief was granted and market to book value has improved; however, the basic uncertainties about load growth, financing capability, and siting difficulties remain. Utility reserve margins remain high (about ___ percent).

  -- Nuclear and coal-fired power plants are the cheapest base load plants, but are the most capital intensive (a 1000 MWe nuclear

plant costs about $_____ million to build) and easiest to defer. Given their long lead-times (7-10 years), if they continue to be deferred and substantial load growth resumes, utilities may have to build oil- or gas-fired plants to meet customer needs.

Approaches Tried

- The Administration proposed a number of measures over the last two years to deal with the utility problem. These include:

  -- The Utilities Act of 1975 was designed to restore the financial health of public utilities by reducing regulatory lags involved in approving proposed rate changes and assuring that rates adequately reflect the full cost of generating and transmitting electricity. To reduce the cost of capital for needed utility expansions and stimulate equity rather than debt financing, proposals for tax changes were also presented including increased investment tax credits for public utilities and preferred stock dividend tax deductions.

- Legislation to provide a stronger role for the Federal Government in the utility rate setting processes has met with strong resistance in the Congress, as utility regulation is the traditional province of the States and some claim that the necessity for higher utility rates has not been demonstrated adequately.

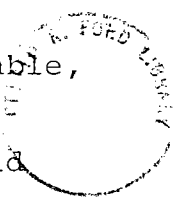
  -- The Energy Facilities Planning and Development Act of 1975 would require that States have a comprehensive and coordinated process for expeditious review and approval of energy facility applications, and that final State energy facility decisions cannot be nullified by actions of local governments. This proposal was also received negatively because of its attempt to interdict Federal regulations on local decision-making.

-- The Electric Power Facility Construction Incentives Act of 1975 (proposed by President's Labor-Management Committee and and endorsed by the Administration) was designed to provide tax incentives to stimulate the construction of new electric power generating facilities other than those fueled by petroleum. This legislation allowed an increased investment tax credit, extension of five-year write-off of pollution control equipment, depreciation of construction work in progress (CWIP) as expended and optional dividend reinvestment with deferred income taxation. The first three benefits are conditioned on inclusion of CWIP in the rate base and normalization of tax deferrals and credits.

-- The Energy Independence Authority Act, which was proposed to supplement and encourage private capital investment, would finance energy projects that would contribute directly and significantly to energy independence, and would not otherwise be financed without government assistance. EIA financial assistance would require as a condition of assistance to a regulated utility, sound and expedited regulatory response from regulatory rate commissions, including the regulatory commission's agreement to a rate covenant with EIA and the regulated utility to assure adequate earnings to protect EIA's investment.

-- Amendments to the Energy Supply and Environmental Coordination Act (ESECA) to extend and broaden the mandate to convert oil and gas boilers to coal, where practicable, were passed by Congress.

-- The Nuclear Fuel Assurance Act of 1975 would encourage the development of a competitive private uranium enrichment industry to fuel expected nuclear power plant needs.



This bill, as discussed in Section b, failed by ___ votes in the Senate late in the 94th Congress.

-- Amendments were proposed to the Clean Air Act to resolve regulatory problems resulting from court decisions regarding "significant deterioration" of air quality, and to extend air quality standards compliance dates through 1985 to allow use of intermittent control systems in isolated power plants through 1985 and require other sources to achieve control as soon as possible. These amendments, as discussed in Section 4, failed to pass.

-- The Nuclear Power Plant Siting and Licensing Procedures Act, intended to shorten and improve the licensing process for nuclear facilities, would allow licensing procedures for reactor sites and standardized reaction designs to be completed at an early point in time. This bill was not enacted because

- As indicated above, the amendments to the ESECA coal conversion authorities were the only Administration initiatives passed by the 94th Congress in the utility area. Primary attention toward utilities in the 94th Congress centered on consideration of S. 1777 in the Senate (Public Works Committee) and H. R. 12461 in the House (Interstate and Foreign Commerce Committee), although neither bill was reported out of Committee.

  -- S. 1777, as discussed in Section 2, would extend and broaden FEA's coal conversion authorities. Under ESECA, the FEA identifies certain candidates for conversion and must justify that conversion can occur without hardship. S. 1777 goes beyond ESECA by requiring all major plants to convert

to coal by a definite time unless an exception is granted. The bill also has a free penalty for burning oil and gas. S. 1777 was not considered by the Senate due to the protracted struggle over amendments to the Clean Air Act also in the Public Works Committee and the lack of widespread support.

-- H. R. 12461, considered by the House Interstate and Foreign Commerce Committee, approaches the utility issue by mandating certain ratemaking practices on a national basis regardless of uniform applicability, providing for automatic adjustment clauses under certain conditions, limiting the inclusion of construction work in progress in the rate base and excluding it entirely from bulk power rates, and other measures. The bill involves a complex set of regulatory changes.

-- In addition to these programs, load management demonstration programs have been funded by the Congress for the past two years and the recently enacted Energy Conservation and Production Act authorizes a $13 million utility demonstration program and mandates the development of proposals on utility rate reform. A report on rate reform is due to Congress in February, 1977.

- There are several reasons why the utility proposals have not received a more positive reaction:

-- Almost all the utility rate relief proposals involve higher costs to consumers in an area where costs have already risen dramatically (the average residential electric bill increased by ____ percent from 1973 to 1975).

-- Assistance to utilities is never a popular public issue since most consumers think utilities are already in good financial health.

-- Siting and regulatory decisions are traditionally made by local authorities and attempts at Federal override meet with strong "states rights" opposition.

-- Environmental quality concerns often conflict at a local level with national energy policy considerations. Nuclear power, in particular, has undergone considerable public scrutiny in the past year.

Possible Initiatives

- Coal Conversion. Converting existing power plants is a long and arduous process. To date, no existing units of the 74 identified as candidates for conversion have actually started burning coal. ESECA is also currently ineffective in preventing conversion from coal to oil before such switches occur. Legislation such as S. 1777, may be needed to amend and extend current ESECA authorities.

- Rate Guidelines. As mandated by the ECPA, the FEA is currently assessing the utility rate setting process and will develop two sets of rate guidelines. Some guidelines could be voluntary, and others mandatory for those jurisdictions participating in proposed Federal utility and financing programs. The study and proposed guidelines will consider load management, cost of work in progress, fuel adjustment clauses, and the normalization of accounting practices.

- Investment Tax Credits. There are a number of alternatives for using tax credits as an incentive to the greater use of coal and nuclear power in the generation of electricity:

-- A 10 percent investment tax credit for the electric utilities building new nuclear and coal power plants; solid waste utilization and coal gasification facilities for electric power generation; capital investments to convert existing natural gas and oil powered plants to coal; and capital investments in load management and environmental control devices.

-- Legislation which would provide that no tax credit be given for any oil or gas-fired facility, except those fueled by gas produced from coal.

- Regional Generation. To promote bulk power generation of electricity, the Congress could consider legislation authorizing States and their regulatory bodies to enter into agreements providing for the formation or regional wholesale generating companies which would construct all future base loaded facilities in their service area and be governed by FPC rules on bulk power generation. Equity in such firms could be held by publicly and privately owned utilities and possibly by the public.

  -- This type of legislation would allow direct FPC regulation of wholesale generating companies, thereby avoiding regulatory lag problems at the State level. Rate adjustments would be made on the basis of the wholesale power rate.

  -- Opposition to this proposal can be expected on the basis of Federal interference in State rate setting processes. While no Federal financing is anticipated, privately owned utilities may oppose direct public and/or publicly-owned utility equity positions.

- Utility Insulation Financing. One approach that has been considered for stimulating conservation as discussed in Section 3, is to have gas (and electric) utilities install insulation in individual homes and charge the cost of the insulation against the utility's rate base, rather than against the householder directly. The rationale for such a proposal centers on the high cost to a given utility of obtaining supplemental gas supplies (synfuels, LNG, etc.), relative to the cost of installing equivalent insulation. The theory is that if the entire rate base benefits from installation of insulation in individual homes, then the entire rate base should support the cost of such installation, just as the entire rate base supports the cost of additional supply alternatives.

  -- Utility insulation financing, charged against the rate base as a whole, could contribute significantly to overcoming many of the major obstacles to widespread insulation investment. These include somewhat high initial costs, long payback periods, uncertainty regarding ultimate cost effectiveness, and difficulties encountered in dealing with the financing and supervision of the household improvement industry. However, the reluctance of the utilities to invest directly in the conservation business would have to be overcome. Potential opposition of insulation businesses which might object to competition from the utilities on antitrust grounds and bondholders who might question the security of insulation investments would also have to be addressed.