The original documents are located in Box 6, folder: "Energy Independence Authority Briefing Book (2)" of the Frank Zarb Papers at the Gerald R. Ford Presidential Library.

Tab E - EIA
Investment Activities by Sector

E-1.1 Major Synthetic Fuels

a. Oil Shale

EIA could support a two-phase program to encourage the conversion of Western oil shale to petroleum. Under Phase I, two to three plants would be built prior to 1980, each with a capacity equivalent to saving up to 50 thousand barrels of oil per day, for a total project cost of $2 billion. In Phase II, if results warrant, an additional four plants would be built for an additional total project cost of $5.2 billion. EIA could provide non-recourse loan guarantees, up to 50 percent of estimated project cost and would also set up a price guarantee program to absorb a major degree of the risk.

EIA Commitment (current dollars):

Year	77	78	79	80	81	Total
$ (million)	1000	-	-	615	1970	3585

E-1.1 Major Synthetic Fuels

b. High Btu Gas

EIA could support a two-phase program to encourage the conversion of coal to high-Btu gas using Lurgi technology. Under Phase I, three plants would be built prior to 1980, each with a capacity equivalent to saving up to 40 thousand barrels of oil per day, for a total project cost of $2.69 billion. In Phase II, if results warrant, an additional four plants could be built for an additional total project cost of $4.265 billion. EIA could provide non-recourse loan guarantees, up to 75 percent of estimated project cost. No special operating incentives appear necessary if regulatory ruling permits cost of service recovery.

EIA Commitment (current dollars):

Year	1977	1978	1979	1980	1981	Total
($ million)	1300	700	--	--	3410	5410

E-1.1 Major Synthetic Fuels

c. Low Btu Gas

EIA could support a two-phase program to encourage the conversion of coal to low-Btu gas. Under Phase I, four to six plants would be built prior to 1980, each with a capacity equivalent to saving up to 25 thousand barrels of oil per day, for a total project cost of $2.295 billion. In Phase II, if results warrant, an additional six plants could be built for an additional total project cost of $4.08 billion. EIA could provide outright construction grants of up to 50 percent of the project cost, if the purchasing utility, which is regulated, is at the limit of its borrowing capacity and cannot raise more equity on reasonable terms.

EIA Commitment (current dollars):

Year	77	78	79	80	81	Total
$(million)	530	-	605	885	1100	3120

E-1.1 Major Synthetic Fuels

d. Coal Liquefaction

EIA could support a program to encourage the conversion of coal to liquid synthetic fuels, which would not begin until after 1979, when the relevant technologies are expected to be ready for major commercialization. Two plants could be built, each with a capacity equivalent to saving up to 50 thousand barrels of oil per day, for a total project cost of $2.94 billion. EIA could provide loan guarantees, up to 50 percent of estimated project cost.

EIA Commitment (current dollars):

Year	1980	1981	Total
($ million)	735	735	1470

E-1.1 Major Synthetic Fuels

e. Biomass Conversion

EIA could support a two-phase program to encourage the wastes conversion of biological waste to gas or oil. Under Phase I, three to five plants would be built prior to 1980, each with a capacity equivalent to saving up to 6 thousand barrels of oil per day, for a total project cost of $1.195 billion. In Phase II, if results warrant, three additional plants could be built for an added project cost of $925 million. EIA could provide non-recourse loan guarantees up to 75 percent of estimated project cost.

EIA Commitment (current dollars):

Year	77	78	79	80	81	82	Total
$(million)	510	180	195	-	445	240	1570

E-1.2 Other Coal Technologies

a. Solvent Refined Coal

The solvent refined coal (SRC) process produces a synthetic fuel which can be used as a boiler fuel for the generation of electricity or for industrial applications. The major thrust of this program will be to furnish a clean fuel for power generation.

ERDA is now funding a pilot plant to obtain more information on the technology. Since the SRC process produces a synthetic fuel, the process technically is included in the ERDA Commercialization Program. However, no projects are under consideration under the currently proposed program.

If research and development results prove favorable, commercial funding will be needed in the 1979/1980 time frame. EIA could participate in supporting the construction and operation of commercial-scale solvent refined coal plants by providing loans and loan guarantees to industries interested in setting up commercial plants on a 75/25 loan to equity basis.

EIA Commitment (current dollars):

Year	1977	1978	1979	1980	1981	1982	1983	Total
$ (million)	--	--	--	648	693	743	--	2084

E-1.2 Other Coal Technologies

b. Fluidized-bed Boilers

In fluidized combustion, coal is injected and burned in a fluidized bed of particles of mineral matter whose chemical characteristics enable coal -- irrespective of its ash or sulfur contents -- to be burned efficiently thereby minimizing the emission of pollutants. A multiple program is envisioned to encourage the installation of fluidized-bed boilers in industry, municipal trash and sewage systems. private residences, and electric utility plants. EIA could provide loans, loan guarantees, and other incentives. EIA assistance to residential customers could involve providing assistance to dealers of coal crushing and blending equipment to encourage residential use.

EIA Commitment (current dollars):

Year	1977	1978	1979	1980	1981	1982	1983	Total
$ (million)	--	--	281	421	562	703	846	2813

E-1.3 Renewable Resources

a. Geothermal Electricity

EIA could support the development of 15 project sites involving hydrothermal and vapor-dominated systems earmarked for electricity generation. The USGS assessment of these project sites indicates a maximum potential of 19,365 Mwe.

To stimulate the development of an initial 5000 Mwe electrical power generation from the 15 project sites by 1983, EIA could provide financial support to utilities at 75 percent of total project cost. EIA participation would be pursuant to the three-party covenant.

PL93-410 provides up to $50 million annually for geothermal loan guarantees. The proposed EIA investment exceeds that by an order of magnitude.

EIA Commitment (current dollars):

Year	1977	1978	1979	1980	1981	1982	1983	Total
$ (million)	177	405	577	693	579	528	505	3464

E-1.3 Renewable Resources

b. Wind Energy

EIA could accelerate commercialization of 1.5 Mwe wind turbine generators to develop a total of 5000 Mwe generating capacity by 1985. The conservative construction cost for a wind turbine generator plant is $500/Kwe. The construction cost of 5000 Mwe is $2.5 billion (1975 $). The proposed EIA participation is to support electric utilities at the 75 percent level for 5000 Mwe total plants, and separately to provide $200 million financing to four wind turbine generator manufacturers. Oil equivalent displacement is 110 thousand barrels/day.

EIA Commitment (current dollars):

Year	1977	1978	1979	1980	1981	1982	1983	Total
Utilities $ (million)	2	16	49	82	33	662	1,808	2957
Manufacturers $ (million)	0	50	100	50	0	0	0	200
Total	2	66	149	132	338	662	1,808	3,157

E-1.3 Renewable Resources

c. Solar Thermal Energy

EIA could support a $1 billion program to accelerate the widespread use of solar thermal energy for heating and cooling buildings (including water heating), in conjunction with other Federal programs to support this technology. The EIA program would focus on providing loans to manufacturers of solar collectors and to purchasers (other than homeowners) of solar thermal equipment. The cumulative project cost for manufacturers through 1985 is estimated to total $1.7 billion and the cumulative project cost for non-homeowning purchasers is estimated to total $5.7 billion over this period.

These projections could not be achieved unless other Federal programs would provide substantial loans and subsidies concurrently to both the homeowner and non-homeowner sectors, totaling over $7 billion ('75 dollars) by 1985. This additional support is required because of special institutional and conceptual barriers to solar commercialization, affecting bankers, builders, homeowners, and the owners of commercial buildings. It includes low-cost loan and tax credit programs to support a total national investment of $13.4 billion ('75 dollars) in solar thermal equipment by 1985, which includes over $8.5 billion ('75 dollars) in homeowner investment.

As a result of this comprehensive program, the two purchasing sectors combined are expected to have installed 840 million square feet of solar collector by 1985, capable of saving the equivalent of 149 thousand barrels of oil per day. In addition, the EIA Solar Heating and Cooling of Buildings Program is expected to stimulate the investment required in related solar thermal process heat applications (in the industrial and agricultural sectors) in order to produce an additional energy savings equivalent to 28,000 barrels of oil per day by 1985 (an additional 18 percent energy savings). The energy savings by 1985 projected for the non-homeowner sector alone is estimated to be equivalent to 40 thousand barrels of oil per day.

EIA Commitment (current dollars):

Year	1977	1978	1979	1980	1981	1982	1983	Total
Manufacturers ($ million)	43	68	86	98	88	75	48	506
Non-Homeowners ($ million)	10	18	41	77	92	113	143	494
Total	53	86	127	175	180	188	191	1000

E-1.4 Conservation Technologies

a. Combined Steam - Electric Plants

The concept of the "dual-purpose power plant" refers to the use of power plants for production of both electricity and process heat. Utility general practice is to waste exhaust steam. Industrial plants typically develop process steam and do not exploit the opportunity to generate electricity.

Opportunities exist for energy savings through retrofit of existing plants for dual electricity and process steam generation as well as the development of new dual-purpose plants. Electric utility power plants could sell process heat to nearby (5-8 miles) industrial customers, and industrial plants could generate, use and/or sell electricity. This could be achieved through individual projects by utilities and industrial plants, or by joint ventures involving utilities and industry.

EIA support could focus upon economic and technological demonstration, indicating a major Federal commitment to overcoming legal and institutional barriers to dual purpose plant utilization (rate structures, reliability or backup provisions, siting, transmission, restraint of trade, etc.). The area of application is in the large industrial dual purpose coal plant producing 300 Mwe electricity and 4 million

lb/hr. steam. This probably would involve the creation of four joint ventures, each including two or three industrial plants sufficiently close so as to share the steam as well as the electrical power.

The equivalent oil displacement is 15 thousand barrels/day attributed to increased efficiency. (No credit taken for use of coal.) EIA participation is projected at a level of 75 percent.

EIA Commitment (current dollars):

Year	1977	1978	1979	1980	1981	Total
$ (million)	193	207	219	236	247	1102

E-1.4 Conservation Technologies

b. Utility Load Management

Analyses indicate that a strategy of encouraging electric utility load management can promise the Nation substantial benefits in both energy and future capital savings. Load management is designed to reverse the unfavorable recent trends in the relative growth rates of average loads and peak loads and to improve capacity utilization by increasing load factors.

Success in achieving these objectives will require reform of existing electricity pricing structures to provide the incentive for utility customers to shift their load patterns. Rate reform to implement peak load pricing, under which the price charged for supplying electricity at different times of day varies according to the time-varying costs of producing electricity, will require the development and installation of two categories of load management technology: utility load control systems and time-of-day metering equipment.

The electric utility industry appears reluctant to invest in these technologies because of the dual risks of a fairly-untested technology and unknown consumer response. To encourage investment in load control systems and time-of-day metering equipment EIA could provide loans or loan guarantees to utilities for the purchase and installation of such equipment. As many as 47 million customers could

be equipped with time-of-day meters which would be owned by the utility company.

Based on a projected peak demand of 705,000 Mwe, approximately 119,000 Mwe of peaking capacity can be saved. Annual savings of 56 billion kw-hrs of peaking generation could also be saved, which at an assumed difference between peak and base load heat rates of 4,800 Btu/Kwh amounts to an oil equivalent savings of 125,000 barrels/day.

In addition to these operating savings, there are capital outlay benefits, namely the net difference between peaking capacity not needed as a result of load management and additions to base and intermediate capacity required to accommodate the shifted load.

EIA Commitment (current dollars):

Year	1977	1978	1979	1980	1981	Total
$ (million)	1055	1129	1208	1293	1383	6068

E-2.1 Nuclear Fuel Cycle

a. Uranium Mining and Milling Support

The shortfall of uranium supply to meet demand between 1981 and 1985 is 100,000 tons. To stimulate exploration and expansion and development of uranium mines and mills, EIA could provide support to the industry equal to 20 percent of the estimated 1981-1985 shortfall.

EIA Commitment (current dollars):

Year	1977	1978	1979	1980	1981	1982	1983	Total
$ (million)	--	--	320	320	320	320	320	1600

E-2.1 Nuclear Fuel Cycle

b. Spent Fuel Reprocessing

Considering there are no commercial reprocessing plants in operation in the U.S. and that Federal regulatory requirements are scheduled to be final in 1977, EIA could participate at the 75 percent level to finance one regional reprocessing center with a capacity of 1500 tons/year and capable of handling fifty 1000 Mwe plants. This proposed support would not extend to the present three commercial plants.

EIA Commitment (current dollars):

Year	1978	1979	1980	1981	1982	1983	Total
$ (million)	75	75	150	225	225	300	1025

E-2.2 Nuclear Power Plants

a. Land-Sited Plants

EIA could support nuclear projects which would be deferred for financing reasons alone in the period 1977-1983. Assuming 15 percent of projects would be so deferred in normal money times, and 30 percent would be deferred in tight money conditions, it is estimated that EIA could support projects representing 25,000 Mwe in the seven-year period. The equivalent oil displacement for those supported projects is 725 thousand barrels/day. The associated total nuclear construction program supported represents the equivalent oil displacement of 4350 thousand barrels/day. EIA participation is projected at a level of 75 percent.

EIA Commitment (current dollars):

Year	1977	1978	1979	1980	1981	1982	1983	Total
$ (million)	1686	1804	1930	2065	2210	2365	2530	14590

E-2.2 Nuclear Power Plants

b. Floating Plants

In addition to supporting land-sited plants, EIA could support electric utility purchase of four 1000 Mwe modular power plants for delivery in 1983, 1984, 1985 and 1986. The principal rationale is to support the modular nuclear power plant concept. Oil equivalent displacement of the four plants is 133 thousand barrels/day. EIA participation is projected at a level of 75 percent.

EIA Commitment (current dollars):

Year	1977	1978	1979	1980	1981	1982	1983	Total
$ (million)	27	109	137	410	819	683	546	2731

E-3.1 Conversion to Coal

a. Electric Utilities

In connection with ESECA/EPCA, EIA could support the conversion of existing electric utility oil and gas-fired power plants to coal, as well as supporting the requirement that planned oil and gas plants be changed to coal plants.

The principal investment areas would be:

1) For plant conversion, the refurbishment of coal-handling equipment and the installation of precipitators.
2) For new plants, the installation of scrubbers and coal handling equipment.

As proposed, the EIA participation, at the 75 percent level, would support all of the planned utility conversions under ESECA/EPCA and 20,000 Mwe of the planned 55,000 Mwe new utility plants which would be required to shift to coal by ESECA/EPCA.

The rationale for EIA participation is that even though the ESECA/EPCA conversions to coal generally represent an improvement in operating costs over plant lifetime, the changes upon the utility system, in retrofit or new construction, represent a perturbation to its near term capital financing plans.

EIA investments cover the conversion of 20,400 Mwe power plants and the construction of 20,000 Mwe new coal plants in lieu of oil, representing an equivalent oil displacement of 988 thousand barrels/day.

EIA Commitment (current dollars):

Year	1977	1978	1979	1980	1981	1982	1983	Total
Conversions	120	129	138	187	217	269	380	1440
New Plants	239	255	273	344	458	533	755	2857
Total	359	384	411	531	675	802	1135	4297

E-3.1 Conversion to Coal

b. Industrial Boilers

In connection with ESECA/EPCA, EIA could support the conversion of existing industrial oil and gas-fired power plants to coal, as well as supporting the requirement that planned oil and gas plants be changed to coal plants.

The principal investment areas are:

1) For plant conversions, the refurbishment of coal handling equipment and precipitators. (The unit cost is lower for industrial conversion than for utility conversion).
2) For new plants, the installation of scrubbers and coal handling equipment.

As proposed, the EIA participation, at the 75 percent level, would support all of the planned industrial conversions and new industrial combustors to be covered under the ESECA/EPCA program.

As for utilities, the EIA rationale is to accommodate the perturbation to industry's near term capital financing plans caused by the ESECA/EPCA program.

EIA investments cover conversion of 16,3000 Mwe power plants and 7,100 Mwe new plants, representing an equivalent oil displacement of 532 thousand barrels/day.

EIA Commitment (current dollars):

Year	1977	1978	1979	1980	1981	1982	1983	Total
Conversion	54	58	62	87	101	126	162	650
New Plants	85	91	97	136	158	197	252	1016
Total	139	149	159	223	259	323	414	1666

E-3.2 Coal-Fired Power

a. Land-Sited Plants

EIA could support coal plants which would be deferred for financing reasons alone in the period 1977-1983. Assuming 15 percent of projects would be so deferred in normal-money times, and 30 percent would be deferred in tight-money conditions, it is estimated that EIA could support projects at the 75 percent level representing 31,500 Mwe in the seven-year period. The equivalent oil displacement for direct projects supported is 913 thousand barrels/day. The associated total coal construction program represents the equivalent oil displacement of 4350 thousand barrels/day.

EIA Commitment (current dollars):

Year	1977	1978	1979	1980	1981	1982	1983	Total
$ (million)	1467	1570	1638	1754	1875	2007	2147	12458

E-3.2 Coal-Fired Power

b. Floating Plants

EIA could support development of the floating coal plant concept, which offers advantages in treating siting and environmental problems and provides an opportunity for standardized factory mass construction of coal power plants. The concept of a floating electric power generation is not new. In recent years, for example, barge mounted turbines have supplied power to New York City. Advantages of a floating coal power plant includes the probable lower environmental impact, increased flexibility in siting and reduction of siting problems and the benefits of mass production factory techniques over those of fuel construction. EIA could participate at the 75 percent level in construction and siting of eighteen 400 Mwe plants in a seven-year period. Each plant would cost $200 million (1975 dollars). The total power developed would be 7,200 Mwe and the equivalent oil displacement would be 180 thousand barrels/day.

EIA Commitment (current dollars):

Year	1977	1978	1979	1980	1981	1982	1983	Total
$ (million)	342	368	398	630	675	723	774	3910

E-3.3 Hydroelectric Reclamation

Support reclamation of abandoned hydroelectric sites in New England, participating at the 75% level to develop 300 Mwe. Participants could be small industrial users, municipalities or utilities.

EIA Commitment (current dollars):

Year	1977	1978	1979	1980	Total
$ (million)	51	53	59	62	225

E-4.1 Railroad Track and Equipment for Coal

Many railroads, especially east of the Mississippi, have lacked the financial resources to rehabilitate and maintain tracks adequate to move unit trains with 100 ton cars or to build new branch lines to mines and utilities. EIA could support the construction of new branch lines to mines and utility sites, and the upgrading of existing branch lines. In addition, EIA could help finance unit train loading and unloading equipment at mines and utilities, hopper cars, and locomotives. The support for these projects could be in the form of loans and loan guarantees not to exceed 75 percent of the costs of the projects or equipment. The program includes support for 2520 miles of new track, 630 miles of track upgrading, 21 unit trains and 21 train loaders.

EIA support would be in addition to the legislation which established the U.S. Railway Administration and CONRAIL to restructure bankrupt eastern railroads.

EIA Commitment (current dollars):

Year	1977	1978	1979	1980	1981	1982	1983	Total
$ (million)	161	172	184	197	211	225	241	1390

E-4.2 Major Infrastructure

EIA support of major new infrastructure could be related to massive oil and gas resource development in frontier areas.

EIA Commitment (current dollars):

Year	1977	1978	1979	1980	1981	1982	1983	Total
$ (million)	563	2563	3125	3686	3363	2294	1844	17438

E-4.3 Electric Transmission

EIA support of new high capacity transmission lines could bring coal- and nuclear-based power into consuming areas currently depending on oil and gas consumption. The proposed project area is to participate at the 75% level in development of 600 circuit miles of high capacity transmission of 20,000 Mwe remote coal/nuclear base loaded generation into urban areas dependent on oil- or gas-fired plants. Oil displacement equivalent is 500 thousand barrels/day

EIA Commitment (current dollars):

Year	1981	1982	1983	Total
$ (million)	224	240	256	720

E-4.4 Energy Parks

The objective of the energy center program would be to help the private sector establish several large energy complexes which can make a significant contribution to energy independence at substantial cost savings vis-a-vis the construction of equivalent dispersed site capacity. EIA assistance could take the form of front-end investments for five purposes: site banking of land; preconstruction costs; acquisition of transmission rights-of-way; demonstration of technology feasibility; and infrastructure requirements. Direct loans and investments and loan guarantees could be the primary financial methods used, with the commitment not to exceed 75 percent of total cost.

EIA Commitment (current dollars):

$ (million)

Year	1977	1978	1979	1980	1981	1982	1983	Total
Site-banking	10	17	34	41	68	84	84	338
Preconstruction Costs	10	17	34	41	68	84	84	338
Transmission Right-of-way	30	51	101	122	203	253	253	1013
Total	50	85	169	204	339	421	421	1689

E-5.1 Current Technology Scrubbers

b. Coal-Fired Plants

EIA would support at the 75 percent level the installation of scrubbers on 31,500 Mwe coal plants to be constructed in the period 1977-1981.

EIA Commitment (current dollars):

Year	1977	78	79	80	81	Total
$ (million)	613	657	703	756	811	3540

E-5.1 Current Technology Scrubbers

c. Manufacturer Support

EIA would provide $150 million direct financial support to manufacturers in 1977 for present scrubber program.

E-5.2 Direct Project Support

This involves support of environmental safeguards for a large, energy-related venture with considerable anticipated environmental impact.

Without prejudging whether an Alaskan gas venture should receive government support, either for the project itself, or for special environmental safeguards, the following observations show hypothetically how EIA support could be extended.

Should the Canadian route be chosen for the pipeline, EIA funds could be used to assure adequate environmental protection during the construction and the operation of the pipeline: (1) computerized pipeline systems to assure shutdown in case of fracture; (2) reclamation and revegetation over 6,000 miles of buried pipeline; (3) engineering and structures and other devices to prevent or control erosion in the Arctic portion of the pipeline; (4) noise control; and (5) sewage treatment at associated facilities along the span of the pipeline.

Should the Alaskan route be chosen, it would be expected that expenditures associated with environmental protection would be less along the route of the pipeline itself, but would include measures to assure environmental protection at Point Gravina, during transport, discharge and regasification.

The engineering and design specifications for both routes have not been finalized, and therefore, it is not possible to judge the total amount of capital which will be associated with environmental protective measures. However, it is not unrealistic to assume that 5 to 15 percent of the total costs could be due to environmental requirements, or approximately $1 billion (current dollars).

EIA Commitment (current dollars):

Year	78	79	80	81	82	Total
$ (million)	150	175	200	225	250	1000

E-5.3 Advanced Technology Scrubbers

EIA would support at the 100 percent level the installation of 5500 Mwe capacity advanced technology scrubbers in the period 1978-1981. Unit cost equals $100 per installed Kwe (1975 $).

EIA Commitment (current dollars):

Year	78	79	80	81	Total
$ (million)	168	181	194	207	750

Tab F - Scope of EIA
Investment Activity

Potential EIA Investment Projects

1. Technologies Not in Widespread Commercial Use:

   A. Synfuels:

      1. High Btu Gas loan guarantees.
      2. Low Btu Gas loan guarantees and construction grants.
      3. Oil Shale loan guarantees and price guarantees.
      4. Coal Liquefaction loan guarantees.
      5. Biomass Conversion (waste) loan guarantees.
      6. Financial incentives for commercial demonstration plants.

   B. Geothermal Energy:

      1. Support for development for commercial production.
      2. Support for constructing power plant and power distribution net.

   C. Wind Energy Conversion:

      1. Support for utilities.

   D. Conservation/Load Management:

      1. Load/Control Systems:
         a. Utilities.
      2. Time-of-day Metering Equipment:
         a. Utilities.

   E. Conservation/Dual-Purpose Power Plant:

      1. Support for industrial users.
      2. Support for utilities.

   F. Coal-Oil-Water-Limestone Refineries:

      1. Low-cost loans or loan guarantees to encourage the building of coal refineries.

   G. Fluidized Bed Boiler Plants:

      1. Equipment manufacturers
      2. Loans and loan guarantees for industrial users.

H. Solvent Refined Coal Plants:

1. Loans and loan guarantees to industries.

2. Nuclear Power:

A. Nuclear Fuel Cycle:

1. Mining and Milling:
   a. Long-term contracts for U_3O_8 to the independent uranium supply industry.
2. Spent Fuel Reprocessing:
   a. Loan guarantee for one reprocessing center.
3. Uranium Enrichment Services:
   a. Warranties, performance assurances, purchasing services, purchasing facilities on a transitional basis.

B. Nuclear Power Plants (land-sited):

C. Floating Nuclear Power Plants:

3. Oil and Gas Displacement:

A. Oil and Gas Conversion to Coal:

1. Guarantee of debt obligation and purchase leasebacks for utility and industrial conversions.

B. Coal-Fired Plants

C. Offshore Floating Coal Plants

1. Leaseback of facilities to utilities.
2. Equipment manufacturers.

D. Hydroelectric:

1. Reclaiming facilities.
2. Generation equipment.

4. Scope/Regulatory Projects

A. Railroad Track and Equipment (associated with coal development).

B. Pipeline Systems

C. Energy Parks

5. Protection of Environment

A. Flue Gas Desulfurization and/or Precipitation

1. Powerplant conversion to coal
2. Retrofits
3. New coal-fired plant

B. Develop Pollution Control Technology

1. Second generation scrubbers
2. Expand pollution control industry

C. Support Environment Safeguards in Other Projects

Tab G - Budgetary Treatment of EIA

Budgetary Treatment of EIA

The presentation of EIA in the FY-1977 budget consists of four categories of activity:

- On-budget appropriations of $42 million;
- Off-budget appropriations of $8 billion;
- Off-budget authorization of $75 billion;
- Off-budget funded outlays of $650 million.

Table I summarizes the various EIA entries in the FY-1977 budget. Table II shows the detailed EIA presentation displayed in the budget appendix. Table III shows other Federal agencies treated off-budget for FY-1977.

Tables IV, V and VI show the derivation of the $42 million appropriations figure, and $650 million funded outlays. These tables assume a hypothetical investment scenario, developed in January for budgeting purposes; the scenario does not represent expected patterns of EIA commitments.

While this off-budget treatment of EIA may be contentious, the rationale for adopting this procedure stems from the basic expectation that although some of EIA's investments will support high-risk ventures and will result in losses, in the aggregate all of the financial resources committed through the EIA will be recovered by the U. S. government. Thus, the impact of EIA upon the Federal budget is better measured in terms of its annual net gains and losses from

operations, rather than in terms of total outlays and commitments, since all of these are to be ultimately recovered as revenues in the form of earnings, interest, dividends, fees, capital gains and the like.

Under this treatment, the estimated impact on the FY-77 budget is a net loss of $42 million, resulting from estimated expenses of $83 million and revenues of $41 million. In addition to this, an obligation of $10 million in dividends payable to the Treasury on EIA's paid-in capital is accrued in that year, and carried forward; interest on this accrual is paid by EIA as an operating expense during fiscal 1977.

EIA's projected net loss position in fiscal 1977, and in the early years of its ten year life span, stems primarily from some conservative assumptions about EIA cash flow. In particular, operating expenses for administration build up rapidly, to a total of $35 million at the end of fiscal year 1977, supporting a staff of 600. This level of staff and expenses is in line with the experience of entities such as the Export-Import Bank, which is comparable to EIA in the nature of its activities. No dividend or capital gain returns are assumed from EIA's equity outlays, on the premise that ventures in which EIA takes a direct participation will need to protect their cash position in the near term. Finally, a two percent allowance for defaults on loans and loan guarantees has been assumed from the beginning of EIA's operations. Without the

creation of this reserve, EIA would show a cash surplus from operations beginning in fiscal 1978. However, an allowance for future defaults should be included as an operating outlay on a current, yearly basis, to present as fairly as possible the estimated impact of EIA's activities upon the Federal budget.

The funding authorization sought for EIA in fiscal 1977 is $83 billion, consisting of $75 billion in borrowing authority, and $8 billion as the initial increment of EIA's $25 billion of capital stock.

The $75 billion in borrowing authority covers EIA's total borrowing resources; the full authority is requested at the outset of EIA's planned ten year life span because it is anticipated that this part of EIA's overall resources will be committed to the lower-risk ventures in EIA's portfolio. The $25 billion of equity, on the other hand, is for the purpose of backing higher-risk projects. Consequently, these funds are requested incrementally with the initial $8 billion in the fiscal 1977 budget planned to cover outlays and commitments for higher-risk projects during the first three years of EIA's existence.

EIA's authorization to borrow up to $75 billion during the period in which it makes commitments is subject to the prior concurrence of the Secretary of the Treasury with respect to method, source, interest, timing and other terms of any debt issues.

Table I

Budget Treatment of EIA, FY-1977
($ million)

Activity	Appropriated, On-Budget	Appropriated Off-Budget	Authorized, Off-Budget	Funded Outlays, Off-Budget
• Net gains/losses from operations	42			
• Initial equity subscription (see table III for other agencies treated similarily).		8,000		150
• Total borrowing authority			75,000	500
TOTAL	42	8,000	75,000	650*

* Only off-budget item which counts against Federal debt subject to statutory limit.

Table II

Budget Presentation of EIA
($ million)

Activity	Amount	Remarks (Not shown in budget document.)
• Funded operating costs	83	Total EIA operating costs, FY-1977
• Funded capital outlays, loans and investments	650	Actual cash paid out; $500 MM in loans, $150 MM in equity
• Undisbursed loans	2,000	Total loan commitments at $2,500; 500 paid out, balance undisbursed in FY-77.
Total obligations	2,733	
• Adjustment for losses	- 42	On-budget appropriations
• Revenues	- 41	
• Authority to spend debt receipts	73,100	Balancing entries
• Fund balance	7,250	
Budget Authority	83,000	
• Appropriation	8,000	Off-budget for EIA equity
• Authority to spend debt receipts	75,000	Initial debt authorization, not appropriated
Net obligations incurred	2,650	Net of revenues and on-budget appropriation
Obligated balance, end of FY-1977		
• Authority to spend debt receipts	1,900	$2 billion in obligated undisbursed loans, less $100 MM for working cash balances shown below
• Fund balance	100	

Table III

Off-Budget Federal Agencies

Rural Telephone Bank
Rural Electrification and Telephone revolving funds
Postal Service fund
Environmental Financing Authority (expired)
Housing for the Elderly or Handicapped fund
Pension Benefit Guaranty Corporation
Federal Financing Bank
U. S. Railway Association
E.I.A. (proposed)

NOTES:

1) Exim was first off-budget agency excluded from unified budget; by law, however, Exim returned to on-budget in FY-1977.

2) Debt of these agencies is part of the gross Federal debt, but not subject to statutory debt limit.

3) Outlays of these agencies are added to unified budget deficit to comprise total Government deficit that has to be financed by borrowing or other means.

Table IV

BUDGETARY IMPACT OF ENERGY INDEPENDENCE AUTHORITY
PROJECTED RESULTS: FY-1977 through FY-1981
($ Million)

	1977	1978	1979	1980	1981
Estimated Income					
Loan guarantee fees (1%)	6	18	31	45	60
Interest on loans made (10%)	25	75	125	175	225
Dividends on equity investments[1/]	--	--	--	--	--
Capital gains on equity investments[2/]	--	--	--	--	--
Commitment fees	10	25	35	40	40
	41	118	191	260	325
Estimated Expense					
Interest paid on borrowing and unpaid dividends (8%)	30	79	136	190	250
Administrative expense and startup[3/]	35	42	42	42	42
Defaults on loan, loan guarantees[4/]	--	--	--	--	--
Price guarantee payments[5/]	--	--	--	--	--
Allowance for defaults[6/]	18	52	88	126	166
	83	173	266	358	458
Results from Operations[7/]	(42)	(55)	(75)	(98)	(133)
Unpaid Dividend Expense[8/]	(10)	(26)	(44)	(60)	(78)

1/ Equity investments assumed not to pay dividends during FY-1977 through FY-1981.
2/ Because of long-term nature of equity investments, gains/losses assumed not to occur during this period.
3/ Administrative expense for organization of 600 employees by end-year FY-1977.
4/ Defaults assumed not to occur until after FY-1981.
5/ Price guarantees made by EIA in FY-1977 through FY-1981 but paid in subsequent years.
6/ Two percent of actual amounts paid out under loans and loan guarantees.
7/ EIA impact in FY-1977 budget shown as $42 million.
8/ Dividend obligation for Treasury's equity subscription assumed to be accrued; interest on this obligatic charged to operations.

Table V

Investment Schedule
Energy Independence Authority
($ in billions)

Category	1977	1978	1979	1980	1981
Loan Guarantees 1/, 2/	6.0	6.0	7.0	7.0	7.5
Loans 1/, 2/	2.5	2.5	2.5	2.5	2.5
Equity 2/, 3/	.5	.5	.5	.6	.7
Reserve-Future Payments 4/	.5	2.3	1.8	2.3	2.3
TOTAL	9.5	11.3	11.8	12.4	13.0

1/ Only 20% of the loans and guarantees are written in the year of the commitment; the remainder is distributed evenly over the next four years.

2/ During FY-1977, only half of this amount is committed by EIA, since the operation begins at zero and builds up to this rate by the end of FY-1977.

3/ Half of EIA's equity commitments during a given fiscal year are assumed to be disbursed; the remainder is distributed evenly in 10% increments over a five year period beginning in the given fiscal year.

4/ These funds are to cover price guarantee commitments; while the commitments are negotiated in the fiscal years as shown, it is assumed that no outlays are required until after FY-1981.

Table VI

Five-Year Investment Scenario
Energy Independence Authority
($ in billions)

	1977	1978	1979	1980	1981
Loan Guarantees & Loans					
Synthetic Fuels 1/					
Oil shale	.8	.8	--	--	.8
High BTU gas	1.4	.7	--	--	--
Biomass	.5	.2	.2	--	--
Boiler fuels--unregulated 5/	.5	--	.5	.5	.5
Syncrude	--	--	--	--	.7
Electric Power Generation 2/					
Fossil	1.6	2.1	3.2	3.2	2.5
Nuclear	1.5	2.2	2.2	2.2	2.2
Conservation/Geothermal	.5	.7	.8	7.0	.7
Other (includes pipelines, oil and gas development and environment)	1.7	1.8	2.6	2.6	2.6
SUB-TOTAL, Loans & Guarantees	8.5	8.5	9.5	9.5	10.0
Equity Investments 3/					
Solar power generation	.1	.1	.1	.2	.2
Various conservation technologies	.1	.4	.1	.1	--
Boiler fuels -- regulated 5/	.3	--	.3	.3	.5
SUB-TOTAL, Equity	.5	.5	.5	.6	.7

1/ Assumes 350,000 barrel-per-day program in FY 1977-79. Starting in FY 1980 moves to the 1 million barrel-per-day "nominal" program; mix of projects is tentative.

2/ Projects that would not otherwise be financed without government assistance; includes coverage of five geothermal plants at $200 million each.

3/ Where emerging technologies are involved the amounts invested in effect are cash subsidies to make the technology economically competitive.

	1977	1978	1979	1980	1981
Price Guarantees					
Synthetic Fuels [4]					
Oil Shale	.5	.5	--	.5	.5
Boiler fuels -- unregulated [5]	--	1.8	1.8	1.8	1.8
SUB-TOTAL, Price Guarantees	.5	2.3	1.8	2.3	2.3
TOTAL	9.5	11.3	11.8	12.4	13.0

4/ Amounts shown are to cover price guarantees signed by EIA in fiscal years 1977-81, but paid in subsequent years.

5/ As defined by SynFuels Commercialization Program: low/medium Btu gas, liquid boiler fuels, methanol; "regulated" applies to electric and gas utilities; "unregulated" to petroleum and gas production firms.

Tab H - Employment Induced by EIA Activity

TAB H

EMPLOYMENT INDUCED BY EIA ACTIVITY

PURPOSE AND SCOPE

This tab provides the results of an analysis which was performed to estimate the rate and amount of employment attributable to capital investments in which EIA may assist.

Annual employment estimates in man-years have been developed for the year 1988. Cumulative man-years of employment through this "milestone" year are also shown in each case. 1988 is representative of a year when most EIA induced programs are operational. Therefore, the EIA induced employment estimate for 1988 is of a permanent-job nature.

Capital expenditures of the size proposed in TAB E will stimulate employment in many business/industry sectors. Accelerated exploitation of geothermal fields and the construction of synthetic fuel facilities will create demands for a large skilled and semi-skilled work force. While construction and equipment industries will be directly affected, suppliers of material to these industries, such as primary metal producers and fabricators, must also expand their facilities to meet demand. Other areas of investment, such as wind power and solar heating, may require the construction of new manufacturing facilities or the creation of service industries.

Future job opportunities will be influenced to a large extent by the composition of the EIA investment portfolio and the rate at which actual expenditures occur; both during and after the operational life of the Authority. This schedule will be moderated by other factors such as lack of special skills, equipment and technologies required for initial exploration and development of energy sources. New capital investments may also be required to overcome infrastructural impediments such as materials shortages and insufficient transportation. These are site specific, data are not now available and, therefore, employment impacts have not been estimated.

Employment induced impact estimates have been developed for all proposed programs where there is a reasonable expectation of EIA and private sector commitment and where a representative investment schedule could be postulated. Analysis results were also affected by assumptions as follows:

1. All labor estimates are based on constant 1975 dollars. Dollar values were established through adjustments to 1972 estimates provided by the Bureau of Economic Analysis, Department of Commerce.

2. Where detailed manpower schedules are not provided, labor productivity for equipment manufacture, induced indirect labor and construction labor are based on changes in productivity rates taken from Bureau of Labor Statistics Bulletin 1831. The year selected for adjustment of plant and facility construction labor rates is the mid-point of the investment schedule for each program. For operating and maintenance labor, 1985 was chosen.

3. Investment schedules provided in TAB E have been followed whenever practical. In the absence of investment schedules, reasonable assumptions of capital expenditures were developed and described or footnoted in the text.

4. Pollution abatement equipment costs and associated labor to produce, install, and maintain these equipments have been treated as an integral part of the program investment, except as noted.

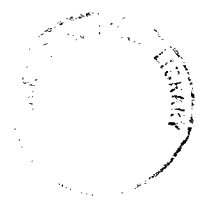
Table H-1 provides a summary of investment and labor requirements for individual energy development programs. It is not suggested that these programs or the proposed levels of capital investment are necessarily representative of future EIA and private sector participation.

It should be emphasized that these estimates are preliminary, and do not reflect the entire scope of the hypothetical EIA portfolio shown in Tab D.

TABLE H-1

COMPOSITE LABOR ESTIMATES,
EIA INDUCED EMPLOYMENT

	Cumulative Labor (man-years through 1988)	1988 Rate (man-years)
Emerging Technologies		
Synthetic Fuels	913,000	71,700
Geothermal Electrical	281,900	11,900
Wind Energy Conversion	165,600	9,600
Conservation/Load Mgt.	318,400	--
Nuclear Power	1,105,500	19,700
Oil/Gas Displacement		
Conversion to Coal	172,000	6,800
New Coal-Fired Plants	483,200	600
TOTAL	3,439,600	120,300



Tab I - Economic Impact of EIA

TAB I

ECONOMIC IMPACT OF EIA

Introduction

The impact of EIA activities on capital markets and, more broadly, on employment, inflation and GNP growth rates in the U.S. economy in the next ten years depends substantively on the general economic climate during that period. In a slack economy, for example, EIA might provide a needed stimulative function. On the other hand, a booming economy with attendant tight money might be strained by EIA activities, depending on what fiscal and monetary policies were then being pursued.

Moreover, the extent of federal, state, and local government deficits will also affect the size of EIA's impact. In 1975, almost 50 percent of the $200 billion net flow of funds in U.S. credit markets was used to finance existing federal, state, and local programs. If this position were to persist, EIA operations would add another 8 to 10 percent to public sector demand for funds during the 1979-83 peak period. However, current projections indicate that existing heavy government borrowing pressures are likely to decline to less than 15 percent of related capital market activity during the peak period. In addition, the Bill contains specific provisions regarding EIA's issuing of obligations designed to minimize the impacts on capital markets. All obligations will require prior approval of the Secretary of the Treasury as to the method, source, interest rate, timing, and other relevant terms and conditions.

Investment Requirements

Total investment impacts of EIA programs will not occur as commitments are made by the EIA board of directors. Outlays and guarantees will likely be spread over the life of the projects undertaken by the companies involved. Table 1 below presents investment requirements of EIA from 1977-1989 that would result from a hypothetical portfolio developed for illustrative purposes. It assumes

a 7 year financial pattern with a bell-shaped dispersion, coupled with a 7 percent inflation rate. Approximately 75 percent of the requirements shown below would take the form of loan guarantees.

TABLE 1

EIA Investment Requirements
1977-1989 (Billions Current $)

1977	.39	1984	15.25
1978	1.25	1985	15.23
1979	3.16	1986	12.33
1980	5.56	1987	8.69
1981	8.78	1988	4.40
1982	12.03	1989	1.85
1983	15.21		

Interest Rate Effects

Changes in the interest rate due to EIA activity cannot be predicted in the absence of assumptions about the general level of business activity and the growth of the money supply. If peak EIA outlays occur during the upward phase of the business cycle, and if growth of the money supply does not keep pace with the demand for investment funds (and the savings rate stays relatively constant), the interest rate will rise. Conversely, if the supply of investment funds is more than adequate (during a slack economic period), EIA should have little effect on the interest rate. Moreover, it is well to note that EIA investment is small when compared to projected investment in the U.S. during the 10 year period (see Table 2).

Allocative Effects

The effect of EIA activity upon the pattern of investment spending in the U.S. is difficult to predict in detail. However, some general indications of mechanisms and directions of flow can be given. If an accommodating monetary policy is assumed, the allocation which will take place is that envisaged by the legislation, i.e., an inducement of investment in the energy sector which would not otherwise occur. The total amount of investment in the

TABLE 2

PROJECTED AGGREGATE AND EIA INVESTMENT 1977-1985

(BILLIONS CURRENT $)

	1977	1978	1979	1980	1981	1982	1983	1984	1985
Aggregate U.S. Investment 1/	241.33	279.92	322.98	382.12	456.76	489.76	521.26	589.23	660.57
EIA Investment 2/	.39	1.25	3.16	5.56	8.78	12.03	15.20	15.75	15.23
EIA as % of Total	.2	.5	1.0	1.5	1.9	2.5	2.9	2.7	2.3

1/ Wharton Long-Term Forecast (FEA Base Case)

2/ Based on Requirements Pattern in Table 1

economy would rise over a base projected growth path, with the increment added to the energy sector. If the accommodating monetary policy assumption is relaxed, so that the possibility of substitution of investment funds from other sectors is introduced, the results are less clear, and the impact of government-guaranteed instruments on the securities market takes on greater significance. A government-guaranteed security issued by an energy company would appear more desirable to investors than a non-guaranteed instrument. In fact, government-guaranteed securities enjoy many of the advantages of Treasury bills and would tend to move up in terms of investor appear to a position second only to Treasury bills. In a tight credit market, borrowers at the margin would be replaced by the government-guaranteed borrowers, so that some reallocation would be inevitable. However, there is no reason to suppose that total investment would be smaller. Thus, the effects would be strictly allocative and would not necessarily affect the levels of real GNP, employment, and price level.

Quantitative Analysis

The macroeconomic effects of proposed EIA programs were evaluated by simulating the Wharton Long-Term Annual and Industry Forecasting Model and comparing the results with the control solution of December 18, 1975 as modified by FEA. The Wharton model combines the national income approach typical of most short-term macro models with a 63 industrial sector input-output matrix. This model was used to produce forecasts of GNP, employment, investment and inflation in a base case projection and a projection incorporating EIA activity.

o Base Case Assumptions

- Inflation rate of 6 percent
- Money supply growth near 10 percent (Accommodating)
- Domestic crude production increases by 4 MMB/D by 1983
- Recurring trade surpluses during forecast period due to strength in agricultural sector
- Real output of utility sector grows at 2.1 percent annually (FEA modification)

o EIA Case Assumptions

- Financial assistance of $100 billion distributed over the following sectors.

	(In Billions, Current $)
Mining	
Shale Oil Mining	2.1
Chemicals	
Bioconversion	2.5
Petroleum	
High Btu Gas	2.7
Utility Fuels	2.3
Utilities	
Solar	5.2
Conversion	14.0
New Capacity	63.0
Conservation	
Non-farm Additions and Alterations	4.2
Environment	4.0
	100.0

- Levels of financial assistance indicated above are net incremental investments in the appropriate sectors.

- EIA financial assistance to utility sector is distributed from 1977-1985 on the basis of traditional financing patterns. Coal and nuclear plants start simultaneously in 1977; coal plants become operational in 1983, nuclear in 1985.

- Assistance to synfuel sector distributed so that facilities become operational 1982-83.

- All other assistance spread evenly 1977-1983.

Results

The results of the simulation are shown in Table 3 below, which lists Real GNP, Implicit Price Deflator and the Unemployed Rate under both the base case and EIA scenarios. There is little difference between the two cases, but in instances where a difference exists, the EIA case has a positive effect on the economy, e.g., a lower unemployment rate in 1977.

TABLE 3

COMPARISON OF MACRO VARIABLES UNDER BASE AND EIA CASES*

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Real GNP (1958$)											
o EIA	798.6	842.3	878.5	897.4	935.5	979.8	1046.6	1051.6	1063.0	1105.2	1159.3
o Base	797.8	842.2	872.3	891.2	926.5	970.2	1032.1	1041.4	1055.9	1105.2	1157.9
Implicit Price Deflator											
o EIA	185.2	195.8	208.1	222.9	238.1	252.3	264.8	282.8	301.2	314.1	323.7
o Base	185.2	195.7	208.3	223.1	238.3	252.3	264.5	281.4	298.8	311.0	321.0
Unemployment Rate											
o EIA	8.5	7.8	7.0	6.8	6.1	5.2	3.5	3.8	4.7	5.1	4.8
o Base	8.5	7.8	7.2	7.2	6.6	5.7	4.1	4.2	4.8	4.8	4.4

*Results obtained from Wharton Long-Term Annual and Industry Forecasting Model.

Tab J - Q's and A's

Energy Independence Authority

Q. What is the Energy Independence Authority?

A. On October 10, 1975, the President submitted legislation for the creation of the Energy Independence Authority which would be an independent Government-owned corporation to help the U.S. achieve energy independence. It would have a limited life span of ten years, and would be overseen by a five-member Board of Directors; management authority would be vested in the Chairman of the Board who would be the Chief Executive Officer of the Authority. EIA would have resources of $100 billion to provide loans, loan guarantees, price guarantees, equity investments, or other financial assistance to the private sector for promising energy projects unable to obtain financing in the private market. Its loans, guarantees, or other commitments would be recovered by the Government, and would be used in conjunction with private sector financing whenever possible. Financial assistance from EIA would be provided only when private capital is not available to carry a project alone, and when a project is vital to achieving energy independence.

Q. Why is energy independence necessary?

A. Since the late 1960's, domestic oil consumption has considerably exceeded domestic production. Since that time we have been importing increasing amounts of oil. Foreign oil now constitutes nearly 40 percent of the oil consumed in the U.S. If domestic production continues to decline, imports of oil could amount to 50 percent of consumption by 1985.

U.S. dependence on foreign oil has two major consequences:

1. Vulnerability to oil supply interruptions jeopardizes national security, decreases our freedom of action abroad, and threatens the credibility of our pledge to meet international responsibilities.

2. The four-fold increase in the price of foreign oil has had a severe inflationary impact on our energy costs. In addition, during 1974 we spent over $24 billion to pay for oil imports. This could have supported more than one million new jobs for American workers.

With energy independence we can meet our international obligations, and mitigate the effects of another oil embargo on our national security and economic growth.

Q. How do we achieve energy independence when our production of oil and natural gas is declining?

A. Besides large untapped reserves of gas and oil, the U.S. has huge reserves of coal and oil-bearing shale, with many times the energy potential of all the oil in the Middle East. We also have a great potential for nuclear power generation. With appropriate economic incentives, these sources of energy can be developed and utilized to increase our domestic production of energy, and thus achieve energy independence. Various conservation measures, as well as increased energy efficiency, will also contribute to this achievement.

Q. Why is EIA necessary for energy independence?

A. It is estimated that $600 to $800 billion of capital investment will be required during the next ten years in order to achieve energy independence.

Unfortunately, some of the most promising new sources of energy require considerable investments and involve substantial risks. Private financing for projects to develop these sources may be difficult to obtain. Projects, such as uranium enrichment plants, energy parks, or synthetic fuel plants, may be too large or technologically risky to secure private financing. Regulatory and technical uncertainties, in combination with the long lead times associated with large-scale construction projects, present risks which deter private investment. Without Government participation, many projects which would produce substantial amounts of energy may not be initiated.

Q. But won't projects financed by EIA certainly lose money because of the risks involved?

A. No. The mere fact that a project involves risks which exceed those the private sector is willing to take does not mean that the project is certain, or even likely, to lose money.

Some investments are too large for the private sector to handle alone. Others, while inherently sound, may involve long lead times or regulatory delays which discourage private sector investment. EIA would be able to assist in financing these projects through loans, guarantees, or other forms of long-term financing.

Q. Couldn't we achieve energy independence by merely removing restrictive regulations?

A. Regulatory delays and environmental group challenges are obstacles to rapid energy development, but even if Government regulations were removed, other major obstacles—such as technological uncertainty and vast financial exposure—would remain. In any event, it is not reasonable to expect that the regulations which many cite as the principal impediments to domestic energy production will be substantially modified, or removed, in the near future.

Q. How will EIA work?

A. EIA will have equity capital of $25 billion. With the concurrence of the Secretary of the Treasury on timing, method, source, interest rate, and other terms, EIA will have the authority to issue and have outstanding at any time notes, debentures, bonds, or other obligations of $75 billion. The Treasury will purchase the equity, and the EIA will pay a dividend on its outstanding capital stock, although its Board could defer such a dividend if it has no earned surplus, or if the funds could be more profitably used to achieve energy independence. EIA's debt may be purchased by the Treasury Department, at the discretion of the Secretary, or channeled through the Federal Financing Bank.

EIA will have considerable flexibility in using its financial resources to help the U.S. achieve energy independence. Its support can take the form of loans, loan guarantees, equity investments, and price guarantees. It can also build projects on a lease-purchase basis, whereby EIA builds a given facility, then leases it to an operator, who purchases the facility. EIA ownership and operation are limited to two years following commencement of operations.

EIA will attempt to operate at a profit on a self-liquidating basis, much like a mutual fund or investment bank. Of course, some of its investments will be more successful than others, though it is expected that all loans made by EIA will be repaid.

Q. Won't the Federal Government, through EIA, be "crowding out" private capital seekers through the borrowings required for this program?

A. The basic issue is one of priority, and national economic priorities must be set. The President has established energy independence by 1985 as a major goal for the United States, and this carries with it the requirement that sufficient capital be made available to meet this objective.

Adequate and secure sources of energy are a prerequisite for a healthy national economy, so the capital invested in energy expansion now is an investment in future economic strength and stability. Insecure or inadequate energy supplies would have a direct and negative impact on almost all sectors of the economy as well as our national security.

In any event, the needs of the Energy Independence Authority will only involve 12 percent to 14 percent of the total of $600 to $800 billion in capital which will be required to achieve energy independence by 1985.

Energy capital needs will certainly make demands on capital markets, but other sectors of the economy, such as municipal bonds or housing, also receive Government assistance in attracting capital. The energy investments supported by EIA will not represent so large a share of total business investments that other critical needs, such as housing, would go unmet.

Q. But won't the additional Government borrowing represented by EIA force the private sector to compete with the Government for capital, and thus raise the cost of capital for all borrowers?

A. All Government borrowing, including that to cover deficits and programs like EIA, can under certain circumstances raise interest rates for other borrowers. However, EIA is not expected to have a significant effect on the capital markets because its borrowings will be spread out over many years, and will be but a small part of the trillions of dollars raised for all purposes by private and public sources during the next ten years. Whatever marginal effect EIA does have on interest rates, however, would be a small price to pay for the benefits of energy independence.

Q. Won't EIA "chill" private sector financing of energy projects by skimming off the cream and taking the good projects for itself?

A. No. EIA is prohibited from financing any project which could be fully financed by the private sector. The Directors of EIA will seek the advice and assistance of investment experts in making this determination. Thus, EIA would complement and not displace private sector investment.

Q. Won't EIA be able to offer interest rates to risky projects which are lower than those paid by sound and profitable private ventures?

A. No. EIA is prohibited from providing financing on more favorable terms than those offered to credit-worthy borrowers in similar projects financed completely by the private sector.

Q. What kinds of projects can EIA finance?

A. EIA will concentrate on the following types of new projects:

—Commercialization of new technologies, not now in widespread domestic commercial use, to produce, transport, or conserve energy (e.g., synthetic fuels);

—Commercial development of technologies essential to the production of nuclear power (e.g., uranium enrichment);

—Production and transmission of electric power generated by non-oil and non-gas sources (possibly floating nuclear plants, geothermal plants);

—Expansion of conventional modes of energy production or transportation, where the undertakings are of such size or scope that they would not otherwise be financed by the private sector, or where the projects involve institutional or regulatory arrangements which are not in widespread use (e.g., coal slurry lines);

—Commercial application of environmental protection technologies necessary in connection with the types of activities described above.

Q. Doesn't this mean that EIA is the first step in a Government takeover of the energy industry?

A. No. EIA's activities are strictly limited to a financing role, and it is not permitted to own or operate energy facilities for more than limited periods. In addition, EIA is required to liquidate its investments and so go out of business in 10 years, thus ending Government's direct role even in financing.

In fact, EIA is designed to strengthen rather than weaken the ability of the private sector to respond adequately and expeditiously to the needs of the American people and their economy. In this way, EIA is actually a force to strengthen rather than take over the private sector, since such a takeover by Government would only be based upon the argument that privately-controlled energy facilities have not adequately met the public's needs.

Q. But what is wrong with Government ownership of energy facilities? Maybe EIA should be structured in this way.

A. Government ownership and operation of energy facilities would have several undesirable features:

—Operations which prove to be unprofitable would be kept in existence through subsidies because of political pressures and vested interests.

—There would be continuing, strong political pressure to cushion increases in the cost of energy through the Federal budget. This would have adverse effects on conservation and production objectives.

—Government ownership would discourage private investment in similar facilities because no private investor wants to compete with an enterprise which is likely to receive Government subsidies. This would have the effect of reducing the amount of public and private investment in energy production rather than increasing it. Further, the Government could not produce alone the $600 billion needed in the next 10 years to help achieve energy independence.

Q. In the case of utilities, wouldn't the availability of funds from EIA encourage State regulatory commissions to refuse rate increases in the hope that EIA would finance utilities?

A. No. The legislation provides that EIA cannot help finance powerplants unless the appropriate State regulatory commission enters into a rate agreement with the utility and EIA. This agreement would provide that the utility receive periodic rate increases which assure repayment of EIA's investment. This would also restore the utility to a credit level enabling it to receive financing from private sources in the future.

Q. Will the costs associated with EIA be included in the budget of the United States?

A. Because EIA is to be self-liquidating and its investments repaid, its outlays will not be included in the budget of the United States. However, EIA's losses or gains from its operations will be included in the Federal budget.

Q. What control will Congress have over the operations of EIA?

A. Although EIA will be an independent Government corporation, Congress will have continuing opportunity to review its activities. Since any EIA request for equity capital would be subject to the normal budget authorization and appropriation procedures, Congress will have the chance at the time of such requests to review the operations and policies of EIA. EIA will also be required to submit an annual report to Congress, and the General Accounting Office is specifically authorized to audit the activities of the corporation.

Q. If EIA is an independent corporation, how will its policies be coordinated with Government energy policies?

A. Prior to any financial commitment, the EIA must submit approved projects to the Energy Resources Council, the Federal Energy Administration, and the Energy Research and Development Administration for a 30-day review and comment period. This will serve to bring any EIA activity in line with Government policies.

In addition, the President appoints the Board of Directors of EIA, and they serve at his discretion. His power of removal would provide a further control over the policies of EIA.

Q. But won't the President's power to appoint or dismiss Board members provide a potential for political favoritism?

A. No. The legislation provides that no more than three members of the five-member Board may be from the same political party. In addition, although the members of the Board are appointed by the President, they are also subject to confirmation by the Senate.

Q. Why is it necessary to create a new Authority? Couldn't ERDA do the job with additional funds?

A. There are three major reasons why EIA should be established as a separate agency, rather than assigning its functions to ERDA:

1. ERDA is a technically-oriented organization. It engages in, and helps to fund, research and development of new energy technologies. EIA, however, is to be financially oriented, and its activities will be commercial rather than technical. A different sort of expertise is required for each function.

2. It would not be a good policy to combine the first-stage research and development functions with second-stage commercialization activities in a single agency. There would be a built-in tendency on the part of a research agency which has invested substantial sums in a research program to devote additional funds to the commercialization of that program. What is needed is an independent judgment as to commercial feasibility, rather than another decision from the same agency to go ahead with the program.

3. EIA is designed as a temporary authority. To assign its functions to a permanent agency like ERDA would increase the likelihood that those functions become permanently integrated into that agency.

Q. Won't EIA just become another Government bureaucracy, continuing its functions long after the need for it has passed?

A. No. The legislation provides that EIA have a limited life of 10 years, and that no new financial commitments be made after 7 years.

After the first 7 years of operation, the corporation will prepare a liquidation plan for the corporation's investments. If possible, this Plan will provide for complete liquidation within 3 years. If the President determines that more time is required for the orderly liquidation of EIA's holdings, he may extend the corporation's life for up to 3 more years, after which any remaining assets, obligations, or required functions will be transferred to the Secretary of the Treasury.

FEA/A-76/004

Tab K - EIA Fact Sheet

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October 10, 1975

Office of the White House Press Secretary

THE WHITE HOUSE

FACT SHEET

ENERGY INDEPENDENCE AUTHORITY

The President today submitted legislation to the Congress to create the Energy Independence Authority (EIA). The EIA will be a new government corporation to help achieve energy independence for the United States by providing loans, loan guarantees, price guarantees, or other financial assistance to private sector energy projects.

It will have a limited life (ten years); its financial outlays and commitments are intended to be recovered by the government, and will be used in conjunction with private sector financing to the maximum possible extent. It will not have authority, except for very limited periods, to own operating facilities related to energy production, transportation, or transmission.

EIA will supplement and encourage private capital investment to meet the energy needs of the nation. Its scope will range across a broad spectrum of energy supply, conservation, and energy-related environmental projects.

The Authority will have financial resources of $100 billion, consisting of $25 billion of equity and $75 billion of debt. The $100 billion for energy projects could help assure that the equivalent of up to 10-15 million barrels of oil per day of new energy production is realized by 1985.

BACKGROUND

° The Nation's energy situation continues to deteriorate:

-- Domestic crude oil production peaked in 1970 and has declined by more than one million barrels per day since then. Production is now at a nine-year low.

-- Oil imports are about 37 percent of oil consumption and are expected to rise to more than 50 percent of consumption or 12 million barrels per day by 1985 if no new actions are taken.

-- As a result of our increasing import dependence, our payments to foreign producers for imported oil has increased from less than $3 billion in 1970 to about $25 billion last year and will increase by another $2 billion annually because of the OPEC price rise announced last month.

-- Natural gas production peaked in 1973, declined by six percent last year (the equivalent of over 230 million barrels of oil), and has dropped another 8.5 percent during the first half of 1975, leading to rising curtailments of service that threaten jobs in many parts of the country.

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-- Electric utility financial problems and regulatory delays have in part resulted in the cancellation or postponement of about three-fourths of all planned nuclear plants and about one-third of all coal plants previously scheduled for operation between now and 1985.

° In his State of the Union Message, the President proposed major new initiatives to explore and develop our domestic energy resources, conserve energy resources, and reduce our vulnerability through standby authorities. Since then no major new legislation to increase domestic supply or cut energy use has been passed by the Congress.

° The Federal Energy Administration (FEA) estimates that investments for energy independence could total about $600 billion (in 1975 dollars) over the next ten years. While most energy projects should be able to be financed in a conventional manner, some projects in selected energy sectors will find financing more difficult:

-- Some emerging technologies, such as synthetic fuels from coal, shale oil, solar, and methods to use energy more efficiently, have uncertain economics due to long lead times and technological uncertainties, and considerable risk if world oil prices drop. The Energy Resources Council (ERC) synthetic fuels task force concluded that a variety of Federal financial incentives is needed to achieve any significant synthetic fuel production by 1985.

-- Many new projects, such as uranium enrichment plants, are too large and economically risky to be financed by the private sector alone.

-- Some industries, such as electric utilities, are not able to finance needed expansion because capital requirements are too large in light of insufficient earnings and regulatory delays or inaction.

° A Federal role in financing and otherwise supporting projects vital to the national interest is not unprecedented, or unique. For example, the Federal Government has taken an active role in such areas as the Communications Satellite Corporation (COMSAT), crash commercialization of new technologies such as synthetic rubber plants in World War II, and uranium enrichment.

EIA Organization

The Energy Independence Authority will be a new government corporation. A five person Board of Directors will be appointed by the President, subject to the advice and consent of the Senate. A member of the Board will be designated by the President as its chairman and will be the chief executive officer of the Authority. No more than three of the Board members may be of any one political party. At the discretion of the President, the members may serve either full-time or part-time. A limited number of the Authority's executives may be paid without regard to executive branch salary limits, but the majority of the Authority's staff will be within the Civil Service system.

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EIA Liquidation and Accountability

The EIA will have a legislated life of ten years, with new financial commitments permitted only in the first seven years of its existence. On or before June 30, 1983, the corporation will prepare a Liquidation Plan for the corporation's investments. The Liquidation Plan will describe how each activity, project or obligation involving financial assistance, and any substantial asset or liability will be disposed of.

The EIA will terminate on or before June 30, 1986, unless the President determines that orderly liquidation requires continuation of its authorized life for up to three years after that date. Any remaining assets, obligations or required functions after its termination will be transferred to the Secretary of the Treasury.

The EIA will submit an annual report to the Congress and will be subject to independent audits by nationally recognized public accountants, as well as by the General Accounting Office at its discretion. Also, the Energy Resources Council, and other agencies designated by the President, will be provided an opportunity to evaluate all projects before commitments are made.

Financial Structure

The EIA will have authorized capital stock of $25 billion and the authority to issue and to have outstanding at any one time notes, debentures, bonds or other obligations of $75 billion. The Authority's obligations will be backed by the full faith and credit of the United States of America.

The Treasury will purchase equity and the EIA will pay an annual dividend on its outstanding capital stock, but its Board could defer such dividends if it has no earned surplus or if the Board determines that other uses of its funds in support of the goal of energy independence are more desirable. The EIA's issuance of its securities, as well as loan guarantees or other similar obligations which directly impact the capital markets in a manner similar to government debt, will be subject to approval by the Secretary of the Treasury as to the timing, method, source, interest rate, and other terms and conditions. At the discretion of the Secretary of the Treasury, EIA's obligations may be purchased directly or channeled through the Federal Financing Bank.

Total loans, guarantees, and other forms of financial assistance by the Authority over its life cannot exceed $100 billion and it can make no further investments if its expected losses, as determined by an annual independent audit, exceed its equity and earned surplus.

The $25 billion of equity will be subject to the appropriation process and requested incrementally as needed; the $75 billion in borrowing authority will be requested initially as a one-time Congressional authorization without any further need for Congressional appropriations. Because the Authority is to be self-liquidating and its investments repaid, its outlays will not be included in the budget of the United States. However, the Authority's losses or gains from its operations will be included in the Federal budget.

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The Energy Independence Authority could provide financing in various forms including direct loans, loan guarantees, guarantees of price, purchase and leaseback of facilities, and the purchase of convertible or equity securities. EIA financing will not be available for projects which can be financed by the private sector and to the extent practicable, will be in the form of loans and loan guarantees.

The EIA's financial assistance will provide for the maximum participation of private financial institutions in projects. Such assistance will be provided in ways that will not give recipients undue advantage over competing firms. This will be assured through minimum interest rate requirements and other terms that will be required by the Authority before financing is executed.

Financial commitments by EIA will not be for the purpose of acquiring a permanent controlling or operating interest in commercial production, transportation, or distribution of energy. Federal ownership or operation could occur only temporarily, in the event of default, or in providing financial assistance which involves construction, testing and demonstration of a facility provided to a business on a "turnkey" basis, or in providing lease-purchase and sale-leasebacks. No permanent ownership, control and operation of energy production facilities by the Federal Government will be authorized.

Scope of EIA Investments

The Energy Independence Authority will concentrate on energy projects deemed critical to our national energy objectives.

The Energy Independence Authority will only support projects which meet the following criteria:

-- Projects that will contribute directly and significantly to energy independence.

-- Projects that would not be financed without government assistance.

The specific types of projects which the EIA could finance would be limited to projects entailing commercialization of:

-- New technologies not yet in widespread domestic commercial operation either to support, produce directly, transport, or conserve energy.

-- Technologies essential to the production of nuclear power.

-- Conventional or new technologies for production and transmission of electric power generated by sources other than oil or gas.

-- Conventional energy technologies for the production or transportation of energy that are of such size or scope that they would not otherwise be financed by the private sector or represent institutional or regulatory arrangements which are not in widespread use, or individual transportation or transmission facilities related to such energy projects.

The projects that could be supported by the EIA range across the full spectrum of energy, excluding research. These would cover such areas as synthetic fuel technology commercialization (e.g., coal gasification, liquefaction, and production of oil from shale); other emerging technologies (e.g., solar energy or geothermal energy); and conventional technologies (e.g., uranium enrichment, coal, nuclear, and geothermal power plants).

EIA could support projects that increase efficiency of energy use and production of energy that involve new technologies not yet commercially proven. Projects of unusual size or scope could include new energy parks or major new pipelines for transportation of oil and gas.

The EIA will not relieve State regulatory commissions of their responsibility to assure the health of regulated industries. Thus, EIA financial assistance will 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 firm that assures adequate earnings to protect EIA's investment.

New Federal Energy Regulatory Procedures

Regulatory problems often make financing difficult by adding uncertainty about a project's ultimate fate and timing and by adding inflationary pressures to construction costs through delay. In addition to its financial authorities, the EIA legislation will establish an important new procedure for coordinating and expediting Federal regulatory proceedings that affect energy projects.

Although it would have no power to override regulatory decisions at any level of government or determine the ultimate fate of the project, the Federal Energy Administration may certify (if such certification is needed to assure expeditious completion) that any project which requires a Federal permit or other Federal action is of critical importance to achievement of energy independence.

Any Federal agency receiving such FEA certification of a project will commence promptly all proceedings needed to reach a final decision concerning the project and each Federal agency may give such proceedings priority over other matters before it. The legislation makes it the intent of the Congress that all proceedings on these critical projects be completed within 18 months and requires that each Federal agency promulgate regulations within 90 days to carry out the expediting actions contemplated in the legislation.

In order to coordinate, simplify, and expedite the processing of applications to construct, license or review energy projects, the FEA, in cooperation with all relevant Federal agencies, will oversee the entirety of the Federal approval process. The authority to approve or disapprove applications for energy projects will remain in those Federal agencies required by law to consider such projects. However, the FEA would be authorized to develop a single composite application that will be the sole application required for Federal approval prior to commencement of a project.

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