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THE WHITE HOUSE  
WASHINGTON

OMB



MEETING ON FY 1977 BUDGET  
(Justice, Civil Service Commission  
and Certain Regulatory Agencies)

Wednesday, November 26, 1975

THE PRESIDENT HAS SEEN.....

2:00 P. M.

1977 PRESIDENTIAL  
REVIEW  
FEA, ERDA, Justice  
CSC, Reg. Agencies



EXECUTIVE OFFICE OF THE PRESIDENT  
OFFICE OF MANAGEMENT AND BUDGET  
WASHINGTON, D.C. 20503

THE PRESIDENT HAS SEEN . . .

MEETING ON FY 1977 BUDGET  
Wednesday, November 26, 1975  
2:00 to 5:00 p.m. (3 hours)  
The Oval Office

From: James T. Lynn

I. PURPOSE

To make decisions on issues raised by the FY-77 budget for the Federal Energy Administration, Energy Research and Development Administration, Department of Justice, Civil Service Commission, and certain regulatory agencies.

II. BACKGROUND, PARTICIPANTS AND PRESS PLAN

A. Background: The FY-77 Budget submissions of the Federal Energy Administration, Energy Research and Development Administration, Department of Justice, Civil Service Commission, and certain regulatory agencies have been reviewed by the Office of Management and Budget and members of the White House staff. This meeting will focus on issues raised in these budget submissions that require Presidential consideration and determination.

B. Participants: James T. Lynn, James Cannon, Paul O'Neill, Brent Scowcroft, Dale McOmber, Jim Mitchell, and Cal Collier.

C. Press Plan: None

D. The attached material is classified and should be treated accordingly.

III. TALKING POINTS

A. Jim Mitchell, what is the first energy issue we should discuss today?

B. Cal Collier, what is the first Department of Justice issue we should discuss today?







EXECUTIVE OFFICE OF THE PRESIDENT  
OFFICE OF MANAGEMENT AND BUDGET  
WASHINGTON, D.C. 20503

April 22, 1975

ACTION

MEMORANDUM FOR:

THE PRESIDENT

FROM:

James T. Lynn

SUBJECT:

1977 Budget decisions: Federal  
Energy Administration



The agency request and my recommendations with respect to 1977 budget amounts for the Federal Energy Administration (FEA) are presented in the tabulation attached (Tab A). A summary of the principal budget decisions reflected in my recommendation is provided as background information (Tab B).

Although the final version of the omnibus energy bill now in Conference Committee is not yet available, preliminary materials indicate that the bill would have a significant impact on fiscal years 1976 and 1977 budget revenues and outlays. The agency request and my recommendations, with the exception of the petroleum storage program, do not provide for any part of the anticipated requirements of the bill.

Both the agency request and my recommendations assume in particular that petroleum allocation and price controls will not continue beyond the present extension to December 15. For continued controls my preliminary estimates for additional resources needed in fiscal year 1977 are a minimum of 1186 permanent positions and \$32 million. Estimates for other requirements of the bill, such as mandatory energy conservation programs, must await study of the final print.

Six key issues have been identified for your consideration (additional detail at Tab C).

1. Petroleum industry compliance audits

FEA requests that its compliance program be extended to December 31, 1977, even though the Emergency Petroleum Allocation Act may expire on December 15, 1975. FEA insists that the Administration's credibility in regulating the oil industry can

best be established by a two-year wrap-up program to catch those who violated price and allocation regulations while they were in effect. FEA's request requires \$32 million, and a field force peaking at 1286 and decreasing to 800 permanent positions by the end of FY 1977.

OMB recommends that the compliance program be extended only to February 28, 1977, so that the bulk of the auditors, investigators, and support personnel can be phased out of the FEA by the end of FY 1977. This would allow FEA to complete audits of all the large oil companies--those that account for over 90% of refinery output and crude oil production--and to sample adequately firms in the other less concentrated sectors. Criticism that FEA has been ignoring "big oil" and concentrating too heavily on the smaller independent companies would thus be quieted. The OMB recommendation would require \$10 million, and a field force peaking at 929 and decreasing to only 24 permanent positions by the end of FY 1977.

Decision: Approve agency request \_\_\_\_\_  
 Approve OMB recommendation \_\_\_\_\_

## 2. FEA energy resource development program

FEA requests \$34 million and 556 positions for FY 1977 to expand its "project management approach" to expediting the development of energy resources. Under this program, which is about to begin in FY 1976, FEA would mobilize project teams that would attempt through administrative means to remove regulatory, environmental, financial, and technical bottlenecks delaying completion of about 40 energy projects of regional or national importance.

OMB recommends \$13 million and 279 positions in FY 1977, a slight increase over current on-board strength. This would allow sufficient resources for FEA to concentrate on eliminating unreasonable Federal, as well as state regulatory, barriers without creating too large an administrative bureaucracy. The project management program should be initiated by reprogramming existing FEA resources and limited to about half the number of projects proposed by FEA. Further increases cannot be justified for this new program until a more detailed implementation plan has been developed and the yet unproven concept has been evaluated more thoroughly.

Decision: Approve agency request \_\_\_\_\_  
 Approve OMB recommendation \_\_\_\_\_



### 3. Strategic petroleum storage

FEA requests \$1.0 billion in FY 1977 to fund the accelerated petroleum storage program (150 million barrels in three years; 550 million total in seven years) required by the omnibus energy bill about to emerge from conference. Total cost for the seven-year program would be \$8.7 billion, with \$711 million to be requested as a supplemental in FY 1976. FEA agrees that a program of this size and timing requires a national commitment to a rapid storage program, with limited chance of meeting its targets, but maintains that the commitment is warranted.

In the absence of an adequate program justification and implementation plan, OMB recommends only \$100 million in FY 1977. This would be adequate to carry out limited site acquisition and advanced engineering and design consistent with a normally-paced program in accordance with existing law and sound management practices. OMB believes that a rapid program involves significant additional costs and environmental risks and, even if it is successful, benefits the Nation little more than a somewhat slower one.

Decision: Approve agency request \_\_\_\_\_  
 Approve OMB recommendation \_\_\_\_\_

### 4. Energy conservation initiatives

FEA requests \$67 million in FY 1977 to continue a series of special conservation initiatives undertaken this fiscal year: industrial conservation seminars, utility rate demonstration projects, mass media advertising, school curriculum development, and Project Conserve (for homeowners).

OMB recommends no further funding for these initiatives, consistent with an earlier budget decision that they would constitute a one-year program only. Additional funds for Project Conserve could be allowed in the future, but only after evaluation of the ongoing program.

Senate recently has approved only \$32 million of \$65 million requested in FY 1976 for these initiatives, deleting all funds for advertising and substantially reducing funds for the other initiatives. House has yet to act.

Decision: Approve agency request \_\_\_\_\_  
 Approve OMB recommendation \_\_\_\_\_



## 5. Federal Energy Management Program

FEA proposes Presidential commitment to an overall 10-year energy saving goal of 25%, to be supported by multiple, quantitative, goals for nine new initiatives in a Multi-Year Action Plan to cut Federal energy use. This would lock the Administration into as yet uncertain funding levels for the nine initiatives regardless of budget constraints and the cost-effectiveness of specific projects that would contribute to achieving the goals over the 10-year period. Preliminary estimates suggest government-wide program costs of \$300 million for FY 1977, cumulating to \$4 billion through FY 1985.

OMB recommends the President announce a single, aggregate, credible, government-wide goal for next year (e.g., 20% energy savings over 1973 base), directing the agencies to implement the most cost-effective projects among the new initiatives by re-programming funds within approved FY 1976 and FY 1977 budget levels. No detailed commitment to 10-year goals, overall or for individual initiatives, or to funding levels would be involved.

Decision: Approve agency request \_\_\_\_\_  
 Approve OMB recommendation \_\_\_\_\_

## 6. Agency employment ceiling

FEA requests an increase over FY 1976 ceiling (3200) of 464 full-time permanent employees in FY 1977 for a total of 3664. FEA maintains this increase is necessary in FY 1977 despite the fact that it assumes a December, 1975 expiration of the Emergency Petroleum Allocation Act (EPAA). Major reasons cited for the increase are an extended two-year "wrap-up" of its regulatory compliance program (to December 31, 1977), expanded activities to speed up development of energy resources at the project level, and continuation of special energy conservation initiatives undertaken in FY 1976. In addition, corresponding increases are sought in support staff.

OMB recommends a reduction of 1496 positions from the FY 1976 ceiling, for a total employment level of 1704. Over 1000 of the recommended decrease reflects OMB's view that, given a December, 1975 expiration of EPAA, the regulatory compliance program can be terminated by February 28, 1977, earlier than FEA has assumed (Issue #1). Moreover, the agency has the capability to shift



positions within its existing employment base to accommodate new and expanded initiatives in energy resource development (Issue #2). Finally, fewer positions will be required in the energy conservation area since the FY 1976 series of new conservation initiatives would not be continued (Issue #4).

Decision: Approve agency request \_\_\_\_\_  
Approve OMB recommendation \_\_\_\_\_



TAB A

Federal Energy Administration  
1977 Budget

Summary Data

	(In millions)		Employment, end-of-year	
	Budget authority	Outlays	Full-time Permanent	Total
1975 actual .....	130.0	120.7	2,978	3,245
1976 February budget (as amended) .....	260.1	265.7	3,200	3,200
agency request .....	260.1	265.7	3,200	3,200
OMB recommendation .....	260.1	265.7	3,200	3,200
OMB employment ceiling .....	xx	xx	3,200	3,200
TQ February budget (as amended) .....	50.8	61.9	xxx	xxx
OMB recommendation .....	50.8	53.6	xxx	xxx
1977 planning target .....	166.9	199.8	1,715	1,715
reduction target .....	xx	182.0	xxx	xxx
agency request .....	351.3	373.1	3,664	3,664
OMB recommendation .....	152.4	182.0	1,704	1,704
1978 OMB estimate .....	130.7	135.0	1,649	1,649



Federal Energy Administration  
 1977 Budget  
 Legislative Program

	(\$ in thousands)		Employment, end-of-year <sup>1/</sup>	
	<u>Budget authority</u>	<u>Outlays</u>	<u>Full-time Permanent</u>	<u>Total</u>
Strategic Petroleum Storage				
Agency request	1,048,990	963,674	65	65
OMB recom.	100,000	36,000	0	0

Proposed legislation for this program is included in H.R. 7014, the "Omnibus Energy Policy & Conservation Act of 1975." FEA's request anticipates enactment of this legislation. In the absence of an adequate program justification and implementation plan, the OMB recommendation is to include only \$100 million in budget authority in the FY 1977 budget. (See Issue #3.)

<sup>1/</sup> Included in the 1977 employment request of 3664 FTP and total positions in Summary Data table on previous page.



TAB B

Federal Energy Administration  
1977 Budget  
Summary and Background Information

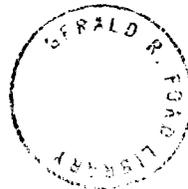
A. 1977 Budget Summary (Budget Authority in Mil. \$)

	<u>1976</u>	% of Total <u>1976</u>	FEA Request <u>1977</u>	OMB Rec. <u>1977</u>	
Regulatory Program	32.1	12	36.2	16.4	Issue #1
Energy Resource Development	15.5	6	34.4	13.4	Issue #2
Energy Conservation and Environment	141.7	54	173.9	66.3	Issue #4
Energy Policy and Analysis	25.7	10	35.4	28.5	
International Energy Affairs	1.6	1	2.9	1.4	
Executive Direction and Administration	<u>43.5</u>	<u>17</u>	<u>68.4</u>	<u>26.3</u>	
Sub-total	260.0	100	351.3	152.4	
Legislative Program - Strategic Petroleum Storage	<u>0.0</u>	<u>0</u>	<u>1,049.0</u>	<u>100.0</u>	Issue #3
Total	260.0	100	1,400.3	252.4	



B. Summary of Issues

	<u>1977</u>	
	<u>BA</u>	<u>O</u>
	(\$ Millions)	
1. Duration and field staffing level of wrap-up compliance program (audits of petroleum firms for violations of price and allocation regulations):		
<u>Agency Request</u> - extend program to December 31, 1977, peaking at 1286 and phasing down to 800 permanent positions by the end of FY 1977 .....	32	32
<u>OMB Recommendation</u> - extend program to February 28, 1977, peaking at 929 and decreasing to only 24 permanent positions at the end of FY 1977 .....	10	10
2. Energy resource development program:		
<u>Agency Request</u> - expand "project management" effort substantially in FY 1977 to cover 40 or more individual projects .....	34	30
<u>OMB Recommendation</u> - until this new FY 1976 program proves itself workable, allow funds and positions for only a slight increase over current level .....	13	13
3. Legislative proposal for strategic petroleum storage:		
<u>Agency Request</u> - provide funds for accelerated storage program required by omnibus energy bill now in conference .....	1,049	964
<u>OMB Recommendation</u> - in absence of adequate program justification and plan, include only \$100 million in budget .....	100	36



	1977	
	BA	0
	(\$ Millions)	
4. Special energy conservation initiatives:		
<u>Agency Request</u> - continue these initiatives, undertaken in FY 1976, in FY 1977 .....	67	75
<u>OMB Recommendation</u> - do not continue the initiatives, since they were originally intended as a one-year program only .....	0	30
5. Federal Energy Management Program		
<u>Agency Request</u> - commit Administration to multiple, quantitative, 10-year goals for 9 new initiatives to conserve energy in the Federal government, resulting in \$4 billion program over 10 years .....	(300) <sup>1/</sup>	(250) <sup>1/</sup>
<u>OMB Recommendation</u> - President should announce a single overall government goal for next year, allowing more flexibility in budgeting .....	0	0
6. Agency employment ceiling		
<u>Agency Request</u> - expand permanent employment from 3200 in FY 1976 to 3664 in FY 1977 .....	85	83
<u>OMB Recommendation</u> - reduce permanent employment to 1704 to reflect quicker phaseout of compliance program, and realistic program levels in energy conservation and energy resource development .....	48	47

<sup>1/</sup> these funds would be included in the budgets of the relevant agencies.



C. Agency Overview

The Federal Energy Office (FEO), predecessor of the Federal Energy Administration (FEA), was created shortly after the beginning of the Arab oil embargo in late 1973. The agency's principal mission was reflected in the FEO budget (later the FEA budget) for FY 1975 that was submitted to the Congress in January, 1974. 2710 (80%) of 3367 positions requested, and \$75M (60%) of the \$118M request for budget authority, were to implement the Emergency Petroleum Allocation Act (EPAA).

By the end of FY 1975, however, the nature of the FEA had been substantially transformed. The FEA Act of 1974 had strengthened the overall policy coordination and the information collection, analysis and dissemination roles that the agency had been developing. The Energy Supply and Environmental Coordination Act of 1974 had provided coal conversion authorities. The President's 1975 State of the Union Address and proposed omnibus energy bill (Energy Independence Act of 1975) sought broader authorities to deal with the energy situation. And FEA's amended FY 1976 budget (3200 positions and \$260.1M), though reflecting the then expected expiration of petroleum allocation and price control activities on November 15, 1975, provided for significant increases in other areas in order to carry out the evolving mission: to seek and implement energy conservation, energy resource development, and energy emergency preparedness authorities of the energy program proposed by the President.

D. FEA Budget Request

The FEA FY 1977 budget request of \$351.3M represents a 40% increase over the amended FY 1976 budget request of \$260.1. In addition, FEA has submitted a request of \$1.0B, pending authorizing legislation for strategic petroleum storage. Expansions are proposed in all program areas despite the fact that (1) new legislative authorities have not yet been conferred upon the agency, and (2) the budget request assumes expiration of allocation authorities on December 15, 1975.

In regulatory programs, FEA requests higher staffing levels for a longer wrap-up compliance effort (audits and investigations of petroleum firms) than that allowed in the recent FY 1976 budget amendment.



In energy conservation, FEA requests the continuation and expansion of the special initiatives undertaken in FY 1976: industrial energy seminars, utility rate demonstration projects, energy conservation advertising, curriculum development for schools, and Project Conserve, a homeowner information program. In addition, a new initiative is proposed to assist state and local governments collect data and design "voluntary" conservation programs.

In energy resource development, FEA proposes a "project management" approach. Forty or more of the most critical energy projects from a national or regional standpoint would be targeted by FEA, and project teams made up of technical, financial, and economic experts would be assigned to expedite their development. FEA proposes drastic reorganization of resources within the Office of Energy Resource Development around this project team approach, and more than a doubling of staff size.

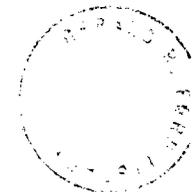
Finally, FEA has requested \$1.0B for the implementation of an accelerated strategic storage program in the event that H.R. 7014, the "Omnibus Energy Policy and Conservation Act of 1975", becomes law.

#### E. OMB Recommendation

As shown in the Summary Data Table, Tab A, the OMB recommendation is slightly below the planning ceiling, but significantly below the FY 1976 amended budget and FY 1977 request levels.

The OMB recommendation reflects four major constraints: (1) the tight fiscal situation for FY 1977; (2) the need to restrain FEA from building a large program base which would have to be expanded even further if and when Congress provides new authorities; (3) the Administration's basic reliance on market forces to solve the Nation's energy problems; and (4) the FEA, by the end of FY 1977, will be only one year from termination of its extended life as an agency.

Major cuts below the amended FY 1976 level have been made in the energy conservation area primarily by not allowing FEA to continue in FY 1977 the initiatives proposed in the FY 1976 budget. OMB's recommendation is consistent with the original premise on which the initiatives were proposed and approved--namely, that they would constitute a one-year program only, based primarily on the need for a large and visible conservation thrust to balance energy supply initiatives and thus allay criticism of the Administration for neglect in this area.



In energy resource development, OMB recommendation takes a cautious approach to the "project management" concept proposed by FEA. The recommendation would allow for a limited number of projects (perhaps 20) to be expedited on a "proof of concept" basis.

In regulatory programs, the OMB recommendation maintains the same assumption on which the FY 1976 budget amendment was based: a wrap-up compliance effort expiring on February 28, 1977, rather than extension through the end of FY 1977.

And in strategic storage, the OMB recommendation would defer action pending the enactment of legislation, and the development of an adequate, detailed program plan and budget justification by FEA. Subsequent budget action, if any, would be in the form of an amendment or supplemental to the FY 1977 budget.





1977 Budget  
Federal Energy Administration  
Summary of Recommended Program Reductions  
(\$ Millions)

	1976		TQ	1977			1978	
	0	FTP Employ.		0	BA	0	FTP Employ.	0
Current Base .....	263	3,200	54	264	267	3,500	267	3,500
Recommended level .....	<u>263</u>	<u>3,200</u>	<u>54</u>	<u>152</u>	<u>182</u>	<u>1,704</u>	<u>135</u>	<u>1,649</u>
Reduction .....	0	0	0	112	85	1,796	132	1,851

Program reductions (covered in Issues)

Terminate petroleum industry wrap-up compliance program by February 28, 1977 .....	-	-	-	14	14	905	20	905
Reprogram existing resources to carry out energy resource development activities, including "project management" program .....	-	-	-	2	2	47	2	47
No further funding for special one-time energy conservation initiatives started in FY 1976 .....	-	-	-	65	45	35	67	35

Program reductions (Other)

Terminate petroleum allocation activities December 15, 1975 ..	-	-	-	6	6	300	6	300
Reduce legal and direct administrative support to regulatory program, consistent with lower recommended level for compliance and allocation activities .....	-	-	-	3	3	128	5	150
Keep energy conservation program at realistic level .....	-	-	-	11	6	130	18	130
Reduce general administrative and support costs, consistent with above reductions .....	=	=	=	<u>11</u>	<u>9</u>	<u>251</u>	<u>14</u>	<u>284</u>
Total Reductions .....	0	0	0	112	85	1,796	132	1,851

TAB C

Issue Paper  
 Federal Energy Administration  
 1977 Budget  
 Issue #1: Petroleum Industry Compliance Program

Statement of Issue

What should be the duration and field staffing level of FEA's "wrap-up compliance program" if the Emergency Petroleum Allocation Act (EPAA) expires December 15, 1975?

Background

- FEA audits petroleum firms for possible violations of allocation and pricing regulations. Management problems in FEA have resulted in a backlog of cases. If the EPAA expires, audit activities would need to continue to wrap-up violations that have occurred.
- The basic issue between OMB and FEA is over the duration and staffing level of FEA's field compliance program.
- OMB staff believes that the program proposed in the President's FY 1976 budget, though reluctantly agreed to by the FEA, would be very effective. This program would have FY 1976 and FY 1977 field employment ceilings of 929 and 24 respectively, and would terminate on February 28, 1977.
- FEA proposes a program with a termination date of December 31, 1977, requiring FY 1976 and FY 1977 field employment ceilings of 1286 and 800 respectively.

Alternatives

	<u>Duration of wrap-up program</u>	<u>Staff-yrs. required</u>	<u>Permanent Positions (yr.-end)</u>	
			<u>1976</u>	<u>1977</u>
#1. FEA Request	To Dec. 31, 1977	2251	1286	800
#2. OMB Recom.	To Feb. 28, 1977	1226	929	24*

\* Compliance standby force

Analysis

Budget Authority/Outlays (\$ Millions)	1976 suppl.		1977		1978	
	BA	O	BA	O	BA	O
Alternative #1 (FEA req.)	4	4	32	32	2	2
Alternative #2 (OMB recom.)	0	0	10	10	1	1

- Alternative #1

- . FEA holds the view that this alternative provides for the broad audit program necessary to achieve credibility with the American public and the Congress, and to deter oil companies from taking advantage of consumers under future price control program (see Attachment A for data on audit coverage).
- . This alternative would require raising the current FY 1976 permanent position ceiling (end-year) for the field compliance program from 929 to 1286. In addition, 800 compliance personnel, plus an estimated 300 support personnel, would still be on the FEA rolls at the end of FY 1977.

- Alternative #2

- . Targets FEA auditing on "big oil" in the refining, producing, and natural gas liquids sectors, or that part of the industry most subject to public skepticism--those responsible for over 90% of crude oil production and refinery output. But also provides for audit sampling in other sectors of the industry (wholesalers, retailers, small producers), which are made up of a large number of small firms and are less concentrated in nature.
- . Would hold field compliance employment at present FY 1976 ceiling of 929; and, by wrapping up on February 28, 1977, allows FEA to ease all but a standby force of compliance personnel (24) off the rolls before the end of FY 1977 (see Attachment B).



. In OMB's view, the increment in credibility gained by selecting Alternative #1 instead of Alternative #2 is so small that it cannot justify the additional cost. Also, the potential small increase in credibility must be weighed against the potential loss of credibility of Presidential efforts to hold down Federal employment in regulatory programs if FEA's resources are not seriously restrained in this area.

Agency request: Alternative #1.

OMB recommendation: Alternative #2.

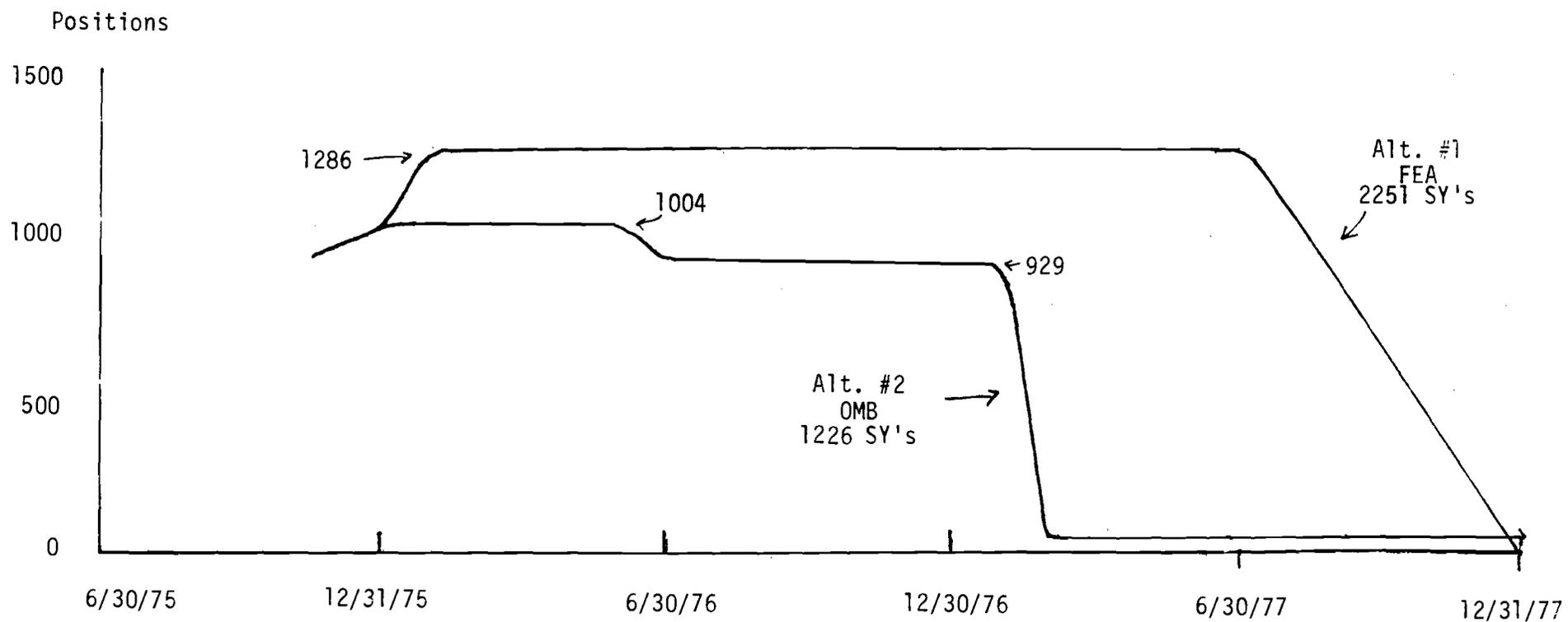


Comparison of Alternatives: Audit Coverage

	Universe	% of universe audited			Comment
		1976 Pres. Bud.	Alt. #1 (FEA)	Alt. #2 (OMB)	
Crude Producers	14,901	21%	79%	23%	- Nearly 90% of crude production is highly concentrated in 142 firms. OMB recom. allows audits of all these firms, plus 20% of the remaining small producers, thus covering over 90% of total production.
(major)	(21)	--	--	(100)	
(other large)	(121)	--	--	(100)	
(all other)	(14,759)	--	--	(20)	
Major Refiners	30	100	100	100	- OMB recom. would cover at least 90% of total refinery output (note: small refiners account for only 15% of output)
Small Refiners	110	20	100	40	
NGL Firms/Plants	123/709	28	100	38	- 23 largest firms account for 70% of production.
Wholesalers	28,286	15	30	22	- Alt. #2 covers all 1200 utility suppliers as per Zarb commitment to Sen. Kennedy, plus 16% of all other wholesalers.
(utility suppliers)	(1,200)	--	--	(100)	
Retailers	276,244	2	2	2	- Low priority area. Violation rate lower than expected (15%).



Issue #1  
Comparison of Alternatives: Compliance Program  
(SY's = Staff-years)



Issue Paper  
Federal Energy Administration  
1977 Budget  
Issue #2: Energy Resource Development Program



Statement of Issue

What should be the role and staffing level for FEA's energy resource development program in FY 1977?

Background

- In June, 1975, as the result of recommendations from the President's Labor-Management Committee to improve tax treatment of electric utilities and to attack problems regarding construction of new electric generating capacity, the Administration established a powerplant acceleration task force within FEA. The task force assigned several small teams to investigate the causes of electric utility construction delays at the project site level. A major new initiative in FEA's FY 1977 budget involves a massive reorganization and expansion of the Office of Energy Resource Development patterned after the powerplant task force model.
- Under its new Assistant Administrator, the activities of the Office would be redirected to go beyond assessing causes and attempt to concentrate on expediting specific projects necessary to the achievement of the resource development goals of the President's energy program. Specifically, project management teams would be created to expedite the development of about 40 energy projects that are critical from a national or regional standpoint. These teams would intervene in regulatory hearings in favor of energy development and seek to resolve complex financial, environmental, and technical impasses causing project delays. They would be supported by a large staff of specialists.
- As a result, FEA's FY 1977 staffing request for resource development (excluding staff for implementation of strategic petroleum storage) calls for considerably more than doubling of current staff.
- FEA's authorizing legislation provides limited authority to administratively "promote increased utilization of known energy resources using available technologies." FEA does not have legal authority to provide financial assistance or to require actions on the part of developers or regulators. However, by pressing for administrative solutions to project delays, FEA would, to a considerable degree, duplicate services already performed in the private sector by investment

bankers, lawyers, and engineers. Over the past two years, reorganizations and high employee turnover have impaired FEA's development of a strong, in-house expertise capable of effectively expediting specific energy projects. As a result, FEA has had little direct experience in solving specific problems of delay.

- FEA would not be the only Federal agency concerned about expediting energy projects. ERDA, Interior, and the Energy Independence Authority, as proposed, have major responsibilities to assure the Nation is moving to prevent future energy shortages.

*App Comm -*

<u>Alternatives</u>	<u>No. of Positions (FY 1977)</u>	<u>Change from FY 1976 Level of 326 Positions</u>	<u>Change from Current On-Board Strength of 222 Positions</u>
#1. Rapid program expansion (FEA Request)	556	+230	+334
#2. Keep at 1976 authorized level	326	+ 0	+104
#3. Reduce below 1976 authorized level (OMB Recommendation)	279	- 47	+ 57



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Analysis

<u>Budget Authority/Outlays (\$ Millions)</u>	<u>1976</u>		<u>1977</u>		<u>1978</u>	
	<u>BA</u>	<u>O</u>	<u>BA</u>	<u>O</u>	<u>BA</u>	<u>O</u>
Alternative #1	15	14	34	30	34	34
Alternative #2	15	14	15	15	15	15
Alternative #3	15	14	13	13	13	13

- The rapid expansion alternative (#1) proposed by FEA would require an addition of 334 positions to the current on-board strength of the Office of Energy Resource Development at a cost of \$34 million. The option understates the Office's capability to use its existing personnel to move to a project management orientation and builds in an unnecessarily large staff of specialists to support the project teams.

- In view of fiscal constraints, lack of a detailed implementation plan, limited legal authority, and lack of any tangible results over the past two years, we believe that any expansion in the energy resource development staff above the authorized FY 1976 level is unwarranted.
- Alternative #3 reflects OMB's view that FEA's monitoring and expediting role is unproven and should be less ambitious than proposed. Some aspects of FEA's proposal are tantamount to providing direct assistance to private energy developers, which we believe would be inappropriate from a public policy standpoint and might lead to further Federal assistance in the form of subsidies. FEA should concentrate on breaking Federal bottlenecks, testifying in favor of energy resource development at State regulatory commission hearings, and on improving incentives for investment in regulated industries. Alternative #3 would constrain the growth of the staff specialist group and keep the number of energy projects to be expedited to a manageable number of about 20, allowing evaluation of the concept before any further expansion.

Agency Request: Alternative #1.

OMB Recommendation: Alternative #3.



Issue Paper  
Federal Energy Administration  
1977 Budget  
Issue #3: Strategic Petroleum Storage

Statement of Issue

Should the Federal government begin a crash petroleum storage program which would require (1) no less than 150 million barrels in storage in three years, and (2) approximately 550 million barrels in seven years?

Background

- Administration's energy emergency preparedness strategy has consisted of flexible storage program (10 to 15 years, up to 1 billion barrels) funded mainly by Naval Petroleum Reserve proceeds, and authority to ration and allocate petroleum.
- Administration (at OMB's insistence) has consistently opposed mandatory, unreasonably short time frame for storage to avoid inefficient program, and supported linking storage to NPR production, to cushion budget impact.
- The omnibus energy bill about to emerge from conference requires the program at issue. In anticipation of this legislation, FEA requests \$1 billion for strategic petroleum storage in FY 1977. Total cost for the seven-year program would be \$8.7 billion, with \$711 million to be requested as a supplemental in FY 1976.
- Storage is a major undertaking. At present FEA is proposing to begin this \$8.7 billion program with only preliminary site identification completed and without a convincing implementation plan or even draft environmental impact statement.
- Naval petroleum reserves yield only \$3 to 5 billion for storage in next seven years, assuming passage of current bills. Conference on NPR bills has not yet met; authorization of production is not assured.



## Alternatives

- #1. Assume crash petroleum storage program, provide FY 1977 contingency funds of \$1 billion, and approve FY 1976 Supplemental at appropriate level when submitted. (Agency request)
- #2. In the absence of adequate program justification and implementation plan, provide only \$100 million in the FY 1977 budget for later transmittal under proposed legislation. Continue to press for enactment of NPR bill with storage linkage.

## Analysis

- Estimates of the cost of an embargo range from \$10 to \$100 billion, with most estimates in the \$20 to \$30 billion range (neglecting distributional consequences and political and foreign policy costs). This justifies continued interest in flexible storage program on insurance grounds but fails to justify accelerated program proposed by FEA.
- Favoring some acceleration of the storage program is Senator Jackson's support for a more rapid program. Otherwise, factors are unchanged from a year ago where flexible strategy was adopted. Administration initiatives in the Middle East have bought us some time but situation remains volatile and unpredictable, with embargo a near certainty if hostilities break out.
- FEA's proposed accelerated program is extremely optimistic and does not appear feasible, based on current status of implementation planning. It fails to provide adequate environmental review (although the risks are high because of the use of salt domes and mines), involves significantly higher cost storage facilities than necessary, may require a new regulatory program, and may involve unproven technology.
- Proposed accelerated program is not linked to NPR production, which was to provide resources for storage and assure defense interests that NPR oil would not be squandered.
- FEA agrees that a program of this size and timing requires a national commitment to storage targets which we may not be able to meet. OMB is concerned that proceeding in this manner may jeopardize the entire program. A less hectic approach will avoid premature commitment to storage and provide comparable benefits in the 1980 time frame at lower risk and cost.

FEA Request: Alternative #1.

OMB Recommendation: Alternative #2.



Issue Paper  
Federal Energy Administration  
1977 Budget  
Issue #4: Energy Conservation

Statement of Issue

Should FEA's FY 1976 special energy conservation initiatives be continued in FY 1977?

Background

Recently, FEA transmitted a budget amendment to the Congress which included \$65 million for a one-year only program of special energy conservation initiatives:

- Industrial Conservation Seminars: a series of two-week seminars in different cities covering industrial and buildings conservation, and vanpooling.
- Utility Rate Demonstration Projects: demonstration projects on the energy conservation effects of different utility rate or pricing structures.
- Mass Media Advertising, and School Curriculum Development: programs to increase the American public's awareness of the need for energy conservation.
- Project Conserve: distribution of do-it-yourself guidebooks, and a limited number of computerized questionnaires to homeowners to assist them in installing energy conserving measures.

Alternatives

- #1. Continue the special conservation initiatives in FY 1977. (FEA Request)
- #2. Do not extend the initiatives in FY 1977. (OMB Recom.)



Analysis

Budget Authority/Outlays (\$ Millions)	1976		1977		1978	
	BA	O	BA	O	BA	O
Alternative #1 (FEA Req.)	65	35	67	75	0	22
→ Alternative #2 (OMB Recom.)	65	35	0	30	0	0

- A basic premise of the FY 1976 budget amendment recently approved for the FEA was that the special conservation initiatives would constitute a one-year program only, based primarily on the need for a large and visible conservation thrust to balance energy supply initiatives being proposed by the Administration.
- FEA now believes it necessary to request continuation of the initiatives in order to maintain a high level of effort in encouraging energy conservation.
- OMB believes that continuation of these special initiatives in FY 1977 would be unjustified because:
  - . all of them are unproven as to effectiveness;
  - . adequate funds were provided in FY 1976 to complete the industrial conservation seminars program;
  - . FY 1976 funds will have already extended utility rate demonstration projects to 30 representative states; and
  - . rising energy prices provide adequate incentives to conserve energy in industry, businesses, and homes.

Agency Request: Alternative #1.

OMB Recommendation: Alternative #2.



Issue Paper  
Federal Energy Administration  
1977 Budget  
Issue #5: Federal Energy Management Program

Statement of Issue

Should the President be committed to a government-wide, 10-year, energy-saving goal of 25%, supported by highly specific goals for 9 new initiatives in the Federal Energy Management Program (FEMP) when it cannot be known now whether the individual projects that would add up to those goals can be justified and approved through the budget process?

Background

- FEA has circulated for agency review a draft Presidential statement on the "Multi-Year Action Plan" of the Federal Energy Management Program. The statement would announce 9 new FEMP initiatives and goals that would be undertaken to increase the efficiency of energy use by the Federal government in response to a Presidential directive.
- FEA estimates that FY 1977 costs government-wide would total nearly \$300 million, with costs through FY 1985 totalling \$4 billion. The goals of the program and preliminary FEA cost estimates of individual initiatives are shown in the attachment.

Alternatives

- #1. Commit the President publicly to specific, quantitative, 10-year, energy-saving goals for the Multi-Year Action Plan of the Federal Energy Management Program. This might result in incremental funding requests, government-wide, as shown in the attachment. (FEA position)
- #2. Announce only a single, aggregate, credible FEMP goal for the next year (e.g., energy consumption 20% below base year of 1973). Agencies would be directed by the President to consider the new initiatives and to propose the most cost-effective ones to be funded entirely by reprogramming within approved FY 1976 and FY 1977 budget levels. (OMB recommendation)



## Analysis

### - Alternative #1

- . FEA holds that a highly specific and public commitment by the President would dramatically emphasize the President's serious concern for energy conservation and insure tangible results for the program over a 10-year period.
- . OMB believes that the Presidential announcement would be acceptable only if the specific, quantitative goals and the program as a whole could be costed out and justified within the President's policy of fiscal restraint. We do not believe this to be feasible at this time.
- . Presidentially-announced energy-saving goals which are detailed, quantitative and long-range would lock the Administration into funding levels for the new energy-saving initiatives regardless of budget constraints and the cost-effectiveness of specific projects. Moreover, OMB questions the assumptions underlying the 10-year projections upon which the program is based as well as the effectiveness of some of the individual initiatives such as solar energy for buildings.
- . Incremental funding, at least for FY 1977 if not FY 1976, would give agencies substantial incentive to move ahead with the program quickly but would create agency pressures for sizeable funding requests.

### - Alternative #2

- . Protects Presidential credibility with respect to commitments.
- . Respects the integrity of the program and budget review process.
- . Eases additional budget pressures in a period of severe fiscal restraint.

FEA Request: Alternative #1.

OMB Recommendation: Alternative #2.



Multi-Year Action Plan Costs

Federal Energy Management Program

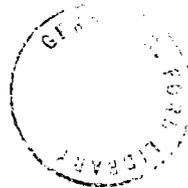
<u>Initiative</u>	<u>Proposed energy saving goal</u>	<u>Est. Funds Required by Fiscal Year</u> <u>(\$ Millions)</u>			
		<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>Total thru 1985</u>
I. Aircraft/Ship Operations	Make optimum use of simulators and other capital equipment to save energy				
DOD				(NOT AVAILABLE)	
Civil Agencies		0.4	1.2	1.4	3.9
II. New Buildings Standards	Minimum 50% reduction in energy consumption in new buildings	1.2	8.9	0	10.1
III. Buildings Retrofit	Reduce energy consumption in existing buildings by 25%				
DOD				(NOT AVAILABLE)	
Civil Agencies		5.0	100.1	514.0	2582.3
IV. Building Load Management	--	1.3	9.0	8.3	24.6
V. New Vehicle Efficiency	Achieve an average of 20MPG in sedan/station wagon fleet by 1980, and truck efficiency of 11MPG by 1985	2.1	2.7	3.3	13.3
VI. Energy Efficient Commuting	--			(POSTPONED FOR FURTHER STUDY)	
VII. Education and Motivation	--	1.7	2.5	2.3	13.9
VIII. Life Cycle Costing	--	2.1	4.4	5.0	11.5
IX. Solar Energy-Buildings	--	5.8	42.3	51.6	245.5



- Over -

<u>Initiative</u>	<u>Proposed energy saving goal</u>	Est. Funds Required by Fiscal Year (\$ Millions)			
		<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>Total thru 1985</u>
X. Natural Gas	Reduce Federal government use of natural gas by 50% by 1985	44.4	74.4	103.4	276.1
<u>Related Activities</u>					
A. Program Management (FEA)		1.4	2.5	2.9	19.2
B. Planning & Analysis (FEA)		2.1	2.9	2.8	17.1
C. New Initiative Implementation		<u>2.0</u>	<u>40.0</u>	<u>110.0</u>	<u>792.0</u>
TOTALS		69.4	290.8	805.8	4009.5

Note: Numbers may not add to totals exactly because of rounding.



Change: 1977 compared to:

1976  
Current Ceiling  
FTP

Alt. #1 (Agency req.)

+ 464

Alt. #2 (OMB Rec.)

-1496

- FEA has been transformed from a predominantly regulatory agency to one whose primary concern is policy planning. In assessing FEA's FY 1977 request for large employment increases in non-regulatory programs, a prime question arises: To what extent are the new or expanded initiatives justified on a cost-benefit basis and reasonably certain to have a significant impact? In many FEA programs, evidence of substantial, positive impact has yet to be evaluated. For example, in resource development and energy conservation programs, OMB is skeptical about how much tangible progress the agency can make in convincing private parties, environmental intervenors, or state regulatory authorities to expedite development of energy projects or to adopt new conservation methods. We expect private companies will continue to make such decisions based on internal cost and investment criteria, not so much on the basis of outside advice or persuasion from the Government.
- OMB recommends a reduction of 1496 positions from the FY 1976 ceiling for a total employment level of 1704. Over 1000 of the recommended decrease reflects our view that, given a December, 1975 expiration of EPAA, the regulatory compliance program can be terminated February 28, 1977, earlier than FEA has assumed (Issue #1). Moreover, FEA has the capability to shift positions within its existing employment base to accommodate new and expanded initiatives in energy resource development (Issue #2). Finally, fewer personnel will be required in the energy conservation area since the FY 1976 series of new conservation initiatives would not be continued. (Issue #4)

Agency request: Alternative #1.

OMB recommendation: Alternative #2.



Issue Paper  
 Federal Energy Administration  
 1977 Budget  
 Issue #6: Agency Employment Totals

Statement of Issue

What is the appropriate employment level for FEA by the end of FY 1977?

Background

- FEA's 1975 base employment level was 3245 full-time permanent positions (FTP's). The current 1976 ceiling is 3200. FEA has requested an additional 464 positions in 1977 for an extended two-year "wrap-up" of its regulatory compliance program (to December 31, 1977), expanded activities to speed up development of energy resources at the project level, and continuation of special energy conservation initiatives undertaken in 1976. Corresponding increases have been requested in policy analysis and in executive direction and administration to support these programs.

Alternatives

- #1. Allow increased employment level sufficient to support new and expanded energy initiatives. (Agency request: 3664 positions)
- #2. Reduce agency employment in accord with a December, 1975 expiration of EPAA and FEA's capacity to reprogram personnel resources within its employment base (OMB rec.: 1704 positions)

Analysis

<u>End-of-year employment</u>	<u>1975 FTP</u>	<u>1976 Current Ceiling FTP</u>	<u>1977 FTP</u>
Alt. #1 (Agency req.)	3,245	3,200	3,664
Alt. #2 (OMB rec.)	3,245	3,200	1,704



EMPLOYMENT SUMMARY  
(Positions)

	1975	1976		1977		
	<u>Actual</u>	<u>Ceiling</u>	<u>Current</u>	<u>On-Bd.</u>	<u>FEA Req.</u>	<u>OMB Recom.</u>
HEADQUARTERS						
Regulatory Programs (Compliance)	298 (59)	196 (110)	303 (75)		185 (70)	88 (20)
Energy Resource Development	227	256	212		470	231
Energy Conservation & Environment	196	216	200		290	200
Policy & Analysis	401	400	386		454	370
International Energy Affairs	41	42	45		54	30
Administrator's Office	30	32	41		33	30
Management & Administration	293	300	291		318	197
General Counsel	92	90	86		97	72
Public Affairs	134	117	114		142	92
Congressional Affairs	46	43	43		46	40
Intergov., Regional, & Spec. Prog.	36	33	35		40	30
Private Grievances & Redress	51	41	47		64	25
Subtotal -- Headquarters	1,845	1,766	1,803		2,193	1,405
REGIONAL OFFICES						
Regulatory Programs (Compliance)	934 (718)	929 (929)	1,112 (895)		800 (800)	24 (24)
Energy Resource Development	13	70	25		151	48
Energy Conservation & Environment	36	100	53		103	28
Administrators	40	40	40		40	40
Management & Administration		136	221		136	80
General Counsel		62	50		88	38
Public Affairs	356	10	10		24	8
Congressional Affairs		10	10		10	5
Intergov., Regional, & Spec. Prog.		64	52		75	15
Private Grievances & Redress	21	13	29		44	13
Subtotal -- Regional Offices	1,400	1,434	1,602		1,471	299
GRAND TOTAL -- FEA	3,245	3,200	3,405		3,664	1,704



ERDA

1977 Presidential Review  
 Energy Research and Development Administration  
 Table of Contents

- TAB A Summary tabulation of the 1977 Budget amounts requested and recommended and Background/Strategy paper.
- TAB B Summary of the principal budget decisions reflected in the OMB recommendation.
- TAB C Issue Papers

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	<u>1977</u>	<u>1978</u>
1. Solar Energy R&D.....	- 76	-193
2. Conservation R&D.....	- 74	-167
3. Nuclear Fuel Reprocessing.....	- 39	- 90
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Energy Research and Development Administration  
1977

Summary Data

	(In millions)		<u>Employment, end-of-year</u>	
	<u>Budget Authority</u>	<u>Outlays</u>	<u>Full-time Permanent</u>	<u>Total</u>
1975 actual.....	3588	3146	7458	7974
1976 February budget				
as amended.....	4592	4089	8052	8592
enacted.....	*	*	xxxx	xxxx
OMB recommendation 1/.....	7694	4089	8245	8875
OMB employment ceiling....	xxxx	xxxx	8052	8592
TQ February budget				
as amended.....	1271	1177	8052	8592
enacted.....	*	*	xxxx	xxxx
OMB recommendation.....	1271	1177	8245	8875
1977 planning target.....	5490	5070	xxxx	xxxx
original agency request...	7570	6222	9092	9903
reduction target.....	N/A	5290	xxxx	xxxx
revised agency request....	6948	5797	8659	9470
OMB recommendation.....	5927	5183	8425	9149
1978 OMB estimate.....	5621	5499	8425	9149

\* not enacted as of 11/22/75

1/ \$2500 million is borrowing authority for the synthetic fuels commercial demonstration program's loan and price guarantee incentives.



FY 1977 Budget

Energy Research and Development Administration

Background/Strategy Paper

Background

- In response to the initial FY 1977 planning ceiling of \$5.1 billion in outlays, ERDA originally submitted a budget request of \$6.2 billion (\$1.1 billion over ceiling and \$2.1 billion over FY 1976).
- In the context of the review of agency ceilings to meet the \$395 billion target for FY 1977, ERDA's ceiling was increased to a revised total of \$5.3 billion in order to provide for additional requirements in the nuclear fuel cycle not included in the initial ceiling.
- In response to the revised ceiling, ERDA reduced its FY 1977 request from \$6.2 billion to \$5.8 billion. Although ERDA identified actions which could be taken to reach the \$5.3 billion revised ceiling, ERDA strongly recommended against going below the \$5.8 billion level. ERDA maintains that further reductions would require a curtailment of high priority efforts essential to the nation's energy independence and national security.

Summary of ERDA and OMB Recommendations

- The following table compares ERDA's revised FY 1977 budget request with the OMB recommended level by major program category (outlays - \$M):

	FY 1975	FY 1976	FY 1977		
			ERDA Req.	OMB Rec.	Diff.
Direct Energy R&D	(1012)	(1417)	(2308)	(1896)	(-412)
Non-nuclear.....	207	514	872	648	-224
Nuclear.....	805	903	1436	1248	-188
Supporting energy R&D (e.g. environmental and materials research.....	317	363	425	397	- 28
Production of enriched uranium (including revenues).....	- 27	299	623	601	- 22
Defense-related programs.....	1501	1647	1924	1790	-134
All other.....	343	363	517	499	- 18
Total outlays.....	3146	4089	5797	5183	-614





- Energy R&D - ERDA's FY 1977 budget request reflects the ERDA strategy of accelerating R&D on all potential energy technologies. OMB believes that ERDA should concentrate its major budgetary resources on technologies with high potential payoff (i.e. the breeder nuclear reactor and R&D on fossil fuels) and spend less on programs which will provide relatively smaller energy contributions by the year 2000 (i.e. solar, geothermal, and energy conservation). (See the last section of this paper and Issues 1 and 2 for additional analysis.)
- Supporting energy R&D - ERDA requests a 17% increase for environmental effects research and supporting physical research. OMB believes that these programs can be held to a 9% increase considering the substantial funding increases provided in recent years.
- Production of enriched uranium - In order to provide a stockpile of enriched uranium large enough to backstop the entry of private industry, ERDA supports continuing the previously planned expansion of production at the existing ERDA uranium enrichment facilities. OMB agrees, but also recommends an 8% increase in the price charged by ERDA in order to recover increased production costs.
- Defense-related programs - ERDA requests a significant increase in the level of activity on weapons R&D and underground testing, as well as substantial pricing increases in weapons production, weapons materials production, and naval propulsion reactor R&D. OMB recommends continuation of the level of activity approved by you in the recent FY 1976 budget amendment for nuclear weapons R&D and testing and tighter pricing for other defense-related programs (e.g. assume 7.5%, vice 12% price escalation).
- All other - OMB recommends reductions in ERDA's requests for additional Government personnel, upgrading of Government-owned facilities, and a high energy physics construction project.

#### Overall OMB Assessment

- Although OMB agrees that ERDA's energy and defense-related programs should have relatively high priority, OMB believes that it is time for ERDA to become more selective in setting priorities and more disciplined in its approach to the budget.
- OMB believes that the 27% increase over FY 1976 outlays (65% over FY 1975) provided by the FY 1977 OMB recommendation should be sufficient for ERDA's highest priority programs and is adequate to support the Administration's commitments to national security; more nuclear power from present commercial light water reactors; the privatization of uranium enrichment; a strengthened national energy R&D effort, (as further described in the section that follows); and the commercialization of synthetic fuels.

### Strategy for ERDA's Energy R&D Program

- The basis for the major difference between ERDA and OMB on the overall level and distribution of energy R&D funds for FY 1977 stems from a disagreement concerning ERDA's long-term energy R&D strategy.
- As required by statute, ERDA published last June a comprehensive national energy research, development and demonstration plan. This plan incorporated ERDA's strategy that "all the national energy technology goals must be pursued together." ERDA's FY 1977 budget request reflects this overall strategy by accelerating development and demonstration of technologies across and within all major energy R&D areas including nuclear, coal, conservation, solar and geothermal.
- While it is generally agreed that the potential of all promising technological approaches must be investigated, OMB does not agree with ERDA that commitments to costly Federal development and demonstration programs are justified in technology areas where:
  - the potential contribution to U.S. energy supplies is expected to be small (compared to total U.S. energy consumption); and
  - there is no clear evidence that the R&D would not be done in the private sector.
- In view of the fact that over 95% of all U.S. energy reserves (i.e., coal, oil shale and uranium) can be utilized by developing the breeder nuclear reactor, by improved direct combustion of coal, and by developing synthetic fuels technologies, OMB believes that considerably less budget emphasis should be given to further acceleration of programs in solar and geothermal energy and in conservation R&D programs which will provide relatively smaller energy contributions even by the year 2000.
- It should be noted that, politically, there are strong Congressional pressures for excessive budgetary increases for the more exotic technologies (e.g., solar, geothermal) and for conservation R&D. This Congressional interest arises from perceptions:
  - that the exotic technologies are more environmentally desirable (even though this is not generally the case);
  - that large energy companies may benefit more from nuclear and synthetic fuels development, whereas small companies would benefit from development of the more exotic technologies (which require relatively lower capital investments in R&D projects); and



- that somehow the consumer will benefit more directly from Federal R&D on conservation, (e.g., better insulation) than on R&D to increase usable energy supplies (even though there are substantial incentives in the private sector to conduct conservation R&D).
- ERDA is tending to respond to Congressional pressures and has not, to date, conducted sufficient critical analyses that would result in establishing program priorities to counter these Congressional pressures.
- The key issue for your consideration in examining the specific issues that follow is whether ERDA's R&D strategy should be
  - to pursue an accelerated energy R&D program across and within all technological areas (as Dr. Seamans is recommending) or
  - to pursue a more selective strategy of concentrating heavily on the high payoff technologies in nuclear and fossil fuels and continuing more limited efforts to explore technological approaches which are now considered to have lower potential in contributing to energy supplies (as OMB is recommending).
- The issues which follow on solar and conservation R&D typify the differences between OMB and ERDA on overall energy R&D program strategy.
- The net result of the OMB strategy - with necessary increases in certain nuclearpower programs - is reflected in the following table:

Direct ERDA Energy R&D Funding  
Outlays (\$ millions)

<u>Program Area</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	
			<u>Agency Req.</u>	<u>OMB Rec.</u>
Nuclear				
Nuclear Fission:	533	524	748	671
(breeder reactor)	(462)	(429)	(585)	(575)
(other fission)	( 76)	( 95)	(163)	( 96)
Nuclear Fusion	151	230	334	302
Non-nuclear				
Fossil	148	352	499	439
Other (e.g. solar geothermal, con- servation)	<u>175</u>	<u>311</u>	<u>727</u>	<u>484</u>
Total	<u>1012</u>	<u>1417</u>	<u>2308</u>	<u>1896</u>
% Nuclear	<u>68%</u>	<u>53%</u>	<u>35%</u>	<u>61%</u>

- As noted above, the OMB strategy from an outlays standpoint results in increased emphasis on nuclear over non-nuclear programs. The "nuclear bias" that is sometimes perceived in Federal R&D program is, however, dispelled when one takes into account both Federal and private energy R&D expenditures.
  - During the 1974-1981 period, the non-nuclear industry's R&D investments are expected to total over \$20 billion. While about one-fourth of this is expected in oil and gas R&D, where there is relatively little Federal funding, the balance of anticipated private investment will depend greatly on Federal R&D assistance and incentives programs. These programs involve loan guarantees, price guarantees, and construction grants for synthetic fuels and the cost-shared R&D efforts.
  - During the same 1974-1981 period, the nuclear industry's R&D investments are expected to be about \$2 billion. Private sector R&D is expected to be much smaller in nuclear than non-nuclear technologies because of: the long-term nature of the potential payoff; the higher technical risks; the massive size of the investment required; regulatory uncertainties; and the traditional role of the Government in nuclear technology. It is likely, however, that there may be larger industry investments in nuclear R&D and demonstrations in the period beyond 1981 in such areas as the fast breeder reactor.
  - Overall it appears, therefore, that the national energy R&D investment does not contain nuclear bias, as illustrated in the following table.

National Energy R&D Funding 1974-1981  
(\$ in billions)

	<u>Federal</u>	<u>Private</u>	<u>Total</u>
Non-nuclear	7.2	21.1	28.3
Fossil	( 4.2)	(15.4)	(19.6)
Other	( 3.0)	( 5.7)	( 8.7)
Nuclear	<u>11.4</u>	<u>2.3</u>	<u>13.7</u>
Total	<u>18.6</u>	<u>23.4</u>	<u>42.0</u>



Tab B

1977 Budget  
 Energy Research and Development Administration  
 Summary of Principal Budget Decisions

	<u>1976</u> <u>0</u>	<u>TQ</u> <u>0</u>	<u>1977</u> <u>BA</u> <u>0</u>	<u>1978</u> <u>0</u>
<u>Funding Summary (\$M)</u>				
Revised agency request.....	4089	1177	6948 5797	6800
Recommended level.....	<u>4089</u>	<u>1177</u>	<u>5927 5183</u>	<u>5499</u>
Reduction.....	--	--	1021 614	1301

	<u>1976</u> <u>0</u>	<u>TQ</u> <u>0</u>	<u>1977</u> <u>BA</u> <u>0</u>	<u>1978</u> <u>0</u>
<u>Personnel Summary (FTP)</u> <sup>1/</sup>				
Revised agency request.....	8557	8557	8659	9092
Recommended level.....	<u>8245</u>	<u>8245</u>	<u>8425</u>	<u>8425</u>
Reduction.....	312	312	234	667

<sup>1/</sup> Number of full-time permanent employees

This section provides a summary discussion of the principal decisions for the FY 1977 ERDA budget (except for the four issues attached at Tab C).

	<u>1976</u> <u>0</u>	<u>TQ</u> <u>0</u>	<u>1977</u> <u>BA</u> <u>0</u>	<u>1978</u> <u>0</u>
<u>Fossil Energy</u>				
Revised agency request.....	352	67	601 499	725
Recommended level	352	67	473 439	563
Reduction.....	--	--	128 60	162

ERDA has requested major increases in its petroleum and natural gas enhanced recovery demonstration program, in its coal gasification and liquefaction demonstration plant program, and in research on in-situ coal and oil shale gasification technologies. The OMB recommendation would (a) delay any new oil and gas enhanced recovery demonstration projects until a definitive program plan has been developed by ERDA; (b) delay for one year a proposed coal gasification pilot plant to manufacture hydrogen (an intermediate step in converting coal to a clean fuel) by requiring a re-evaluation of the project and private sector involvement; and (c) delay design efforts on four coal liquefaction and gasification demonstration plants in order to improve coordination with the new Synthetic Fuels Commercial Demonstration Program. OMB agrees to an expanded effort on in-situ gasification of oil shale but restricted research on the less promising coal gasification processes.



The long-term technological options that ERDA is developing are complemented by the efforts of the Bureau of Mines and EPA which are expected to have nearer-term benefits. The Bureau of Mines has a \$60 million (outlays) coal mining R&D program, and EPA has a \$75 million research program on energy pollutant control technologies (particularly flue-gas desulfurization).

<u>Geothermal Energy</u>	<u>1976</u>	<u>TQ</u>	<u>1977</u>		<u>1978</u>
	<u>0</u>	<u>0</u>	<u>BA</u>	<u>0</u>	<u>0</u>
Revised agency request.....	32	4	70	56	157
Recommended level.....	<u>32</u>	<u>4</u>	<u>44</u>	<u>41</u>	<u>45</u>
Reduction.....	--	-	<u>26</u>	<u>15</u>	<u>112</u>

The ERDA request calls for rapid acceleration in the development of geothermal energy technology, with particular emphasis on that development leading to demonstration of technology for the more accessible, but much less abundant, hydrothermal resources. These resources include, for example, the hot brines found in Southern California's Imperial Valley. OMB recommends an accelerated development of geothermal technology, but without costly demonstrations of near-term technology such as hydrothermal, because of its low potential as a resource. Within funds recommended by OMB, greater emphasis can be given to the longer-term program of developing technologies for tapping the more abundant but less accessible geopressed and hot dry rock resources.

<u>Fusion Power</u>	<u>1976</u>	<u>TQ</u>	<u>1977</u>		<u>1978</u>
	<u>0</u>	<u>0</u>	<u>BA</u>	<u>0</u>	<u>0</u>
Revised agency request.....	230	65	431	334	499
Recommended level.....	<u>230</u>	<u>65</u>	<u>384</u>	<u>302</u>	<u>400</u>
Reduction.....	--	--	<u>47</u>	<u>32</u>	<u>99</u>



ERDA requested an expansion of its two fusion power programs (magnetic confinement and laser fusion) which are directed toward determining scientific feasibility and which path ultimately to pursue. In the magnetic confinement program, ERDA would spend additional funds now required as the approved Tokamak Fusion Test Reactor (TFTR) begins construction and expand the effort to solve the engineering problems of future fusion power reactors. In the laser fusion program, ERDA has requested increases to permit development of a large laser facility (Los Alamos, N.M.) and a general expansion of its contractual support program. OMB recommends a slight slowdown in the pace of both fusion programs which have grown very rapidly in the past few years (the OMB FY 1977 recommendation would still allow a doubling of the FY 1975 outlay level).

	<u>1976</u>	<u>TQ</u>	<u>1977</u>		<u>1978</u>
	<u>0</u>	<u>0</u>	<u>BA</u>	<u>0</u>	<u>0</u>
<u>Fast Breeder Reactor R&amp;D</u>					
Revised agency request.....	429	117	677	585	655
Recommended level.....	<u>429</u>	<u>117</u>	<u>655</u>	<u>575</u>	<u>643</u>
Reduction.....	--	--	22	10	12

The ERDA request assigns high priority to increasing the momentum of the Liquid Metal Fast Breeder Reactor (LMFBR) development program by proceeding with the construction of the \$2 billion Clinch River Breeder Reactor (Tennessee) demonstration plant for completion by 1983. OMB agrees with the high priority of the LMFBR program which will assure the availability of nuclear power after reserves of moderately priced uranium ore for current light water reactors are exhausted late in this century. OMB has made only relatively minor reductions to supporting technology programs where the rate of growth over FY 1976 appears excessive.

	<u>1976</u>	<u>TQ</u>	<u>1977</u>		<u>1978</u>
	<u>0</u>	<u>0</u>	<u>BA</u>	<u>0</u>	<u>0</u>
<u>Other Fission Reactor R&amp;D</u>					
Revised agency request.....	95	42	188	163	142
Recommended level.....	<u>95</u>	<u>42</u>	<u>106</u>	<u>96</u>	<u>92</u>
Reduction.....	--	--	82	67	50

The ERDA request would (a) continue development of four advanced reactor concepts (primarily as possible backups to the LMFBR discussed above) and (b) initiate a major new Government program (\$300 million over 5 years) to improve the operating reliability and shorten the construction time for commercial light water reactors. The OMB recommendation would terminate support for the Molten Salt Breeder Reactor (which has serious technical uncertainties); require any funds for the proposed new initiative for light water reactors to be absorbed within the Conservation R&D budget; and reduce other lower priority programs.

	<u>1976</u>	<u>TQ</u>	<u>1977</u>		<u>1978</u>
	<u>0</u>	<u>0</u>	<u>BA</u>	<u>0</u>	<u>0</u>
<u>Commercial Radioactive Waste Management</u>					
Revised agency request.....	14	4	120	91	96
Recommended level.....	<u>14</u>	<u>4</u>	<u>85</u>	<u>66</u>	<u>70</u>
Reduction.....	--	-	35	25	26



The ERDA request would greatly accelerate the commercial radioactive waste management program by expanding research and development and by investigating many geologic formations as possible long-term storage sites for these wastes. Although the OMB recommendation would reduce the number of alternative geologic formations to be surveyed by ERDA, the large increase recommended by OMB will support a major new program initiative and accelerate the process for solving this crucial problem (which is the major public concern about nuclear power).

	<u>1976</u>	<u>TQ</u>	<u>1977</u>		<u>1978</u>
<u>Uranium Enrichment R&amp;D</u>	<u>0</u>	<u>0</u>	<u>BA</u>	<u>0</u>	<u>0</u>
Revised agency request.....	87	22	158	118	142
Recommended level.....	<u>87</u>	<u>22</u>	<u>137</u>	<u>105</u>	<u>117</u>
Reduction.....	--	--	21	13	25

The ERDA request would provide funds for (a) a major increase in R&D on gas centrifuges and construction of a \$100 million facility for testing and production of improved gas centrifuge machines and (b) the acceleration of development of a longer-range technology of using lasers to perform uranium enrichment. The OMB recommendation would provide for a \$50 million facility limited to testing centrifuges which the private sector plans to use in near-term commercial uranium enrichment ventures (as part of the Administration's proposal to transfer uranium enrichment into the private sector). OMB expects the private sector to fund the longer-term development and testing of more advanced machines. Because laser uranium enrichment (if successful) offers high potential benefits in the form of reduced costs and more efficient use of uranium fuel resources, OMB recommends approval of the revised ERDA request for this program.

	<u>1976</u>	<u>TQ</u>	<u>1977</u>		<u>1978</u>
<u>Production of Enriched Uranium</u>	<u>0</u>	<u>0</u>	<u>BA</u>	<u>0</u>	<u>0</u>
Revised agency request.....	891	243	1308	1203	1260
Related revenues.....	-592	- 95	- 580	-530	- 873
Recommended level.....	891	243	1336	1231	1260
Related revenues.....	<u>-592</u>	<u>- 95</u>	<u>- 630</u>	<u>-630</u>	<u>- 943</u>
Reduction.....	--	--	22	22	70

The ERDA request provides for a substantial increase in the production of enriched uranium and for continuation of the previously approved upgrading of the output of the current ERDA uranium enrichment production facilities. In order to produce a large enough stockpile to backstop private enrichment ventures, OMB recommends that the full amount of ERDA's original request be approved. To recover production cost increases, OMB recommends an 8% increase in the price charged to utilities by ERDA for enriching uranium, which will increase all nuclear electricity costs by less than two thirds of one percent.



	<u>1976</u>	<u>TQ</u>	<u>1977</u>		<u>1978</u>
<u>Biomedical and Environmental</u> <u>Effects</u>	<u>0</u>	<u>0</u>	<u>BA</u>	<u>0</u>	<u>0</u>
Revised agency request.....	178	46	224	210	245
Recommended level.....	<u>178</u>	<u>46</u>	<u>198</u>	<u>195</u>	<u>195</u>
Reduction.....	--	--	<u>26</u>	<u>15</u>	<u>50</u>

ERDA has requested a large expansion of its research program to determine the biomedical and environmental effects of effluents from nuclear and non-nuclear energy sources. The OMB recommendation allows a 32% expansion of non-nuclear effects research which has been underfunded in the past (e.g. environmental effects of pollutants from fossil power plants and synthetic fuels). The OMB recommendation holds level nuclear related effects research, which has been adequately funded in the past.

	<u>1976</u>	<u>TQ</u>	<u>1977</u>		<u>1978</u>
<u>Basic Energy Sciences</u>	<u>0</u>	<u>0</u>	<u>BA</u>	<u>0</u>	<u>0</u>
Revised agency request.....	185	50	238	215	266
Recommended level.....	<u>185</u>	<u>50</u>	<u>224</u>	<u>202</u>	<u>220</u>
Reduction.....	--	--	<u>14</u>	<u>13</u>	<u>46</u>



ERDA has requested a 16% increase for research on fundamental scientific and engineering problems that constrain the development of energy technologies such as fossil, geothermal, and solar (e.g. research on the effects of high temperature environments on materials and on corrosion processes). OMB believes that the change in emphasis to non-nuclear technologies can be partially accomplished by shifting funds from nuclear-related research which has been well funded in the past. OMB therefore recommends that the program be held to the FY 1976 level of activity adjusted for price increases and a fuel conversion facility project (from gas to coal).

	<u>1976</u>	<u>TQ</u>	<u>1977</u>		<u>1978</u>
<u>Weapons Production, Capital</u> <u>Equipment and Construction</u>	<u>0</u>	<u>0</u>	<u>BA</u>	<u>0</u>	<u>0</u>
Revised agency request.....	548	142	691	638	695
Recommended level.....	<u>548</u>	<u>142</u>	<u>644</u>	<u>603</u>	<u>637</u>
Reduction.....	--	--	<u>47</u>	<u>35</u>	<u>58</u>

ERDA has requested production levels responding to DOD guidance on required nuclear weapons stockpile deliveries and retirements. The level requested represents a minimum under discussion with DOD and is subject to possible upward revision. OMB recommends that the revised production levels requested by ERDA generally be approved with the addition of \$2 million to maintain the previous production schedule for one strategic system. However, OMB recommends reductions for production overhead, a Los Alamos computer (which can be leased), general purpose equipment and construction, and a lower level of price escalation.

	<u>1976</u>	<u>TQ</u>	<u>1977</u>		<u>1978</u>
<u>High Energy Physics</u>	<u>0</u>	<u>0</u>	<u>BA</u>	<u>0</u>	<u>0</u>
Revised agency request.....	178	44	241	201	239
Recommended level.....	<u>178</u>	<u>44</u>	<u>195</u>	<u>191</u>	<u>195</u>
Reduction.....	--	--	46	10	44

The revised ERDA request allows for continuation of the FY 1976 level of operations at ERDA's four major high energy physics accelerators taking into account increases in electric power and other operating costs and a new central computer for the Fermi Laboratory in Illinois. In addition, ERDA requests initiation of construction of a \$78 million facility project at the Stanford Linear Accelerator (the Positron-Electron Project which has been assigned high scientific priority). Because of the present fiscal climate OMB recommends deferring the new construction project and the new computer while allowing additional funds to maintain a constant level of operation for the existing accelerators.

	<u>1976</u>	<u>TQ</u>	<u>1977</u>		<u>1978</u>
<u>Program Support</u>	<u>0</u>	<u>0</u>	<u>BA</u>	<u>0</u>	<u>0</u>
Funding (\$M)					
Revised agency request.....	232	61	325	277	330
Recommended level.....	<u>232</u>	<u>61</u>	<u>249</u>	<u>248</u>	<u>254</u>
Reduction.....	--	--	76	29	76
Full-Time Permanent Employees					
Revised agency request.....	8557	8557	8659		9092
Recommended level.....	<u>8245</u>	<u>8245</u>	<u>8425</u>		<u>8425</u>
Reduction.....	312	312	234		667

Relative to the current FY 1976 employment ceiling, ERDA has requested a 7.5% increase in staffing for 1976/1977 to respond to a planned program growth of over 40% (outlays) and to strengthen overall agency management of its programs. ERDA has also requested \$54 million of budget authority to initiate a major program for upgrading Government-owned research laboratories and production facilities.

OMB recognizes that there has been a very large growth in ERDA program responsibilities (e.g. energy R&D, synthetic fuels commercialization) with relatively few additional personnel provided to direct a greatly expanded contractor effort. But, in view of the overall need for stringency in Government personnel, OMB recommends restricting the ERDA personnel increase to 2% in FY 1976 and a further 2% in FY 1977 which responds to only the most urgent workload and management problems. None of ERDA's general purpose facility upgrading program is recommended for approval because of the current fiscal situation.

<u>Peaceful Nuclear Explosives (PNE)</u>	<u>1976</u>	<u>TQ</u>	<u>1977</u>		<u>1978</u>
	<u>0</u>	<u>0</u>	<u>BA</u>	<u>0</u>	<u>0</u>
Revised agency request.....	1	-	4	3	3
Recommended level.....	<u>1</u>	<u>-</u>	<u>1</u>	<u>1</u>	<u>1</u>
Reduction.....	<u>-</u>	<u>-</u>	<u>3</u>	<u>2</u>	<u>2</u>

ERDA has requested funds to (a) continue evaluation of the Rio Blanco gas stimulation PNE test (\$1.3M) and (b) initiate a new program for use of PNE's in radioactive waste disposal and for research on physical and environmental effects of PNE's (\$1.7M). OMB recommends no more funds for Rio Blanco because the most important evaluations have been completed and because the use of this technology appears very unlikely because of public opposition and economic problems. OMB recommends \$1M for radioactive waste management and for continued research. OMB also recommends this program be funded under control technology so that it can compete for future funding with other waste disposal alternatives.



Tab C

Issue Paper  
Energy Research and Development Administration  
1977 Budget  
Issue #1: Solar Energy

Statement of Issue

Should expansion in ERDA's solar program be limited to the highest potential options?

Background

The ERDA solar program is largely the result of two acts passed by the 93rd Congress, the Solar Energy Research, Development, and Demonstration, and the Solar Heating and Cooling Demonstration Act of 1974. These acts authorize a program of research, development, and demonstration to provide the option of utilizing solar energy as a viable contributor to the Nation's future energy needs.

Technology for converting the sun's energy into usable forms may be grouped into three categories: (1) direct thermal applications, involving the collection of sunlight through thermal collectors for uses such as heating and cooling of buildings, (2) solar electric applications, in which energy from the sun is transformed into electricity, and (3) fuels from biomass, involving the production of fuels from organic material, such as the production of methane from animal wastes.

ERDA has requested \$199 million (BA) for the FY 1977 solar energy program (as compared to \$89 million in FY 1976). Of this total, \$174 million is for heating and cooling of buildings and solar electric applications (as compared to \$77 million in FY 1976). Lesser amounts have been requested for agricultural and industrial process heat applications, fuels from biomass, and a technology support program that would initiate a Solar Energy Research Institute, provide for solar information dissemination, and assess solar resources.

Alternatives

- #1. Authorize a solar energy program that would provide accelerated development of all major solar technologies and a highly accelerated solar heating and cooling demonstration program. (ERDA request).



- #2. Authorize a solar energy program that would continue an accelerated but more orderly development of solar technology, with development funding limited to the higher potential payoff areas and a heating and cooling demonstration program continued at the 1976 level. (OMB recommendation).

Analysis

Budget Authority/Outlays (\$ Millions)	1975		1975		July 1 - Sept. 30, 1976		1977		1978		1979		1980		1981	
	BA	O	BA	O	BA	O	BA	O	BA	O	BA	O	BA	O	BA	O
<b>Solar Energy</b>																
Alt. #1 (Agency req.)	40	15	89	65	26	17	199	152	328	281	290	253	188	188	179	161
Alt. #2 (OMB rec.)	40	15	89	65	26	17	103	76	123	88	115	97	86	87	86	96
<u>Agency Request</u> <span style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;">160</span>																
(Difference from Alt. #1 (Agency request) Alt. #2 (OMB recommendation))																
1977 Outlays      1978 Outlays																
-76      -193																

Agency Request. Alternative #1. Gives solar energy a priority comparable to the Liquid Metal Fast Breeder Reactor. This does not appear justified by the relatively low potential contribution of solar energy to energy supplies. ERDA's request would greatly accelerate all solar technologies to encourage energy production which, by ERDA's estimates, may be no more than 7% of the Nation's projected energy demand by the year 2000.

OMB Recommendation. Alternative #2. Would allow growth in the solar electric options (photovoltaics and solar thermal electric) where the potential energy contribution is significant but major technical and engineering breakthroughs are required. Options with potentially low energy contributions or high energy resource uncertainty (e.g., wind, ocean thermal, and biomass) would be sharply reduced below the FY 1976 level. The OMB recommendation would also continue the heating and cooling demonstration program at the 1976 level pending completion of ERDA's program design effort; allow continued development of agricultural applications to reduce the use of propane; and allow a limited technology support program to assess environmental and resource uncertainties and initiate a Solar Energy Research Institute.

Issue Paper  
Energy Research and Development Administration  
1977 Budget  
Issue #2: Conservation R&D Program

Statement of Issue

Should Federal efforts in conservation R&D be limited to selected programs in which the potential for energy savings are large and where the rationale for Federal involvement is clear?

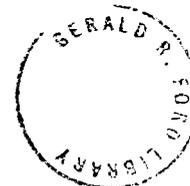
Background

There are two paths for achieving energy savings through improved technologies: (a) greater efficiency in the production, distribution, and storage of energy (e.g., advanced battery concepts), and (b) reduced end-use consumption of energy (e.g., improved technologies for industrial processes, buildings, and transportation).

Industry conducts energy conservation R&D in all key program areas, although the level of effort in a given area depends on the technical risk, timing of the payoff, and the size of the R&D investment needed. For example, industry R&D on transportation and energy storage for CY 1974 has been estimated at over \$50 million for conservation and about \$140 million for environment.

ERDA requests a tripling in BA for conservation R&D, from \$72 million in 1976 to \$223 million in 1977. Largest increases have been requested in energy storage and in the three programs concerned with reducing end-use consumption -- buildings, industry, and transportation. These increases are consistent with ERDA's proposed strategy to assume national technical leadership in all major conservation programs, with strong support from the Congress which views conservation programs favorably because of their direct help to consumers.

Federal R&D appears appropriate in transportation (advanced engine concepts) and energy storage (both for autos and other uses) since there is a significant conservation potential, specifically in oil, and there is underinvestment by the private sector due to the large costs, high risks, and long-term payoffs. As noted above, industry spends more on R&D to meet near-term Federally imposed regulations, such as for the environment, than on conservation.



At least two million barrels of oil per day could be saved by the year 2000, from transportation R&D, largely from vehicles with 25% to 40% more efficient engines. Furthermore, electric vehicles, using greatly improved battery technology, can result in large reductions in U.S. dependence on oil.

### Alternatives

- #1. Triple the program level over that of FY 1976 to allow major expansions in all areas. (ERDA request)
- #2. Greatly accelerate (about double) programs in energy storage, transportation, buildings, and industry.
- #3. Provide significant increases only in transportation and energy storage. (OMB recommendation)

### Analysis

<u>Budget Authority/Outlays</u> (\$ Millions)	<u>1975</u>		<u>1976</u>		<u>July 1 - Sept.</u> <u>30, 1975</u>		<u>1977</u>		<u>1978</u>		<u>1979</u>		<u>1980</u>		<u>1981</u>	
	<u>BA</u>	<u>O</u>	<u>BA</u>	<u>O</u>	<u>BA</u>	<u>O</u>	<u>BA</u>	<u>O</u>	<u>BA</u>	<u>O</u>	<u>BA</u>	<u>O</u>	<u>BA</u>	<u>O</u>	<u>BA</u>	<u>O</u>
Alt. #1 (ERDA req.)	31	17	72	55	18	14	223	150	345	257	392	305	400	324	395	336
Alt. #2	31	17	72	55	18	14	120	91	120	110	120	120	120	120	120	120
Alt. #3 (OMB rec.)	31	17	72	55	18	14	90	76	90	90	90	95	90	90	90	90

### Agency Request

(Difference from Alt. #1 (Agency request)	<u>1977 Outlays</u>	<u>1978 Outlays)</u>
( Alt. #3 (OMB recommendation)	-74	-167
( Alt. #2	-59	-147

Agency Request. Alternative #1. Would dramatically increase, in all areas, the Federal role in conservation R&D. It would provide for costly Federal demonstrations of both new and existing technology -- many in areas where the private sector is already showing evidence of responding to higher energy prices (e.g., building conservation, industrial processes).

OMB Recommendation. Alternative #3. Provides significant increases only in energy storage and transportation, programs likely to be most effective in reducing oil use and where there is little evidence that the private sector will significantly accelerate R&D investments.

Alternative #2. Represents an intermediate level between OMB and ERDA. In addition to providing increases in storage and transportation, it would provide some increase for programs aimed at reducing energy use in buildings and industry -- areas that are clearly high payoff but where the need for Federal involvement is not clear.



Issue Paper  
Energy Research and Development Administration  
1977 Budget  
Issue #3: Nuclear Fuel Reprocessing

Statement of Issue

What steps, if any, should the Federal Government take, through ERDA, to assure the future availability of a private industry to reprocess nuclear fuel?

Background

Reprocessing of spent fuel from nuclear power plants is needed (a) to recover valuable uranium and plutonium which can be reused ("recycled") as fuel and (b) to process radioactive waste material into a form suitable for safe disposal. Having reprocessing available by 1985 will relieve some of the demand of new uranium mines, mills and enrichment plants and reduce the cost of nuclear power. Furthermore, reprocessing nuclear fuel will help provide a method for environmentally sound waste disposal and for this reason alone ought to be developed.

Using Government technologies for reprocessing materials for nuclear weapons, a commercial reprocessing industry began to develop in the 1960's. One small private plant has operated and two other private efforts have been undertaken. But, due to regulatory and technical problems, all three plants are now shutdown.

- Allied General Nuclear Fuel Services (AGNS) has almost completed the first stage of a large reprocessing complex in Barnwell, S.C., at a cost of \$250 million. However, there are two needed additional stages which cannot be built until the Nuclear Regulatory Commission (NRC) decides whether - and how - to permit plutonium fuel to be recycled. NRC will not make its decision on permitting plutonium recycle until CY 1977 after completion of a generic environmental impact statement concerning the use of plutonium as fuel, supplemented by an analysis of the problems of safeguarding recycled plutonium against theft. The operation of the AGNS complex will be delayed until 1983, at the earliest. Completion of the complex will probably cost about an additional \$750 million.
- The Nuclear Fuel Services Plant in West Valley, New York, which operated from 1966 to 1977 and then closed for an expansion, must comply with all current and future NRC standards, which delays this plant's operation until after 1983.



- The General Electric company completed a small reprocessing plant at Morris, Illinois, in 1974 at a cost of \$80 million. However, the plant cannot be operated due to technical problems.

Thus, development of a competitive reprocessing industry is stalled due to (a) the lack of a decision by NRC to permit plutonium recycle (b) the uncertain costs associated with meeting any new NRC safeguards regulations and (c) some technical uncertainties involved in reprocessing nuclear fuel. All these uncertainties preclude private investment in billion dollar reprocessing facilities. In order to attain timely benefits of reprocessing, the U.S. Government could stimulate the private sector by attempting to alleviate uncertainties. Possible Government actions include funded Government/industry ventures to build demonstration plants, purchase of plutonium produced by industry (for potential resale as fuel after NRC completes its regulatory actions) and guarantees to industry against future regulatory actions which could prevent plant operation.

### Alternatives

- #1. Let private industry resolve the nuclear reprocessing problems itself on its own time schedule. Provide a small ERDA program in reprocessing R&D to assist the regulatory process and solve technical problems.
- #2. Initiate a potential \$1 billion cost-shared ERDA/industry program (with \$97 million in 1977 BA and \$38 million in supporting R&D) to demonstrate complete nuclear fuel reprocessing capability in commercial-scale facilities. ERDA would issue requests for proposals in FY 1976 which would allow industry to identify, on a competitive basis, the support it needs to proceed. (ERDA request).
- #3. Similar to Option #2 except that instead of \$97 million BA being included in the ERDA budget for the joint ERDA/industry program, \$67 million BA (\$19 million in outlays) would be included in the overall budget contingency for 1977. Depending upon evaluation of the industry responses, a decision would later be made on whether to submit an amendment to ERDA's FY 1977 budget for an ERDA/industry joint program. (OMB recommendation).

<u>Analysis</u>	1975		1976		July 1 to Sept. 30, 1976		1977		1978		1979		1980		1981	
	<u>BA</u>	<u>0</u>	<u>BA</u>	<u>0</u>	<u>BA</u>	<u>0</u>	<u>BA</u>	<u>0</u>	<u>BA</u>	<u>0</u>	<u>BA</u>	<u>0</u>	<u>BA</u>	<u>0</u>	<u>BA</u>	<u>0</u>
Budget Authority/Outlays (\$ Millions)																
Alt. #1	--	--	16.5	12.5	3.8	3.8	29	25	18	20	14	15	9	10	5	6
Alt. #2(Agency req.)	--	--	16.5	12.5	3.8	3.8	135	69	200	100	200	200	200	300	200	200
Alt. #3(OMB rec.)	--	--	16.5	12.5	3.8	3.8	35	30	9	10	9	0	8	8	7	7
(Contingency Allow.)--	--	--	--	--	--	--	( 67)	( 19)	(100)	( 50)	(100)	(100)	(150)	(100)	(100)	(100)

Agency Request

<u>(Difference from Alt. #2 (Agency request)</u>	<u>1977 Outlays</u>	<u>1978 Outlays)</u>
{ Alt. #1	-44	-80
{ Alt. #3 (OMB recommendation)	-39	-90
{ Alt. #3 (OMB recommendation if contingency is used)	-20	-40

Alternative #1 would likely result in a substantial delay in achieving the benefits of plutonium recycle, and does not, therefore, appear to be a viable alternative.

Agency Request. Alternative #2. To demonstrate that the Government is serious about solving nuclear fuel reprocessing problems and to be able to sign agreements immediately after evaluating industry proposals, ERDA wants funds for a cooperative program in its FY 1977 budget.

OMB Recommendation. Alternative #3. In order to take full advantage of the potential benefits of nuclear fuel reprocessing, this country should have reprocessing capacity developed by the mid-1980's. The capacity should be owned, built and operated by the private sector. To assure this objective, the uncertainties (regulatory, economic, or technical) now impeding industry must be removed in a timely manner and at the least cost to the U.S. Government. However, the nature of the support required has not yet been adequately defined by ERDA. Furthermore, by not including a specific dollar level we can maintain our flexibility, and also help prevent industry, in developing its proposals, from over or underestimating the size of the possible Federal commitment. ERDA should proceed to solicit expressions of interest from industry to find out the specific level and type of Government support required. Following a review of the industry response, the Administration can decide whether to announce a specific new Government program in this area and submit an FY 1977 budget amendment.

In the meantime, the Administration can reflect its concern about having the nuclear fuel recycle and waste problems solved in the national interest by citing (a) increased R&D funds provided and (b) the plan to solicit ideas from industry-in the Budget or State of the Union Messages.

Recently the Administration has informed the nuclear industry that if it fails to support private uranium enrichment, the Nuclear Fuel Assurance Act may not pass and ERDA would be forced to divert funds to expanding the Government's uranium enrichment plants. By refraining from committing now to a definitive dollar level of assistance for reprocessing demonstration plans, we would be exerting continued pressure on the nuclear industry to support the Administration's private uranium enrichment plan.



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