

DEPARTMENT OF ENERGY
FY 1997 CONGRESSIONAL BUDGET REQUEST
ENERGY SUPPLY, RESEARCH AND DEVELOPMENT
(Tabular dollars in thousands, Narrative in whole dollars)

ENERGY RESEARCH ANALYSES

PROGRAM MISSION

The mission of the Energy Research Analyses (ERA) program is to evaluate the quality and impact of Department of Energy research programs and projects.

The GOAL of the ERA program is to:

Provide Department of Energy program managers and senior managers with objective assessments of research projects and programs in order to evaluate the quality and impact of these efforts, to identify undesirable duplications and gaps, and to provide analysis of key technical issues in support of long range energy research planning, science and technology planning, and technical evaluation of departmental programs and objectives.

The OBJECTIVES related to these goals are:

1. To PROVIDE THE BASIS FOR JUDGMENTS ON THE QUALITY OF RESEARCH AND ITS IMPACT. Using merit review with peer evaluation, provide departmental program managers and their superiors with detailed information about the technical strengths and weaknesses of projects that comprise the R&D program as a basis for judgment of the quality of the research and its impact.
2. To PROVIDE INDEPENDENT VIEWS OF FUTURE R&D NEEDS IN AREAS OF INTEREST TO THE DEPARTMENT. Evaluate the status of science and technology areas of potential importance to the Department's mission, and to lay out appropriate fundamental and applied research and development to hasten the advance towards potential energy applications.
3. To DEVELOP STRATEGIC PLANS. Use advice from outside experts, advisory committees, departmental managers, national laboratory managers, industrial scientists and managers, and officials of other government agencies to formulate strategic plans for the Office of Energy Research and for the Science and Technology business line of the Department.

PROGRAM MISSION - ENERGY RESEARCH ANALYSES (Cont'd)

4. To **CONTRIBUTE TO DOE AND INTERAGENCY PROGRAM ANALYSIS AND PLANNING FOR GOVERNMENT SCIENCE AND TECHNOLOGY**. Participate in committees, task forces, working groups, and workshops of the Department of Energy and organizations such as the National Science and Technology Council, the National Science Foundation, the National Academy of Sciences, and private sector organizations such as the Industrial Research Institute, and the Electric Power Research Institute.

PERFORMANCE MEASURES:

1. **Quality and value of peer review evaluations, as indicated by satisfaction of investigators and program managers and actions taken to improve or replace projects that have significant shortcomings, and to capitalize on the strengths of stronger projects.**
2. **Satisfaction by customer program managers with assessments of science and technology needs, as indicated by changes or additions to make DOE programs and projects more productive and relevant to DOE missions.**
3. **Quality and acceptance of strategic plans, as indicated by their use by the Director of the Office of Energy Research and by program offices in multi-year program planning, program budget planning, and in effectively justifying programs.**
4. **Influence on government science and technology planning and analysis, as indicated by contributions to DOE, interagency, and outside recommendations on science policies and plans.**

SIGNIFICANT ACCOMPLISHMENTS AND PROGRAM SHIFTS:

1. **Independent peer reviews have verified the quality and relevance of over 300 DOE projects and tasks. Assessment of research needs for Advanced Heterogeneous Catalysts for Energy Applications was completed. These levels of effort will be scaled down in FY 1997 to accommodate the reduced funding associated with the Department's realignment of staff and activities.**
2. **An improved and systematic process for appraisal of Energy Research Laboratories will be developed in FY 1996. Implementation by this program for the Office of Energy research will continue in FY 1997.**
3. **A new DOE-wide system for simplified technical reviews of National Laboratories has been developed with the participation of all affected parties, including the National Laboratories and DOE Operations Offices. The new system will be tested in a pilot process in FY 1996 at three National Laboratories and implemented across the Department in FY 1997.**

PROGRAM MISSION - ENERGY RESEARCH ANALYSES (Cont'd)

4. **Developed the Strategic Plan for the Office of Energy Research. Provided science and technology sections of the National Energy Policy Plan (NEPP). Coordinated the formulation of ER technology status reports for the Yergin Task Force.**

ENERGY RESEARCH ANALYSES

PROGRAM FUNDING PROFILE

(Dollars in thousands)

	<u>FY 1995 Comparable Appropriation</u>	<u>FY 1996 Original Appropriation</u>	<u>FY 1996 Real & Comp Adjustments</u>	<u>FY 1996 Comparable Adjusted</u>	<u>FY 1997 Budget Request</u>
Research.....	<u>\$3,330</u>	<u>\$3,463</u>	<u>-\$49</u>	<u>\$3,414</u>	<u>\$2,000</u>
Subtotal, Energy Research Analyses.....	3,330	3,463	-49	3,414	2,000
Adjustment.....	<u>-101 a/</u>	<u>-337 a/</u>	<u>0</u>	<u>-337 a/</u>	<u>0</u>
Total, Energy Research Analyses.....	<u><u>\$3,229 b/</u></u>	<u><u>\$3,126</u></u>	<u><u>-\$49 c/</u></u>	<u><u>\$3,077</u></u>	<u><u>\$2,000</u></u>

a/ Share of Energy Supply, Research and Development general reduction for use of prior year balances assigned to this program.

The total general reduction is applied at the appropriation level.

b/ Excludes \$66,000 which has been transferred to the SBIR program and \$3,000 which has been transferred to the STTR program.

c/ Reprogramming to the Indian Energy Resources programs.

Public Law Authorizations:

Public Law 95-91 "Department of Energy Organization Act" (1977)

ENERGY RESEARCH ANALYSES

PROGRAM FUNDING BY SITE

(Dollars in thousands)

<u>Field Offices/Sites</u>	<u>FY 1995 Comparable Appropriation</u>	<u>FY 1996 Original Appropriation</u>	<u>FY 1996 Real & Comp Adjustments</u>	<u>FY 1996 Comparable Appropriation</u>	<u>FY 1997 Budget Request</u>
Chicago Operations Office					
Argonne National Laboratory	\$300	\$150	\$0	\$150	\$0
Brookhaven National Laboratory	100	0	0	0	0
Oak Ridge Operations Office					
Oak Ridge National Laboratory	644	200	0	200	0
Richland Operations Office					
Pacific Northwest National Laboratory	465	250	0	250	0
All Other Sites a/	<u>1,821</u>	<u>2,863</u>	<u>-49</u>	<u>2,814</u>	<u>2,000</u>
Subtotal	<u>3,330</u>	<u>3,463</u>	<u>-49</u>	<u>3,414</u>	<u>2,000</u>
Adjustment	<u>-101 b/</u>	<u>-337 b/</u>	<u>0</u>	<u>-337 b/</u>	<u>--</u>
TOTAL	<u><u>\$3,229</u></u>	<u><u>\$3,126</u></u>	<u><u>-\$49 c/</u></u>	<u><u>\$3,077</u></u>	<u><u>\$2,000</u></u>

a/ Funding provided to laboratories, universities, industry, other Federal agencies and other miscellaneous contractors.

b/ Share of Energy Supply, Research and Development general reduction for use of prior year balances assigned to this program.

The total general reduction is applied at the appropriation level.

c/ Reprogramming to the Indian Energy Resources programs.

**ENERGY RESEARCH ANALYSES
PROGRAM OBJECT CLASS SUMMARY
(Dollars in thousands)**

	FY 1995		FY 1996		FY 1997
	Comparable	Non-Comp	Comparable	Non-Comp	
Direct Funding:					
Personnel compensation:					
11.1					
11.3					
11.5					
11.8					
11.9					
11.9	0	0	0	0	0
12.1					
13.0					
21.0					
22.0					
23.1					
23.2					
23.3					
24.0					
25.1	252	252	255	255	255
25.2	453	453	2,276	2,325	1,745
25.3					
25.4					
25.5					
25.7					
26.0					
31.0					
32.0					
41.0	1,177	1,177	0	0	
99.0	3,396	3,396	3,131	3,180	2,000
	-	-	-		
99.9	3,396	3,396	3,131	3,180	2,000
	-2	-2			
	-219	-219	-54	-54	
	54	54			
	\$3,229	\$3,229	\$3,077	\$3,126	\$2,000

ENERGY RESEARCH ANALYSES
 (Tabular dollars in thousands. Narrative in whole dollars.)

I. Mission Supporting Goals and Objectives

The Energy Research Analyses (ERA) program assesses research projects and programs in order to judge the significance of these efforts and to identify undesirable duplications and gaps. Peer reviews of individual research projects using outside experts are performed. Technical assessments to determine the direction of future research and state-of-the-science reviews are also performed. The program also provides analysis in support of long range energy research planning, science and technology planning, and technical evaluation of DOE programs and objectives.

II. Funding Schedule

<u>Program Activity</u>	<u>FY 1995</u>	<u>FY 1996</u>	<u>FY 1997</u>	<u>\$ Change</u>	<u>% Change</u>
Energy Research Analyses.....	\$ 3,330	\$ 3,414	\$ 2,000	\$ -1,414	-41.4%
Total, Energy Research Analyses.....	\$ 3,330	\$ 3,414	\$ 2,000	\$ -1,414	-41.4%

III. Performance Summary

FY 1995 Accomplishments:

- Determined the strengths and weaknesses of 300 projects in Energy Research, Fossil Energy, and Energy Efficiency by independent peer review, including quality of the science, relevance to DOE and national missions, and research management.
- Determined the need for new, specific research in the area of Advanced Heterogeneous Catalysts for Energy Applications.
- Provided the DOE support for management of the National Acid Precipitation Program Assessment (NAPAP) Program.

III. Performance Summary: ENERGY RESEARCH ANALYSES (Cont'd)

- Developed the Strategic Plan for the Office of Energy Research. Provided science and technology sections of the National Energy Policy Plan (NEPP). Coordinated the formulation of ER technology status reports for the Yergin Task Force.
- Analyzed specific governmental and Departmental R&D issues using expert technical groups at the National Academy of Sciences, the Keystone Center, the JASON group, the Foreign Area Science Assessment Center (FASAC), and the Japan Technology Evaluation Center (JTEC).
- Funding in the amount of \$66,000 and \$3,000 has been transferred to the SBIR and STTR programs, respectively.

FY 1996 Accomplishments (to date and planned):

- Develop a simplified and improved DOE-wide technical review process, as promised by the Secretary of Energy to the Congress. Organize and manage a pilot program at three National Laboratories to evaluate the new review process.
- Evaluate the quality and relevance of approximately 275 projects in Energy Research, Fossil Energy, and Energy Efficiency by independent peer reviews.
- Assess additional technical needs in Energy Research, Fossil Energy, and Energy Efficiency (e.g., advanced composite materials).
- Develop a new and improved Laboratory appraisal process to evaluate the performance of ER Laboratories on an annual basis as part of the Department's new performance-based contracting system.
- Support external R&D review of critical issues, as requested by the Director, Office of Energy Research, through groups outside the Department of Energy, (e.g., the National Academy of Sciences, and the JASON group).
- Funding in the amount of \$69,000 and \$5,000 has been budgeted for the SBIR and STTR programs, respectively.

III. Performance Summary: ENERGY RESEARCH ANALYSES (Cont'd)

FY 1997 Planned Accomplishments:

- Update and improve the Energy Research Strategic Plan to establish a new vision and mission, and to get maximum research value from the realigned Office of Energy Research.
- Continue to improve the quality and relevance of DOE research and development programs through peer reviews of approximately 200 projects in Energy Research, Fossil Energy, and Energy Efficiency.
- Evaluate critical planning and policy issues of DOE science and technology through reviews by expert groups at the National Academy of Sciences, the JASON group, etc., as appropriate.
- Funding in the amount of \$50,000 has been budgeted for the SBIR program.

Explanation of Funding Changes FY 1996 to FY 1997:

The decrease reflects a reduction in the number of peer reviews conducted from 275 in FY 1996 to 200 in FY 1997 (\$-1,414,000).