

DEPARTMENT OF ENERGY
FY 1990 CONGRESSIONAL BUDGET REQUEST
OFFICE OF ENERGY RESEARCH

OVERVIEW

ENERGY RESEARCH ANALYSES

The Office of Program Analysis (OPA) manages the Energy Research Analyses Program to fulfill one of the major responsibilities of the Director of the Office of Energy Research. The Department of Energy Organization Act (Public Law 95-91) states "...It shall be the duty and responsibility of the Director [of the Office of Energy Research] (1) to advise the Secretary with respect to the physical research program...[and] (2) to monitor the Department's energy research and development programs in order to advise the Secretary with respect to any undesirable duplication or gaps in such programs...". Accordingly, the Office of Program Analysis arranges for and participates in the assessments of research projects and programs in order to judge the significance of these efforts and to identify undesirable duplications and gaps.

There are three types of independent technical assessments performed by OPA on research programs throughout the Department. First, OPA staff perform comprehensive project by project evaluations of major programs using outside experts from industry, academia and the National Laboratories. These peer reviews of ongoing projects provide the basis for judgments on the quality of the research and its impact. DOE Principal Officers responsible for energy R&D recognize that without these reviews less technically competitive projects might be continued.

Second, technical assessments provide independent views on the directions that future R&D in specific areas should take to be more productive and relevant to DOE missions. Research assessments are performed by contractors and OPA staff drawing on the world's leading experts in the specific fields being addressed. State-of-the-science reviews by the Foreign Applied Sciences Assessment Center (FASAC) and JASON's are also performed. In addition, the Energy Research Advisory Board (ERAB) funded by this office addresses questions posed directly by the Secretary or the Director, Office of Energy Research, and provides views based upon their expertise.

Third, OPA investigates the accomplishments of programs by determining specific advances in science or marketable products that arise from the programs' R&D. Accounts of scientific developments are prepared in lay english to communicate the program's accomplishments to the general public.

In addition, OPA has the responsibility within DOE for providing financial support for management of the National Acid Precipitation Assessment Program (NAPAP) created by the Acid Precipitation Act of 1980 (P.L. 96-294). OPA provides funds under NAPAP for summarizing and synthesizing the state of the science in acid rain research and producing assessment reports useful for policy makers.

DEPARTMENT OF ENERGY
 FY 1990 CONGRESSIONAL BUDGET REQUEST
 ENERGY SUPPLY RESEARCH AND DEVELOPMENT
 (dollars in thousands)

LEAD TABLE

Energy Research Analyses

| Activity | FY 1988 Actual | FY 1989 Estimate | FY 1990 Base | FY 1990 Request | Program Change Request vs Base | |
|-------------------------------|-------------------|---------------------|-----------------|--------------------|-----------------------------------|---------|
| | | | | | Dollar | Percent |
| Energy Research Analyses (OE) | \$3,672 | \$3,800 | \$3,800 | \$3,980 | \$+ 180 | + 5% |
| Total..... | \$3,672 | \$3,800 | \$3,800 | \$3,980 | \$+ 180 | + 5% |
| Operating Expenses..... | \$3,672 a/ | \$3,800 | \$3,800 | \$3,980 | \$+ 180 | + 5% |
| Total Program..... | \$3,672 | \$3,800 | \$3,800 | \$3,980 | \$+ 180 | + 5% |

Authorization: Section 209, P.L. 95-91.

a/ Total has been reduced by \$28,000 which has been transferred to the SBIR program.

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SUMMARY OF CHANGES

Energy Research Analyses

| | |
|--|-----------------|
| FY 1989 Appropriation | <u>\$ 3,800</u> |
| FY 1990 Base | 3,800 |
| - Provides for a cost of living increase for each of the Assessment and Acid Rain activities | <u>+ 180</u> |
| FY 1990 Congressional Budget Request..... | \$ 3,980 |

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KEY ACTIVITY SUMMARY

ENERGY RESEARCH ANALYSES

I. Preface: Energy Research Analyses

The Office of Program Analysis manages the Energy Research Analyses program to fulfill one of the responsibilities of the Director, Office of Energy Research. The Department of Energy's Organization Act (Public Law 95-91) states "It shall be the duty and responsibility of the Director (Office of Energy Research) (1) to advise the Secretary with respect to the physical research program...(and) (2) to monitor the Department's energy research and development programs in order to advise the Secretary with respect to any undesirable duplication or gaps in such programs...". Accordingly, the Office of Program Analysis assesses research projects and programs in order to judge the significance of these efforts and to identify undesirable duplications and gaps.

II. A. Summary Table

| Program Activity ----- | FY 1988 ----- | FY 1989 ----- | FY 1990 ----- | % Change ----- |
|---------------------------------|------------------|------------------|------------------|-------------------|
| Program Technology Assessment.. | \$ 2,530 | \$ 2,600 | \$ 2,730 | + 5 |
| Acid Rain Support..... | 1,142 | 1,200 | 1,250 | + 4 |
| | ----- | ----- | ----- | ----- |
| Total Energy Research Analyses. | \$ 3,672 | \$ 3,800 | \$ 3,980 | + 5 |

II. B. Major Laboratory & Facility Funding

| | | | | |
|---------------------------------|-------|-----|-----|-------|
| Argonne National Laboratory... | 545 | 245 | 250 | + 2 |
| Brookhaven National Laboratory. | 362 | 400 | 400 | -- |
| Oak Ridge National Laboratory.. | 1,075 | 400 | 400 | -- |
| Pacific Northwest Laboratory... | 415 | 450 | 0 | - 100 |

III. Activity Descriptions

| Program Activity | FY 1988 | FY 1989 | FY 1990 |
|--------------------------------|---|---|--|
| Program Technology Assessment | <p>Perform technical assessments of coal liquefaction (FE). Prepare lay language report of program accomplishments in High Energy Physics and Basic Energy Sciences (ER), conduct peer reviews of Advanced Process Technology (APT/FE) and Small Business Innovative Research (SBIR/ER). Fact finding surveys of the exploratory funds R&D (ER) and ceramics research (DOE). Support ERAB, JASON, FASAC, SBIR, and ETSAP.</p> | <p>Perform technical assessments of membrane separations (ER, CE) and laser instrumentation (ER). Completed Basic Energy Sciences and High Energy Physics program accomplishments reports. Conduct peer reviews in Conservation & Solar Renewable programs. Support ERAB, JASON, FASAC, SBIR, and ETSAP.</p> | <p>Perform technical assessment in Energy Research, Fossil Energy, and Conservation and Solar Renewable areas (e.g., catalysis, transportation, materials). Perform peer reviews for programs in Fossil Energy and Conservation and Solar Renewables. Support external R&D review through groups outside OPA; e.g., ERAB, JASON, FASAC, SBIR, and ETSAP.</p> |
| | \$ 2,530 | \$ 2,600 | \$ 2,730 |
| Acid Rain Support | <p>Provide DOE share of NAPAP management and technical staff under P.L. 96-294. Begin final assessment for 1990 concluding the 10-year NAPAP program. Assess scientific underpinning of advanced models of aquatic chemistry. Start analysis of data sources for regional ozone estimates and aerosol health effects.</p> | <p>Provide DOE share of NAPAP management and technical staff under P.L. 96-294. Draft portions of final assessment for 1990 concluding the 10-year NAPAP program. Complete analysis of advance models of aquatic chemistry and regional ozone estimates and aerosol health effects. Start assessment of the results of the direct-delayed aquatic response program.</p> | <p>Provide DOE share of support for NAPAP management and technical staff under P.L. 96-294. Complete portions of final assessment for 1990 concluding the 10-year NAPAP program. Support synthesis of the results of over \$500 million worth of Federally funded acid rain research funded through FY 1989 to prepare for use by decision makers.</p> |
| | \$ 1,142 | \$ 1,200 | \$ 1,250 |
| Total Energy Research Analyses | \$ 3,672 | \$ 3,800 | \$ 3,980 |