Professional Audit Review Team

Report to the President
and the Congress

Performance Evaluation of the Energy Information Administration

Department of Energy

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To the President of the United States, the President of the Senate, and the Speaker of the House of Representatives

This report discusses the results of the Professional Audit Review Team's evaluation of the performance of the Department of Energy's Energy Information Administration, as required by the Department of Energy Organization Act (P.L. 95-91, Aug.4, 1977). The report covers the agency's activities from July 1994 through September 1995. Public Law 104-66, enacted December 21, 1995, eliminates our legislative mandate to further evaluate the performance of the Energy Information Administration. Therefore, this will be the final report.

Copies of the report are being sent to the Secretary of Energy; the Director, Office of Management and Budget; the chairmen of energy-related congressional committees; and the heads of the review team member agencies.

Victor S. Rezendes,
Acting Chairman
General Accounting Office

Paul A. Pautler
Federal Trade Commission

Marilyn E. Manser
Bureau of Labor Statistics

Susan M. Miskura
Bureau of the Census

Tony Le M. Tri
Securities and Exchange Commission

Executive Summary

Purpose

The Energy Information Administration (EIA) was established by legislation as the independent statistical and analytical agency within the Department of Energy. EIA is responsible for developing and maintaining information for national energy policy decisions.

The Congress created the Professional Audit Review Team (PART)—composed of members from leading statistical and analytical agencies–to evaluate periodically whether EIA has performed its activities independently, objectively, and professionally. PART is reporting on its evaluation for the period July 1994 through September 1995. The principal objective of this review was to evaluate the usefulness, reliability, and timeliness of energy information reports. To accomplish this, PART chose to review the Annual Energy Outlook and Annual Energy Review reports. Additionally, PART examined whether the users of three EIA reports of limited distribution–U.S. Energy Industry Financial Developments, Profiles of Foreign Direct Investment in U.S. Energy, and Solar Collector Manufacturing Activity–would have any problems if these reports were not available on hard copy. PART also gathered information on how some EIA publications might be affected to accommodate possible significant budget cuts. PART also reviewed the status of EIA's Data Quality Evaluation Program, Model Quality Audit Program, and Quality Maintenance Investments and identified actions EIA has taken to ensure products' relevance and quality.

Background

The Department of Energy Organization Act established EIA as the federal focal point to collect, process, and publish data and information relevant to energy resource reserves, production, demand, and technology. The act recognized the need to ensure that energy data collection and analysis functions are not biased by political considerations or energy policy formulation and advocacy activities.

Principal Findings

PART's survey of recipients of two major EIA reports' usefulness, reliability, and timeliness showed that at least 80 percent of the respondents were confident in using the data in the reports and at least 78 percent were satisfied with the reports' content. Also, from 71 to 86 percent of the respondents used the reports at least several times a year for trend information and as sources of basic facts. In addition, at least 76 percent of the respondents found the reports extremely to moderately useful for forecasting.

At least 84 percent of the respondents believed that the reports were timely as sources of basic facts and trend information. Although the reports' timeliness appeared satisfactory, some respondents said that they wanted the data sooner. The majority of the comments about timeliness pertained to data usefulness because of the time taken from data gathering to publication. However, EIA has introduced a system that permits users of the Internet to review reports as well as have access to the information contained in EIA's data and forecasting products sooner.

PART's survey of recipients that receive three reports of limited distribution–namely, the U.S. Energy Industry Financial Developments, Profiles of Foreign Direct Investment in U.S. Energy, and Solar Collector Manufacturing Activity–were asked whether communication alternatives other than EIA-printed reports would be acceptable. From 59 to 66 percent of the respondents found the hard copy reports to be extremely or moderately useful. For the alternatives, the percentage ranged from 25 percent, for Internet, to 45 percent, for diskettes. PART also found the respondents' reactions to these reports to be mixed. The majority of the respondents said

that the hard copy provided easier access to the data. Additionally, over 50 percent of the respondents said that they would have a very great deal more difficult or moderately more difficult time obtaining reasonably comparable data if EIA no longer published these reports.

PART also noted EIA publications which may be eliminated, published less frequently, consolidated, and/or made available only by electronic access if significant budget cuts were to occur. PART found that EIA has taken several actions over the past 2 years to ensure product relevance and quality, such as revising products to include data and analyses desired by EIA's customers.

Furthermore, to ensure EIA's reporting of quality data, PART examined quality assurance activities by EIA that help ensure that it is providing quality data to its users. EIA conducts evaluations of all of its data collection systems and models and the accuracy of results. Quality maintenance investments also help to ensure quality data. Data quality evaluations have most recently been completed on coal, natural gas, and electric power data collection forms and have resulted in some modifications to respective EIA forms, instructions, and/or documentation.

EIA program offices receive funds to carry out quality maintenance investment projects. These projects are investments in a specific quality tool or activity that resulted from data quality evaluations' recommendations. Since its inception, EIA's Office of Statistical Standards has completed two annual quality maintenance investment evaluations. The March 1995 evaluation focused on 11 investments and found that the investment tasks and subtasks fulfilled their stated objectives. Although no model quality audits were performed during 1993 and 1994, PART found that EIA concentrated its efforts on the adequacy of the National Energy Modeling System's model quality and documentation. From January through September 1995, EIA had five models undergo audits. PART found that although not specifically identified in the budget, funding for quality has been reduced. EIA expects these reductions to generally affect each program office. Quality assurance may be affected by fewer evaluations of data systems audits of models, and independent expert reviews.

Recommendation

To provide further opportunity for EIA to cut operating costs regarding disseminating data, PART recommends that the Administrator of EIA instruct its managers to, where possible, eliminate, publish less frequently, consolidate, or provide only by electronic access the data currently provided in all EIA reports of limited distribution.

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ABBREVIATIONS

AEO	Annual Energy Outlook
AER	Annual Energy Review
DOE	Department of Energy
EIA	Energy Information Administration
EIFD	U.S. Energy Industry Financial Developments
EPUB	electronic publishing
OSS	Office of Statistical Standards
PART	Professional Audit Review Team
PFDI	Profiles of Foreign Direct Investment in U.S. Energy
SCMA	Solar Collector Manufacturing Activity

Chapter 1

Introduction

The Energy Information Administration (EIA) was established by legislation[1] in 1977 as the independent statistical and analytical agency within the Department of Energy (DOE). The legislation charged EIA with

- maintaining a comprehensive data and information program relevant to energy resources and reserves, energy production, energy demand, energy technologies, and related financial and statistical information relevant to the adequacy of energy resources to meet the nation's demands in the near-and longer-term future and
- developing and maintaining analytical tools and collection and processing systems; providing analyses that are accurate, timely, and objective; and providing information dissemination services.

In 1993, the Secretary of Energy directed DOE to be at the forefront of strategic planning, performance-based budgeting, and customer service. These activities were also called for in part in the National Performance Review; the Government Performance and Results Act of 1993; and the President's September 11, 1993, Executive Order, which led to the establishment of customer service standards and measurement of results against the standards. To meet the objectives of these mandates in the most effective manner, EIA established a strategic planning process in 1994. This process produced new statements of EIA's mission and goals that stressed improvement in quality, such as

- assuring that data and analyses are of the highest quality and relevant to the needs of its customers,
- providing customers fast and easy access to energy information, and
- making resource and program decisions based on customer input and conducting business in an efficient and cost- effective manner.

EIA'S MISSION ACTIVITIES

EIA's mission is to provide high-quality, policy independent energy information to meet the requirements of government, industry, and the public in a manner that promotes sound policymaking, efficient markets, and public understanding. EIA published 74 periodicals and one-time reports on energy issues in 1993 and 89 in 1994. EIA carried out its mission with a budget of $86.5 million in fiscal year 1994 and $84.6 million in fiscal year 1995, with 497 and 471 full-time equivalent staff members each of those years. (See app. I for EIA's organizational structure.)

THE ROLE OF THE PROFESSIONAL AUDIT REVIEW TEAM

The DOE Organization Act mandates that the Professional Audit Review Team (PART) review and evaluate EIA's work and determine whether data collection and analytical activities are being performed in an objective and professional manner.

In accordance with the authorizing legislation, PART consists of a chairman, designated by the Comptroller General of the United States, and members from the following federal agencies:

- Bureau of the Census.
- Bureau of Labor Statistics.
- Council of Economic Advisers.
- Federal Trade Commission.
- Securities and Exchange Commission.

[1]The Department of Energy Organization Act (42 U.S.C. 7101).

PART staff members and the technical adviser during the period covered by this report and their agency affiliations include:

- Richard A. Hart, General Accounting Office.
- Alfred T. Brown, General Accounting Office.
- Jonathan T. Bachman, General Accounting Office.
- Martha L. Mister, General Accounting Office.

OBJECTIVES, SCOPE, AND METHODOLOGY

The Congress has shown its concern for the quality and credibility of energy information not only by establishing EIA as a separate agency within DOE, but also by creating PART to conduct an annual evaluation of EIA's operations. In past evaluations, PART has concentrated on areas such as:

- The effectiveness of EIA's programs to ensure the quality of its data collection and analysis systems.
- The effectiveness of planning and management processes.
- The usefulness of the quality of data submitted by reporting companies.
- The usefulness of energy information reports and the adequacy of EIA's contract management.

As mandated, this review continues the cyclical evaluations that PART performs on the quality of EIA data. PART's current review concentrated on the usefulness, reliability, and timeliness of two energy information reports—the Annual Energy Outlook (AEO) and the Annual Energy Review (AER). Additionally, PART examined whether the users of three EIA reports of limited distribution–U.S. Energy Industry Financial Developments (EIFD), Profiles of Foreign Direct Investment in U.S. Energy (PFDI), and Solar Collector Manufacturing Activity (SCMA)–would have any particular problems if these reports were not available on hard copy. Additionally, PART gathered information on what EIA publications may be eliminated, published less frequently, consolidated, or made available only by electronic access if significant budget cuts were to occur. PART also reviewed the status of EIA's Data Quality Evaluation Program, Model Quality Audit Program, Quality Maintenance Investments, and how quality may be affected by federal budget reductions in its continuing effort to ensure quality in EIA data programs.

To obtain comments about the overall usefulness of the reports,[2] PART mailed questionnaires to all report recipients. Recipients include DOE employees and contractors, other federal agency officials, state and local government officials, private industry officials, foreign government officials, and the media. In order not to prejudice responses and/or to ensure that individuals receiving the reports were the users, PART did not send questionnaires to EIA staff or its contractors or libraries (multiple users) on its report mailing lists. The universe in table 1.1 reflects these exclusions. (See app. II for a list of the categories of respondents and the number of respondents in each category for these reports.)

PART surveyed all of the recipients that received the AEO and the AER to obtain their comments on the reports' usefulness, reliability, and timeliness. (See app. III for a summary of the responses.) PART also surveyed all of the recipients that received the EIFD, PFDI, and SCMA reports to obtain comments on their satisfaction with the reports and the suggested alternatives to the hard copy version. (See app. IV for a summary of the responses.)

[2]PART's survey does not reflect the opinions of people who do not directly receive EIA's reports but who may use the reports.

Table 1.1 shows the number of recipients in the survey and their response rate.

In performing our work, we examined laws establishing EIA, EIA's policies and procedures, budget documents, reports, records, and other documents related to the areas being evaluated. We also interviewed EIA officials responsible for program planning and day-to-day operations of the offices issuing the reports surveyed.

This report covers EIA's activities during the period July 1994 through September 1995. Our work was carried out at EIA headquarters in Washington, D.C., and was performed in accordance with generally accepted government auditing standards. Public Law 104-66 enacted December 21, 1995, eliminates PART's legislative mandate to further evaluate the performance of the Energy Information Administration. Therefore, this will be the final report.

Table 1.1: Number of Recipients in the Survey and Their Response Rate

EIA reports	Universe	Number of recipients surveyed	Total responses returned	Response rate[a]
AEO	601	601	451	75.0
AER	407	407	287	70.5
EIFD	137	137	83	60.6
SCMA	171	171	119	69.6
PFDI	91	91	57	62.6
Total	1,407	1,407	997	70.9

[a]The results are based on the percentage of those who responded to the survey. Since the characteristics (opinions) of those responding may be different from the nonrespondents, caution should be used in making judgments about the rest of the universe. If a difference exists, the overall results could change had PART obtained responses for all those originally in the universe since all report recipients were surveyed.

Chapter 2

EIA Reports Favorably Viewed Although Data Timeliness Still a Factor

In general, recipients favorably viewed the Annual Energy Outlook (AEO) and Annual Energy Review (AER) reports. From 78 to 84 percent of the respondents to our questionnaire were very to generally satisfied with these reports. At least 80 percent of the respondents were extremely to moderately confident in the data in these reports. Also, the majority of the respondents said that these reports were useful as sources of basic facts, for maintaining trend information, and forecasting. However, some respondents said that the data in the reports needed to be more timely. The results of the survey are summarized in the following sections and are shown in more detail in appendix III.

HOW USEFUL ARE THE REPORTS AND HOW ARE THEY USED?

From 71 to 86 percent of the respondents used the AEO and AER reports at least several times a year for maintaining trend information and as sources of basic facts. At least 81 percent said that the reports were extremely or moderately useful for these purposes. At least 76 percent found the reports extremely or moderately useful for forecasting.

The percent of respondents who said that the reports were extremely or moderately useful for different purposes and who used the reports for such purposes are summarized in tables 2.1 and 2.2.

HOW TIMELY ARE THE REPORTS?

At least 84 percent of the respondents said that the reports were definitely or probably timely for maintaining trend information and as sources of basic facts. In addition, 77 percent said that the reports were definitely or probably timely for market research and forecasting. Table 2.3 shows the percent of respondents who said that the reports were definitely or probably timely for different purposes.

Although report timeliness appeared satisfactory, some respondents commented about wanting the data sooner. PART reviewed the respondents' written comments on timeliness. The

Table 2.1: Percent of Respondents Who Said That the Reports Were Extremely or Moderately Useful for Different Purposes

	Percent	
Purpose	AEO	AER
Trend information	81.7	83.1
Basic facts	80.8	87.4
Market research	73.1	78.5
Forecasting	76.0	79.1

Table 2.2: Percent of Respondents Who Used the Reports At Least Several Times a Year for Different Purposes

	Percent	
Purpose	AEO	AER
Trend information	71.4	82.6
Basic facts	77.6	85.7
Market research	42.1	42.1
Forecasting	70.2	56.8

EIA Reports Favorably Viewed Although Data Timeliness Still a Factor

Table 2.3: Percent of Respondents Who Said That the Reports Were Definitely or Probably Timely for Different Purposes

	Percent	
Purpose	**AEO**	**AER**
Trend information	85.7	84.0
Basic facts	86.5	85.3
Market research	84.3	76.9
Forecasting	86.1	78.6

Table 2.4: Category and Frequency of Respondents' Comments on Reports' Usefulness

Comment category	Frequency of comments
Clarification/interpretation	13
Data relevancy	15
Organization	22
Timeliness	28

majority of the timeliness comments pertained to data usefulness because of the time taken from data gathering to publication. Some respondents said that it would be better if the information were more timely, but they were still able to use the report for all desired uses and had not experienced any adverse effects because of untimely data. PART found that for report recipients with computer access to Internet EIA can provide its data sooner. For example, EIA's Home Page provides users full access to the information contained in EIA's data and forecasting products.

HOW COULD THE REPORTS BE MADE MORE USEFUL?

The majority of the respondents said that both AEO and AER are useful energy data publications. However, PART received written comments from respondents of both the AEO and AER on ways to improve usefulness. These comments could be grouped into four distinct categories, and the frequency of the respondents' comments are shown in table 2.4.

The organization category includes comments that referred to information that should either be included or excluded and/or referred to changes in the way data were reported. PART provided these comments to EIA for its consideration in developing future reports.

IN WHAT TYPES OF DATA DO RESPONDENTS LACK CONFIDENCE?

The majority of the respondents said that the data from both EIA publications were accurate. However, PART received written comments on a question regarding the types of data that respondents lacked confidence in for both AEO and AER. The categories of respondents' comments and their frequencies are shown in table 2.5.

Table 2.5: Category and Frequency of Respondents' Comments on Confidence in Data

Comment category	Frequency
All categories	1
Definitions	3
Price	4
Prior data	7
Projection/models	13
Foreign country data	2

WHY DO RESPONDENTS LACK CONFIDENCE IN THESE DATA?

The majority of the respondents for both the AEO and AER expressed confidence in these publications' data. However, PART received 30 written comments explaining why respondents lacked confidence in these data for both questionnaires. The respondents expressed concern about the completeness of data reported. For example, concerns mentioned included:

- "World consumption exceeds production and refinery gain. No one can get accurate production data for many countries."
- "There is little effort made to obtain complete data on renewable resources."
- "Past forecasts have been incorrect."
- "Data does not match known production and reserve data."

CONCLUSION

On the basis of the responses and comments to its questionnaire, PART believes that the Annual Energy Outlook and Annual Energy Review are of high quality, useful, and timely for multiple purposes. Improving the timeliness of the reports from when the data are collected to when the reports are issued was the respondents' most frequent comment. PART has observed that EIA is continually trying to shorten the gap between receipt of the data and publication of data and still maintain accuracy and quality. For example, EIA's Home Page provides users with Internet services full access to the information contained in EIA's data and forecasting products sooner.

Chapter 3

EIA Actions and Recipients' Responses Toward Printed Reports Are Mixed

PART examined whether data communication alternatives other than EIA-printed reports would be acceptable to report recipients. These alternatives included (1) electronic publishing (EPUB), (2) diskettes, (3) CD-ROM, and (4) the Internet. PART sent questionnaires to recipients of three EIA reports of limited distribution–U.S. Energy Industry Financial Developments (EIFD), Profiles of Foreign Direct Investment in U.S. Energy (PFDI), and Solar Collector Manufacturing Activity (SCMA)–to solicit their responses. PART also determined if there would be any particular problems if the reports were no longer available on hard copy. Most recipients preferred hard copy because of its easy access and/or their lack of other alternative means to access the data. In addition, PART gathered information on how some EIA publications might be affected if there are significant budget cuts.

HOW USEFUL IS EACH PUBLISHING ALTERNATIVE?

PART questioned recipients of three EIA reports of limited distribution to gather their views regarding alternatives to publishing. From 59 to 66 percent of the respondents indicated that the hard copy was extremely to moderately useful. Regarding the other alternatives, the usefulness of EPUB ranged from 28 to 40 percent, diskettes ranged from 39 to 45 percent, CD-ROM ranged from 25 to 30 percent, and the Internet ranged from 29 to 39 percent extremely to moderately useful. Table 3.1 provides data on recipients' concerns about the possible unavailability of reports on hard copy.

Table 3.1: Percent of Respondents That Would Have Problems If the Reports Were No Longer Available on Hard Copy

Reports	Percent		
	Yes	No	Did not respond
EIFD	39.8	33.7	26.5
PFDI	28.1	35.1	36.8
SCMA	48.7	22.7	28.6

Table 3.2: Category and Frequency of Respondents' Comments on Problems If the Reports Were No Longer Available on Hard Copy

Comment category	Frequency
Accessibility	19
Difficult to obtain data	13
Lack of electronic equipment	11
Hard copy best reference	10
Other	7
Total	60

PART asked recipients to comment on why they would have problems if the reports were no longer available on hard copy. The recipients' comments are shown in table 3.2.

PART informed EIA officials that some respondents said that they wanted EIA to continue to publish reports of limited distribution because electronic equipment costs would make it difficult to obtain the data. According to the EIA Deputy Administrator, EIA could provide the needed data on a "Fax on Demand" basis if the reports were no longer published.

PART also obtained recipients' comments about the dependency, satisfaction, and relevancy of each report's data. (See app. IV.)

EIA PUBLICATION CONSIDERATIONS IN LIGHT OF POSSIBLE BUDGET REDUCTION

According to the EIA Director Office of Planning, Management and Information Services, EIA office directors were asked in light of possible significant budget cuts, "What do you think you could do in so far as publications to accommodate these cuts?" A March 1995 list of publications reflected their views and would be used as a starting point for future EIA publication decisions. The list showed publications in four categories: (1) eliminate, (2) publish less frequently, (3) consolidate, and/or (4) electronic access only.

The publications list showed the following proposals:

Eliminate

- U.S. Energy Industry Financial Developments.
- State Energy Price Projections for the Residential Sector.
- Energy Facts.
- Natural Gas Annual Supplement: Company Profiles.
- International Oil and Gas Exploration and Development.

Publish less frequently

- Manufacturing Energy Consumption Survey: Manufacturing Consumption of Energy.
- Coal Data: A Reference.
- Directory of Energy Data Collection Forms.
- Directory of EIA Models.

Consolidate

- Assumptions for the Annual Energy Outlook.
- Profiles of Foreign Direct Investment in U.S. Energy.

Electronic access only

- Derived Annual Estimates of Manufacturing Energy Consumption 1974-88.
- Development of the 1991 Manufacturing Energy Consumption Survey.
- Historical Monthly Energy Review.
- Sample Design for the Residential Energy Consumption Survey.
- User-Needs Study for the Commercial Building Energy Consumption Survey.
- User-Needs Study for the Residential Energy Consumption Survey.
- Oil and Gas Field Code Master List.

According to an Office of Energy Markets and End Use official, EIA has taken action on one of the previously mentioned publications--"U.S. Energy Industry Financial Developments." This quarterly publication is no longer available. As a result, the savings to EIA could be between $20,000 and $25,000.

In addition to the possible actions listed above to cut the cost of publications, EIA plans to eliminate six other publications between September 1995 and September 1997. These publications include:

- Petroleum Marketing Annual.
- U.S. Biomass Consumption.
- Solar Collector Manufacturing Activity.
- Short-Term Energy Outlook Annual Supplement.
- Supplement to the Annual Energy Outlook.
- Cost and Quality of Fuels for Electric Utility Plants.

CONCLUSION

On the basis of the responses and comments to the questionnaire, PART found that most report recipients of the three EIA reports of limited distribution prefer the hard copy alternative. The majority of the respondents said that they

preferred the hard copy because of its easy access and/or their lack of other alternative means to access the data. Although EIA has developed a list of publications that would be considered for elimination or revision if there are significant budget cuts, PART believes that all reports of limited distribution should be considered for elimination or publication in another form.

RECOMMENDATION

To provide further opportunity for EIA to cut operating costs regarding the dissemination of data, PART recommends that the EIA Administrator instruct its managers to, where possible, eliminate, publish less frequently, consolidate, or provide only by electronic access the data from all EIA reports of limited distribution.

Chapter 4

EIA Quality Assurance Activities and Possible Future Problems

EIA's goals include ensuring that its data and analyses are of the highest quality, relevant to customers' needs, and easily accessible. Internally, EIA conducts evaluations and audits of all its data collection systems and models on a cyclical basis to ensure the accuracy and completeness of documentation, the efficient operation of data systems and models, and the accuracy of results. Quality maintenance investments also help to ensure quality data. Although these activities have led to positive actions, such as modifications to respective EIA models, forms, instructions, and/or documentation, PART is concerned about EIA's ability to continue these activities in light of declining resources.

EIA QUALITY ASSURANCE ACTIVITIES

PART addressed three types of quality assurance activities. These activities included (1) data quality evaluations, (2) model quality audits, and (3) quality maintenance investments. Quality assurance activities in EIA include

- establishing quality policies, standards, and methods;
- evaluating the overall quality of data and models;
- assessing the extent to which quality control procedures are effective;
- developing new procedures for quality control; and
- appraising the resulting energy information.

Data Quality Evaluations

The data quality evaluation program focuses on three areas of potential error–response, nonresponse, and processing. The evaluation concentrates on forms in a subject matter area (e.g., fuel type) rather than individual forms. The evaluations are conducted in two stages. The first stage determines whether quality control procedures are adequate. The second stage involves more detailed and intensive evaluation, depending on what is found in stage 1 and the time available.

EIA's Office of Statistical Standards (OSS) tested this approach with an evaluation of coal data collection forms. OSS recommended and action was taken by the program office to (1) update documentation, (2) delete outdated edits, (3) modify forms and/or instructions, and (4) program additional performance statistics. In addition, OSS evaluated natural gas data collection forms. In this evaluation, OSS examined whether the data collection is appropriate to reflect the changing industry. OSS recommended and action was taken to evaluate the various price series that are available to determine which are the most appropriate to collect and present.

The electric power data evaluation is OSS' most recent evaluation. In this evaluation, OSS examined the electric power surveys to determine whether (1) quality control procedures are adequate, (2) data measure what they mean to measure, (3) EIA is collecting the right data to reflect a changing industry, and (4) explanatory notes and documentation are adequate. OSS recommended and action has been taken or planned to be taken in areas such as survey follow-up procedures, collecting information on end-use taxes, and explaining possible sources and effects of error inherent in the survey process, so that users will have a better understanding of the limitations of the data. Each evaluation requires significant staff time working with program offices to clarify problems with respondents' answers and ensure that recommendations are reasonable to implement.

Model Quality Audits

During 1993 and 1994, OSS concentrated its efforts on the National Energy Modeling System's model quality and documentation. These efforts included reviewing model design documented in the Component Design Reports, test results, and documentation. Independent Expert Reviewers worked throughout the 2-year development process with the EIA program and OSS staff. As a result of this large undertaking, no other model quality audits were performed. EIA, however, has five models that have undergone at least one of the three audit stages in 1995.

According to an OSS official, the three model quality audit stages are:

Stage I
Verification that the model documentation conforms to EIA standards.

Stage II
Independent Expert Review of the economic, mathematical, and statistical foundation of the model.

Stage III
Qualitative and quantitative evaluation of the mathematical and statistical properties of the model.

Although no final reports have been issued, all audit stages have been completed for the Uranium Market Module and the World Energy Projection Module. For the Wellhead Gas Productive Capacity Module, stage II has been completed, and stages I and III are in process. The Residential and Transportation Demand Submodules are undergoing stages I and III.

EIA is required by Public Law 93-275 to prepare adequate documentation for all of its statistical and forecast reports written for the public. EIA administrators have consistently concluded that all variables, parameters, data, and data transformations should be explicitly identified. This resulted in a document that would permit outsiders, including model auditors, to examine the model in depth.

In August 1994, OSS issued a report about model documentation that showed that many in-house analysts believed that in attempting to document the new National Energy Modeling System, the appendices requirements for an inventory of variables and for the auxiliary mathematical equations caused the most difficulty. In addition, the lack of time and, in some cases, the lack of prompt, clear guidance and feedback from reviewers made the documentation job harder. The 1994 report concluded that the reviewer-documenter relationship needed some substantial changes. These officials believed that there should be more face-to-face meetings between reviewers, the documenting office, and contractors. The officials also believed that these types of meetings would allow improvements to the model documentation process to be discussed in an interactive setting. According to an OSS official, the following actions have occurred:

- Increased active discussions with management.
- Increased written documentation guidance in the revised standard.
- Ongoing negotiations to revise the documentation standards.

Quality Maintenance Investments

EIA program offices receive funds to carry out quality maintenance investment projects. The funding levels are defined and monitored by the Office of Planning, Management and Information Services. Quality maintenance investments are investments in a specific quality maintenance tool or activity, or in an activity supporting quality, that is (1) paid for and managed as a separate project, (2) not created or performed as a

routine operation or function, (3) not created or performed as a normal function of new system design and development, and (4) frequently, but not always, is created or performed in order to correct specific deficiencies and bring product quality in line with policy, standards, and specifications.

Since its inception, OSS has completed two annual evaluations of quality maintenance investments, one in both 1994 and 1995. The 1995 evaluation focused on 11 investments and highlighted EIA's commitment to quality. OSS examined 37 tasks or subtasks from the 11 investments to determine the extent to which these tasks and subtasks satisfied their stated objectives. The team's findings were grouped into the following categories:

- Objective fulfilled.
- Objective partially fulfilled.
- Objective not fulfilled.

The March 1995 report noted and PART believes that all 37 tasks or subtasks scheduled for completion had fulfilled their objectives.

EIA EFFORTS TO ENSURE PRODUCT RELEVANCE AND QUALITY

During the past 2 years, EIA has taken action to ensure product relevance and quality. EIA has conducted new or modified surveys, issued new information products, revised existing products to include data and analyses desired by EIA's customers, and eliminated products that no longer meet customer needs.

Although not specifically identified in the budget, according to the EIA Deputy Administrator, funding for quality has been reduced. The budget reductions generally have affected each program office across the board, with some variations. For example, funding for the Office of Integrated Analysis and Forecasting is being cut $750,000 because there will be no further National Energy Modeling System model enhancements. According to an EIA official, budget cuts could affect data quality, and quality assurance could suffer in the following ways:

- Data systems evaluations and models audits may be reduced.
- Independent expert reviews and workshops may be reduced.

CONCLUSION

EIA's goals include ensuring that its data and analyses are of the highest quality, relevant to customers' needs, and easily accessible. Data quality evaluations, model quality audits, and quality maintenance investments serve as a means to ensure quality. According to EIA officials, in light of a budget reduction, funding for quality may be affected.

Appendix I

EIA's Organizational Structure

When EIA was created in 1977, it was organized into functionally related offices (data development, data dissemination, special program development, and analytical activities). In July 1981, the organizational structure was realigned into comprehensive program offices based on fuel types–oil and gas; coal, nuclear, electric, and alternate fuels; and energy markets and end use.

The Office of Oil and Gas collects, processes, and interprets data about crude oil, petroleum products, natural gas, and natural gas liquids. The office also analyzes and projects the level and distribution of petroleum and natural gas reserves and production.

The Office of Coal, Nuclear, Electric, and Alternate Fuels gathers and integrates data on coal, nuclear energy, electric power, and alternate fuels. The office also develops projections of supply and demand for fuels.

The Office of Energy Markets and End Use develops and operates EIA's statistical and forecasting information systems on energy consumption and supply. The office collects and processes data on energy consumption, supply and demand balances, prices, and economic and financial matters. The office also prepares and publishes reviews of foreign energy developments that could affect the nation's economy.

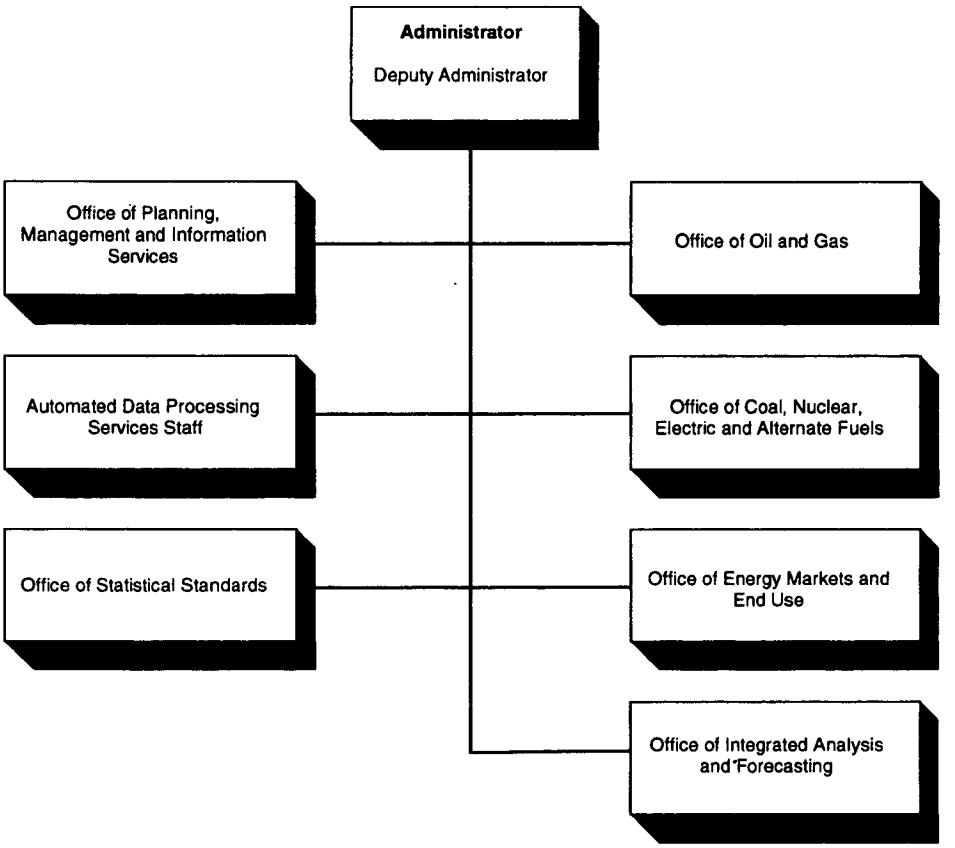
Although the exact names have varied over the years, three offices now provide support services for EIA. The Office of Statistical Standards provides EIA with strategies for survey and statistical design and assesses the quality and meaningfulness of energy information and the process used to collect, analyze, and forecast information. This office develops standards and coordinates standard definitions that govern collection, processing, and documentation of energy information. The office also manages the clearance process of energy data forms for public use.

The Office of Planning, Management and Information Services provides overall management support to EIA and information dissemination to the public. Among its responsibilities are program planning, financial management, budgeting, procurement, program evaluation, personnel management, and legislative support services. The office also includes branches that edit, publish, and disseminate EIA information and respond to public inquiries for energy information.

The ADP Services Staff provides information technology support for DOE's energy information programs, including those of EIA and the Federal Energy Regulatory Commission.

The Office of Integrated Analysis and Forecasting was created by the EIA Administrator through a reorganization in October 1991. This office was created to develop and maintain the National Energy Modeling System and other modeling systems necessary to analyze energy information and data used for mid-term and long-term energy forecasting. Previously, most of these functions had been dispersed among the program offices based on fuel types. With the reorganization, the analytical activities and the mid-term and long-term forecasting for all fuels were consolidated into this office. This office prepares analytical studies and mid-term and long-term forecasts of integrated energy markets, international markets, environmental and macroeconomic issues, and the effects of various energy policies.

Figure I.1: EIA's Organizational Chart



Source: Energy Information Administration

Appendix II

Summary of EIA Mailing List Respondents for Selected Reports

Respondents	AEO[a]	AER[b]	EIFD[c]	PFDI[d]	SCMA[e]	Total
Congress	8	8	7	5	2	30
DOE/DOE contractor	99	64	25	18	15	221
Energy industry	152	53	16	5	72	298
Federal agencies	63	64	2	2	3	134
Foreign embassies	5	6	0	3	3	17
Foreign governments	11	5	2	1	1	20
Print/broadcast media	25	22	10	5	5	67
State/local governments	69	48	17	14	12	160
U.S. embassies	3	1	0	2	3	9
Other[f]	16	16	4	2	3	41
Total	**451**	**287**	**83**	**57**	**119**	**997**

[a]Annual Energy Outlook.

[b]Annual Energy Review.

[c]U.S. Energy Industry Financial Developments.

[d]Profiles of Foreign Direct Investment in U.S. Energy.

[e]Solar Collector Manufacturing Activity.

[f]Other includes miscellaneous organizations such as academia, research companies, and trade associations.

Appendix III

Summary of Recipient Responses to Selected Energy Information Administration Reports

	AEO	AER
Question concerning recipient confidence in reports		
How confident, if at all, are you in using the data in this report?		
Response:		
Extremely confident	34.1	44.9
Moderately confident	45.7	41.8
Somewhat confident	6.0	3.8
A little confident	1.8	0
Not at all confident	1.1	0
No response	11.3	9.4
Question concerning recipient satisfaction with reports		
Overall, how satisfied or dissatisfied are you with this report?		
Response:		
Very satisfied	32.4	39.0
Generally satisfied	45.2	44.6
Neither satisfied or dissatisfied	10.2	6.3
Generally dissatisfied	0.2	0.7
Very dissatisfied	0.2	0
No response	11.8	9.4
Questions concerning frequency of reports' use		
How often do you use this report for maintaining trend information?		
Response:		
At least weekly	2.0	5.6
Several times a month	17.1	20.9
Several times a year	52.3	56.1
Never or almost never	12.0	4.2
No response	16.6	13.2
How often do you use this report for sources of basic facts?		
Response:		
At least weekly	4.9	10.1
Several times a month	21.7	23.7
Several times a year	51.0	51.9
Never or almost never	7.1	3.1
No response	15.3	11.2

Summary of Recipient Responses to Selected Energy Information Administration Reports

	AEO	AER
How often do you use this report for market research?		
Response:		
At least weekly	0.4	2.1
Several times a month	8.4	11.1
Several times a year	33.3	28.9
Never or almost never	31.3	30.7
No response	26.6	27.2
How often do you use this report for forecasting?		
Response:		
At least weekly	2.4	2.4
Several times a month	12.6	15.0
Several times a year	55.2	39.4
Never or almost never	10.6	21.3
No response	19.2	21.9
Questions concerning reports' usefulness		
How useful is this report for maintaining trend information?		
Response:		
Extremely useful	53.1	55.7
Moderately useful	28.6	27.4
Somewhat useful	14.0	13.5
A little useful	2.2	1.7
Not at all useful	0	0
Not applicable	0	0
No response	2.1	1.7
How useful is this report for sources of basic facts?		
Response:		
Extremely useful	55.4	66.3
Moderately useful	25.4	21.1
Somewhat useful	14.9	8.1
A little useful	1.4	1.6
Not at all useful	0.3	0
Not applicable	0	0.4
No response	2.6	2.5

[redacted]

Summary of Recipient Responses to Selected Energy Information Administration Reports

	AEO	AER
How useful is this report for market research?		
Response:		
Extremely useful	38.9	47.1
Moderately useful	34.2	31.4
Somewhat useful	20.5	16.5
A little useful	4.2	0.8
Not at all useful	0	0.8
Not applicable	0	0
No response	2.2	3.4
How useful is this report for forecasting?		
Response:		
Extremely useful	51.4	50.9
Moderately useful	24.6	28.2
Somewhat useful	17.7	16.0
A little useful	3.2	2.5
Not at all useful	0	0
Not applicable	0.3	0
No response	2.8	2.4
Questions concerning reports' timeliness		
Is this report timely for maintaining trend information?		
Response:		
Definitely yes	40.4	34.2
Probably yes	45.3	49.8
Uncertain	6.2	5.5
Probably no	2.8	5.5
Definitely no	0	0.4
No response	5.3	4.6
Is this report timely for sources of basic facts?		
Response:		
Definitely yes	45.1	39.0
Probably yes	41.4	46.3
Uncertain	6.0	4.1
Probably no	2.6	4.5
Definitely no	0	0
No response	4.9	6.1

Summary of Recipient Responses to Selected Energy Information Administration Reports

	AEO	AER
Is this report timely for market research?		
Response:		
Definitely yes	33.2	30.6
Probably yes	51.1	46.3
Uncertain	5.8	9.9
Probably no	3.7	5.8
Definitely no	0	0
No response	6.2	7.4
Is this report timely for forecasting?		
Response:		
Definitely yes	43.5	30.7
Probably yes	42.6	47.9
Uncertain	5.0	7.4
Probably no	1.9	6.7
Definitely no	0.6	0
No response	6.4	7.3
Question concerning recipient dependency on reports		
How much, if at all, do you depend solely on this EIA report for the information you need regarding reports' contents?		
Response:		
Depend solely on this EIA report	6.7	12.5
Depend mostly on this EIA report	33.0	40.8
Depend equally on this EIA report and other material	35.9	29.3
Depend mostly on other material	12.4	8.4
Depend solely on other material	0.7	0.3
No response	11.3	8.7
Question concerning the recipient use of the Annual Energy Outlook Supplement		
To what extent do you use the Annual Energy Outlook Supplement?		
Response:		
Very great extent	9.1	
Great extent	21.3	
Moderate extent	31.0	
Some extent	18.6	
Little or no extent	6.9	
No response	13.1	

	AEO	AER
Questions concerning the usefulness of data dissemination media		
How useful to you is paper-hard copy?		
Response:		
Extremely useful	46.8	51.9
Very useful	26.8	24.4
Moderately useful	9.1	9.8
Somewhat useful	2.2	1.7
A little or not useful	2.0	1.4
No response	13.1	10.8
How useful to you is electronic publishing (EPUB)?		
Response:		
Extremely useful	8.0	7.7
Very useful	13.7	14.3
Moderately useful	16.0	19.2
Somewhat useful	14.2	13.2
A little or not useful	23.7	22.3
No response	24.4	23.3
How useful to you is a diskette?		
Response:		
Extremely useful	15.5	13.9
Very useful	18.6	21.6
Moderately useful	19.3	23.7
Somewhat useful	12.9	11.1
A little or not useful	16.6	14.6
No response	17.1	15.1
How useful to you is CD-ROM?		
Response:		
Extremely useful	10.4	12.9
Very useful	14.2	15.3
Moderately useful	11.8	13.2
Somewhat useful	10.6	10.8
A little or not useful	33.3	29.3
No response	19.7	18.5
How useful to you is Internet?		
Response:		
Extremely useful	16.6	16.0
Very useful	12.4	13.2
Moderately useful	11.1	15.7
Somewhat useful	10.0	11.1
A little or not useful	31.7	25.4
No response	18.2	18.6

Summary of Recipient Responses to Selected Energy Information Administration Reports

	AEO	AER
Which data dissemination media do you most prefer?		
Response:		
Paper	51.2	54.7
EPUB	2.9	1.7
Diskette	11.1	11.5
CD-ROM	9.1	10.8
Internet	8.9	10.5
No response	16.8	10.8

Note: The percentages are based on the number of respondents answering each question.

Appendix IV

Summary of Recipient Responses to Selected Energy Information Administration Reports of Limited Distribution

	[a]EIFD	[b]PFDI	[c]SCMA
Question concerning recipient dependency on reports			
How much, if at all, do you depend on the information contained in each of these EIA reports?			
Response:			
Depend solely on this EIA report	7.2	21.1	17.6
Depend mostly on this EIA report	21.7	19.3	14.3
Depend equally on this EIA report and other material	25.3	12.3	26.9
Depend mostly on other material	15.7	8.8	9.2
Depend solely on other material	3.6	0	3.4
No response	26.5	38.5	28.6
Question concerning recipient satisfaction with reports			
Overall, how satisfied or dissatisfied are you with this report?			
Response:			
Very satisfied	19.3	26.3	11.8
Generally satisfied	37.3	21.1	41.2
Neither satisfied nor dissatisfied	12.0	12.3	16.0
Generally dissatisfied	0	0	1.7
Very dissatisfied	1.2	0	1.7
No response	30.2	40.3	27.5
Question concerning recipient ability to obtain comparable data			
If EIA no longer published this report, how much more difficult, if at all, would it be for you to get reasonably comparable data?			
Response:			
A very great deal more difficult	18.1	36.8	21.0
A great deal more difficult	25.3	5.3	21.0
Moderately more difficult	13.3	8.8	11.8
Somewhat more difficult	8.4	1.8	5.9
A little or no more difficult	7.2	7.0	11.8
No response	27.7	40.4	28.6

Note: The percentages are based on the number of respondents answering each question.

[a]U.S. Energy Industry Financial Developments.

[b]Profiles of Foreign Direct Investment in U.S. Energy.

[c]Solar Collector Manufacturing Activity.

Appendix V

Comments from the Energy Information Administration

Department of Energy
Washington, DC 20585

DEC 19 1995

Chairman
Professional Audit Review Team
441 G Street, N.W.
Washington, D.C. 20548

Dear Sir:

Thank you for the opportunity to review and comment on the draft Professional Audit Review Team (PART) report, "Performance Evaluation of the Energy Information Administration." I concur with the findings regarding the satisfaction of the users of our information products, the need to concentrate on the most widely used products in this period of budget austerity, and the need to maintain the high quality of our data systems, models, and products.

The report recommends that, where possible, the Energy Information Administration (EIA) eliminate, publish less frequently, consolidate, or provide only by electronic access the data from all EIA reports of limited distribution. While I agree that such steps must be taken to accommodate the resource levels we expect in the future, I also believe that we must proceed in a manner that does not deny access to EIA products to those users who are not technologically sophisticated. I expect that achieving that balance between access and cost, while maintaining the traditionally high quality of our products, will be the great challenge facing EIA for the foreseeable future.

Some additional minor and editorial comments have been provided directly to the PART staff for consideration. If you have any questions or desire additional information, please contact me on 586-4361.

Sincerely,

Jay E. Hakes
Administrator
Energy Information Administration

Printed with soy ink on recycled paper

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