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Annual Report To Congress

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Energy Information Administration

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Annual Report To Congress 1998

Energy Information Administration
U.S. Department of Energy
Washington, DC 20585

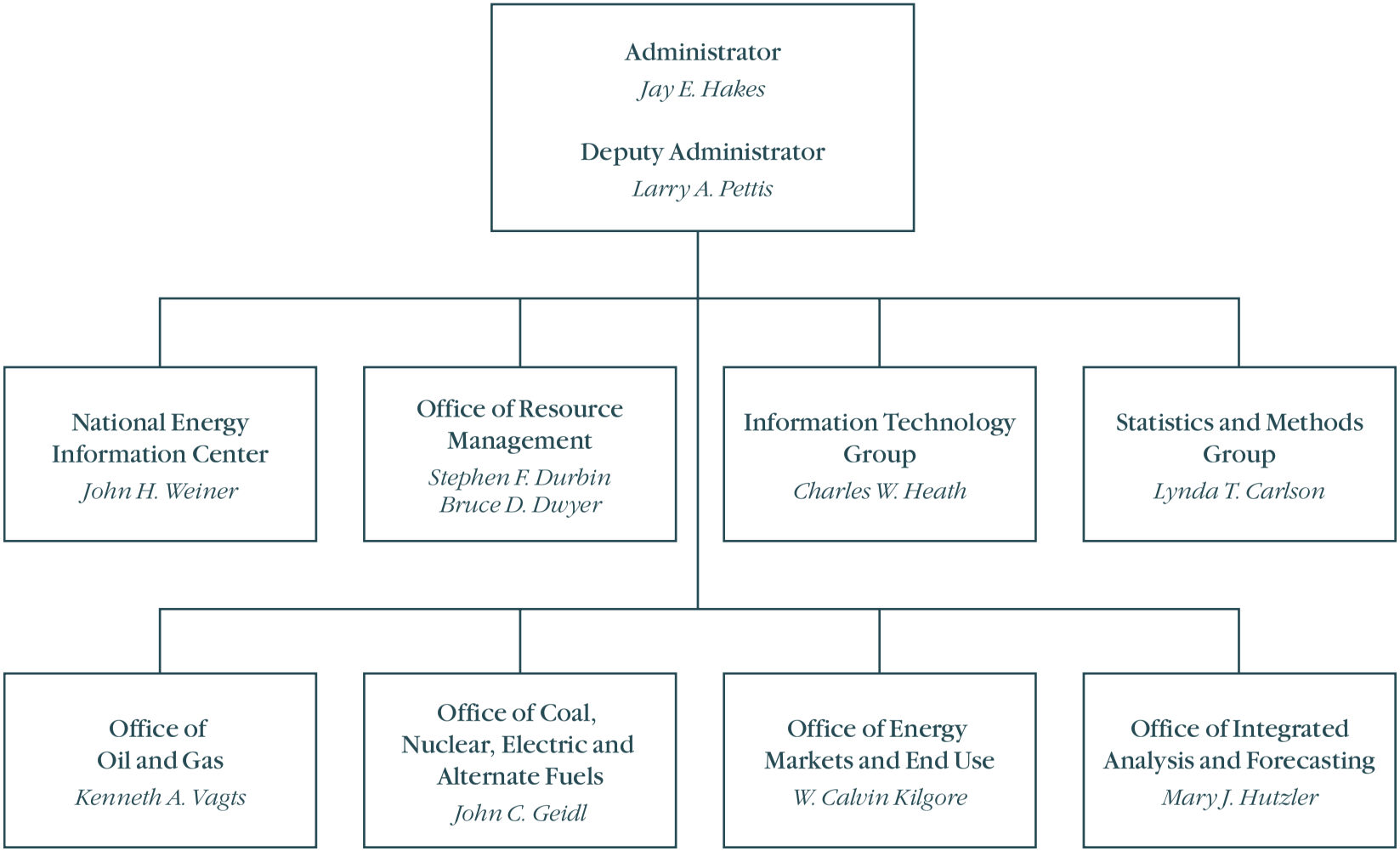
April 1999

Preface

Section 205 of the Department of Energy Organization Act of 1977 established the Energy Information Administration (EIA). One of the mandates in this legislation is that EIA prepare for Congress an annual report summarizing both activities and information collected and published. EIA's major 1998 accomplishments are profiled in the body of this edition of the *Annual Report to Congress*.

Appendix A contains abstracts of significant reports issued by EIA in 1998 and a chart of all titles and a list of all feature articles published during the year. Appendix B contains graphs of selected performance measures. Appendix C lists contact information for EIA subject matter specialists. Appendix D lists the major laws which form the basis of EIA's legislative mandate.

Energy Information Administration



Effective as of June 1997

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APPENDICES

How to Obtain EIA Products and Services

For further information on any of the following services, or for answers to energy information questions, please contact EIA's *National Energy Information Center:*

National Energy Information Center (NEIC)
Energy Information Administration
EI-30, Forrestal Building
Washington, DC 20585

(202) 586-8800
Fax: (202) 586-0727
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Electronic Products and Services

EIA's *Internet Site Services* offer nearly all EIA publications. Users can view and download selected pages or entire reports, search for information, download EIA data and analysis applications, and find out about new EIA information products and services.

World Wide Web: http://www.eia.doe.gov
FTP: ftp://ftp.eia.doe.gov

EIA also offers a *listserv* service for EIA press releases and other short documents. Sign up on the EIA World Wide Web site.

EIA's *CD-ROM, Energy InfoDisc,* contains most EIA publications and major energy database applications. The *Energy InfoDisc,* produced quarterly, is available for a fee from STAT-USA, Department of Commerce, 1-800-STAT-USA.

Printed Publications

EIA *directories* are available free of charge from NEIC. Recent *periodicals* and *one-time reports* are available from the Government Printing Office. Older reports are available from the National Technical Information Service.

Superintendent of Documents
U.S. Government Printing Office
P.O. Box 371954
Pittsburgh, PA 15250-7954
(202) 512-1800
(202) 512-2250 (fax)

National Technical Information Service
U.S. Department of Commerce
Springfield, VA 22161
5285 Port Royal Road
1-800-553-6847
(703) 321-8547 (fax)

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Introduction

Since its creation in 1977, the Energy Information Administration (EIA) has provided high-quality energy information products and services to a broad spectrum of customers across the Nation and around the world, including Congress, representatives of the print and broadcast news media, businesses, officials of Federal, State, and local agencies, foreign governments and international organizations, students, librarians, researchers, lawyers, and private citizens. Our motto: "On-line or off the shelf, EIA is the first place to go for the last word in energy information." Established as an independent statistical and analytical agency within the U.S. Department of Energy (DOE), EIA was charged by its enabling legislation with:

- Maintaining a comprehensive data and information program on 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.
- Developing and maintaining analytical tools and collection and processing systems; providing analyses that are accurate, timely, and objective; and providing information dissemination services.

Five years ago, EIA was one of the 28 departments and agencies selected as a pilot project in the Office of Management and Budget's implementation of the Government Performance and Results Act (GPRA) of 1993. Beginning with Fiscal Year 1997, GPRA required Federal agencies to prepare: (1) strategic plans that define an agency's mission and long-term general goals, (2) annual performance plans containing specific targets, and (3) annual reports comparing actual performance to the targets set in the annual performance plans.

EIA's experience as a pilot program participant has been crucial in preparing the agency to meet the GPRA requirements. EIA has already completed several strategic planning cycles, establishing and refining program goals, objectives, action plans, and, most importantly, the performance measures that help gauge agency progress in realizing its goals and objectives. This annual report, EIA's twenty-second, provides a narrative summary of program accomplishments. It also documents EIA's success in meeting the specific quantitative performance targets set out in the strategic plan.

In 1998, EIA continued to emphasize improving the development and delivery of timely, innovative, customer-oriented products and services; standardizing core business systems; and raising productivity through performance measurement and quality management. Selected 1998 accomplishments are highlighted on the following pages, including major program initiatives, business reengineering, improvements in information dissemination, performance measurement activities, a new process for developing an analysis agenda, and our customer feedback program.

Finally, in October 1998, EIA was awarded the Energy Quality Achievement Award in a ceremony hosted by Secretary of Energy Richardson. The award, modelled on the Malcolm Baldridge National Quality Award and OPM's President's Quality Award, is the highest-level quality award DOE has ever bestowed. (For more information, see page 11.)

Selected Program Highlights

Study on the Impacts of the Kyoto Protocol

On October 9, 1998, the EIA Administrator testified on EIA's report "Impacts of the Kyoto Protocol on U.S. Energy Markets and Economic Activity" before the U.S. House of Representatives, Committee on Science. This study was requested by both Representative James Sensenbrenner, Chairman of the Committee, and Representative George Brown, ranking minority member, thus representing a bipartisan initiative. Intensive interest in the study was indicated by the 108,148 Internet accessions it received during the first week of release, a record for any EIA publication, and also by the more-than-35 invited presentations on the analysis, with many provided to high ranking officials in the Administration, including Janet Yellen, Chairman of the Council of Economic Advisers, and Katie McGinty, then Chairman of the Council on Environmental Quality.

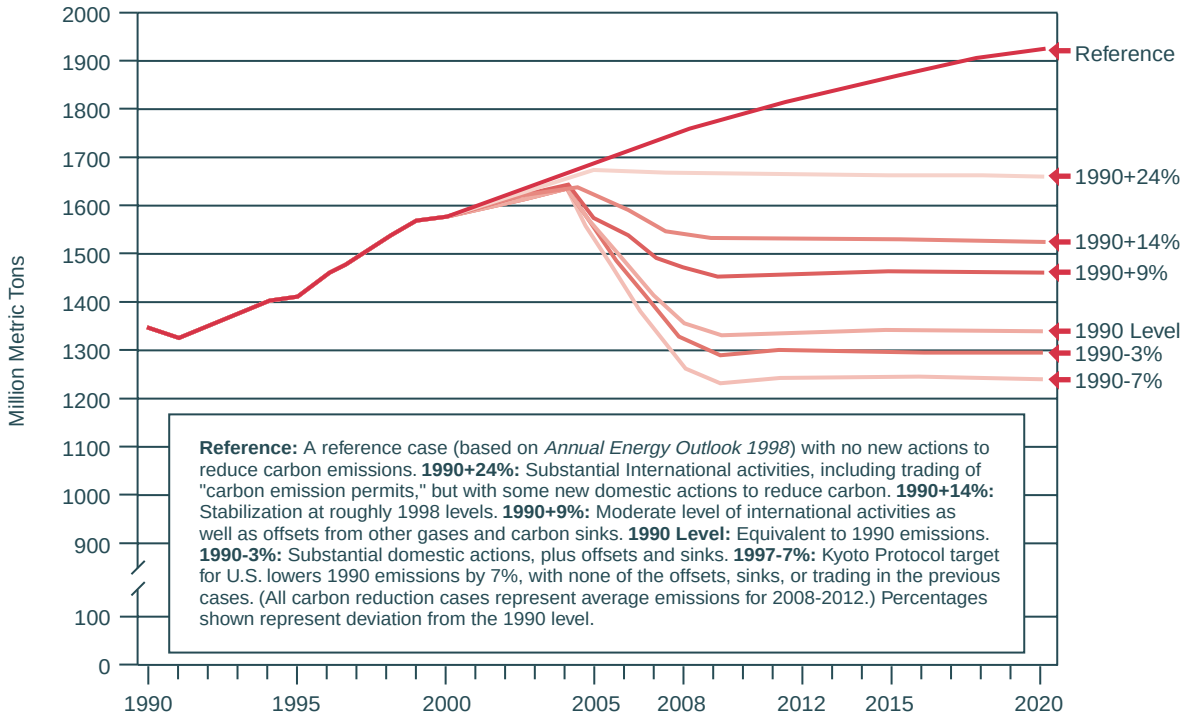
In December 1997, the U.S. and other developed countries agreed at the 3rd Conference of the Parties in Kyoto, Japan, to limit their emissions of greenhouse gases to specified average levels during the period 2008 to 2012. The U.S. target is a 7-percent reduction in greenhouse gas emissions below its 1990 emission levels. Since about 83 percent of the greenhouse gas emissions in 1990 were carbon dioxide associated with energy combustion, reductions in greenhouse gases of the size stipulated for the United States by the Kyoto Protocol would likely have significant impacts on U.S. energy markets. This is the case despite the fact that the Kyoto Protocol allows some flexibility, both domestic and international, in meeting the target, including: offsetting reductions in greenhouse gases other than carbon dioxide that are covered by the Protocol; forestry and land use actions that absorb carbon dioxide ("sinks"); trading of carbon permits among countries; and actions undertaken to reduce greenhouse gas emissions or develop carbon-absorbing sinks, such as forests and other vegetation, in other countries.

EIA's study examined six cases each, with different reductions in energy-related carbon emissions (Figure 1). In the case with the least stringent target for domestic energy-related reductions, carbon emissions are reduced by an average of 122 million metric tons a year relative to the projected baseline emissions between 2008 and 2012, representing an increase of about 24 percent above 1990 levels. For the most stringent target, emissions are reduced on average by 542 million metric tons relative to the baseline, or 7 percent below 1990 levels. Each case implicitly assumes different levels of international actions, offsets, or sinks, but these are not directly quantified. To reduce energy-related carbon emissions, EIA assumed that a carbon price would be added to the price of energy fuels at their point of consumption which would be based on their carbon content. The mechanism was assumed to be a government-run auction of carbon permits, with the government collecting the revenues and then returning those revenues to consumers through rebates of income taxes or social security taxes.

Highlights of the study include:

- The carbon price required to reduce U.S. energy-related carbon emissions ranges from $67 to $348 (1996 dollars) per metric ton of emissions in 2010, depending on the amount of permits that can be purchased internationally, on credits that can be taken for projects to reduce emissions or develop sinks in other countries, and on domestic actions to reduce other gases and increase sinks (Figure 2). Higher energy prices and the impact of the higher prices on the U.S. economy encourage consumers to reduce energy consumption by between 4 and

FIGURE 1. Carbon Emissions in the Reference and Six Target Cases, 1990-2020



18 percent in 2010, relative to the baseline, by reducing their utilization rates for energy services and purchasing more efficient equipment. Shifts from more to less carbon-intensive fuels also occur in the cases examined. In the more stringent reduction cases, the carbon price declines by 2010, as more efficient and lower-carbon technologies become economically available and penetrate beyond the 2008-2012 target period. In all cases, energy consumption increases between 2010 and 2020, as the economy grows and carbon prices flatten or decline.

- Because coal is the most carbon-intensive of the fossil fuels, the price of coal rises dramatically, with the delivered price to electric generators increasing between 153 and 800 percent in 2010 relative to baseline projections. Total coal use is lower than the baseline by between 18 and 77 percent in 2010, due mainly to lower consumption for electricity generation. Electricity generation from coal is as low as 4 percent of today's level by 2020 in the most stringent case. Coal used to generate electricity will be replaced by natural gas and renewables and also by the continued operation of many existing nuclear plants, which would be expected to retire in the absence of the Kyoto Protocol. Increases in natural gas consumption for electricity generation more than offset reductions in natural gas consumption by residential, commercial, industrial, and transportation consumers, with total natural gas consumption higher than natural gas consumption in the reference case by between 2 and 12 percent in 2010. Average electricity prices are expected to be 20 to 86 percent higher than prices in the baseline in 2010, compared with prices in the reference case.

- Petroleum consumption is lower than it would be without carbon reductions but remains above current levels because most petroleum

is used for transportation where there are only limited options to shift to less carbon-intensive fuels. Due to the carbon price, the average price of gasoline could be between $0.14 and $0.66 per gallon higher in 2010 than it would be otherwise, thereby reducing gasoline consumption by between 3 and 18 percent in 2010 compared to consumption in the baseline.

- When energy costs rise, other factors of production, including labor and capital, become relatively less expensive. Energy price increases encourage adjustments in which labor and capital are substituted for more expensive energy. In the process, some economic potential is lost, a fact which could reduce the "potential" GDP from a growth rate of 2.0 percent per year between 2005 and 2010 in the baseline to 1.9 percent a year (Figure 3). Returning carbon revenues to consumers will offset some of the negative impacts on the economy. In the baseline, the actual gross domestic product (GDP) grows at an average rate of 2.0 percent a year between 2005 and 2010. As a carbon price is introduced, the average growth could be reduced to 1.6 percent a year, assuming a social security tax rebate, or to 1.2 percent a year, assuming a personal income tax rebate (Figure 3). As carbon prices decline and the economy adjusts, GDP rebounds and the average growth rate between 2005 and 2020 is only slightly less than in the baseline.

EIA also analyzed cases with alternative assumptions about higher and lower economic growth, faster and slower technology change, and the construction of new nuclear generation plants.

FIGURE 2. Motor Gasoline Price in the Reference and Six Target Cases, 1990-2020

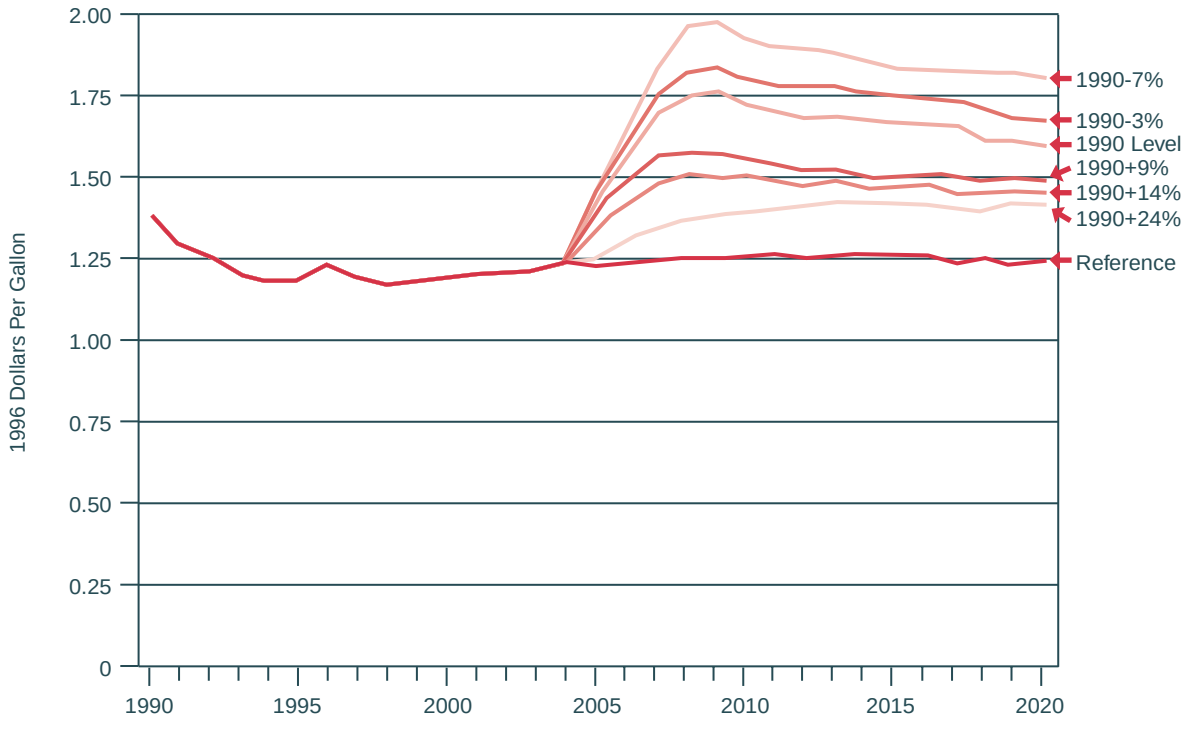
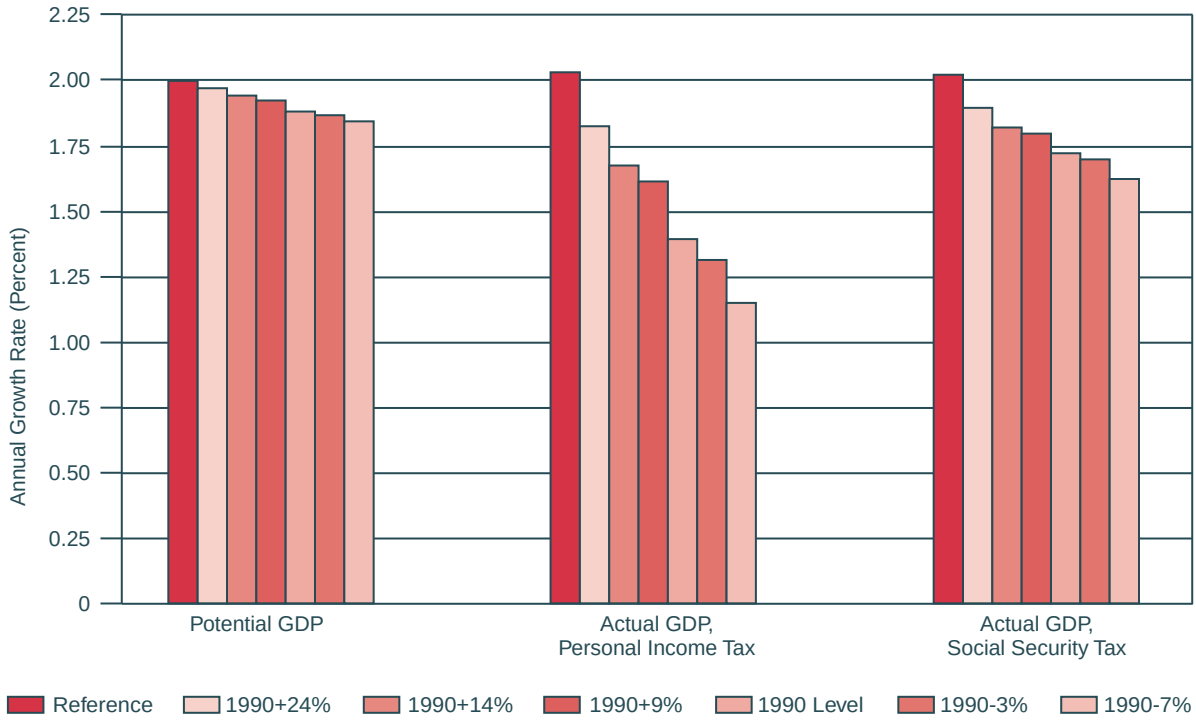


FIGURE 3. Potential and Actual GDP Annual Growth Rates, 2005-2010



EIA's Greenhouse Gases Program in 1998

The aftermath of the Kyoto Protocol dominated the work of the Energy Information Administration's Greenhouse Gases Program in 1998. While most EIA activities can help measure greenhouse gas emissions or are useful to an analysis of current or prospective climate change policies, the EIA has two statutory programs (required by Section 1605 of the Energy Policy Act) that were particularly affected:

- The EIA'S annual estimate of U.S. greenhouse gas emissions;
- The "Voluntary Reporting of Greenhouse Gases" program, which collects and reviews emission reductions reports from corporations, and publishes the results on the Internet, in a CD-ROM database, and in an annual report.

The Emissions Inventory Program

The United States is required by the 1992 Framework Convention on Climate Change (the Rio Treaty) to submit periodic emissions inventories to the Convention Secretariat. Countries that ratify the Kyoto Protocol are to use their national inventories to demonstrate compliance (or otherwise) with the Protocol target emission levels. The Kyoto Protocol (if adopted) would require parties to put in place "a national system of emissions estimation" and to submit more frequent, more detailed, and more comparable national emissions inventories to the Secretariat.

Consequently, government agencies, the press, legislators, corporations, advocates, and analysts all developed a sudden intense interest in the details of greenhouse gas emissions inventories. Since energy-related carbon dioxide emissions account for 82 percent of U.S. emissions, and these emissions are caused by combustion of fossil fuels and are measured by recourse to EIA energy statistics, this intense interest translated into a flow of telephone calls and e-mails to EIA staff and numerous requests for public presentations. During 1998,

EIA staff made inventory-related presentations to National Laboratory executives, the Air & Waste Management Association, the Chemical Manufacturer's Association, steel industry executives, the American Statistical Association, a United Nations Commission on Trade and Development (UNCTAD) forum, and several less formal venues.

In addition, EIA staff provided technical expertise on emissions inventories to the international community and to other Government agencies. At the request of the State Department, EIA staff participated in expert working group meetings hosted by the Secretariats of the Framework Convention on Climate Change and the Intergovernmental Panel on Climate Change. EIA staff also provided technical assistance on energy statistics and emissions estimation issues to the Policy Offices of the Department of Energy and the Environmental Protection Agency, the State Department's Office of Global Change, and the Defense Department.

This year's report, *Emissions of Greenhouse Gases in the United States 1997*, contained several innovations, including the first estimates of carbon dioxide emissions from natural gas production, and new approaches to characterizing the uncertainty in emissions estimates.[1] In addition, EIA posted a "flash" estimate of 1997 emissions on its Web site in June 1998, providing access to the emissions data several months earlier than in previous years.

As in prior years, EIA staff continued to work closely with their counterparts at the Environmental Protection Agency on emissions inventory issues and estimates.

The Voluntary Reporting of Greenhouse Gases Program

The Voluntary Reporting of Greenhouse Gases Program, which commenced operations in 1995, permits corporations, trade associations, private voluntary organizations, and households that have taken actions to reduce their emissions of greenhouse gases to report their reductions to the U.S. Government. The reports are compiled into a public use database, and the EIA publishes an annual report on the results of the program.

The Voluntary Reporting Program accelerated its work in 1998. The EIA published its CD-ROM database of results from the 1997 reporting cycle (data through 1996) in May 1998 and moved on directly to the 1998 reporting cycle, with publication of a preliminary "flash" report on the Internet in October 1998, giving access to 1997 results several months earlier than in previous years.[2] The flash report contained summary data on the number of reporters and projects reported and the quantity of emissions reductions claimed. Some 156 organizations (129 of them electric utilities) reported on more than 1,200 emissions reduction projects, with claimed emissions reductions totaling more than 45 million metric tons of carbon equivalent in 1997 alone.

Electric utility reporters to the Voluntary Reporting Program account for about two-thirds of electric utility greenhouse gas emissions in the United States. Coverage of the residential and industrial sector is much lower. Non-utility reporters included industrial firms, such as General Motors, IBM, Dow, Dupont, Johnson & Johnson, several aluminum smelters, landfill methane operators, and several private voluntary organizations with forestry projects.

In October 1997, the White House announced that it favored "Credit for Early Reductions," shorthand for a not-yet-legislated program in which companies that reduced their emissions prior to the 2008-2012 target date in the Kyoto Protocol would receive some to-be-defined "credit" for their actions. The announcement generated intellectual ferment as policymakers, companies, and advocates attempted to define the notions of "credit," "early," and "reductions."

[1] Energy Information Administration, *Emissions of Greenhouse Gases in the United States 1997* [DOE/EIA-0573(97)] (October 1998). See www.eia.doe.gov/oiaf/1605/1605a.html.

[2] Energy Information Administration, *1997 Preliminary Summary: Voluntary Reporting of Greenhouse Gases* (November 1998). Available on the Internet at http://www.eia.doe.gov/oiaf/1605/vr98rpt/flash/overview.html.

In this period of ferment, the EIA endeavored to provide perspective and information on "lessons learned" from the Voluntary Reporting Program, with briefings for House Commerce Committee Staff, the White House Task Force on Climate Change, the Edison Electric Institute, the Air & Waste Management Association, steel industry executives, Wisconsin corporate and Government officials, and the General Accounting Office.

As part of his climate change package, the President also indicated that he would be issuing an Executive Order requiring government agencies to take steps to reduce their energy consumption and greenhouse gas emissions. This proposal sparked interest on the part of Federal agencies in using the Voluntary Reporting Program as a registry and "back office" for their emissions reduction efforts. EIA staff were asked to give briefings on the Voluntary Reporting Program for Department of Energy facility managers, the Department of Defense, and the Overseas Private Investment Corporation.

At the request of Representative Henry Waxman (D-CA), the General Accounting Office conducted two separate investigations of the Voluntary Reporting Program during 1998, the first aimed at understanding data submitted to the program, and the second aimed at using the Voluntary Reporting Program data to provide insights into the problems associated with a "Credit for Early Reductions" program.[3] In addition, the Library of Congress' Congressional Research Service prepared a report, *Forestry Projects in the United States to Offset Carbon Emissions,* for Senator Daniel Akaka (D-HI), which drew heavily on Voluntary Reporting Program data.

In October, Senators Chafee, Lieberman, and Mack introduced S.2617, "The Credit for Voluntary Early Action Act," which proposed a measure of credit, subject to several conditions, for those entities that participated in the Voluntary Reporting Program. S.2617, it is reported, may be reintroduced in the present session of Congress.[4] It is likely that consideration of such a bill in Congress during 1999 will generate increased interest in the experience of the Voluntary Reporting Program.

Electricity Restructuring

During 1998, EIA continued to provide background information and analysis on competitive electricity markets in three new reports: *The Changing Structure of the Electric Power Industry: Selected Issues 1998*, *Challenges of Electricity Restructuring for Fuel Suppliers,* and *Issues in Midterm Analysis and Forecasting 1998*. A brochure was also prepared on the restructuring of the industry that is a capsule of the issues and events. To provide timely information on the transition to competitive markets, EIA initiated a monthly Internet report that provides a brief summary of the State legislative and regulatory actions and the dates for the start of retail choice. Although 18 States have passed legislation and/or regulatory orders for competition, retail choice of an electric energy supplier will not begin in each of those States in the same year and some States have adopted a phased-in approach for customer choice.

In addition to the analysis products, EIA initiated a project to redesign our electric power data surveys for post-2000. The goal is to maintain relevant information about the industry during and after the transition to competition. Data requirements were gathered through a series of focus groups held with users of EIA electric power data and survey respondents. A report, which is available on the Internet, was prepared summarizing the findings from each of 11 focus groups. Subsequently, conceptual designs for the new data surveys were developed after meetings with industry and government representatives in California, Pennsylvania, New England, and the Northwest. EIA also developed interim changes to our survey forms and revisions to our policy on the confidential treatment of data for our collection starting in 1999

[3] General Accounting Office, *Basic Issues in Considering A Credit for Early Action Program* [GAO/RCED-99-23], November 1998, and a letter report, *Department of Energy Voluntary Reporting Program for Greenhouse Gas Emissions Reductions* [GAO/RCED-98-107R]. Available on the Internet at www.gao.gov/AIndexFY99/abstracts/rc99023.htm and www.gao.gov/corresp/corresp.htm.

[4] The text of S.2617 can be found on the Library of Congress Internet site (thomas.loc.gov) under "bills introduced in the 105th Congress."

because of the changes that have already occurred in the industry. That initiative is described in detail later in this report.

The analysis report, *The Changing Structure of the Electric Power Industry: Selected Issues 1998*, provided information and statistics on wholesale electricity trade from 1990 through 1996 and on the development and functions of independent transmission system operators in response to the Federal Energy Regulatory Commission Orders 888 and 889. It also addressed a crucial issue in the States for the successful implementation of competition and the recovery of stranded costs. Stranded costs may be viewed as that portion of the value of a utility's existing assets (i.e., the unamortized portion of historical costs outstanding on the books of a utility) that would have been recovered under regulation but cannot be recovered through revenues in a competitive market. They result from high-cost generating plants (primarily, but not exclusively, nuclear), high-cost power purchase contracts, nuclear decommissioning costs, and regulatory assets. The Federal Energy Regulatory Commission established a precedent on wholesale stranded cost recovery in Order 888, stating that recovery of legitimate, prudently incurred and verifiable stranded costs should be allowed and that those costs should be recovered from the departing customer. Following that lead, most States that are proceeding with retail choice are providing the opportunity for the recovery of retail stranded costs contingent on the adoption of appropriate mitigation strategies. The process usually starts with the utilities submitting estimates of stranded costs that they seek to recover for review by the regulators. The States designate the method and transition period for recovery of stranded costs.

The restructuring of the electric power industry will also lead to changes in the financial risks and demand for fuels used to generate electricity. The report *Challenges of Electricity Restructuring for Fuel Suppliers* examined the potential changes and concluded that natural gas is likely to be the preferred source of energy for most new generating plants with or without a competitive electricity market. This is due to the lower capital cost, less stringent siting requirements, and improved efficiency of gas turbines and combined cycle units, all of which result in lower investment requirements for new gas-fired units. Increases in coal-fired generation of electricity from 1996 levels is expected in some regions of the country, due primarily to the greater utilization of existing coal-fired power plants rather than construction of new units. The challenges for the natural gas industry will be to develop shorter-term contracts with lower transaction costs, to improve the deliverability and flexibility, to share the risk with plant developers, and to improve the coordination for the scheduling of natural gas deliveries to electricity demands. Coal producers will also face challenges. It is expected that the electric generating companies will put further pressure on coal producers for lower coal prices and contracts of shorter duration. In addition, financial institutions will evaluate the financing of coal mines on a "balance sheet" basis rather than by the traditional project financing. These developments could lead to more consolidation in the coal industry, forcing operators of small mines out of business. The coal futures market, which is already being developed for risk hedging and price discovery, could become an important tool for risk management by coal producers.

The question concerning the 105 nuclear generating units in a competitive market is whether they will operate until the end of their license, retire early, or extend their operating license. The answer will depend on the ability of each plant operator to keep the plant's operating and maintenance costs, including the costs of capital improvements, such as steam generator replacements, competitive with an alternative source of replacement baseload power—coal-fired or natural gas-fired combined cycle plants. The inability to recover the remaining investment costs and decommissioning costs of the existing nuclear plants from the revenues received in a competitive market will not be a factor in retirement decisions, but these costs will make up a major portion of the stranded costs for utilities. The outlook for the nuclear plants will also affect the uranium markets. The uranium industry has already seen significant contraction during a decade of depressed prices, and further consolidation would be expected.

The role of renewable energy sources in a competitive market will depend primarily on legislative initiatives, such as a renewable portfolio standard or system benefits charges to fund renewable programs. However, some energy suppliers are finding a market as "green" energy suppliers, who package electricity sales that are generated at least 50 percent by renewable resources. States are developing procedures similar to product labels to assist customers in making informed decisions about choosing a "green" supplier.

The report *Issues in Midterm Analysis and Forecasting 1998* addressed the impact that electricity restructuring could have on electricity prices and the ability of companies to exercise market power. The EIA projected electricity prices under various assumptions related to competitive electricity markets. The fundamental difference assumed between regulated and competitive markets is that, under competition, electricity prices are based on the marginal cost of production rather than on the average cost that is currently used in regulated markets. The analysis showed that in some regions of the country, where low-cost electric-generating sources are used, consumers could see prices rise if the marginal providers have higher costs than the imbedded costs used in the traditional regulated cost calculation. Because the marginal providers are likely to be fueled by natural gas, the prices that consumers face will be directly linked to prices of natural gas. Market power concerns have been raised about the control of the operations of the transmission system. EIA constructed a test case by using a model of the New England transmission system and performed analyses to determine the potential for the exercise of market power. It was found that market power could be an issue under unusual situations, such as when key generators are removed from service for maintenance or other reasons, and that a detailed representation of the transmission grid is required to make a final determination about the extent of market power.

All of the EIA reports, the brochure, and the monthly status report for the States that are described above are accessible on the EIA Web site www.eia.doe.gov under the topic of electricity.

EIA Wins Energy Quality Achievement Award

In March 1998, EIA submitted an application for the 1998 Energy Quality Award (EQA), a Department of Energy award modelled on the Malcolm Baldrige National Quality Award and OPM's President's Quality Award. EIA's Quality Council decided that EIA should submit an application primarily for two reasons. First, the creation of an application following the Baldrige evaluation criteria serves as a comprehensive organizational self-assessment and, second, we wanted the independent review and feedback provided to all applicants by the trained EQA examiners. EIA's application was prepared by a team of EIA managers and staff from all parts of the agency, and the final product serves as a chronicle of all aspects of EIA's operations. Following an extensive evaluation process that included a three-day on-site visit by the EQA examiner team, EIA was awarded the Energy Quality Achievement Award in October 1998 in a ceremony hosted by Secretary of Energy Richardson (see photograph). The Achievement Award is the highest-level quality award DOE has ever bestowed.

In our application, we provided information for each of the seven Baldrige evaluation categories:

- Leadership
- Strategic Planning
- Customer and Market Focus
- Information and Analysis
- Human Resources Management
- Process Management
- Organizational Results

The application was posted on the EIA Web site, at the time it was submitted, making it easily available to all employees and customers.

The feedback report prepared by the DOE examiner team contained the following statements concerning EIA's strengths:

- "EIA's leadership system appears to be effective. There is a well-developed customer focus, and an active line of communication exists with leadership, employees and customers."
- "EIA has a well-refined strategic planning process. A systematic compilation of input data provides key information for the strategic planning process. Input data are obtained from

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The Energy Quality Achievement Award Team: Left to Right: Janet Gordon, Thomas Broen, William Dorsey, Colleen Blessing, Barry Yaffe, Secretary Richardson, Lawrence Pettis, Bruce Dwyer, and Paula Weir.

customer feedback, employee perceptions, agency capabilities, status of major work efforts, and five-to-ten-year trend and risk projections."

- "EIA has established a multilevel approach to listening and communicating with customers. These include formal surveys, briefing sessions for Congress, sponsoring annual conferences, holding focus groups, and attending specific energy industry conferences. EIA has a National Energy Information Center (NEIC) staffed with information specialists trained in customer service and customer requirements. EIA is viewed as a benchmark by other government agencies in conducting customer surveys."

In describing areas for improvement, the feedback report noted that EIA does not track all key business results, some processes are not implemented systematically, and EIA does not compare itself with competitors or make extensive use of comparative data. These areas of improvement will be addressed by EIA's Quality Council and leadership groups.

Survey Redesign

Best Practice: Redesign of EIA's Electric Power Data Collection Forms

Even though the electric utility industry is a $200 billion capital-intensive industry, the largest in the United States, collecting data from this industry sounds like a boring topic. However, the EIA has raised the interest in, and the quality of, the forms used to collect electric power data and has also raised the use of stakeholder input to a new level.

By way of background: electric utilities have been regulated by the Federal Energy Regulatory Commission (FERC) and State Public Utility Commissions (PUC) for many years. The implicit agreement has been that a utility was given a monopoly over a certain franchised area for which it would receive specified rates of return. In return, it would be required to service all of the demands of the customers in that service territory. The utility's operations included three major aspects of the electric power system: 1) generation of electricity; 2) transmission of the electricity across the power lines; and 3) delivery of the electricity to the end user (residential, industrial, and commercial customers).

EIA's mission has been to collect information about all three segments of this chain and make the information available for everyone to use. We have done this through a variety of monthly and annual reports produced first in hard copy and more recently disseminated on the Internet. EIA has used up to 11 different survey forms to collect these data from a variety of entities.

In April 1996, FERC issued two orders which made the transmission component open for competition. That is, anyone who generates electricity can use the transmission lines to transmit their electricity and be charged the same price the owner of the lines charges itself. In addition, many State PUC's are experimenting with making all electric power suppliers compete for their business and have directed their electric utility companies to sell their generation units and recover whatever capital costs they can.

Certain companies, known as non-utilities, also produce electricity. EIA also collects data from these companies. These entities are allowed, by the Energy Policy Act of 1992, to sell their electricity to electric utilities at the electric utilities' "avoided cost." This means that, for example, a chemical company that produces electricity for its own operations can sell its excess electricity to the electric power grid and get paid for it. It also means that a private company can produce electricity and sell it to the grid, although it is not allowed to sell to end users (only electric utilities have been allowed to do that). With the changes made by FERC to open the transmission lines to anyone and the potential for retail competition, the level of competition is increased even more.

Given all of these changes, the forms which have been used for the past 20 years by EIA to collect data from regulated monopolies needed to be adapted to the new environment. To determine how to change its methods of collecting information for Congress, the Executive Branch, and the public, EIA developed a plan to obtain the views of stakeholders on what information needs to be collected and the frequency of its collection.

First, EIA assembled more than 120 people from all parts of the user community by sponsoring ten focus group meetings. Participants included members of utilities; non-utilities; environmental organizations; the media; investment banks; Federal,

State, and local governments; consumer groups; public utility commissions; academia; and Congressional staff members. These meetings were held from July 1997 to January 1998. A summary of the comments from these meetings was made available to the public on EIA's Internet site *(www.eia.doe.gov)* in April 1998.

The result of these meetings was agreement that everyone wants EIA to collect a variety of information on electricity generation, transmission, and consumption. However, there was considerable disagreement on how much of the data should be disseminated and how much should be held confidential. In the past, because the utility industry was regulated, EIA followed the lead of FERC and released all of the electric utility data it collected. Since non-utilities were not regulated, their data were held confidential and published only in aggregate form. With the coming changes to the industry, there was a desire to treat the different types of electricity producers equally.

To get further guidance from interested parties, in February 1998, EIA asked for comments on how to formulate a confidentiality policy for electric power data. This was done through a *Federal Register* Notice and alerting people on EIA's Internet site. Having received comments from 151 organizations and individuals, EIA developed a draft confidentiality policy and again asked in July 1998 for interested parties to provide their comments. At the same time, EIA used the input from the focus groups and several visits to PUC's and electric generating companies in California and Massachusetts (leaders in experimenting with retail electric competition) to develop a set of changes to the existing forms. These changes reflected the changes to the industry over the short-term. (EIA has further plans to make longer-term changes to the forms by January 2002 to accommodate additional competition.) In June 1998, interested parties were also asked to provide EIA with their comments on the proposed form changes. Both of these proposals were advertised in the *Federal Register* and on EIA's Internet site. In addition, every company that provides electric power data to EIA was sent a copy of both proposals and was asked for their comments.

EIA met with several interested Federal agencies to coordinate its efforts. These included: FERC, the Environmental Protection Agency, and the Rural Utility Service (U.S. Department of Agriculture), which collects the same type of financial data as EIA, but from electric cooperatives. EIA also participated in a collaborative set of meetings, organized by the National Resources Defense Council (NRDC), to review EIA's proposals and make recommendations to EIA. The participants included: NRDC, the Environmental Protection Agency, and a variety of renewable energy, environmental, electric power and trade associations. EIA was present at all of the meetings to answer questions of the participants and to hear their points of view. Even though they were a very divergent group, they came to an agreement on what EIA should do. One of the major agreements was to treat utilities and non-utilities equally, both on the information they have to submit and on which data elements should be kept confidential.

EIA received 60 sets of comments on the proposed confidentiality policy and 50 sets of comments on the proposed form changes. EIA's Administrator also met with representatives of the Edison Electric Institute and the NRDC to inform them of EIA's intended proposals. In these meetings, EIA explained how it balanced the needs of Congress, the Executive Branch, and the public against the needs of private enterprise. EIA's decisions included having non-utilities and utilities file the same monthly information and most of the same annual operational form information. Utilities will still be required to provide financial and environmental information which non-utilities will not have to file. Some utility information which was released to the public before is now to be held confidential and some non-utility data which was confidential will now be released to the public. Also, the same data elements will be kept confidential for both utilities and non-utilities. This "leveled the playing field" much more than it had been before.

In November 1998, EIA forwarded its proposed confidentiality policy and form changes to the

Office of Management and Budget (OMB) for approval. OMB gave its approval in December 1998 and EIA began to implement the proposed changes.

The overall process is a model for fostering and using stakeholder input to a process which affects billions of dollars worth of decisions in an industry which is vital to every person's life in the United States. EIA was open in asking for viewpoints early in the process. EIA asked several times and in several ways for input, and EIA tried to be as fair and open as it could with its final decisions. This helped build support for EIA's proposals by demonstrating its openness and fairness in dealing with all of the affected parties.

Natural Gas Restructuring

For more than 20 years the natural gas industry has undergone significant changes. The deregulation of the industry began with the gradual decontrol of natural gas wellhead prices and continued with the unbundling of pipeline company transportation and sales services. More recently, wholesale and retail competition have also changed the structure of the industry and will continue to have a substantial impact in the foreseeable future. There are new business entities involved in natural gas markets, and customer choices for commodities and services are bringing in new market players all the time. In addition, the deregulation of the electric power industry will have an effect on the gas industry.

In response to these changes in the natural gas industry, EIA has initiated a project to design and implement a new, comprehensive information program for natural gas to meet customer requirements in the post-2000 time frame. This project is known as *"Next Generation * Natural Gas."* The result of the project will be the next generation of natural gas information reporting. This effort is needed so that EIA can maintain a high quality and relevant information program for natural gas. The project is a joint effort between EIA's Natural Gas Division and the Statistics and Methods Group. It includes a series of quality assurance projects to address issues of data quality which are currently known. The results of these quality assurance projects will provide valuable input in redesigning the information program.

*Next Generation * Natural Gas* has several major phases. The first is to determine information requirements. To that end, EIA has conduced ten focus groups and many executive interviews. Groups included in this process were: associations, such as the National Association of State Regulatory Commissioners, the American Public Gas Association, and the US Association of Energy Economists; natural gas producers, utilities, and local distribution companies; natural gas marketers; researchers, academics, and consultants; natural gas trade associations; Congressional staff; and DOE policy makers. These focus groups and interviews were nearly complete by the end of 1998 and will be a valuable source of input in determining the needs for information. Once the requirements have been validated and refined, the next step will be to map these requirements against EIA's existing information collection program to see what needs to be modified. This could mean changing or eliminating existing collections as well as developing some new ones. The requirements will be used to design a new, forward-looking information program. Once the design effort is completed, the information collections will undergo a rigorous testing program, which will employ the latest cognitive and pilot testing methodologies. The product of this effort will be the next generation of information collection, a program designed to meet user needs into the 21st century.

EIA has initiated a series of quality assurance assessments that will be used as input for the data requirements and redesign stages of the *Next Generation * Natural Gas* project. Several areas for assessing the quality of natural gas data and for investigating new methodologies were identified through an examination of performance measures and results from the EIA Survey of Subscribers. One of the data quality issues pertains to the observed decrease in deliveries to industrial consumers in 1998. The project will

determine if this downswing was real or due to reporting or coverage problems. Another concern is the balancing item for the supply and disposition series. The magnitude and direction of the series used to balance supply and disposition has changed substantially in the last few years. The possible causes of the change will be examined and recommendations made for possible adjustments in the series to reflect the underlying drivers of these changes. Another issue is the early estimates obtained from the Short-Term Integrated Forecasting System (STIFS). In response to the Strategic Plan initiative to improve the timeliness of our data, the Natural Gas Division and the Short-term Forecasting Group developed an approach to use the STIFS model to provide early estimates of some key natural gas data series. Relatively high revision errors have been associated with some of the series. The purpose of this project is to examine the magnitude of the revisions and evaluate whether this approach is reasonable. In addition to these data quality projects, there are efforts underway to identify new sources to maintain the frames for natural gas surveys, to identify additional sources of natural gas information (to supplement or replace the data that EIA collects), and to obtain cost estimates for surveying industrial end users.

EIA's Electronic Dissemination

Web Site

The EIA Web site has become the first place many individuals and organizations look for energy information. Use of the EIA Web site has continued to increase significantly. The following table gives the percentage increase between 1997 and 1998 for three different measurements of daily unique users.

Comparison of Daily Unique Users

	Percent Increase	1998	1997
Total for Year	65%	1,413,000	859,000
Busiest Month	53%	150,000 (November)	98,000 (November)
Busiest Day	60%	7,600	4,700

Continuing in the tradition of EIA's leadership among Federal agencies in providing electronic access to data and reports, EIA made a major effort to improve the overall quality of data presentation methods. EIA's Web site was recently selected as a Select Site in the Dow Jones Business Directory, a guide to high-quality business Web sites. The EIA Web site received the highest possible rating for content on the basis of timeliness, depth, and accuracy. It received the second highest possible rating for speed on the basis of performance, using a variety of modems, network connections, and browsers at different times of the day and week. "For researchers, grant writers, forecasters or any other professionals involved in preparing energy material, the EIA is a bonanza," so exclaimed the Director.

Virtually all EIA reports and analyses are available on the Web site. In 1998, an analysis of the navigation and search features was initiated to optimize the process of finding information. A prototype was successfully developed which standardizes the presentation of publications. The standard format mandates one file per table of content item. This format provides not only improved ease of navigation for users but also supports the generation of access statistics reports that show demand for energy data in detail. The prototype system also enables publication archives to be maintained on-line. There are over 70,000 separate files containing information by energy source/fuel group (energy overview, petroleum, natural gas, coal, electricity, nuclear, renewable, and alternative fuels) and by other energy topics (international, end-use consumption, financial, forecasts, and historical data.)

EIA made the enhanced version (IQ-2) of its Interactive Query (IQ) system publicly available in May 1998. Introduced in 1996, IQ-1 allowed users to create custom data tables, either in HTML or text format, from a small number of available data elements. IQ-2 consists of over 1 million records and data from EIA's most popular data publications, 5 times the content of IQ-1. It also generates graphics and spreadsheet formats and uses new software applications to speed the process of data updating. The total 81,000 unique daily users in 1998 downloaded a significantly increased number of files after IQ-2 was introduced in May. The average number of files downloaded per month between May and December was 63,000, which is a 45 percent increase from the January-to-April monthly average of 43,500 files.

Other features on the EIA Web site include:

- "What's New at EIA" lets customers know what has been added to the site recently and allows them to click on their selections and see the new items immediately.
- A list of more than 300 links to other related sites, including DOE, National Laboratories,

other Federal Government agencies, universities and other academic institutions, international statistical organizations, energy companies, energy news services, and energy trade associations.

- All recent EIA press releases.
- Annotated EIA contacts list, with telephone numbers and e-mail addresses.

A typical reaction the EIA Web site's new prototype system is this response from a very pleased librarian at a large energy company:

> *"The EIA Web site is the very best Web site out there for our needs. I applaud your wealth of information and your ease of use."*

Listserv E-mail

Web customers also can register for over 40 electronic mail lists (listservs) to receive energy information automatically via e-mail. There is no charge for any of these lists. During 1998, EIA distributed 1.5 million e-mails, which is an 80 percent increase from the mailings sent in 1997. As of December 1998, there were 64,000 total sign-ups for all the lists, which is a 50 percent increase from the total sign-ups as of December 1997. In December 1998, 5,000 customers had signed up to receive *Press Releases*, our most popular listserv subject. Other popular listservs include the *Short-Term Energy Outlook*, *Country Analysis Briefs for All Available Countries*, "This Week at EIA," *Electric Power Industry Developments, Electric Power Summary,* and *Monthly Oil Market Chronology*.

Customer Feedback

What did we hear from our customers in 1998?

During 1998, EIA conducted two EIA-wide customer surveys and three product-specific surveys. We also received feedback from Web site customers and conducted a number of focus groups and customer interviews to collect feedback on specific topics.

Telephone Customer Survey

Results from the fifth annual telephone survey show that most customers continue to be satisfied or very satisfied with all aspects of our products and services. Several new questions were added this year to help us make decisions about, or improvements to, specific services. Interesting results from the telephone survey revealed:

- Satisfaction with the timeliness of our information continues to score lower than other product attributes. Accuracy remains the most important attribute.
- A total of 93 percent of the telephone customers surveyed reported using an electronic product or service (the main one being our Web site) during the past year, up from 73 percent in early 1998 and 56 percent in early 1997.
- Despite the availability of electronic information, 56 percent of the telephone customers still want the paper copy. This percentage has remained relatively unchanged over the 5 years we have conducted this survey.
- A large majority (84 percent) of the respondents said they had never been reluctant to call EIA even though we don't have a toll-free telephone number, and 73 percent said they wouldn't call more often if we did have a toll-free number.
- A total of 84 percent of our respondents said our Web site was easy to use, but they did offer some suggested improvements: Make things easier to find; make downloading files easier; and improve the search engine.

Mail Survey of Publication Subscribers

In the summer of 1998, EIA conducted a mail survey of its publication subscribers. This was the largest survey we have fielded to date. We mailed questionnaires to nearly 4,000 customers (both paying customers and those who receive complimentary copies) and received more than 2,100 replies, for a response rate of 54 percent. The sample was selected to ensure we would have statistically valid results for six of our major publications. Interesting results from this survey include:

- Customers generally were satisfied or very satisfied with our products and services, but the scores were lower than those from the telephone surveys. We attributed this change to the survey medium (people can be more honest in writing than over the phone) and to the fact that we were asking about one specific publication, rather than all EIA products.
- By far the most important publication characteristic is accuracy, followed by relevance.
- Although 90 percent of our publication subscribers have electronic access to our publications (Internet and CD-ROM), 42 percent were not aware that our publications are available electronically. In 1999, we plan to have banners on the publications' covers to advertise the electronic version.
- A total of 58 percent of all our respondents and more than 56 percent of our subscribers who say they use the Web still prefer the paper

version. Reasons include: They don't like reading large documents on the screen, they often use paper publications away from their PC, and they enjoy having paper archives.

- Reaction to a publication alternative where EIA would distribute short summaries in paper version and then offer detailed data and tables electronically was mixed:

45%	Satisfied with this alternative
24%	Neutral
22%	Unsatisfied

- Customized briefings of the survey results were presented to the offices responsible for the six targeted publications.

Country Analysis Briefs Customer Survey

EIA received about 400 responses to a customer survey fielded on the Web site during Spring 1998 asking about our Country Analysis Briefs. These reports provide summary statistics and analyses of the energy situation and other facts about specific countries. The Briefs are one of the most popular areas of our Web site.

When we asked customers if they wanted shorter but more frequent reports or longer but less frequent reports, they said "yes," they want both. People want more information more often. One change we did make as a result of this feedback was to add countries to our list and add some special topics (in 1998, for example, a report on OPEC oil revenues) to the Country Analysis Briefs program.

Electronic Bulletin Board Customer Survey

EIA was seriously considering discontinuing its Electronic Bulletin Board (EPUB) Service in 1998 but wanted to talk with our customers first to see how that change would affect them. We surveyed 34 customers, which represented 67 percent of the petroleum data accesses, including the top EPUB users. More than half (22) of these customers said they could access data from the EIA Web site. Only three customers currently had no Internet access and had no alternative way to access our data. Ten customers strongly opposed the elimination of EPUB. Many of those surveyed preferred EPUB because they believed the Web site does not have all the data they need, EPUB is updated sooner, and Web access was not as fast as it was for EPUB. Nearly all of them downloaded data from the bulletin board by using computer programs or script files which do not work on the Web site.

As a result of these customer contacts, EIA decided to discontinue EPUB in 1998, although, based on the customer feedback from this survey, we decided to phase out EPUB more slowly than originally planned and to work with the major users to show them how they could access the data they need from our Web site. By the time EPUB was discontinued, the users had developed the capability to access the data from the Web site.

Petroleum Marketing Monthly Customer Survey

Staff in EIA's Oil and Gas Division conducted a mail survey of subscribers to the *Petroleum Marketing Monthly* to explore customer views about eliminating specific data and adding new data. Four specific data series were offered as candidates for elimination. Although a majority of our customers responded that their needs would still be met without these data, a significant minority (many were very important EIA data users) said their needs would not be met. This response convinced EIA that these data should not be dropped. Data for select States for specific products were added to the report as a result of this customer feedback.

Historically EIA has published 27 pages of explanatory notes in each edition of the *Petroleum Marketing Monthly*. A majority of survey respondents favored publishing the bulk of these notes only once each year or having them available electronically. EIA will make this change in 1999.

Web Site Customer Feedback

EIA received nearly 300 comments and suggestions from Web site customers who used our "Feedback" button in 1998. Results were:

Was this site easy to use?

Yes	74%
Somewhat	21%
No	5%

Did the information on this site meet your needs?

Yes	49%
No	51%

Type of message to EIA:

Data request	61%
Technical	28%
Compliment	11%

At the end of July 1998 we added a new question to our Web site feedback survey:

How does EIA's Web site compare to other Government Web sites you have used?

One of the best	41%
Better than most	45%
About the same	11%
Not as good as most	3%
One of the worst	0%

Web Site Feedback Collected by Staff

The information specialists in the National Energy Information Center help customers every day via telephone and e-mail. In their work they hear many suggestions and complaints about our Web site. In May 1998, the Information Specialists began recording these Web comments. Summary suggestions passed along to those people responsible for Web development include:

- Customers would like a short description of what EIA is on our Web site.
- Customers thought alphabetical lists of site contents and publications would be useful.
- Many customers still are having difficulty finding the historical energy data they need.
- Customers wanted the name of the document and a page number on each electronic page, as well as the date of release of the data or report.

Updates and improvements to our Web site based on these comments have been implemented or are now being considered for implementation. For example, a new Web feature, entitled "About Us," has been developed to provide customers with a profile of EIA's history, mandate, mission, and programs.

Focus Groups and Customer Interviews

EIA collects energy data from respondents who are required to fill out our survey forms. The more intuitive and understandable the forms, the higher quality data we will receive. In 1998, we initiated three projects to redesign specific survey forms, one using focus groups and two using a new technique called cognitive interviewing. This process involves a respondent's actually filling out a survey with an interviewer while "thinking out loud" so we can see how they interact with the questionnaire and what meanings they get from terms and instructions. (Prior to 1998, EIA relied heavily on post-collection techniques, such as error checks and periodic expert reviews of its surveys, to improve the quality of its data.)

EIA was introduced to cognitive interviewing techniques during a 1997 workshop on survey design and implementation sponsored by the EIA's Statistics and Methods Group.

In June 1998, EIA used cognitive interviewing to test a redesign of our Manufacturing Energy Consumption Survey to prepare for the 1999 data collection. The revised version is longer but has a more intuitive design and has the instructions printed throughout the survey, directly in places where respondents need to read them, rather than in a separate booklet. EIA conducted cognitive interviews at seven local manufacturing establishments. The interview findings, which included identification of problems with some of the survey terms and concepts, were incorporated into a second draft. Twenty additional interviews

conducted by telephone indicated that these revisions were successful. Most respondents said the new format was easier and that the length did not bother them.

Staff have been trained in conducting cognitive interviews so that these techniques can be used on other EIA data collections. Plans currently exist to employ cognitive interviewing as a part of the information collection redesign efforts of the *Next Generation * Natural Gas* project.

EIA also conducted a series of focus groups during 1998 to collect customer feedback on the redesign of our electric power surveys.

In the Fall of 1998, seven EIA staff received intensive training from the U.S. Census Bureau on the cognitive interviewing process. As part of the training, we conducted four interviews in a cognitive lab with actual survey respondents (one segment of our customer base) watching them fill out one of our natural gas forms. The interviews focused on the understandability of the questions themselves and the usefulness and understandability of the instructions. EIA will use this customer feedback in redesigning this survey form.

Samples of Customer Feedback About Our Web Site

"There is an unbelievable amount of specific technical stuff which I was desperately looking for. Thanks a million."

"Very helpful information — in an easy-to-use format. The table information is excellent and easy to print. Thank you very much!!!"

"Your site is great! I'm glad I found it to write my paper. Thank you!"

"Excellent site. Comprehensive but not complicated."

"EIA reports are an invaluable tool to me as I develop projects both domestically and internationally."

"Terrific site! I was able to dig up some very specific data from several decades ago in a matter of five minutes or so. I didn't think I'd be able to get my hands on this stuff, but it turned out to be extremely easy, all done by browsing. I didn't even have to try your search engine. Keep up the good work!"

"I'm teaching about energy resources in my middle school science class. I needed data to use for them to generate a graph of the various sources of energy used for electricity. Your site had exactly the data I needed. Thanks!"

"This is an excellent site. The info is arranged in chunks that make sense. Someone's head is screwed on right at your site. Probably a lot of heads. The site is one example of what government is for, especially one like the US.... keep up the fine work."

1999 EIA/NEIC Telephone Customer Satisfaction Survey

Findings

Customer Survey Committee
February 1999

FIGURE 1. NEIC Telephone Customers Satisfied or Very Satisfied with Customer Service

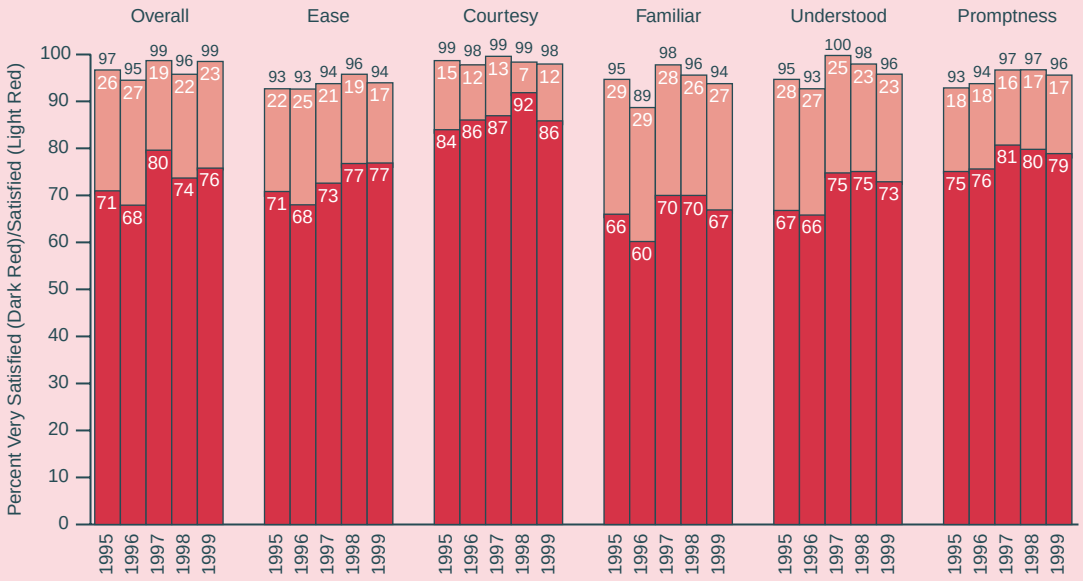
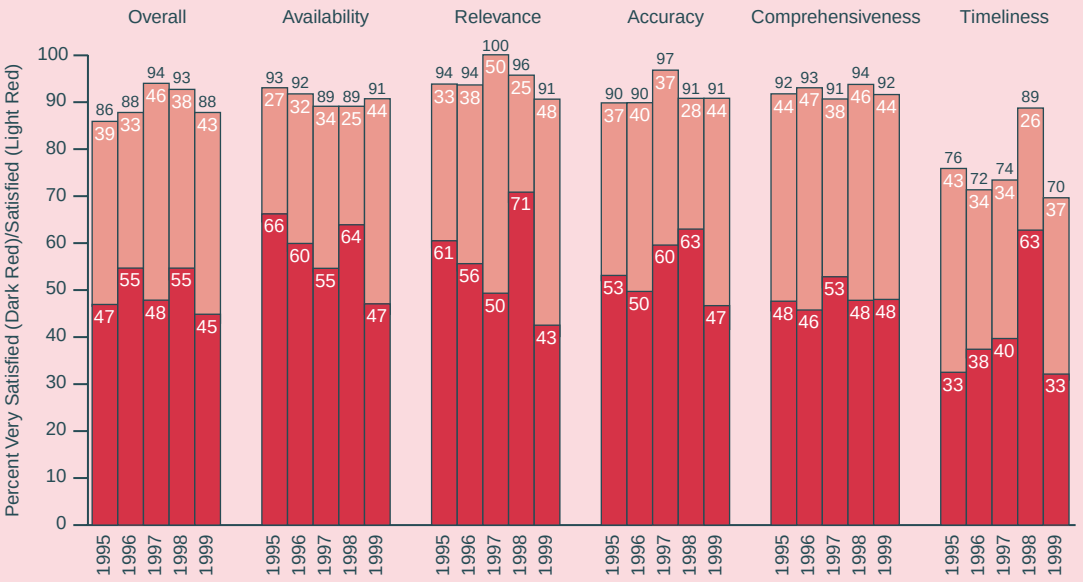
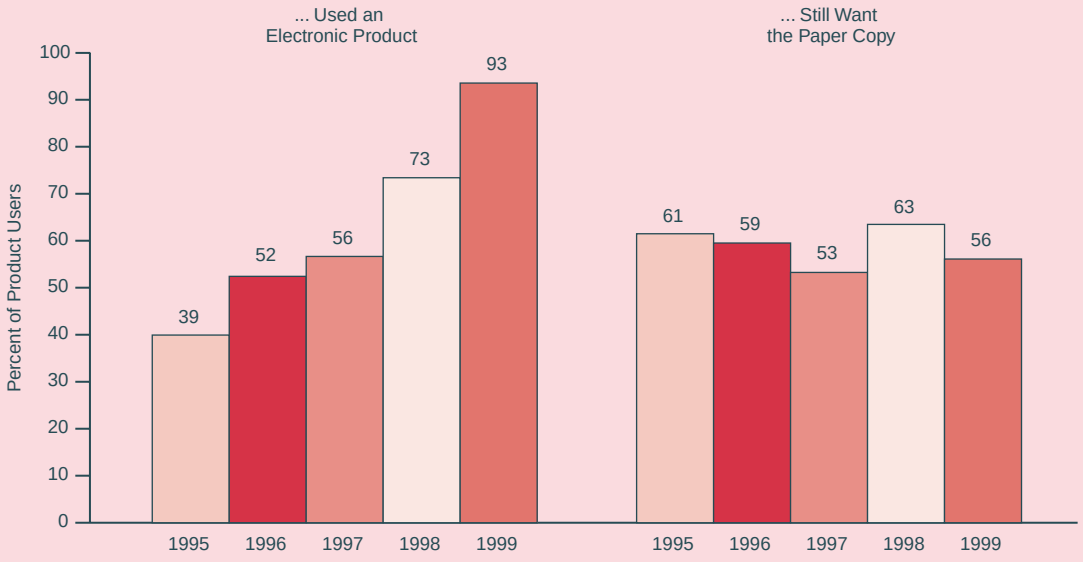


FIGURE 2. NEIC Telephone Customers Satisfied or Very Satisfied with Information Quality



1999 EIA/NEIC Telephone Customer Satisfaction Survey

FIGURE 3. Product Users During the Past Year Who...



1999 EIA/NEIC Telephone Customer Survey

Reasons for Calling NEIC

(More than One Reason May Apply)

- Needed help finding something on the Web site 39%
- Needed data not available on the Web site 20%
- Difficulty accessing or downloading a file 17%
- Wanted to order a printed publication 15%
- Preferred talking with a real person 15%
- Didn't know EIA had a Web site 2%
- Computer doesn't have an Internet connection 2%
- Some other reason 5%

EIA's Organizational Climate Survey

EIA Surveys its Employees' Perceptions

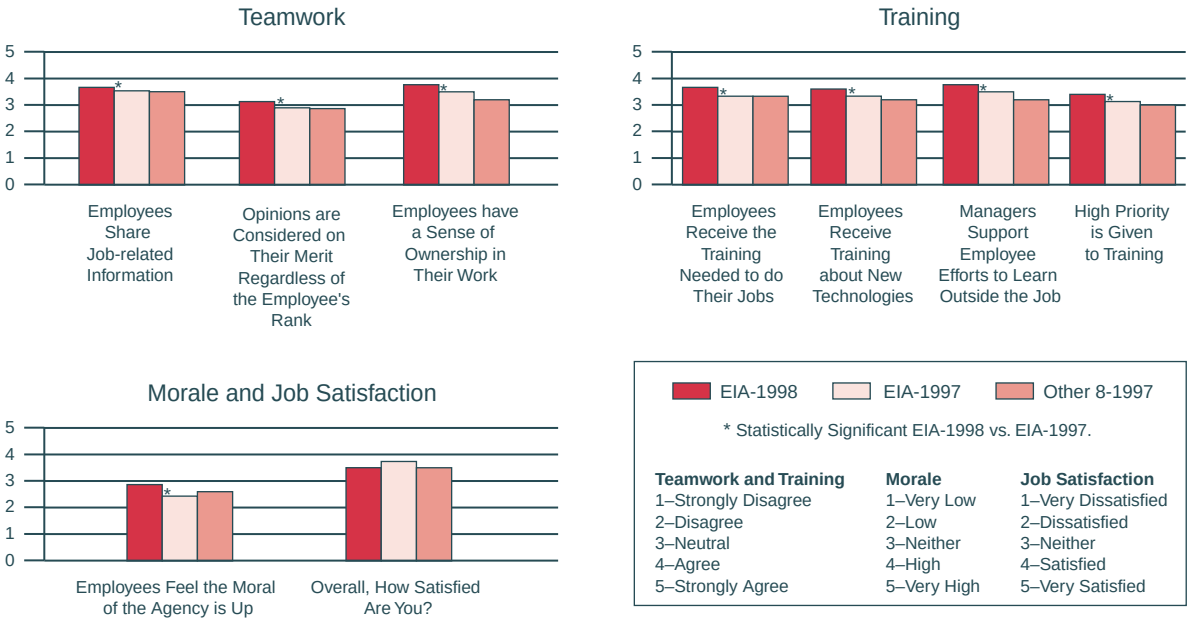
In March 1998, EIA conducted its fourth organizational climate survey since 1994. This was the first time the survey was administered and analyzed entirely by EIA staff. The first two climate surveys were administered under contract. The 1997 survey was a collaborative effort with eight other Federal statistical agencies and the University of Maryland Joint Program on Survey Methodology, which allowed for establishing a baseline of data for benchmarking with organizations very similar to EIA.

The survey was distributed to all EIA staff and had a response rate of 91 percent, a significant improvement over the 59 percent response rate for the 1997 survey. The improved response rate was attributed to a more proactive marketing campaign that included a team of staff representatives, improved management support for the survey, and a reduction in the number of stadardized questions from 81 to 21. The questions related to the important issues of training, teamwork, morale, innovation, and change. The questions were tied to similar questions from the 1997 survey so that trend comparisons could be made. Employees were also given the opportunity to express their views in response to two questions on how change has affected their jobs over the year and what further changes they would like to see happen in EIA.

EIA achieved meaningful gains in 1998 in how its employees regard the organizational climate in the agency. Improvements over 1997 were scored on 20 out of the 21 questions. For eight of the questions, the mean responses were statistically significantly higher than the 1997 means. These gains were in the areas of:

- Teamwork
  - employees share job-related information
  - opinions are considered on their merit regardless of the employee's rank

FIGURE 1. 1998 EIA Organizational Climate Survey



  - employees have a sense of ownership in their work

- Training
  - employees receive the training needed to do their jobs
  - employees receive training about new technologies
  - managers support employee efforts to learn outside the job
  - high priority is given to training

- Morale
  - employees feel the morale of the agency is up

Job satisfaction is the only question which had a lower mean than it did in 1997. However, it still received a high rating and is very close to the mean of the other eight statistical agencies for 1997.

While no other agencies conducted a survey in 1998, a comparison of EIA's 1998 mean results with the 1997 means of the other eight statistical agencies shows EIA higher on all of the questions and statistically significant higher on nine of the questions. However, EIA did not have the highest "benchmark" score on any of the questions.

The areas identified as needing attention have to do with workload and change. Employees are feeling the impact of downsizing that has, among other things, lead to the perception that work is not distributed fairly. Employees have also indicated that it is difficult to get things changed in the agency. The EIA Quality Council is conducting focus groups to gain a better understanding of the underlying reasons for these concerns.

The results of the climate surveys are included in EIA's performance measures system and are used in the strategic planning done by senior management. Asking employees how they feel about EIA and making use of the results was a major factor contributing to human resources management receiving the highest score out of seven evaluation criteria in the Energy Quality Achievement Award EIA received in October, 1998 (see page 13).

Reaching Customers Through the Media

"Consumers See Lowest Summer Gasoline Prices on Record"

"Industrial Electricity Price Lowest Since 1981"

"Oil Reserves Up for the First Time in a Decade"

"Lower Heating Bills for Customers This Winter"

Do these titles look like government writing or newspaper headlines? The answer is both! These are titles of some of the press releases EIA issued during 1998.

Outreach is critical to EIA's mission, because our information affects policymaking, promotes efficient markets, and contributes to public understanding of energy issues. EIA is reaching a lot of people via our Internet site and by other means, but when an article appears in one of the nation's top newspapers or on a television news show, our message goes out to an even larger audience.

Our impact on energy news was significant in 1998. We were cited over 3,000 times by newspapers, wire services, and television reports in stories on topics such as gasoline prices, electricity restructuring, and greenhouse gas emissions.

Our news media outreach in 1998 focused on making it easier for journalists to access, understand, and use our information. Outreach efforts included issuing 30 press releases covering major reports and holding five press conferences on especially newsworthy EIA analyses or forecasts. The press specialists at EIA's National Energy Information Center responded directly to over 1,100 inquiries from the news media and maintained personal contacts with those reporters who are frequent users of EIA information.

In October 1998, EIA held a two-day media relations seminar where working journalists (print and broadcast) and media experts discussed their needs and expectations for our information with staff members. Suggestions were made for improving the content and timing of our press releases and press conferences. Hearing first-hand the media's desire for timely releases, snappy coverage, and nontechnical writing made a definite impression on those who prepare and present information for the media.

EIA developed detailed guidelines for preparing press releases, emphasizing how to write for the media. We cited these guidelines for all EIA staff in EIA's monthly newsletter. These continuing efforts are aimed at increasing the clarity and readability of our press releases by encouraging authors to explain technical terms in simple English and to avoid cluttering the message with unnecessary detail.

Finally, EIA received coverage in the following press, trade, and industry media, among others: the *Washington Post,* the *New York Times, USA Today, Newsweek,* the *Oil and Gas Journal, Scientific American, Middle East Economic Survey, Nuclear News,* and Bloomberg and Reuters News Services.

EIA's Analysis Review Board

In 1998, EIA's Analysis Review Board continued to set direction for EIA's analytical program through a variety of activities. The Board sponsored two Customer Roundtable meetings at which energy experts from the public and private sectors visited EIA and discussed topical energy issues. The Government Roundtable was held on April 16, 1998, and was attended by representatives of various government agencies, including the Departments of Defense, State, Commerce, and Interior; other Department of Energy Offices; the Nuclear Regulatory Commission; the Federal Energy Regulatory Commission; the Central Intelligence Agency; the Commodity Futures Trading Commission; the Office of Management and Budget; the General Accounting Office; the Congressional Research Service; and the National Association of Regulatory Utility Commissioners.

The Private Sector Roundtable, held on April 30, 1998, focused on environmental issues. Attendees included representatives from the Natural Gas Supply Association, the World Resources Institute, the Gas Research Institute, the American Petroleum Institute, the National Mining Association, and Resources For The Future. At both Roundtables, participants discussed topical energy issues and what analytical work EIA should do in FY1999 related to those issues. Using information provided by these and other customers, the Board refined EIA's Analytical Themes, which guide its yearly analysis program. The themes are:

- Changes in the Electric Power Industry
- Energy-Economic Impacts of Environmental Quality Goals
- Oil and Other Energy Supply, Consumption, and Price Developments
- Impact of Technological Change on Future Energy Markets

The Board reviewed over thirty FY1999 analysis proposals submitted to the Administrator by EIA Offices and provided specific recommendations to him resulting in approval of EIA's FY1999 Analysis Agenda. Additionally, the Board provided a number of other recommendations aimed at specific improvements in EIA's analytical program.

Throughout the year, the Board continued to maintain the EIA Analysis Agenda Web site, which provides information to the public about all EIA analysis projects and results, including links to completed publications. In addition, the Board continued to sponsor monthly Analysis Briefings, described next.

EIA Analysis Briefings

Starting in January 1998, the Analysis Review Board began sponsoring monthly briefings at which EIA analysts shared the methods and results of their ongoing work with other EIA staff. In 1998, analysts discussed the following topics:

- Environmental Regulations and Changes in Petroleum Refining Operations
- Oxygenates Supply/Demand Balances in the Short-Term Integrated Forecasting Model
- Analysis of Senate Bill 687 (Renewable Portfolio Standards)
- Motor Gasoline: Assessment of August 1997 Price Increase
- Renewable Energy Annual
- Gas Deliverability Report
- 1996 Profits of U.S. Majors Reach a 15-Year High—How and Why?
- Electricity Restructuring Issues

- Sectoral Pricing in a Deregulated Electricity Market
- Importance of Housing Type on Future Energy Use
- Oil Import Dependence Measures
- Natural Gas Issues and Trends, 1998
- Volatility in Energy Futures Markets
- Commercial Nuclear Fuel from U.S. and Russian Surplus Defense Inventories: Materials, Policies, and Market Effects
- Electric Power Restructuring: Challenges, Risks, and Opportunities for Natural Gas
- Volatility Happens! A Case Study in Electricity Pricing
- International Energy Outlook
- Propane Market Assessment—Winter 1998-99
- The Kyoto Protocol—Impacts on U.S. Energy Markets and Economic Activity

Performance Measures

EIA continued to collect and analyze the performance measures that we first established in 1995. One of the major advances in 1998 was the completion and deployment of a centralized database for the storing and reporting of all quantitative measures. This LAN-based system allows for individuals from across the agency to enter data for which they are responsible, thereby streamlining our collection and reporting procedures. By maintaining current data in one central, easily accessible database, we now have increased opportunities to share data and make comparisons. The centralized system has also improved our analysis capabilities by allowing joint, simultaneous analysis of data and development of reports.

One of the major uses of our performance measures data this past year was for the Energy Quality Award application. Performance measures data were used extensively throughout the award application.

A reporting schedule for all measures was established. Some measures are reported every quarter, whereas others are reported only when updated information becomes available or when needed by senior management. Two reports were delivered to senior staff during 1998, with results for data accuracy, time of release of data, media citations, internal training, and more (see Appendix B). Although the reports use a standard format and contain a standard minimum of data, they were also expanded as needed with additional graphs and tables to show important underlying trends. Both reports also included a list of areas that the performance measures committee believe require further attention.

EIA is working to share and increase our knowledge in the area of performance measures. We are actively seeking benchmarks from similar organizations for some of our measures, such as usage of our Internet site. We also shared our progress on performance measures, both formally and informally, with representatives from other Federal agencies, universities, and foreign governments.

We began, late in the year, the process of reviewing all of our agency-level performance measures. Many of our measures are providing us with useful information, but a few are not. Some of these we plan to redefine, but others will be replaced or deleted.

See Appendix B (pages 63-64) for graphs of performance measures showing EIA's progress in meeting certain objectives.

Business Reengineering

During 1998, EIA concentrated on implementing two recommendations of our Business Reengineering Team: the development of a common data collection and processing system for most of EIA's surveys and the development of common data definitions for use in our publications.

Common Collection and Processing System

The goals of the common data collection and processing system are to standardize survey data collection across the various fuel areas in order to insure that the best practices are identified and implemented agency wide and to minimize costs associated with the maintenance and operations of processing systems which lead to EIA products. In 1998, the first increment of the system, consisting of the coal and natural gas data surveys, was designed, coded, and placed in beta testing. The second increment, the petroleum data surveys, was begun while testing continues.

Common Data Definitions

Over time, different data surveys developed by EIA have, in some cases, used slightly different definitions of terms, depending on the objectives of the data collection. In order to insure that data series comparisons are valid, such variations must be noted and adjustments made. A review of the *EIA Glossary of Energy and Energy-Related Terms and Definitions* indicated that a number of such multiple-definition terms existed. The purpose of this new effort is to establish, where possible, a common definition for such terms sufficiently clear for general understanding by the broad range of customers while satisfying the needs of more technically oriented users of the data. A team, known as the Common Data Definitions Team, was chartered to consult with subject matter experts both within EIA and outside the agency to identify and resolve such terms—hopefully, to compile one unique and comprehensive definition for each energy and energy-related term where there had been several definitions before.

Thus far, the Team has developed and circulated for comment about 50 new definitions for the following categories: crude oil, coal, motor gasoline, aviation gasoline, and distillate fuel oil. The formal process for obtaining comments involves all of EIA. Each EIA staff member is sent the definitions for comment; the Team then reviews and incorporates the comments, where appropriate, and sends back to EIA staff the revised definitions, along with a summary of the comments and how the Team has responded to them. The Team then reviews any additional comments and finalizes the definitions. Definitions for coal terms have been finalized. Other terms are in various stages of review or having comments incorporated. The Team has also developed a procedure to ensure that new or revised definitions are written in a consistent style and format and do not result in multiple definitions of the same term. The Business Reengineering Steering Committee agreed that a standard should be developed that is based on the Team's recommended procedure, and work on the standard is in progress.

EIA's Diversity Advisory Council

Three of the most frequently asked questions about the EIA Diversity Advisory Council (DAC) are: (1) who are the members of the Council; (2) why is there a Diversity Council in EIA; and (3) exactly what does the DAC do?

The DAC is the successor of the EIA Equal Employment Opportunity (EEO) Task Group, which was formed under a former Administrator as a result of the large number of EEO complaints filed. One of the recommendations of the EEO Task Group was that an EEO Manager be hired to advise and assist the Administrator and Senior Management with EEO and affirmative action issues. Thus, an EEO Manager was hired in 1995. In her role, she has direct access to the Administrator on EEO/Affirmative Action, Mediation, and other diversity issues. The EEO Task Group was renamed the Diversity Advisory Council. An election of a Chair and Vice Chair was completed.

As reported in the 1997 EEO/Affirmative Action Report, there has not been a formal EEO complaint filed in EIA since 1994. Work is in process for the 1998 report, which is due to the Office of Civil Rights late January 1999. EIA is the only organization in DOE that has an active diversity advisory council. Each member, other than the Diversity Manager, serves a voluntary two-year term. The Council developed and signed a Charter and adopted a Code of Conduct.

An initial goal of the Council was to define the term "diversity." But first the group agreed that EEO/Affirmative Action refers to exclusion and "diversity" means inclusion. The Council then agreed on the following definition, which is stated in its Charter:

> *"Diversity encompasses ALL differences in individuals and groups, moving well beyond race and gender to the broadest definition of inclusiveness for employees, contractors, suppliers, and customers."*

What exactly does the DAC do? The Council meets once a month, on the third Tuesday. The team sets its goals at the beginning of each year. It briefs the Administrator twice a year and Senior Staff once a year on the status of EIA's affirmative action goals. It supports the Diversity Manager's goals and objectives as they relate to the Departmental goals and fosters a partnership with the Secretary's Diversity Council. By law, EIA is required to prepare and forward an indepth statistical EEO/Affirmative Action Report to the Office of Civil Rights, which, in turn, compiles an agency-wide report. This report is forwarded to the Equal Employment Opportunity Commission for review and compliance. A final report is prepared for Congress which identifies how each agency has met goals that were set. The DAC prepares a more user-friendly report for EIA employees. A copy of this report is on EIA's Intranet site at http://taz.

Throughout the year, the DAC sponsors various activities which focus on diversity in an attempt to raise awareness on issues that otherwise would not be discussed. A typical meeting will run about two hours and the agenda is usually very full. Because of the diversity that each member brings to the team from his or her personal and professional life, there is never a shortage of either variety or uniqueness in the discussions. All EIA issues and concerns are important and deserve attention and support. Therefore, individual office representation is very important as the Council attempts to serve the needs of all EIA employees. The DAC is committed to helping make a difference in the EIA workplace.

There have been occasions when the Council has been criticized for "not taking action" in the area of EEO issues or concerns. However, that is not the function of the Council. The DAC is an Advisory Council, which is what it does—

advises the Administrator, Deputy Administrator, and Senior Staff in the form of briefings and recommendations.

Each year the Council, in its briefing to the Senior Staff, discusses its current activities, its accomplishments, and its future goals. In the last two years, the Council has accomplished the following:

- developed a partnership with the DOE Diversity Council;
- sponsored several Communications Day programs;
- held diversity training seminars for EIA staff;
- conducted disability awareness training;
- developed an EIA Diversity Report; established an Intranet Web site;
- placed several articles and notices in *EIA Today;*
- conducted the 1st EIA Appreciation Day celebration;
- co-sponsored diversity training with the DOE Diversity Council;
- submitted a proposal for Emergency Child Care to the DOE Diversity Council;
- and provided input to the Workforce Planning Group; the Quality Council Sub-group on the Climate Culture Survey; the Strategic Plan; the Performance Measurements Group; and EIA's Affirmative Action Plan.

EIA's Outreach Activities

The purpose of EIA outreach activities is to inform policy makers and the general public about energy issues and to make EIA products and services more accessible and useful to them. The most effective outreach tools in 1998 were briefings and presentations, press conferences, press releases, brochures, and displays of the EIA products and services exhibited at conferences.

Briefings and Presentations

More than 100 EIA briefings and presentations were given to organizations, groups, and individuals in 1998, principally Members of Congress and staffs and representatives of DOE and other Federal agencies; State and local governments; foreign governments and international organizations; private industry, domestic and foreign; trade and industry associations; and academic institutions and professional associations. The most popular briefings covered basic information about the Kyoto Protocol and the electric power industry for policy makers involved in emissions reductions and restructuring issues. EIA gave these presentations to diverse audiences in private briefings and to conferences and workshops. Several of these sessions were sponsored by the White House and Members of Congress.

Other Outreach Activities

Brochures and cards are an effective and inexpensive method of conveying EIA information in a brief, visually attractive, and convenient format. They can convey pertinent information on timely topics or highlight and summarize a significant publication. Working with technical staff, writers, and designers in 1998, EIA designed and produced 26 topical brochures and cards on major analysis issues, highlighting and summarizing the data in each energy area: petroleum, natural gas, electricity, coal, nuclear energy, alternate fuels, international data, consumption data, forecasts, and greenhouse gases.

One of the more interesting uses of EIA publications was their use as textbooks in university classes. EIA's *Country Analysis Briefs* were used in a graduate class at Harvard University's John F. Kennedy School for Government titled "Designing and Managing Energy Systems." Also, a professor of economics at Portland State University used EIA's *Changing Structure of the Electric Power Industry: Selected Issues, 1998* and its accompanying pamphlet, *The Restructuring of the Electric Power Industry: A Capsule of Issues and Events* in his classes. Finally, the Director of the Energy, Environment, Science and Technology Department at the Johns Hopkins School for Advanced International Studies used EIA's *Petroleum 1996: Issues and Trends* for the second year in a row as a textbook in his classes.

International Activities

Perhaps the fastest growing arena for exposure of EIA data and analyses and the one where our expertise proved the most helpful—especially when the arena involved the nations of the Pacific Asian rim, where the subject of energy is quite new and the economies are suffering—is the arena of international activities. The following is only a partial list of EIA's 1998 involvement with energy officials and representatives from other nations.

- The capabilities and operations of EIA's EIAGIS-NG geographic information system was demonstrated to the *Mexican delegation* attending the Mexico-U.S. Bilateral Technical Energy Consultations on December 8 at the Forrestal Building.

- On January 7, the *Director of the Electricity Division, Institute of Electricity and Energy, University of São Paulo, Brazil*, visited EIA to discuss the possibility of a data exchange arrangement with Brazil. This was a preliminary step to establishing an energy data and analysis group is Brazil similar to EIA.

- On January 26, EIA briefed the *International Energy Agency's Review Team* on the latest forecasts from EIA's *1998 Annual Energy Outlook*.

- During January and February. EIA met on four different occasions with *Japanese delegations* to discuss world fossil energy resources, the U.S. coal industry, and electricity privatization in the Asia-Pacific region.

- At the end of January, EIA met with *Canadian officials* about the new natural gas pipeline, due to open in late 1999, that will run from western Canada to Chicago, IL, and will have an initial throughput capacity of 1.325 billion cubic feet of natural gas per day.

- During February, two interns from *South Africa's Department of Minerals and Energy* received training at EIA, learning about statistical surveys, energy modeling, quality assurance, program analysis and interpretation of data, and other information activities.

- In early February, EIA met three times with delegates from the *South African Department of Minerals and Energy* to discuss, among other matters, greenhouse gas emissions, EIA's *1998 Annual Energy Outlook*, and the NEMS Transportation Sector Model (TRAN).

- On February 17-18, EIA participated in a workshop in Japan sponsored by the *Asia/Pacific Energy Research Center* to help evaluate an upcoming report on the Energy Demand and Supply Outlook for the Asia-Pacific region.

- In late March, EIA reviewed with *Natural Resources of Canada*, the Canadian government's equivalent of the U.S. Department of Energy, the algorithms contained in the NEMS Transportation Model. Natural Resources planned to install the model onto their computer system and modify it with Canadian data.

- In April, EIA provided assistance to the *East China Electric Power Group*, which has the largest power grid in China, enabling them to understand stranded cost issues related to restructuring of the electricity industry.

- EIA described for the representatives of the *South African Energy Foundation*, who had spent several months at DOE determining what lessons American energy markets have for the upcoming deregulation of energy markets in South Africa, EIA's data collection efforts for petroleum and natural gas and the interrelationships between oil and gas markets, both before and after deregulation.

- In late April, two professors from the *University of Stuttgart* met with EIA staff about a study to be initiated by the German American Academic Council (GAAC) on Energy Supply in the Light of Sustainable Development. (The GAAC was initiated between the United States and Germany in 1994.) The current study proposed by the GAAC was to review existing scenarios for the supply of and demand for energy and to apply jointly developed indicators (criteria) to assess these strategies.

- In mid-July, EIA hosted a R*ussian delegation from the Russian Chamber of Accounts*, who were interested in adapting EIA modeling and forecasting systems for use in Russia.

- In July, EIA met with the head of the *Economics Division, Seoul National University*, to discuss the design of restructuring of electricity markets to be used in Korea. The professor was interested in avoiding stranded costs that could occur if Korea enters into purchased power agreements before opening its markets to wholesale competition. Due to financial problems, Korea was planning to enter into purchased power agreements as an alternative.

- In early July, an EIA office director made an 11-day *visit to China* for the fifth joint *Energy Information Administration/State Statistical Bureau* (EIA/SSB) meeting under the 1995 Statement of Intent on Energy Information Exchange. This trip was to include negotiations on formalizing the EIA/SSB 1995 agreement to become a Protocol operating under the umbrella of the Sino-U.S. Agreement on Science and Technology Exchange signed by Presidents Jimmy Carter and Deng Xiaoping in 1979.

- In late July, EIA hosted a Chinese delegation from the *China Electric Council*, who had come to provide managerial and technical personnel of the Chinese power industry with insight into technologies and practices currently employed in the U.S. electric power industry.

- In late September, EIA participated in the *7th Annual U.S./Austrian Bilateral Meeting of energy experts*, discussing long-term prospects for fossil fuel supplies, the current Asian economic downturn, and problems associated with the development of effective accounting regimes to support proposed greenhouse gases emissions trading programs.

- In September, EIA participated in a workshop in Tokyo on industrial energy efficiency indicators sponsored by the *Asia Pacific Energy Research Center* (APERC). Staff made presentations on EIA's development of energy efficiency indicators based on EIA's Manufacturing Energy Consumption Survey and projects of future industrial indicators based on the *Annual Energy Outlook 1998*.

- Also in September, EIA briefed a delegation of Korean business and government officials tasked with developing a restructuring plan for electricity markets in Korea. The meeting was sponsored by the *Korean Trade Development Administration*.

- In late October, EIA hosted a series of eight meetings with the *Japan Development Bank* (JDB) and other program offices in the Department. The meeting responded to six JDB questionnaires concerning U.S. energy policy, renewable energy sources, energy efficiency, nuclear energy, natural gas, and nuclear fuel/radioactive waste.

- Also in Late October, EIA participated in the third *Workshop on Economic Commission for Europe/International Energy Agency* in Seville, Spain. The workshop was to improve communications between modelers and policymakers and to investigate the potential impact of technological change on energy consumption and efficiency, and carbon emissions in the post-Kyoto period.

- At the behest of the *International Atomic Energy Agency*, EIA hosted the Second Research Coordination Meeting, which is part of the ongoing DECADES (Data Bases for Comparative Assessment of Energy Sources for Electricity Generation) project organized the IAEA in 1992. Participants from 11 countries presented the results of their projects that use modeling tools developed within the framework of the DECADES.

- A 25-member delegation of scientists and engineers from *nine countries of the former Soviet Union* attended a Departmental presentation in late October on the U.S. oil and gas industry. EIA described the oil and gas industry and recent financial trends in the oil industry.

- A delegation from the *Japanese Ministry of International Trade and Industry*, *Japanese gasoline companies, their Petroleum Energy Center*, and the *Mitsubishi Research Institute* were briefed by EIA on U.S. financial energy markets and their potential threat to price stability in a time of crisis that can arise from the money flows of speculative hedge flows, the development and use of EIA's PC Electronic Data Reporting Options (PEDRO) system for collecting industry data, and EIA's data processing methods and data accuracy.

- EIA provided information about the prospects of emerging generating technologies drawn from EIA's *Annual Energy Outlook 1999* to

researchers from *Industrial Research Limited*, the *research arm of the New Zealand Government*. The New Zealanders were particularly interested in distributed generation and superconductivity.

- In late November, EIA briefed representatives from the *Office of Energy Efficiency, Natural Resources Canada* on energy consumption surveys, paying particular attention to sample design, data collection procedures, editing procedures, and imputation procedures for EIA's Commercial Building's Energy Consumption Survey.

- Also in late November, EIA presented to representatives from *Energy Economics, Japan*, and *Mitsui, Inc*., (a commodities trading company), who are collecting information from various organizations and companies regarding coal futures trading, because they planned to complete a report on the subject within the next several months.

Press Releases

In 1998, EIA issued 30 press releases.

EIA 1998 Press Releases	Number	Date Issued
Demand-Side Management Programs: Utilities Shift Focus, Reduce Spending	EIA-98-01	01/07/98
EIA Says Natural Gas Capacity More Than Adequate Through 1998	EIA-98-02	01/08/98
Lower Heating Bills for Customers This Winter	EIA-98-03	01/12/98
Electricity Prices Down Third Year in a Row	EIA-98-04	01/23/98
Energy Use and Carbon Emissions Continue Worldwide Rise in 1996	EIA-98-05	01/29/98
Profitability of Major U.S. Energy Companies Highest Since 1979-1981 Oil Price Escalations	EIA-98-06	01/30/98
Geothermal Heat Pumps Penetrating Market	EIA-98-07	04/01/98
High Gasoline Demand, Record Low Prices Likely This Summer	EIA-98-08	04/08/98
EIA Projects Strong Long-Term Growth in Asian Energy Demand Despite Recent Economic Downturn. The Kyoto Protocol Could Alter Expected Growth in Emissions in the Industrialized World, but Worldwide Emission Levels Continue to Rise.	EIA-98-09	04/22/98
Capacity, Utilization of the Nation's Natural Gas Pipeline Network Reached All-Time Highs in 1996-97	EIA-98-10	05/15/98
Surplus Defense Inventories: A Growing Source of Nuclear Fuel for Generating Electricity	EIA-98-11	05/27/98
Carbon Emissions from Fossil Fuels Up Slightly Between 1996 and 1997	EIA-98-12	06/01/98
Growth of U.S. Energy Consumption Slows as Economy Expands	EIA-98-13	07/01/98
Reign of Lower Gasoline Prices Continues	EIA-98-14	07/10/98
Hydroelectric Power Sets All-Time Record for Generation of Electricity	EIA-98-15	07/15/98
Electricity Restructuring: Industrial Customers Secure Rate Concessions; Premiums on Wholesale Prices for Firm Power May Continue to Exist	EIA-98-16	07/17/98
Electric Power Data and Confidentiality	EIA-98-17	07/17/98
Consumers See Lowest Summer Gasoline Prices on Record	EIA-98-18	07/29/98
U.S. Photovoltaic Shipments Up Twelve Years in A Row; Record Levels for Shipments and Revenues In 1997	EIA-98-19	08/06/98
Electric Power Industry Restructuring: Fuel Suppliers Face New Challenges in Competitive Electricity Markets	EIA-98-20	09/02/98
25th Anniversary of the 1973 Oil Embargo: Where Are We Now?	EIA-98-21	09/03/98
Oil Reserves Up for the First Time in a Decade	EIA-98-22	09/10/98
Good Chance for Lower Fuel Prices This Winter, But Total Heating Costs Should Rise	EIA-98-23	10/08/98
Higher Energy Prices, Cuts in Fuel Use May Be Needed to Comply with the Kyoto Protocol	EIA-98-24	10/09/98
Industrial Electricity Prices Lowest Since 1981	EIA-98-25	11/03/98
U.S. Greenhouse Gas Emissions Growth Slows	EIA-98-26	11/03/98
Gasoline Price Falls Below $1 per Gallon, Lowest Price in Nearly 5 Years	EIA-98-27	11/16/98
Asian Economic Downturn Slows Growth in Oil Prices through 2007	EIA-98-28	11/17/98
Electricity Prices and Carbon Emissions Affected by Proposed Policy Changes	EIA-98-29	12/09/98
Investments in New Natural Gas Pipeline Capacity May Grow to More Than $6 Billion in 2000	EIA-98-30	12/23/98

Exhibits

EIA exhibits, staffed by technical experts and featuring displays of EIA products and services, appeared at 12 conferences in 1998, attended by thousands of energy professionals. The conferences included:

- *Federal Coal Symposium*
  U.S. Department of the Interior
  Washington, DC
  January 21, 1998

- *NASEO 1998 Energy Outlook Meeting*
  National Association of State Energy Officials
  Washington, DC
  February 9-11, 1998

- *1998 NAPIA/PIRA Annual Meeting*
  National Association of Petroleum Investment Analysts & Petroleum Investor Relations Association
  Washington, DC
  March 11-13, 1998

- *National Energy Modeling System/ Annual Energy Outlook Conference*
  Energy Information Administration
  Arlington, VA
  March 30, 1998

- *Public Service Recognition Week*
  Public Employees Roundtable & President's Council on Management Improvement
  Washington, DC
  May 5-11, 1998

- *Gas/Power Mart 98*
  Intelligence Press, Inc.
  New Orleans, LA
  May 6-8, 1998

- *EEI Annual Convention/Expo*
  Edison Electric Institute
  Chicago, IL
  May 31-June 3, 1998

- *9th Annual Energy Forum*
  Alliance to Save Energy
  Washington, DC
  June 10, 1998

- *17th World Energy Congress & Exhibition*
  World Energy Council
  Houston, TX
  September 13-18, 1998

- *15th Annual World Fuels Conference on Refining Technology*
  Hart Publications
  Arlington, VA
  September 23-25, 1998

- *SPE Annual Technical Conference & Exhibition*
  Society of Petroleum Engineers
  New Orleans, LA
  September 27-30, 1998

- *Power-Gen 98 International*
  Power Engineering Magazine
  Orlando, FL
  December 9-11, 1998

Appendix A
Publications of the Energy Information Administration

Service Reports

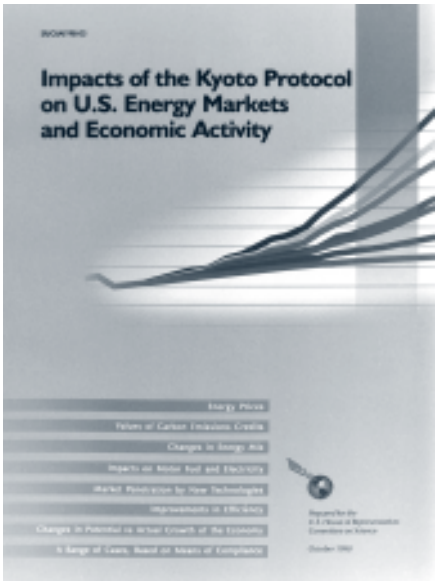
EIA Service Reports are analyses prepared, as the name implies, as a service upon specific request from other Executive Branch agencies or Congress. They are often based on assumptions provided by the requestor. During 1998, EIA produced three Service Reports, two on the Kyoto Protocol and one on the impacts of diesel penetration in the transportation sector.

The Impacts of Increased Diesel Penetration in the Transportation Sector
(SR/OIAF/98-02)

This study was undertaken at the request of the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Office of Transportation Technologies (OTT). OTT requested that EIA examine the impacts on supply and prices of assumed increased penetration of diesel fuel in the U.S. transportation sector. Specifically, OTT requested that EIA examine cases in which diesel technology penetrated new U.S. light duty vehicle (LDV) sales at rates of 10, 20, and 30 percent by 2010. In addition, it was requested that EIA analyze a 30-percent penetration case in which the diesel fuel required would have a sulfur content of 50 parts per million (ppm) compared to the current specification of 500 ppm, in order to examine some of the impacts of requiring a much lower-sulfur diesel fuel. In each of these cases, OTT requested that EIA assume that the diesel technology to be used is 50 percent more efficient than that of conventional gasoline-powered internal combustion engines, based on the best currently available technology. The primary reason for the request was to assist in the measurement of costs and benefits of OTT's programs, as required by the Government and Performance Results Act of 1993, the National Performance Review's Performance Agreements with the President, and Executive Order 12862 on setting Customer Service Standards.

The primary results for each of the four cases are compared with the reference case in Table ES1. The reference case for this study is that appearing in the *Annual Energy Outlook 1998*.

Impacts of the Kyoto Protocol on U.S. Energy Markets and Economic Activity
(SR/OIAF/98-03)



From December 1 through 11, 1997, more than 160 nations met in Kyoto, Japan, to negotiate binding limitations on greenhouse gases for the developed nations, pursuant to the objectives of the Framework Convention on Climate Change of 1992. The outcome of the meeting was the Kyoto Protocol, in which the developed nations agreed to limit their greenhouse gas emissions, relative to the levels emitted in 1990. The United States agreed to reduce emissions from 1990 levels by 7 percent during the period 2008 to 2012.

The analysis in this report was undertaken at the request of the Committee on Science of the U.S. House of Representatives. In its request, the Committee asked the Energy Information

Administration (EIA) to analyze the Kyoto Protocol, "focusing on U.S. energy use and prices and the economy in the 2008-2012 time frame," as noted in the first letter in Appendix D. The Committee specified that EIA consider several cases for energy-related carbon reductions in its analysis, with sensitivities evaluating some key uncertainties: U.S. economic growth, the cost and performance of energy-using technologies, and the possible construction of new nuclear power plants.

The energy projections and analysis in this report were conducted by using the National Energy Modeling System (NEMS), an energy-economy model of U.S. energy markets designed, developed, and maintained by EIA. NEMS is used each year to provide the projections in the *Annual Energy Outlook (AEO).* In its second letter, in Appendix D, the Committee also requested that the analysis use the same general methodologies and assumptions underlying the *Annual Energy Outlook 1998 (AEO98),* published in December 1997; however, some minor modifications were made to allow greater flexibility in NEMS in response to higher energy prices and to incorporate some methodologies that were formerly represented offline. These differences are outlined in Appendix A. The macroeconomic analysis used the Data Resources, Inc. (DRI) Macroeconomic Model of the U.S. Economy, which is also used for the economic analysis in the *AEO.*

What Does the Kyoto Protocol Mean to U.S. Energy Markets and the U.S. Economy?
(SR/OIAF/98-03)(5)

In a study entitled *Impacts of the Kyoto Protocol on U.S. Energy Markets and Economic Activity,* the EIA has projected that meeting the U.S. targets under the Protocol will call for significant market adjustments:

- Reductions in CO_2 emissions will result in between 18 and 77 percent less coal use than projected in the EIA Reference Case in 2010, particularly affecting electricity generation, and between 2 and 13 percent less petroleum use, mainly affecting transportation.
- Energy consumers will need to use between 2 and 12 percent more natural gas in 2010 and between 2 and 16 percent more renewable energy, and extend the operating life of existing nuclear units.
- To achieve these ends via market-based means, average delivered energy costs (in inflation-adjusted 1996 dollars) must be between 17 and 83 percent higher than projected in 2010.
- The amount prices must rise is uncertain. Accounting procedures and international trading rules for greenhouse gases are not finalized. Forecasting technological change and public response to it under various pricing scenarios is an inexact science. The more stringent the need for domestic emission reductions, however, the more costly the adjustment process will be.

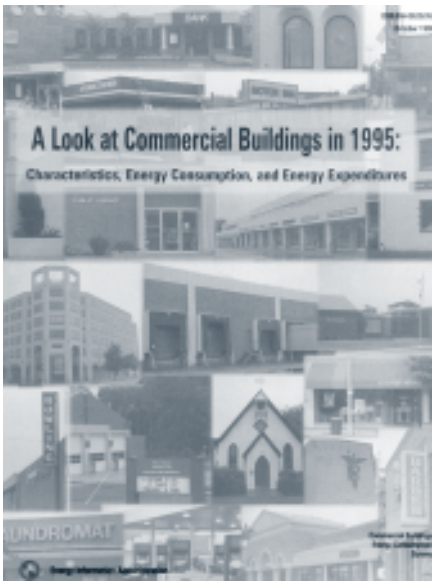
The Kyoto Protocol does not specify targets for greenhouse gases after the period 2008-2012. At the Committee's request, EIA held the target for energy-related carbon emissions in the commitment period constant to 2020, the end of the forecast horizon. Targets following the 2008-2012 period will be a topic at future negotiating sessions.

Publications of Special Interest

A Look at Commercial Buildings in 1995: Characteristics, Energy Consumption, and Energy Expenditures
(DOE/EIA-0625(95))

The commercial sector consists of business establishments and other organizations that provide services. The sector includes service businesses, such as retail and wholesale stores, hotels and motels, restaurants, and hospitals, as well as a wide range of facilities that would not be considered "commercial" in a traditional economic sense, such as public schools, correctional institutions, and religious and fraternal organizations.

Excluded from the sector are the goods-producing industries: manufacturing, agriculture, mining, forestry and fisheries, and construction.



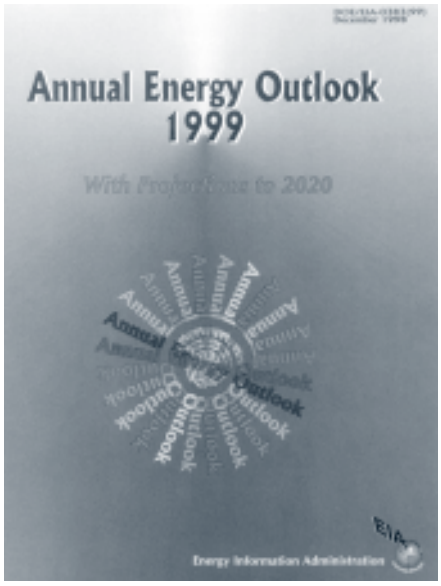
Nearly all energy use in the commercial sector takes place in, or is associated with, the buildings that house these commercial activities. Analysis of the structures, activities, and equipment associated with different types of buildings is the clearest way to evaluate commercial sector energy use. The Commercial Buildings Energy Consumption Survey (CBECS) is a national-level sample survey of commercial buildings and their energy suppliers conducted quadrennially (previously triennially) by the Energy Information Administration (EIA). The target population for the 1995 CBECS consisted of all commercial buildings in the United States with more than 1,000 square feet of floorspace.

Decision makers, businesses, and other organizations that are concerned with the use of energy—building owners and managers, regulators, legislative bodies and executive agencies at all levels of government, utilities and other energy suppliers—are confronted with a buildings sector that is complex. Data on major characteristics (e.g., type of building, size, year constructed, location) collected from the buildings, along with the amount and types of energy the buildings consume, help answer fundamental questions about the use of energy in commercial buildings.

Annual Energy Outlook 1999 with Projections to 2020
(DOE/EIA-0383(99))

The *Annual Energy Outlook 1999 (AEO99)* presents midterm forecasts of energy supply, demand, and prices through 2020 prepared by the Energy Information Administration (EIA). The projections are based on results from EIA's National Energy Modeling System (NEMS).

The report begins with an "Overview" summarizing the *AEO99* reference case. The next section, "Legislation and Regulations," describes the assumptions made with regard to laws that affect energy markets and discusses evolving legislative and regulatory issues. "Issues in Focus" discusses current energy issues—the economic decline in East Asia, growth in demand for natural gas, vehicle emissions standards, competitive electricity pricing, renewable portfolio standards, and carbon emissions. It is followed by the analysis of energy market trends.



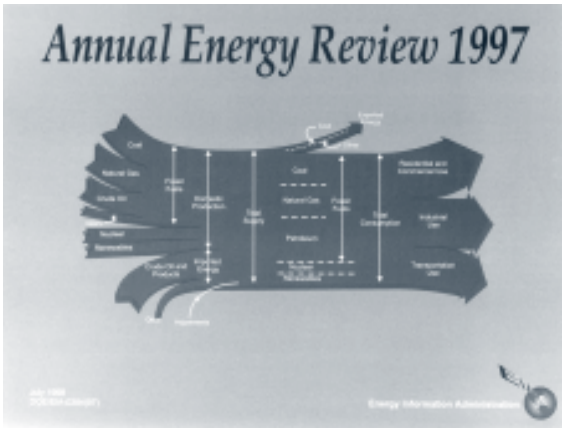
The analysis in *AEO99* focuses primarily on a reference case and four other cases that assume higher and lower economic growth and higher and lower world oil prices than in the reference case. Forecast tables for these cases are provided in Appendixes A through C. Appendixes D and E present a summary of the reference case forecasts in units of oil equivalence and household energy expenditures. Other cases explore the impacts of varying key assumptions in NEMS—generally, technology penetration. The major results are shown in Appendix F. Appendix G briefly describes NEMS and the *AEO99* assumptions, with a summary table of the cases. Appendix H provides tables of energy and metric conversion factors. *AEO99,* the detailed assumptions, and supplementary tables will be available on the EIA Home Page and on CD-ROM.

The projections in *AEO99* are not statements of what will happen but of what might happen, given the assumptions and methodologies used. The projections are business-as-usual trend forecasts, given known technology, technological and demographic trends, and current laws and regulations. Thus, they provide a policy-neutral reference case that can be used to analyze policy initiatives. EIA does not propose, advocate, or speculate on future legislative and regulatory changes. All laws are assumed to remain as currently enacted; however, the impacts of emerging regulatory changes, when defined, are reflected.

Annual Energy Review 1997
(DOE/EIA-0384(97))

The *Annual Energy Review (AER)* is an historical data report that tells many stories. It describes, in numbers, the changes that have occurred in U.S. energy markets since the midpoint of the 20th century. In many cases, those markets differ vastly from those of a half-century ago.

By studying the graphs and data tables presented in this report, readers can learn about past energy supply and usage in the United States and gain an understanding of the issues in energy and the environment now before us. Energy markets will continue to evolve, and those who know the history of our Nation's energy markets will be better prepared to address the future.



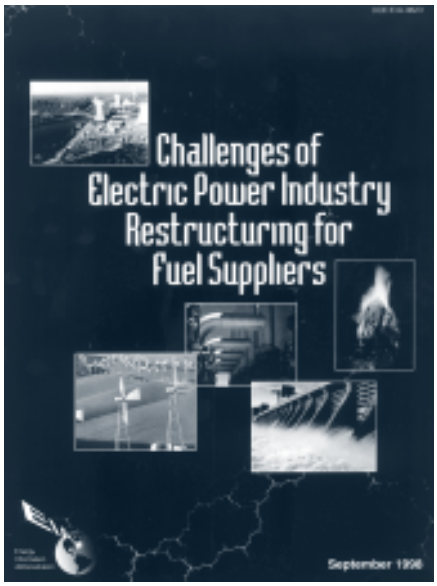
While most of this year's report content is similar to last year's, there are some noteworthy developments. Table 1.1 has been restructured into more summarized groupings—fossil fuels, nuclear electric power, and renewable energy—to aid analysts in their examination of the basic trends in those broad categories. Readers' attention is also directed to the electricity section, where considerable reformatting of the tables and graphs has been carried out to help clarify past and recent trends in the electric power industry as it enters a period of radical restructuring. Table 9.1, which summarizes U.S. nuclear generating units, has been redeveloped to cover the entire history of the industry in this country and to provide categories relevant in assessing the future of the industry, such as the numbers of ordered generating units that have been canceled and those that were built and later shut down. Finally, the section-specific texts have been replaced by one consolidated narrative, which we hope readers will find more informative of energy history and trends and more interesting to read.

In general, the *AER* emphasizes *domestic* energy statistics. Sections 1 through 10 and Section 12

are devoted mostly to U.S. data; Section 11 reports on international statistics and world totals. Readers interested in more international data may wish to consult the Energy Information Administration's *International Energy Annual*.

Challenges of Electric Power Industry Restructuring for Fuel Suppliers
(DOE/EIA-0623)

The current movement to restructure U.S. electricity generation markets and make them more competitive may lead to changes in the financial risks and demands on the supply and transportation infrastructures for the fuels used in electricity generation. This report examines the potential impacts of restructuring of the U.S. electric power industry on the markets for electricity generation fuels—coal, nuclear, natural gas, petroleum, and renewable energy.



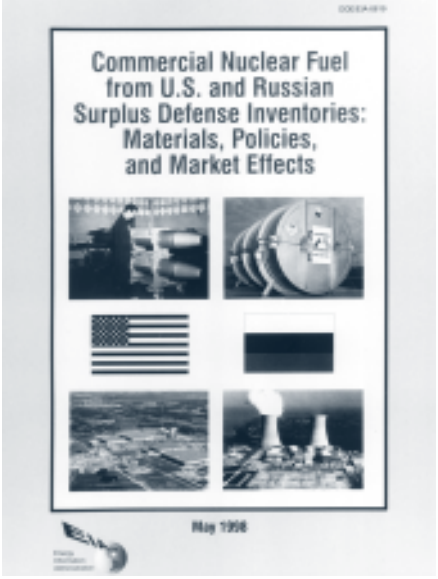
Included in this report are a brief review of electric power industry restructuring already in progress at the Federal and State levels, detailed discussions of the major qualitative issues for each of the major fuel supply markets, and a presentation of a range of possible quantitative results, based on the Energy Information Administration's (EIA) National Energy Modeling System (NEMS).

Electric power industry restructuring may lead to new financial risks and demands on the supply and transportation infrastructure of the fuels used for electricity generation. This report analyzes issues that electricity restructuring creates for each fuel market.

Commercial Nuclear Fuel from U.S. and Russian Surplus Defense Inventories: Materials, Policies, and Market Effects
(DOE/EIA-0619)

The first five chapters of the report provide information of the materials and policies that comprise U.S. and Russian Government plans for commercializing surplus nuclear materials. A brief historical perspective on the evolution of government policies making it possible to convert nuclear materials stockpiled for military purposes to peaceful uses is presented in Chapter 1. Chapter 2 provides a description of the military and civilian nuclear fuel cycles in order to give the reader background information about the similarities between the two cycles. These similarities allow for the conversion of surplus defense inventories to commercial nuclear fuel for producing electricity. An overview of the inventories built up by the United States and Russia is presented in Chapter 3. Descriptions of the activities related to the conversion of Russian highly enriched uranium (HEU) from dismantled weapons to nuclear fuel are provided in Chapter 4. A detailed chronology of the commercialization of Russian HEU is presented in Appendix A. U.S. plans for commercializing uranium and plutonium are presented in Chapter 5. For commercialization efforts by the U.S. Government, detailed chronologies for both the overall activities and the required regulatory procedures are provided in Appendices B and C, respectively.

The last two chapters focus on the market effects of current government commercialization plans. An assessment of the key market penetration issues that could influence the availability of surplus defense inventories is provided in Chapter 6. Chapter 7 provides an analysis of the effects of U.S. and Russian government inventories based

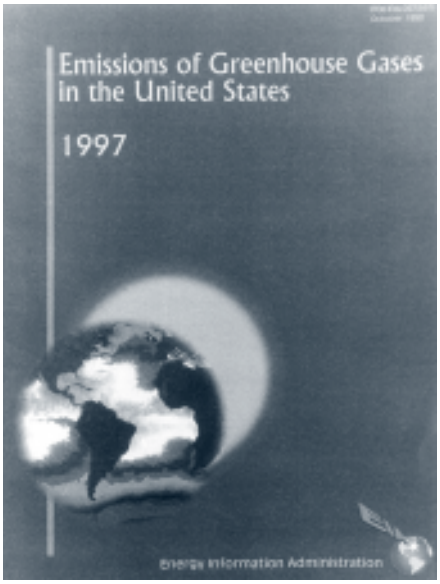


on different scenarios of market penetration. As part of the analysis, three cases developed with EIA's Uranium Market Model are presented to simulate the effects on spot-market prices and world uranium production. A detailed description of the UMM is provided in Appendix D. Also, Chapter 7 contains an estimate of savings that could be realized by U.S. nuclear power generating companies as a result of access to competitively priced uranium from surplus defense inventories.

Emissions of Greenhouse Gases in the United States, 1997
(DOE/EIA-0573(97))

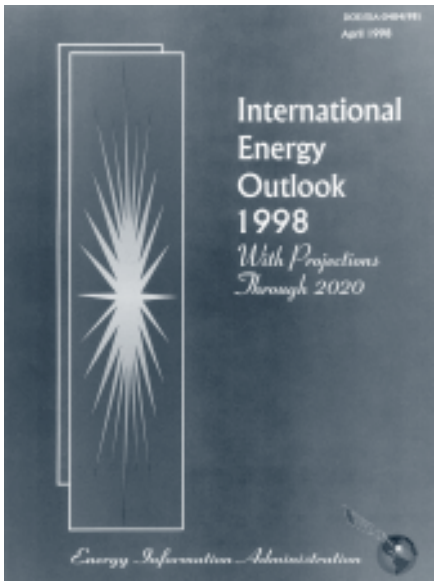
Total U.S. emissions of greenhouse gases in 1997 increased by 1.4 percent from their 1996 level. Overall, U.S. emissions are now about 10 percent higher than they were in 1990. The expansion in 1997 is a return to earlier trends after the unusual growth in 1996 emissions (up by a revised 2.8 percent from the 1995 level), which was caused primarily by severe weather in 1996. Since 1990, U.S. emissions have increased at a compounded annual rate of about 1.3 percent, slightly faster than the population (1.1 percent) but more slowly than energy consumption (1.7 percent), electricity consumption (2.0 percent), or gross domestic product (GDP) (2.3 percent).

Most (82 percent) of U.S. greenhouse gas emissions are caused by the combustion of fossil fuels such as coal, petroleum, and natural gas. Consequently, U.S. emissions trends are largely caused by trends in energy consumption. In recent years, national energy consumption, like emissions, has grown relatively slowly, with year-to-year fluctuations caused (in declining order of importance) by weather-related phenomena, business cycle fluctuations, and developments in domestic and international energy markets.



Other U.S. emissions include carbon dioxide from noncombustion sources (2 percent of total U.S. greenhouse gas emissions), methane (9 percent), nitrous oxide (5 percent), and other gases (2 percent). Methane and nitrous oxide emissions are caused by the biological decomposition of various waste streams, fugitive emissions from chemical processes, fossil fuel production and combustion, and many smaller sources. The other gases include hydrofluorocarbons (HFCs), used primarily as refrigerants; perfluorocarbons (PFCs), released as fugitive emissions from aluminum smelting and also used in semiconductor manufacture; and sulfur hexafluoride, used as an insulator in utility-scale electrical equipment.

International Energy Outlook 1998 with Projections Through 2020
(DOE/EIA-0484(98))



The *International Energy Outlook 1998 (IEO98)* presents an assessment by the Energy Information Administration (EIA) of the outlook for international energy markets through 2020. The report is an extension of the EIA's *Annual Energy Outlook 1998 (AEO98)*, which was prepared by using the National Energy Modeling System (NEMS). U.S. projections appearing in *IEO98* are consistent with those published in *AEO98*. *IEO98* is provided as a statistical service to energy managers and analysts, both in government and in the private sector. The projections are used by international agencies, Federal and State governments, trade associations, and other planners and decisionmakers. The *IEO98* projections are based on U.S. and foreign government policies in effect on October 1, 1997.

Projections in *IEO98* are displayed according to six basic country groupings. The industrialized region includes projections for four individual countries—the United States, Canada, Mexico, and Japan—along with the subgroups Western Europe and Australasia (defined as Australia, New Zealand, and the U.S. Territories). The developing countries are represented by four separate regional subgroups: developing Asia, Africa, Middle East, and Central and South America. China and India are represented in developing Asia. New to this year's report, country-level projections are provided for Brazil—which is represented in Central and South America. Eastern Europe and the former Soviet Union (EE/FSU) are considered as a separate country grouping.

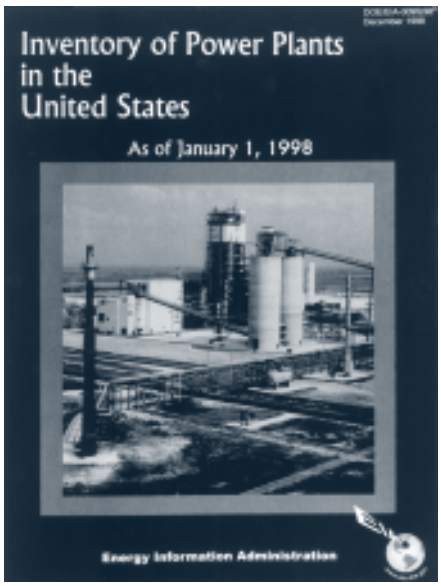
The report begins with a review of world trends in energy demand. The historical time frame starts with data from 1970 and extends to 1996, providing readers with a 26-year historical view of energy demand. For the first time, *IEO98* projections are extended to 2020, so that the forecasts cover a 24-year period.

Inventory of Power Plants in the United States as of January 1, 1998
(DOE/EIA-0095(98))

The *Inventory of Power Plants in the United States* provides annual statistics on generating units operated by electric utilities in the United States (the 50 States and the District of Columbia). Statistics presented in this report reflect the status of generating units as of January 1, 1998. The publication also provides a 10-year outlook for generating unit additions and generating unit changes.

Chapter 2. "Year in Review" contains aggregate statistics on capacity at various regional levels and at the national level for existing and planned generating unit additions. Aggregate data on capacity at the national level are presented by energy source and prime mover. Aggregate data on capacity at various regional levels are presented by primary energy source. Planned capacity additions and retirements are summarized by year for 1998 through 2007.

Chapter 3. "Existing Capacity at U.S. Electric Utilities" contains data on existing generating units as of January 1, 1998 and generating units that were retired from service during 1997. A summary of generating unit additions by energy source during 1997 is also included.



Chapter 4. "Planned Capacity Additions at U.S. Electric Utilities" contains information regarding generating units scheduled to start commercial operation from 1998 through 2007. This chapter also contains data about proposed changes (modifications and changes in status) to existing and previously retired generating units.

This is a report of electric utility data; in cases where summary data or nonconfidential data of nonutilities are presented, it is specifically noted as nonutility data.

Performance Profiles of Major Energy Producers 1997
(DOE/EIA-0206(97))

The information and analyses in *Performance Profiles of Major Energy Producers* is intended to provide a critical review and promote an understanding, of the possible motivations and apparent consequences of investment decisions made by some of the largest corporations in the energy industry. (For a list of the companies covered in this report, the Financial Reporting System companies, see Chapter 1, the box entitled "The FRS Companies in 1997.")

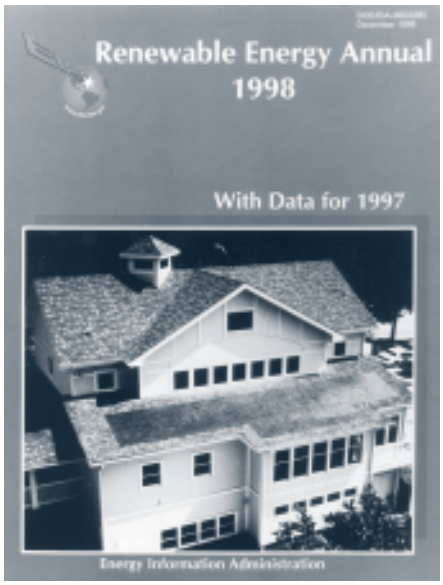
The economic performance of these companies, in financial and physical dimensions, continues to serve as a significant factor in evaluating past decisions (from a corporate and a governmental point of view) and guiding future options in the development and supply of energy resources in the U.S. and abroad. Also, this edition of *Performance Profiles* initiates an increased scope of analysis that includes U.S.-based oil and gas producers and petroleum refiners outside the FRS respondent group.

Performance Profiles presents a comprehensive annual financial review and analysis of the domestic and worldwide activities and operations of the major U.S.-based energy-producing companies. Emerging issues in financial performance are also analyzed. The report primarily examines these companies' (the majors) operations on a consolidated corporate level, by individual lines-of-business, by major functions within each line-of-business, and by various geographic regions. A companion analysis of foreign investment (trends and transactions) in U.S. energy resources, assets, and companies is also included as a separate chapter in the report. The coverage of foreign direct investment developments discussed in this chapter lags the discussion of the FRS companies by one year. This is due to the later release date of much of the foreign direct investment data.

This edition of *Performance Profiles* reviews financial and operating data for the calendar year 1997. Although the focus is on 1997 activities and results, important trends prior to that time and emerging issues relevant to U.S. energy company operations are also discussed.

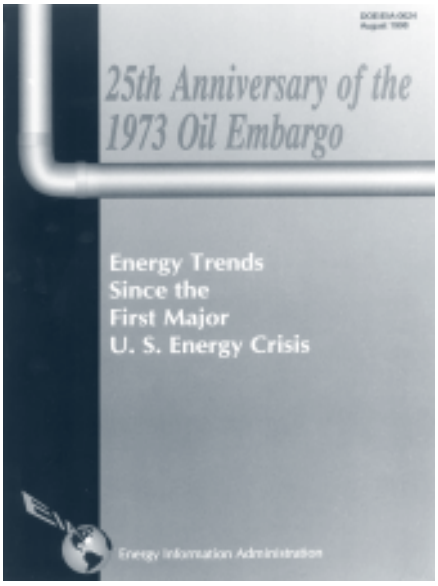
Renewable Energy Annual 1998 with Data for 1997
(DOE/EIA-0603(98))

This is the fourth annual report published by the Energy Information Administration (EIA) which presents information on renewable energy consumption, capacity, and electricity generation data; U.S. solar thermal and photovoltaic collector manufacturing activities; and U.S. geothermal heat pump manufacturing activities. It updates and provides more detail on renewable energy information than what's published in the Energy Information Administration's (EIA) *Annual Energy Review 1997.*



The renewable energy resources included in the report are: biomass (wood, wood waste, municipal solid waste, ethanol, and biodiesel); geothermal; wind; solar (solar thermal and photovoltaic); and hydropower. However, hydropower is also regarded as a "conventional" energy source because it has furnished a significant amount of electricity for more than a century. Therefore, the contribution of hydropower to total renewable energy consumption is discussed, although hydropower as an individual energy source is not addressed. Since EIA collects data only on terrestrial (land-based) systems, satellite and military applications are not included in this report.

25th Anniversary of the 1973 Oil Embargo: Energy Trends Since the First Major Energy Crisis
(DOE/EIA-0624)



This publication is a compendium of 30 figures depicting the major energy trends during a 25-year period, 1973-1998.

The purpose of this publication is not to assess the causes of the 1973 energy crisis or the measures that were adopted to resolve it. Our intent is to present some data on which such analyses can be based. Those interested in a fuller set of statistics are urged to consult EIA's *Annual Energy Review* (Web site: www.eia.doe.gov/emeu/aer/contents.html).

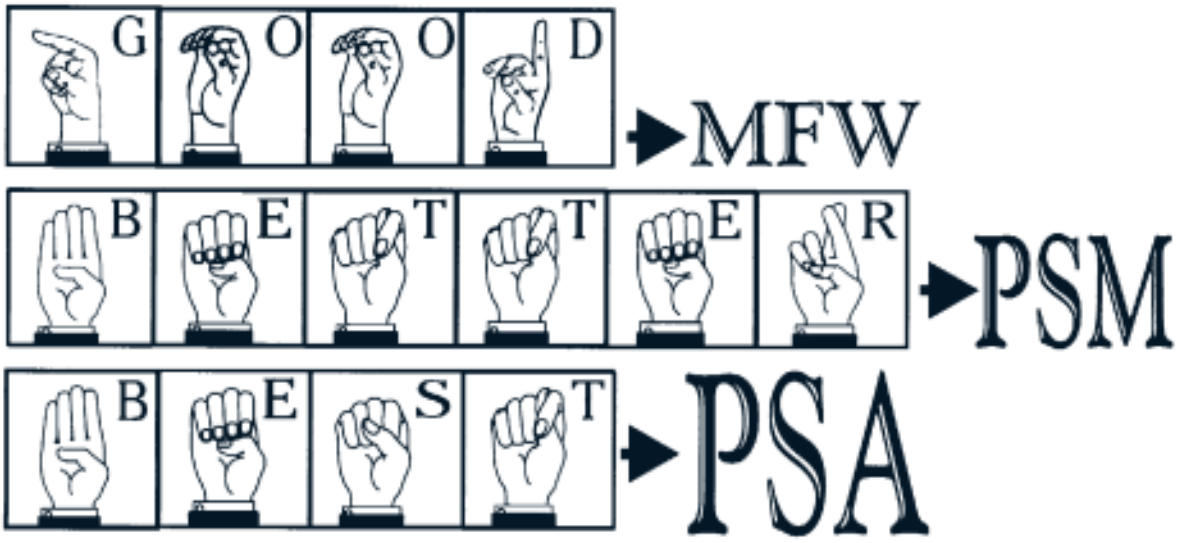
Accuracy of Petroleum Supply Data

The 15 surveys in the Petroleum Supply Reporting System (PSRS) track the supply and disposition of crude oil, petroleum products, and natural gas liquids in the United States. To maintain a database with historically accurate observations and current estimates from the petroleum industry, EIA administers three survey series: weekly, monthly, and biennial (every other year).

Petroleum supply data collected by the Petroleum Division (PD) of the Energy Information Administration (EIA) displayed improving signs of accuracy in 1997. These data were presented in a series of PD publications: the W*eekly Petroleum Status Report (WPSR),* the *Winter Fuels Report (WFR),* the *Petroleum Supply Monthly (PSM),* and the *Petroleum Supply Annual (PSA).* Weekly estimates in the *WPSR* and *WFR* were the first values available.

Figure FE1 illustrates the improving signs of accuracy from the weekly estimates to the interim monthly values to the final petroleum supply values. The monthly-from-weekly (MFW) data are the least accurate but "good." The *PSM* data are more accurate or "better" and the *PSA* data are the most accurate or "best." For 1997, 66 petroleum supply data series were analyzed to determine how close the *PSM* values were to the final *PSA* values. For these series, 45 out of the 66 were within 1 percent of the *PSA* values in terms of mean absolute percent error. Sixty-one petroleum supply data series were analyzed to see how close the MFW estimates were to the final *PSA* values. For these 61 series, 27 were within 2 percent of the *PSA* values in terms of mean absolute percent error and, of those, 11 were within 1 percent.

FIGURE FE1. The "Best" Sign for 1997 PD Data



Two major factors that contribute to the *PSM* values being more accurate than the MFW estimates are: (1) the greater length of time between the close of the reference period and the publication date of the *PSM* and (2) some MFW values are estimates, whereas many *PSM* respondents extract their actual data from automated accounting systems. The greater length of time allows more in-depth review of the data by the respondents and EIA. Within 2 months of the close of a reference month, interim values are published in the *PSM*. The weekly data are more quickly available. The *WPSR* is available electronically 5 days after and in hardcopy 7 days after the close of the reference week (excluding holiday weeks). Propane data are available electronically and in the *WPSR*. About 5 months after the end of the reference year, final monthly values, reflecting any resubmissions, are published in the *PSA*.

Historically, the weekly publications (*WPSR* and *WFR*) and the monthly publication (*PSM*) provided volumes of crude oil and petroleum products data at relatively increasing levels of accuracy. This article provides petroleum analysts with a measure of the degree to which, on average, estimates and interim values vary from their final values.

Source: Petroleum Supply Monthly, October 1998.

EIA Corrects Errors in Its Drilling Activity Estimates Series

The Energy Information Administration (EIA) has published monthly and annual estimates of oil and gas drilling activity since 1978. These data are key information for many industry analysts, serving as a leading indicator of trends in the industry and a barometer of general industry status. They are assessed directly for trends, as well as in combination with other measures to assess the productivity and profitability of upstream industry operations. They are major reference points for policymakers at both the Federal and State level. Users in the private sector include financial analysts assessing investment opportunities. Firms with upstream operations also rely on these data in apprising their circumstances relative to those of their competitors. EIA uses these data in its own analytical and modeling work.

EIA does not itself collect drilling activity data. Instead, it relies on an external source for data on oil, gas, and dry well completions. These data are provided to EIA monthly on an *as reported* basis. Due to lags in the reporting of well completions which can (though most do not) range up to several years, EIA must statistically adjust the *as reported* completion data to obtain estimates of the numbers of completions that *would have been reported had there been no reporting lags*. Essentially, this is done by assuming that the pattern of reporting lags observed in the past holds true for the present and then making appropriate upward adjustments to the reported numbers of completions on that basis.

As an integral part of its data gathering function, EIA routinely monitors data quality and periodically conducts work intended to enhance its data systems. During a recent effort to enhance EIA's well completion data system, the detection of unusual patterns in the well completion data as received led to an expanded examination of these data. Substantial discrepancies between the data as received by EIA and correct record counts since 1987 were identified. For total wells by year, the errors ranged up to more than 2,300 wells, 11 percent of the 1995 total, and the impact of these errors extended backward in time to at least the early 1980s.

When the magnitude and extent of the *as reported* well completion data problem were confirmed, EIA suspended its publication and distribution of updated drilling data. EIA staff proceeded to acquire replacement files with the *as reported* records and then revise the statistical portion of its drilling data system to reflect the new information. The replacement files unfortunately also

included erroneous data based on the improper allocation of wells between exploration and development. Users of EIA drilling activity data therefore are advised that the drilling activity data that were published or otherwise distributed by EIA prior to August 1998 are not necessarily valid.

EIA has now resolved the two data problems and generated revised time series estimates for well completions and footage drilled. While most industry trends remain consistent with those of the initial, incorrect series, the revised series does exhibit certain differences, chief among which are:

- Total well counts by year in the initial and revised series vary by less than 0.5 percent until 1996, when the difference is 1.3 percent.
- Drilling activity did attain its peak level in 1981, but the industry completed an estimated 91,553 wells as opposed to the prior estimate of 90,034.
- The decline in drilling during the mid 1990s was not as steep as previously indicated. The wells in 1995 had been underestimated by 2,384 wells—a difference of 11 percent.
- Success rates, measured as the share of successful gas and oil wells relative to total wells, are similar in the initial and final drilling series, but the improvement in the mid-1990s was not as great as previously indicated.
- The remainder of this report presents background on the drilling activity data: what the records are, how they are collected, and the resulting difficulties in developing timely measures of recent drilling activity. This is followed by a discussion of the nature and extent of errors in the raw data files received by EIA. Last, the revised data are presented along with key differences between the prior and revised series and their implications for understanding industry performance.

Sources: Natural Gas Monthly, March 1998, and *Petroleum Supply Monthly,* March 1998.

Natural Gas 1997: A Preliminary Summary

Production and Wellhead Prices

Preliminary data for 1997 show relatively modest increases in both natural gas production and the national average wellhead price compared with 1996. Dry natural gas production in 1997 is estimated to be 18,921 billion cubic feet, an increase of 129 billion cubic feet, or 1 percent above the 1996 level. The average natural gas wellhead price in 1997 is estimated to be $2.23 per thousand cubic feet. While this is $0.06 per thousand cubic feet, or 3 percent higher than in 1996, the wellhead price had increased sharply, by $0.62 per thousand cubic feet, or 40 percent, between 1995 and 1996.

Daily production rates each month of 1997 were fairly close to those of 1996 throughout the year. Daily dry production is estimated to be no more than 2 percent of that of 1996 in every month except December. In December 1997, dry production was 52.4 billion cubic feet per day, 3 percent higher than in December 1996. Daily production rates varied from an estimated 50.7 billion cubic feet per day in October to 52.9 billion cubic feet in February.

The pattern of monthly average wellhead prices in 1997 was more variable than in 1996. During 1996, wellhead prices were fairly steady much of the year, remaining in the range of $1.85 to $2.25 per thousand cubic feet each month through September. Then, starting from a low of $1.85 per thousand cubic feet in September 1996, the average wellhead price rose 85 percent, peaking at $3.42 per thousand cubic in January 1997. The January price was 67 percent higher than in January 1996.

In addition to production and wellhead prices, the article discusses underground storage, imports, exports, end-use consumption, and city gate and end-use prices of natural gas.

Source: Natural Gas Monthly, April 1998.

Revisions to Monthly Natural Gas Data

The Energy Information Administration (EIA) publishes monthly data for the supply and disposition of natural gas in the United States in the *Natural Gas Monthly*. These data are preliminary when initially published. This article discusses the differences that occurred between the initial (first) monthly supply and disposition data for the United States published for 1994, 1995, and 1996 and the final monthly data published for those years.

National monthly data initially published come from one of three sources: (1) data reported on surveys of the natural gas industry, (2) analytical estimates, or (3) Short-Term Integrated Forecasting System (STIFS) model estimates. Beginning with the June 1996 issue of the *Natural Gas Monthly,* the EIA began publishing estimates of natural gas volumes from its STIFS model computations to provide more timely information about the gas industry. For production, total supply and disposition, and storage, STIFS estimates are published for the most current two months (the same month as the publication issue month and one month previous to the issue month). For consumption by sector, STIFS estimates are published for the most current three months (the same month as the issue month and the two months previous to the issue month).

Analytical estimates are developed by EIA staff based on historical trends and data available from sources other than EIA surveys. Analytical estimates are provided when data reported from surveys cannot be obtained in a timely manner. Reported data are taken from EIA surveys of the natural gas industry, except for import and export data, which are taken from reports to the Office of Fossil Energy, U.S. Department of Energy.

All data discussed in this report are reported survey data or analytical estimates. Although the usefulness of initially reported survey data and analytical estimates cannot be judged solely on the basis of the quality of past estimates, the EIA is providing information about these differences to assist users in evaluating the usefulness of preliminary National data for 1997 and subsequent years.

Source: Natural Gas Monthly, July 1998

U.S. Natural Gas Imports and Exports—1997

During 1997, Canada continued its role as the major supplier of natural gas imported into the United States. However, the growth rate of U.S. imports of Canadian gas was minimal because pipeline capacity utilization remained near its maximum level and capacity expanded very little during the year. Increases in pipeline capacity are under development or have been proposed for the next several years. Crossborder trade with Mexico also increased in 1997, and that nation holds substantial promise for expansion on both the supply and demand sides of the market. Spot purchases of liquefied natural gas (LNG) rose as the United States responded to LNG availability in the world marketplace (Figure SR1).

Some of the highlights of 1997 for U.S. natural gas imports and exports are:

- Net imports rose for the 11th consecutive year, representing 13 percent of U.S. natural gas consumption.
- Pipeline imports from Canada continued to climb to a new record level of 2,899 billion cubic feet, although the growth rate slowed considerably.
- The average price of natural gas imports from Canada was $2.15 per thousand cubic feet. This is the highest average price since the price in 1986.
- LNG imports totaled 77.8 billion cubic feet, almost double the 1996 level. This increase was primarily the result of the end of curtailments from Algeria which had been in effect since August 1994 because of a major renovation project on that nation's liquefaction plants.

- Spot market purchases of LNG totaled 12.1 billion cubic feet, 16 percent of total LNG imports. These shipments were received from the United Arab Emirates and, for the first time, from Australia.

Source: Natural Gas Monthly, August 1998.

Energy Information Administration Periodicals Released in 1998

	Petroleum	Petroleum & Natural Gas	Natural Gas	Electricity	Coal	Nuclear Energy	Solar & Renewable Energy	Multisource Energy	Energy Consumption	Metadata
Weekly/ Biweekly	Crude Oil Watch *(Electronic Only)* Distillate Watch *(Electronic Only)* Motor Gasoline Watch *(Electronic Only)* Petroleum Market Report *(Electronic Only)* Propane Watch *(Electronic Only)* Weekly Petroleum Status Report		Natural Gas Weekly: Market Update *(Electronic Only)*		Weekly Coal Production *(Electronic Only)*					
Monthly/ Bimonthly	International Petroleum Statistics Report Petroleum Marketing Monthly Petroleum Supply Monthly		Natural Gas Monthly	Electric Power Monthly				Monthly Energy Review		
Quarterly					Quarterly Coal Report			Short-Term Energy Outlook: Quarterly Projections		EIA New Releases *(Electronic Only)*

Energy Information Administration Periodicals Released in 1998 *(Continued)*

	Petroleum	Petroleum & Natural Gas	Natural Gas	Electricity	Coal	Nuclear Energy	Solar & Renewable Energy	Multisource Energy	Energy Consumption	Metadata
Annual/Other	25th Anniversary of the 1973 Oil Embargo Assessment of Summer 1997 Motor Gasoline Price Increase Emissions of Greenhouse Gases in the United States 1997 Fuel Oil and Kerosene Sales 1997 Oil and Gas Field Code Master List 1997 Petroleum Marketing Annual 1997 *(Electronic Only)* Petroleum Supply Annual 1997, Vol. 1 Petroleum Supply Annual 1997, Vol. 2	Advanced Summary of the U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 1997 Annual Report Petroleum Supply Annual 1997, Vol. 1 Petroleum Supply Annual 1997, Vol. 2 U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 1997 Annual Report	Deliverability on the Interstate Natural Gas Pipeline System Natural Gas Annual 1997	Challenges of Electric Power Industry Restructuring for Fuel Supplies The Changing Structure of the Electric Power Industry: Selected Issues 1998 Cost and Quality of Fuels for Electric Utility Plants 1997 *(Electronic Only)* Electric Power Annual 1996, Vol. 2 Electric Power Annual 1997, Vol. 1 Electric Power Annual 1997, Vol. 2 Electric Sales and Revenue 1997 Electric Trade in the United States 1994	Coal Industry Annual 1997	Commercial Nuclear Fuel from U.S. and Russian Surplus Defense Inventories: Materials, Policies, and Market Effects Uranium Industry Annual 1997	Renewable Energy Annual 1997, Vol. 1	Annual Energy Outlook 1999 Annual Energy Review 1997 International Energy Annual 1996 International Energy Outlook 1998 Issues in Midterm Analysis and Forecasting 1998 National Energy Modeling System: An Overview 1998 Performance Profiles of Major Energy Producers 1996 State Energy Price and Expenditure Report 1995	A Look at Commercial Buildings in 1995: Characteristics, Energy Consumption, and Energy Expenditures	Annual Report to Congress 1997 EIA Publications Directory 1997 EIA Publishing Style Guide 1998 Energy Education Resources: Kindergarten through 12th Grade 1998 Energy Information Directory 1998 Energy Information Sheets 1996

Energy Information Administration Periodicals Released in 1998 *(Continued)*

	Petroleum	Petroleum & Natural Gas	Natural Gas	Electricity	Coal	Nuclear Energy	Solar & Renewable Energy	Multisource Energy	Energy Consumption	Metadata
Annual/Other *(Continued)*				Financial Statistics of Major U.S. Publicly Owned Electric Utilities 1996 Financial Statistics of Major U.S. Publicly Owned Electric Utilities 1997 Inventory of Power Plants in the U.S. 1997						

Energy Information Administration One-Time Reports Released in 1998

	Petroleum & Natural Gas	Natural Gas	Electricity	Coal	Renewable & Alternate Fuels	Nuclear Energy	Energy Markets & End Use
Data Reports, Analysis Reports, Documentation Reports, and Service Reports	EIA Model Documentation: Petroleum Market Model of the National Energy Modeling System The Impact of Increased Diesel Penetration in the Transportation Sector	Model Documentation: Natural Gas Transmission and Distribution Model of the National Energy Modeling System	EIA Model Documentation: Electricity Market Module, Electricity Fuel Dispatch The Restructuring of the Electric Power Industry—A Capsule of Issues	Model Documentation: Coal Market Module of the National Energy Modeling System	Model Documentation: Renewable Fuels Module of the National Energy Modeling System		EIA Model Documentation: Transportation Sector Model of the National Energy Modeling System Impacts of the Kyoto Protocol on U.S. Energy Markets and Economic Activity Model Documentation Report: Commercial Sector Demand Module of the National Energy Modeling System National Energy Modeling System Integrating Module Documentation Report What Does the Kyoto Protocol Mean to U.S. Energy Markets?

Appendix B
Selected 1998 Performance Measures

EIA's most recent strategic plan contains five strategic goals and 22 objectives.

This appendix includes graphs of performance measures showing EIA's progress in meeting some of these objectives, specifically those for which we have quantitative data and the latest data available. Each objective ties to one of the five EIA strategic goals. Additional objectives, not shown here, are measured by qualitative discussion and analysis.

OBJECTIVE: EIA will support its employees in acquiring the *training* necessary for them to do their jobs well between 1998 and 2000.

FIGURE B1. Training Courses Taken

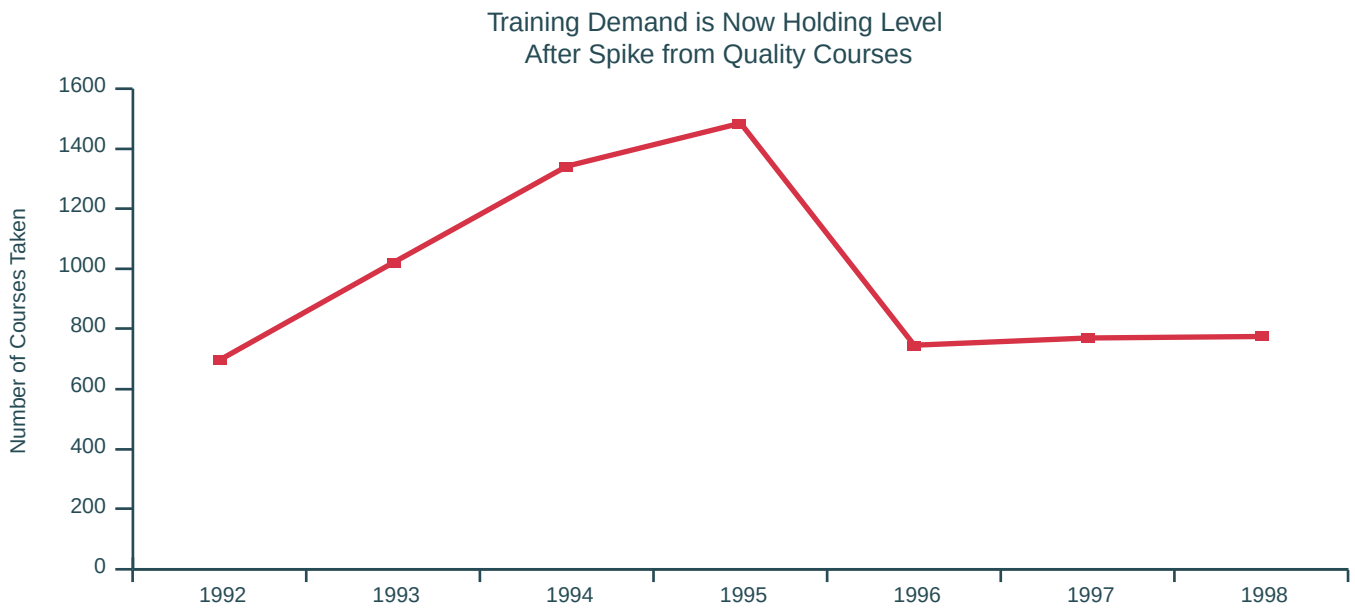
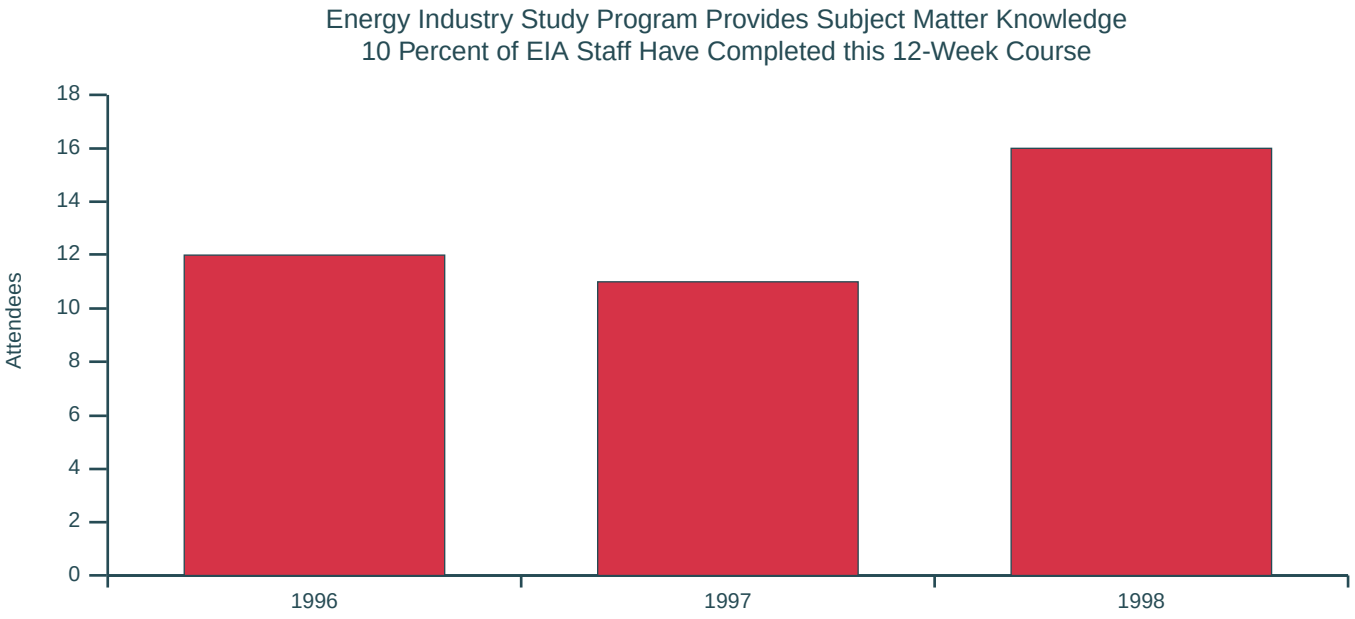


FIGURE B2. Energy Industry Studies Program



OBJECTIVE: Data accuracy will remain stable, or improve over time, as EIA improves the timeliness of its data and analysis products between 1998 and 2002.

FIGURE B3. Accuracy—Petroleum Marketing Data

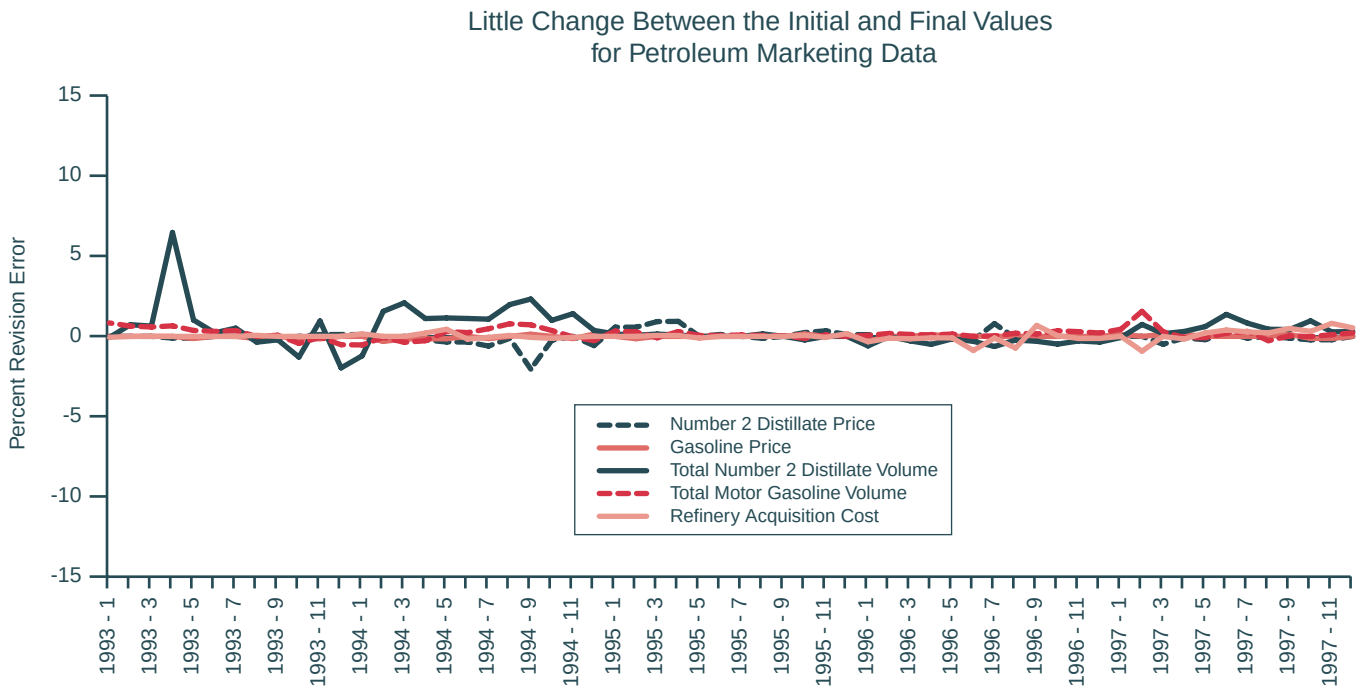


FIGURE B4. Accuracy—Petroleum Supply Data

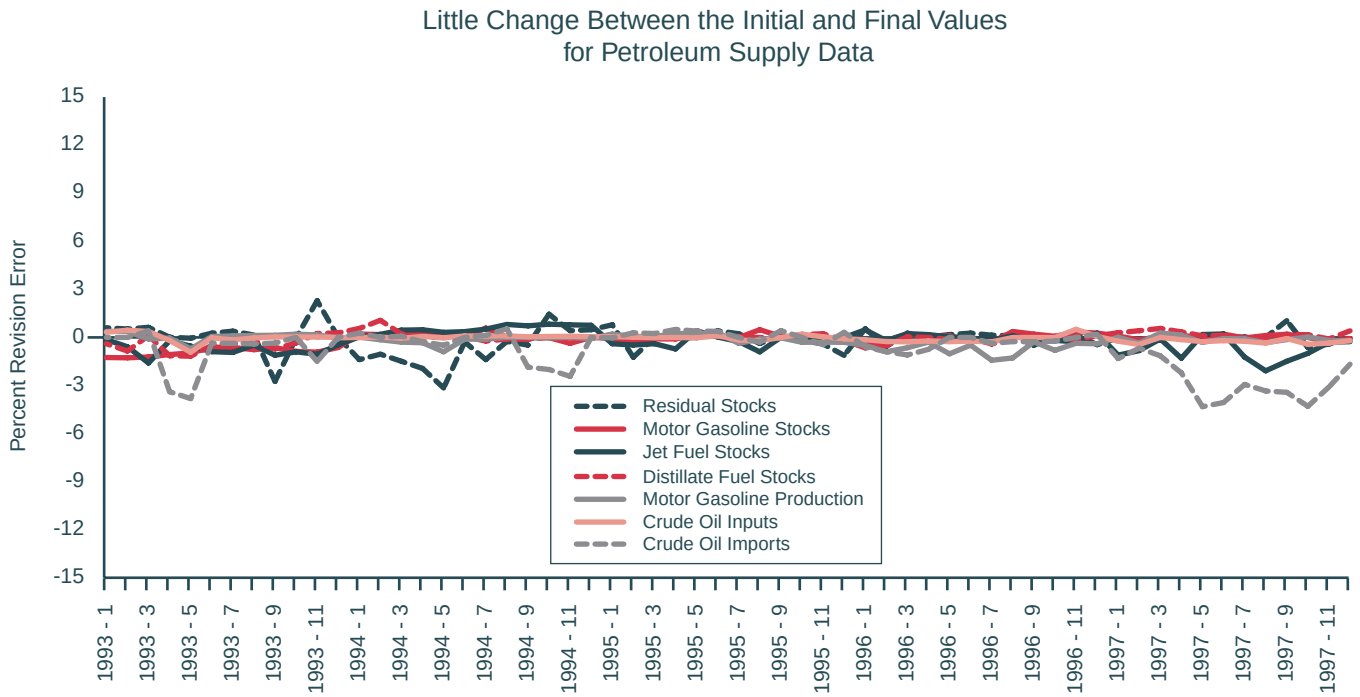


FIGURE B5. Accuracy—Coal Data

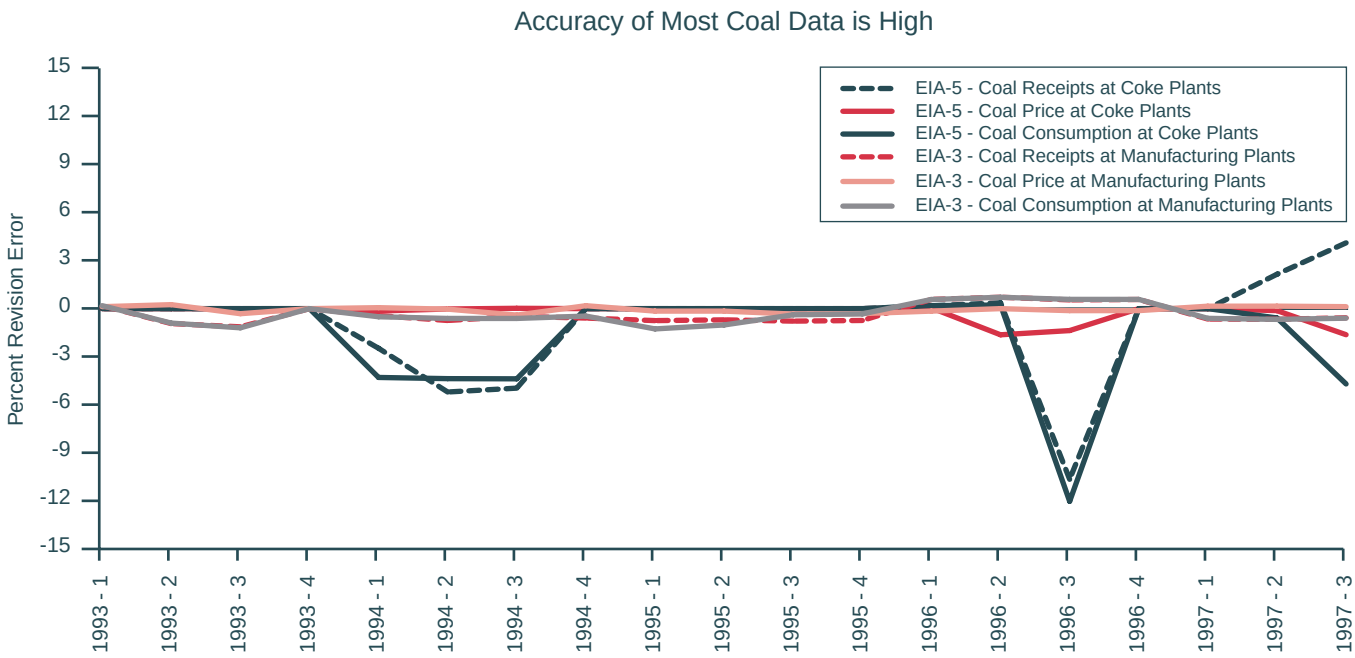
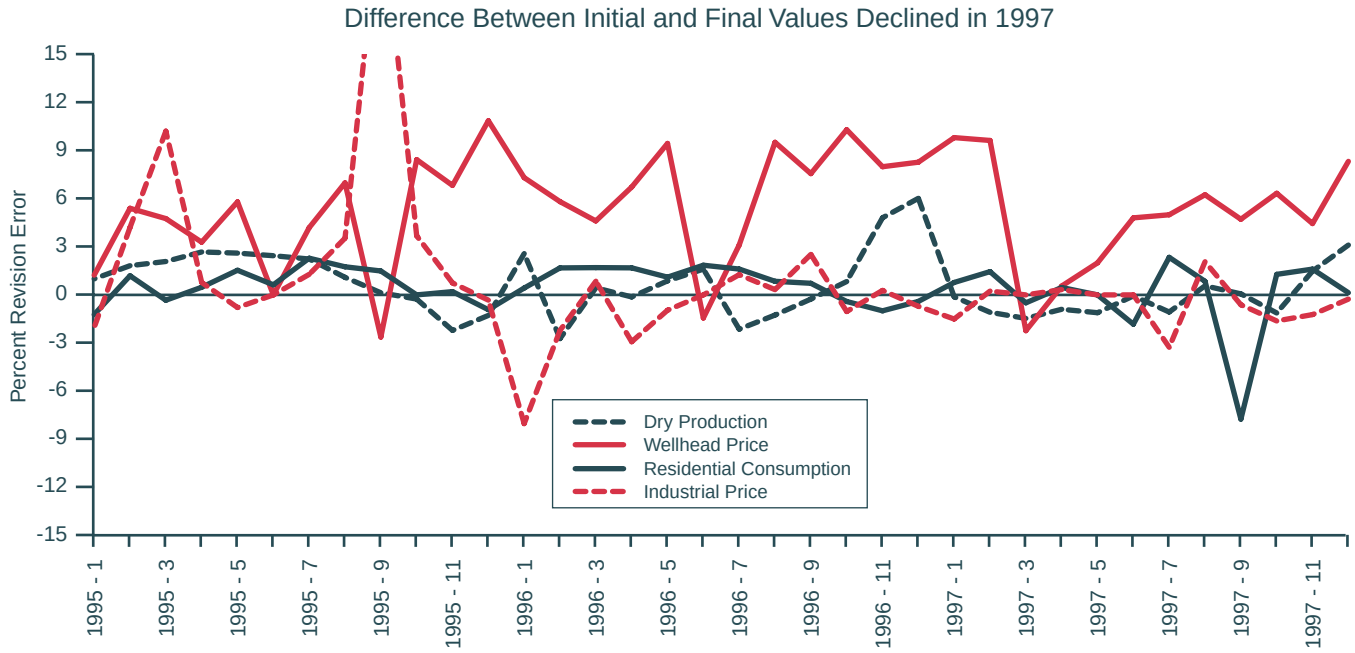
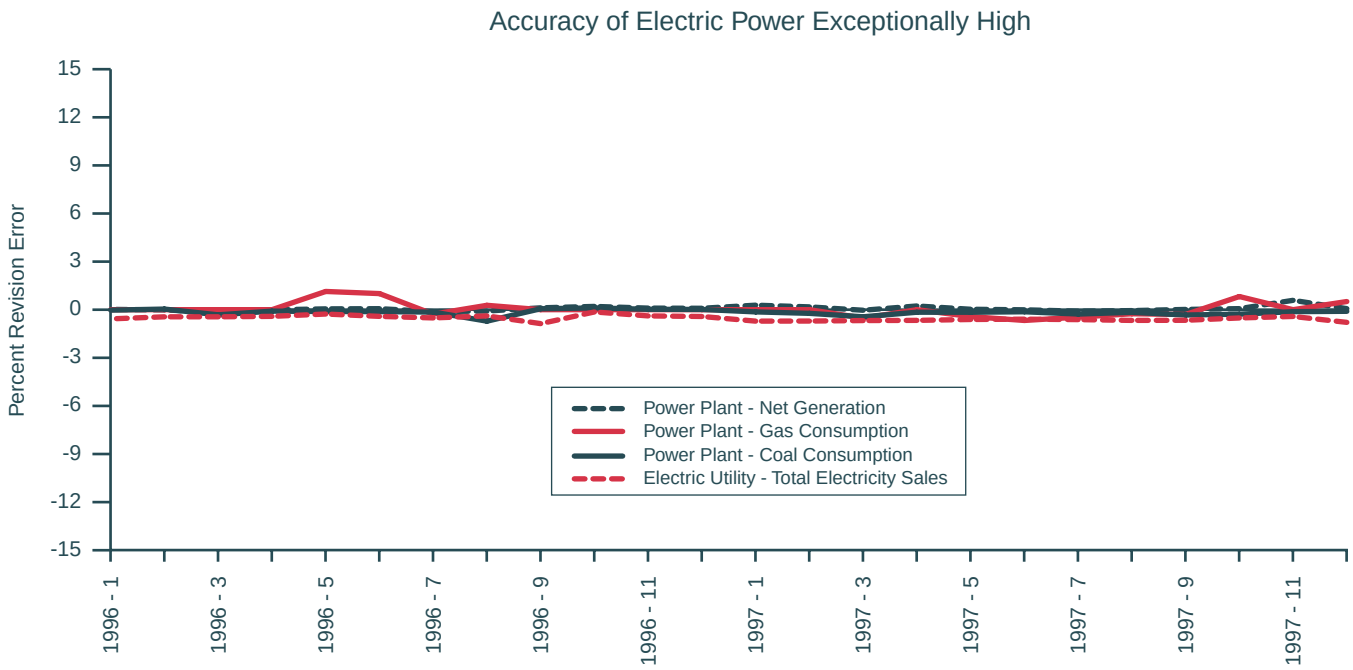


FIGURE B6. Accuracy—Natural Gas Data



OBJECTIVE: Data accuracy will remain stable, or improve over time, as EIA improves the timeliness of its data and analysis products between 1998 and 2002.

FIGURE B7. Accuracy—Electric Power Data



OBJECTIVE: *Forecast Credibility* will remain stable, or improve over time, as EIA improves the timeliness of its products between 1998 and 2002.

FIGURE B8. STEO Petroleum Prices Forecast Accuracy

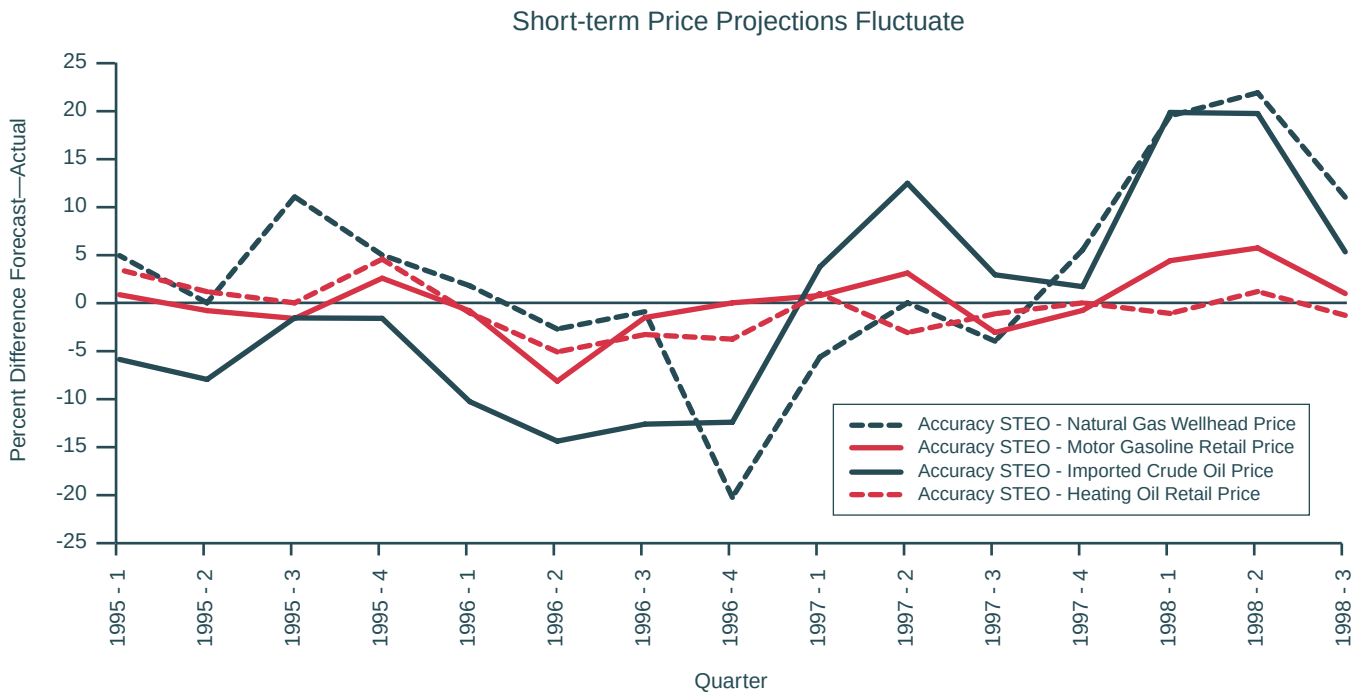
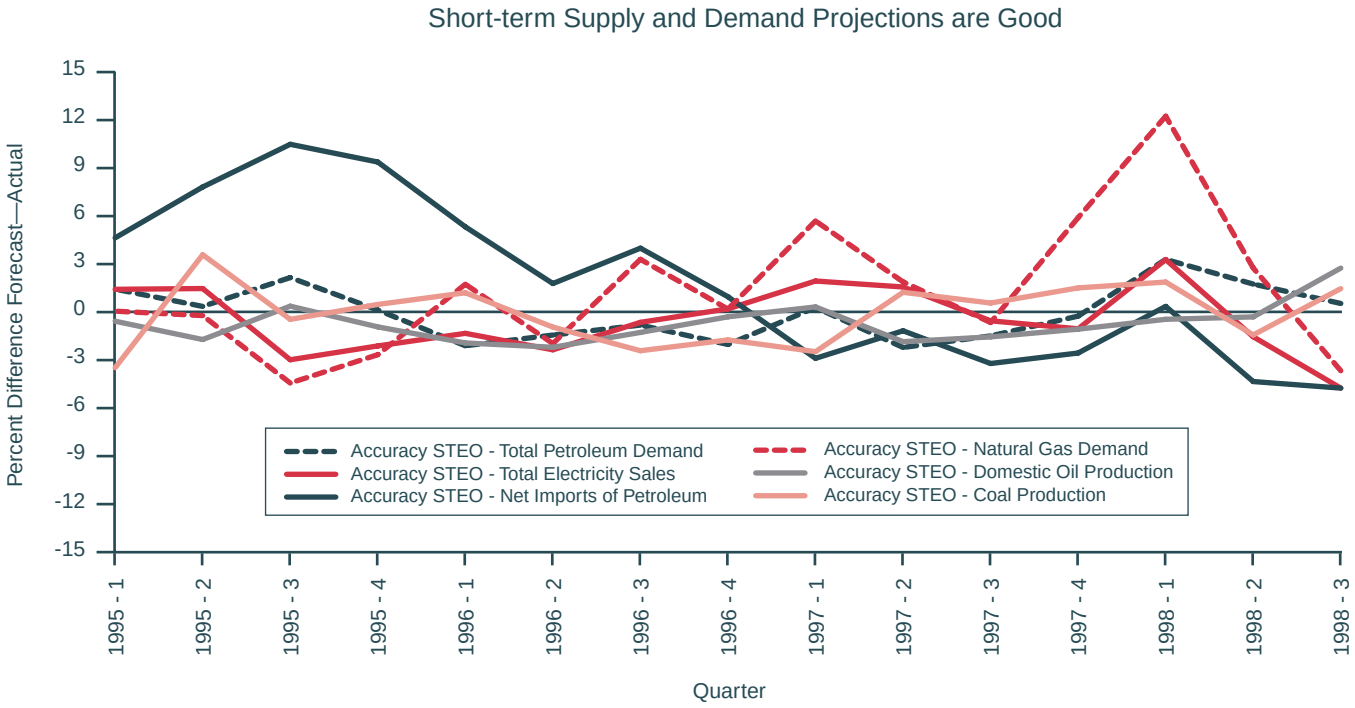
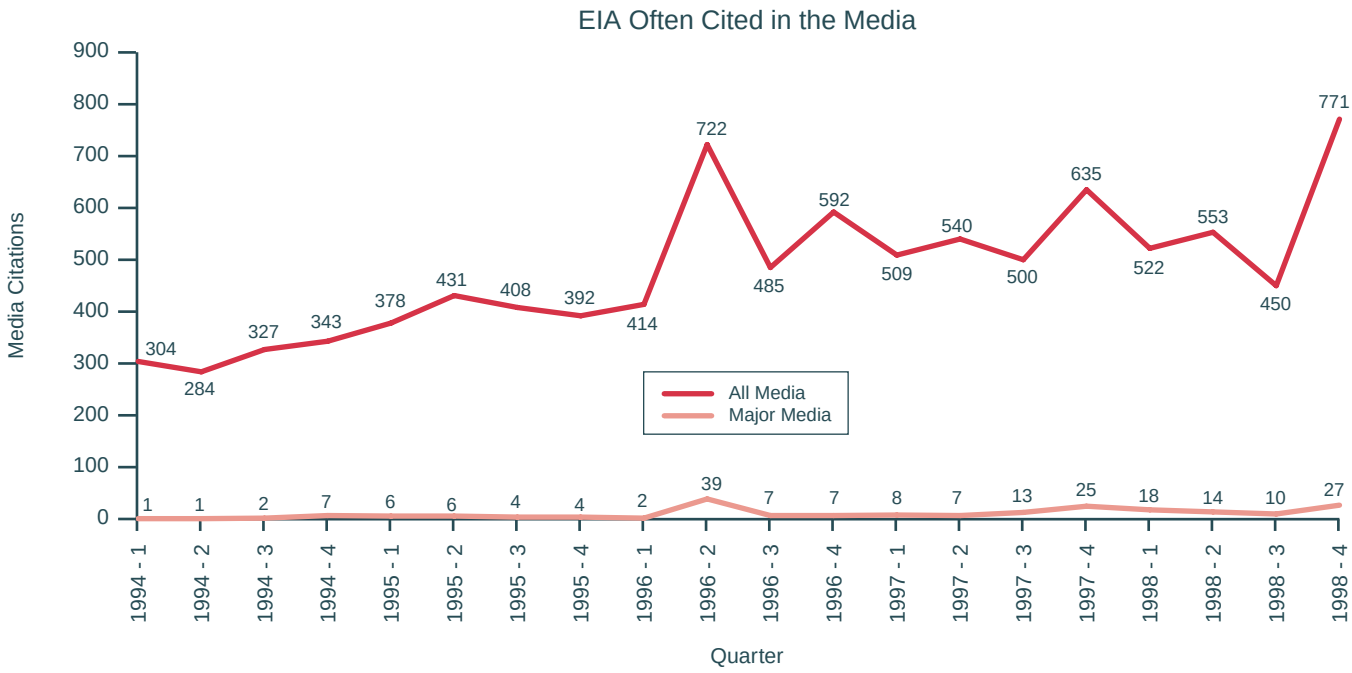


FIGURE B9. STEO Supply and Demand



OBJECTIVE: EIA will increase the number of *citations* of energy information attributed to EIA in the news *media* between 1998 and 2002.

FIGURE B10. Citations of EIA Information in Media



OBJECTIVE: EIA will *increase its customer base* between 1998 and 2002.

FIGURE B11. Web Site Customer History

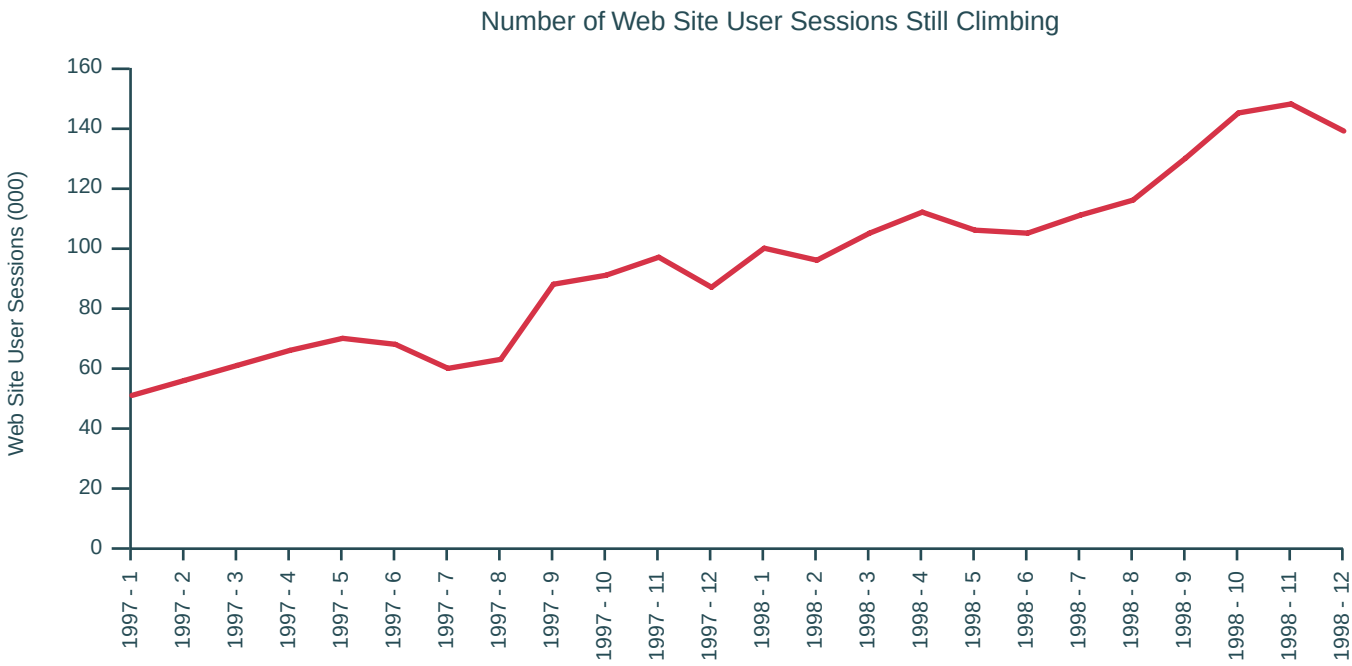
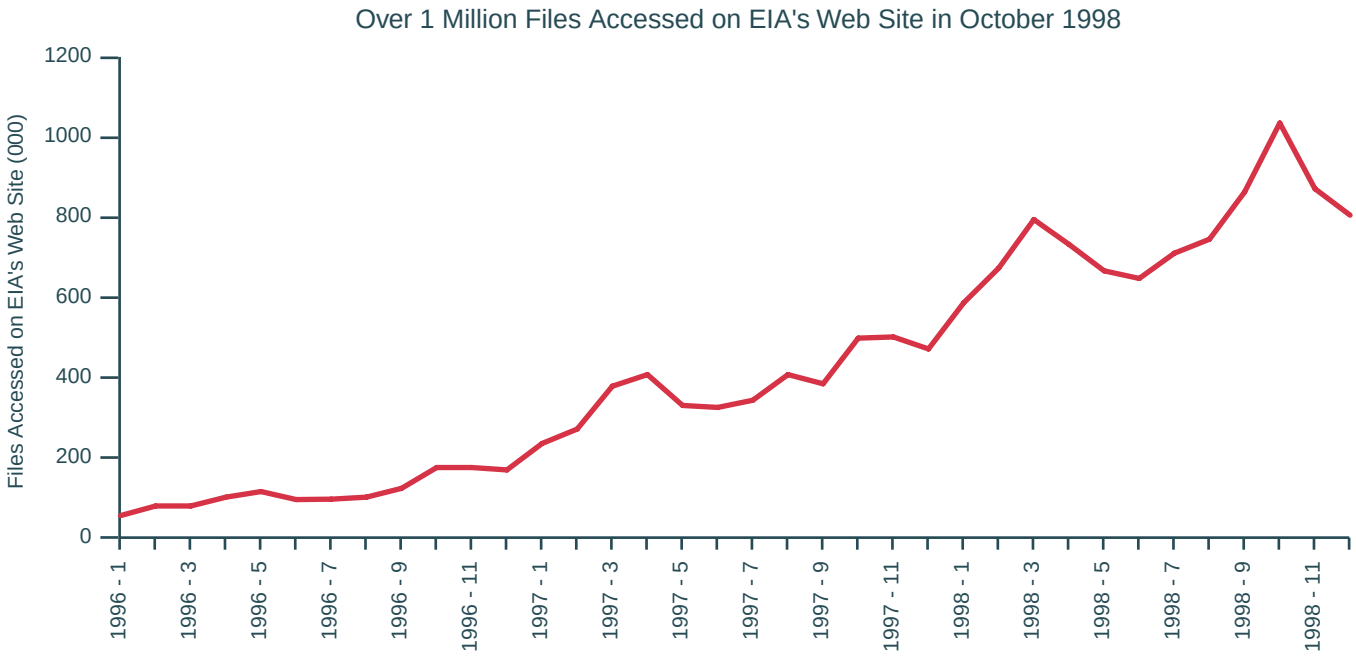


FIGURE B12. Files Accessed Electronically on Web Site



OBJECTIVE: *Forecast Credibility* will remain stable, or improve over time, as EIA improves the timeliness of its products between 1998 and 2002.

FIGURE B13. Date of Issue for Data from Commercial Buildings and Energy Consumption Survey

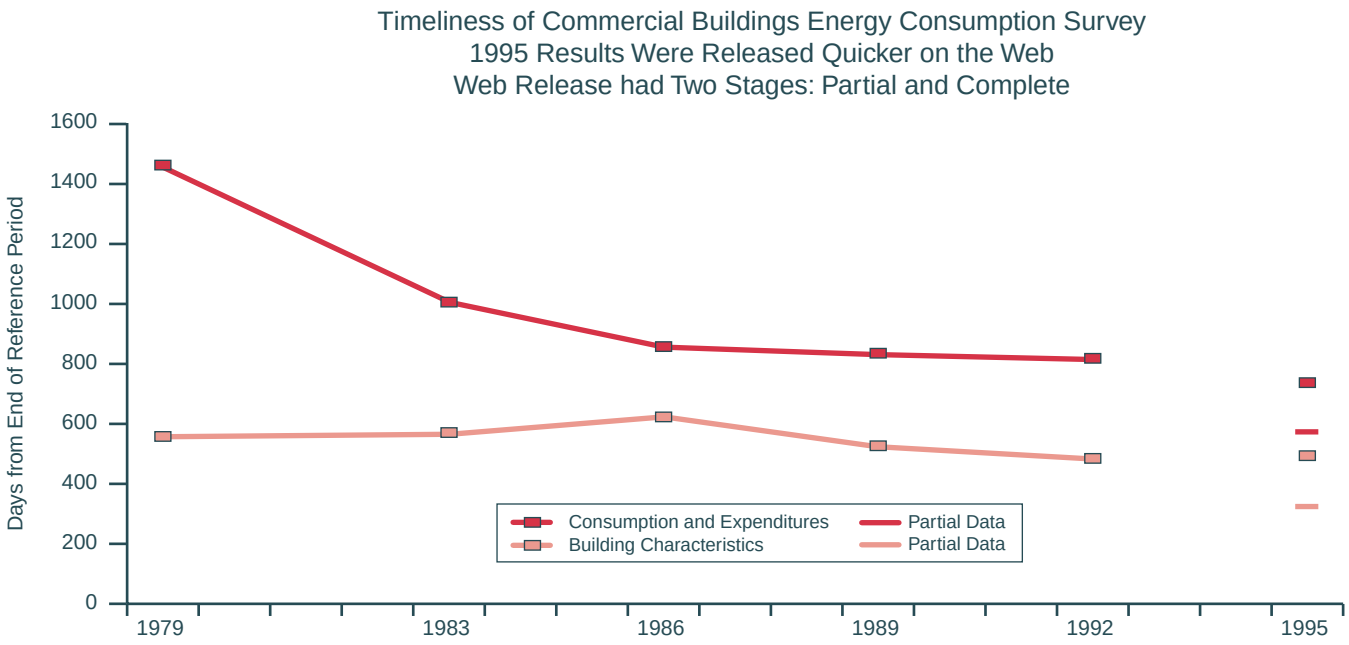
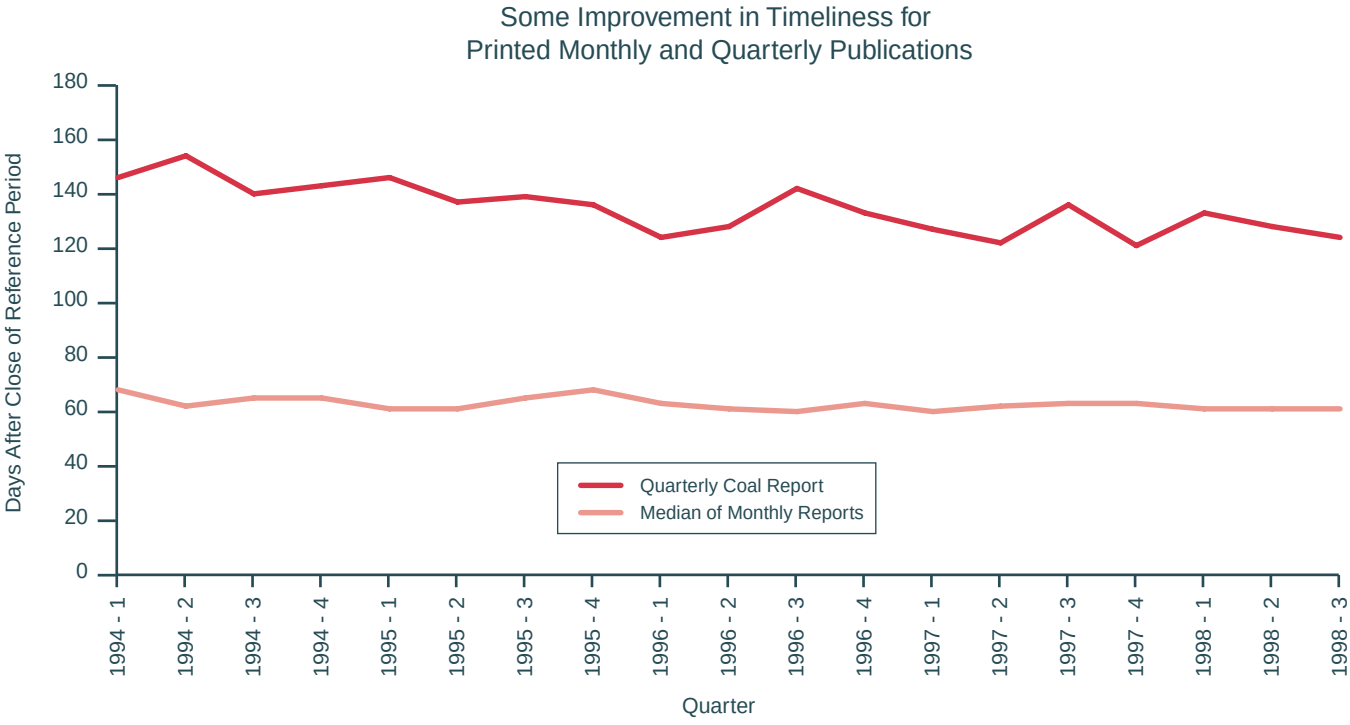


FIGURE B14. Date of Issue of Paper Reports Following Close of Reporting Period for Monthly and Quarterly Reports



Appendix C
Energy Information Administration

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Deputy Administrator	Larry Pettis	lpettis@eia.doe.gov

EIA Office Directors (As of 4/1/99)

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TTY: For people who are deaf or hard of hearing: (202) 586-1181
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COAL

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Consumption at Coke Plants	Michelle Bowles	426-1155	mbowles@eia.doe.gov
Consumption at Manufacturing Plants	Joyce Morrison	426-1470	jmorriso@eia.doe.gov
Distribution (Annual)	Tom Murphy	426-1151	tmurphy@eia.doe.gov
Imports/Exports (Quarterly)	Paulette Young	426-1150	pyoung@eia.doe.gov
Monthly Data (Includes Imports/Export Data)	Mary Lilly	426-1150	mlilly@eia.doe.gov
Producer/Distributor Stocks	Tom Murphy	426-1151	tmurphy@eia.doe.gov
Production and Consumption	Mary Paull	426-1153	mpaull@eia.doe.gov
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Coal Industry Financial Analysis	Neal Davis	586-6581	neal.davis@eia.doe.gov
Corporate Finance	Jon A. Rasmussen	586-1449	jon.rasmussen@eia.doe.gov
Domestic Refining and Worldwide Gasoline Marketing Financial Analysis	Neal Davis	586-6581	neal.davis@eia.doe.gov
Energy Taxation	Jon A. Rasmussen	586-1449	jon.rasmussen@eia.doe.gov
Foreign Investment	Larry Spancake	586-8597	larry.spancake@eia.doe.gov

Foreign Refining and Worldwide Transportation Financial Analysis	Susanne Johnson	586-4795	susanne.johnson@eia.doe.gov
Worldwide Oil and Gas Exploration, Development, and Production Financial Analysis	Larry Spancake	586-8597	larry.spancake@eia.doe.gov

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Monthly Sales to Electric Utilities	Deborah Bolden	426-1235	dbolden@eia.doe.gov
Nonutility Short-Term Projections	Kenneth Wade	426-1248	kwade@eia.doe.gov

ELECTRIC POWER: Utility

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Short-Term Hydroelectric Projections	Rebecca McNerney	426-1251	rmcnerne@eia.doe.gov
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Utility Fuel Receipts	Kenny McClevey	426-1144	kmccleve@eia.doe.gov
Utility Fuel Cost and Quality	Kenny McClevey	426-1144	kmccleve@eia.doe.gov
Utility Fuel Stocks/Generation	Melvin Johnson	426-1172	mejohnso@eia.doe.gov
Utility Power Production Expenses	Elsie Bess	426-1142	ebess@eia.doe.gov
Utility Publications	Robert Schnapp	426-1211	rschnapp@eia.doe.gov
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FORECASTS

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Fuel and/or Specific Data Area	Name	Telephone (202)	E-mail
Annual Energy Outlook/ Midterm Projections	Susan H. Holte	586-4838	sholte@eia.doe.gov
Coal Production/ Minemouth Prices	Michael Mellish	586-2136	mmellish@eia.doe.gov
Coal Distribution/End-Use Prices	Richard Newcombe	586-2415	rnewcomb@eia.doe.gov
Coal Exports/Midterm Projections	Michael Mellish	586-2152	mmellish@eia.doe.gov
Commercial Demand/ Midterm Projections	Stephen Wade Erin Boedecker	586-1678 586-4791	swade@eia.doe.gov eboedeck@eia.doe.gov
Crude Oil Supply/Midterm Projections	Ted McCallister	586-4820	tmccalli@eia.doe.gov
Electricity Generation and Cost	J. Alan Beamon	586-2025	abeamon@eia.doe.gov
Electricity Prices/Midterm Projections	Peter Whitman	586-1940	pwhitman@eia.doe.gov
Greenhouse Gases	Arthur Rypinski Stephen Calopedis	586-8425 586-1156	arypinsk@eia.doe.gov scaloped@eia.doe.gov
Industrial Demand/ Midterm Projections	T. C. Honeycutt	586-1420	choneycu@eia.doe.gov
International/Midterm Projections	Linda Doman	586-1041	ldoman@eia.doe.gov
Macroeconomic Analysis	Ronald F. Earley	586-1398	rearley@eia.doe.gov

Midterm Projections	Kay A. Smith	586-1455	ksmith@eia.doe.gov
National Energy Modeling System	Mary J. Hutzler Susan H. Holte	586-2222 586-4838	mhutzler@eia.doe.gov sholte@eia.doe.gov
Natural Gas Supply/Midterm Projections	Ted McCallister	586-4820	tmccalli@eia.doe.gov
Natural Gas Markets/Midterm Projections	Phyllis Martin	586-9592	pmartin@eia.doe.gov
Nuclear Energy — Domestic and International	Robert T. Eynon	586-2315	reynon@eia.doe.gov
Petroleum Product Markets	Stacy MacIntyre	586-9795	smacinty@eia.doe.gov
Renewable Energy/Midterm Projections	Tom Petersik	586-6582	tpetersi@eia.doe.gov
Residential Demand/Midterm Projections	Stephen Wade	586-1678	swade@eia.doe.gov
Short-Term Energy Forecasts	David W. Costello	586-1468	dcostello@eia.doe.gov
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World Oil Prices/Midterm Projections	G. Daniel Butler	586-9503	gbutler@eia.doe.gov
World Oil Price/Short-Term Projections	Douglas MacIntyre	586-1831	dmacinty@eia.doe.gov
Energy Fuel Price/ Short-Term Projections	Neil Gamson	586-2418	neil.gamson@eia.doe.gov
Petroleum Markets/ Short-Term Projections	Michael Morris	586-1199	mmorris@eia.doe.gov
Petroleum Supply/ Short-Term Projections	Tancred Lidderdale	586-7321	tlidderd@eia.doe.gov
Natural Gas Markets/ Short-Term Projections	Khadija El-Amin David Costello	586-1468 586-1468	kelamin@eia.doe.gov dcostell@eia.doe.gov
Coal Markets/Short-Term Projections	Elias Johnson	586-7277	ejohnson@eia.doe.gov
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Renewables/Short-Term Projections	David Costello	586-1468	dcostell@eia.doe.gov
Short-Term Energy Outlook	David Costello	586-1468	dcostell@eia.doe.gov
Short-Term Energy Model	John Pearson David Costello	586-6162 586-1468	jpearson@eia.doe.gov dcostell@eia.doe.gov

INTERNATIONAL: Energy Analysis

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Fuel and/or Specific Data Area	Name	Telephone (202)	E-mail
Country Analysis Briefs	Lowell Feld	586-9502	lfeld@eia.doe.gov
Petroleum and Contingency	Derriel Cato	586-6574	dcato@eia.doe.gov
Soviet Joint Ventures	Erik Kreil	586-6573	ekreil@eia.doe.gov
World Oil Market Disruption Analysis	Douglas MacIntyre	586-1831	dmacinty@eia.doe.gov
Contingency Analysis/Regional Issues	Erik Kreil	586-6573	ekreil@eia.doe.gov

INTERNATIONAL: Energy Statistics

Fax Number: (202) 586-9753

Fuel and/or Specific Data Area	Name	Telephone (202)	E-mail
Selected Crude Oil/Refined Petroleum Product Prices	Joel Lou	586-1457	jlou@eia.doe.gov
World Consumption & Production of Total Energy	Mike Grillot	586-6577	mgrillot@eia.doe.gov
World Population by Country	Joel Lou	586-1457	jlou@eia.doe.gov
World Production of Crude Oil & Natural Gas Plant Liquids	Patricia Smith	586-6925	psmith@eia.doe.gov
World Crude Oil Reserves and Refining Capacity	Patricia Smith	586-6925	psmith@eia.doe.gov
World Generation & Consumption of Electricity	Patricia Smith	586-6925	psmith@eia.doe.gov
World Consumption Production/Recoverable Coal	Vicky McLaine	586-9412	hmclaine@eia.doe.gov
World Imports and Exports of Crude Oil & World Consumption	Joel Lou	586-9412	jlou@eia.doe.gov
World Consumption/Reserves of NG by Country	Karen Griffin	586-1357	kgriffin@eia.doe.gov
World Gross Domestic Product at Market Exchange Rates	Joel Lou	586-1457	jlou@eia.doe.gov

MULTIFUEL: Consumption

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Fuel and/or Specific Data Area	Name	Telephone (202)	E-mail
Commercial Buildings	Martha Johnson	586-1135	martha.johnson@eia.doe.gov
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Manufacturing Establishments	Bob Adler	586-1134	bob.adler@eia.doe.gov
Residential Households	Emilda Rivers	586-5744	e.rivers@eia.doe.gov
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Transportation — Alternative Fuels	Christy Hall	586-1068	christy.hall@eia.doe.gov

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Coalbed Methane/Tight Gas	Bob King	586-4787	rking@eia.doe.gov
Consumer and City Gate Prices	Roy Kass	586-4790	nkass@eia.doe.gov
Consumption (by Sector)	Roy Kass	586-4790	nkass@eia.doe.gov
Drilling	Bob King	586-4787	rking@eia.doe.gov
Exploration	Dave Morehouse	586-4853	dmorehou@eia.doe.gov
Futures Market	Jim Todaro	586-6305	jtodaro@eia.doe.gov
Imports/Exports	Linda Cook	586-6306	lcook@eia.doe.gov
Liquefied Natural Gas Storage	Margaret Natof	586-6303	mnatof@eia.doe.gov
Natural Gas Liquids	David Hinton	586-2990	dhinton@eia.doe.gov
Natural Gas Vehicles	Jim Todaro	586-6305	jtodaro@eia.doe.gov
Pipeline Capacity	James Tobin	586-4835	jtobin@eia.doe.gov
Pricing Analysis	Mary Carlson	586-4749	mcarlson@eia.doe.gov
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Productive Capacity	John Wood	(214) 720-6160 F: (214) 720-6155	jwood@eia.doe.gov
Regulatory Issues	Joan Heinkel	586-4650	jheinkel@eia.doe.gov
Reserves	John Wood	(214) 720-6160 F: (214) 720-6155	jwood@eia.doe.gov
Resources	Dave Morehouse	586-4853	dmorehou@eia.doe.gov
Rigs Count	Bob King	586-4787	rking@eia.doe.gov
Spot Market	Jim Todaro	586-6305	jtodaro@eia.doe.gov
Supply Analysis	James Tobin	586-4835	jtobin@eia.doe.gov
Underground Storage	Carol Jones	586-6168	cjones@eia.doe.gov
Underground Storage	Jim Todaro	586-6305	jtodaro@eia.doe.gov
Wellhead Prices	Sylvia Norris	586-6106	snorris@eia.doe.gov

NUCLEAR POWER

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Fuel and/or Specific Data Area	Name	Telephone (202)	E-mail
Capacity and Generation	John Moens	426-1247	jmoens@eia.doe.gov
Foreign Nuclear Power	John Moens	426-1247	jmoens@eia.doe.gov
Fuel Cycle Requirements Projections	Diane Jackson	426-1176	djackson@eia.doe.gov
Short-Term Nuclear Generation Projections	Diane Jackson	426-1176	djackson@eia.doe.gov
Spent Fuel Projections	Diane Jackson	426-1176	djackson@eia.doe.gov
Waste Characteristics	Jim Finucane	426-1960	jfinucan@eia.doe.gov
Waste Fund Fees	Jim Finucane	426-1960	jfinucan@eia.doe.gov

PETROLEUM

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Fuel and/or Specific Data Area	Name	Telephone (202)	E-mail
Refiner Crude Oil Acquisition Cost	Elizabeth Scott	586-1258	escott@eia.doe.gov
Crude Oil/Wellhead Value	Dave Gatton	586-5995	dgatton@eia.doe.gov
Domestic Crude Oil First Purchase Report	Dave Gatton	586-5995	dgatton@eia.doe.gov
Crude Oil Production	Mir Yousufuddin	(214) 720-6186	myousufu@eia.doe.gov
Crude Oil Reserves	John Wood	(214) 720-6160	jwood@eia.doe.gov
Futures Market Analysis	Aileen Bohn	586-4255	abohn@eia.doe.gov
Product Prices	Tammy Heppner	586-4748	theppner@eia.doe.gov
Retail Gasoline/Diesel Prices	Jake Bournazian	586-1256	jbournaz@eia.doe.gov
Retail Gasoline/Diesel Prices	Theresa Hallquist	586-2051	thallqui@eia.doe.gov
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Appendix D
Laws Affecting EIA, 1974-1998

Year	Law	Impact on EIA
1974	Federal Energy Administration (FEA) Act P.L. 93-275, 15 USC 761	Created the FEA and mandated it to "collect assemble, evaluate, and analyze energy information;" provide energy information and projections to the Federal Government, State Governments, and the public; and provide Congress with an annual report summarizing these activities. It also provided FEA with data collection enforcement authority for data gathered from energy producing and consuming firms.
1974	Energy Supply and Environmental Coordination Act P.L. 93-319, 15 USC 796	Provided additional authority for collecting energy information. The definition that was given "energy information" has been included in all subsequent energy information legislation.
1975	Energy Policy and Conservation Act P.L. 94-163, 42 USC 6274	Provided for exchange of information for the international energy program.
1976	Energy Conservation and Production Act P.L. 94-385, 15 USC 790	Established within the FEA the Office of Energy Information and Analysis (which later became the Energy Information Administration (EIA). This office was to (1) operate a National Energy Information System, (2) possess expertise in energy analysis and forecasting, (3) be subject to performance audits by a Professional Audit Review Team, (4) coordinate energy information activities with other Federal agencies, (5) "promptly provide upon request any energy information... to any duly established committee of Congress," and (6) produce an annual report to Congress.
1977	Department of Energy (DOE) Organization Act P.L. 95-91, 42 USC 7135	Established EIA as the single Government authority for energy information. Gave EIA independence from the rest of the DOE with respect to data collection, and from the whole of Government with respect to the content of EIA reports. Incorporated all the mandates of the Office of Energy Information and Analysis. Established the Financial Reporting System, an annual survey that gathers and reports detailed energy industry financial data. Established an annual requirement to conduct a complete and independent analysis of actual U.S. oil and gas reserves.
1978	Powerplant and Industrial Fuel Use Act P.L. 95-620, 42 USC 8301	Required a comprehensive annual summary on coal reserves.

1982	Energy Emergency Preparedness Act P.L. 97-229, 42 USC 6245	Required EIA to maintain State-level petroleum marketing data similar to those published in September 1981.
1983	Nuclear Regulatory Commission Authorization Act P.L. 97-415, 42 USC 2210	Required a one-time review by the President on the status of the domestic uranium mining and milling industry. Required an annual DOE report on the viability of this industry, using criteria for assessment given in this act. EIA gathers information for this report.
1985	Energy Policy and Conservation Act Amendments of 1985 P.L. 99-58, 42 USC 6201	Required EIA to conduct a comprehensive analysis of the U.S. coal import market and to issue quarterly reports on the status of coal imports.
1986	Omnibus Budget Reconciliation Act P.L. 99-509, 42 USC 7135	Required EIA to conduct a survey of energy consumption in manufacturing industries in the United States on a triennial basis and EIA's participation in a one-time DOE study of domestic crude oil production and petroleum refining capacity and the effects of imports thereon.
1987	Powerplant and Industrial Fuel Use Act of 1978 Amendment P.L.100-42, 42 USC 8312	Repealed section of Powerplant and Industrial Fuel Act, P.L. 95-620, which required an annual summary on coal reserves.
1992	Energy Policy Act of 1992	Required EIA to expand energy consumption surveys; collect data and perform analyses of alternative fuels and alternatively-fueled vehicles; compile an inventory of greenhouse gas emissions; establish data base and prepare study on transportation rates and distribution patterns of coal, oil and natural gas; collect data on renewable energy sources in electricity production; compile data on foreign purchases and imports of uranium; and support the DOE in the study of industrial energy use targets.

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