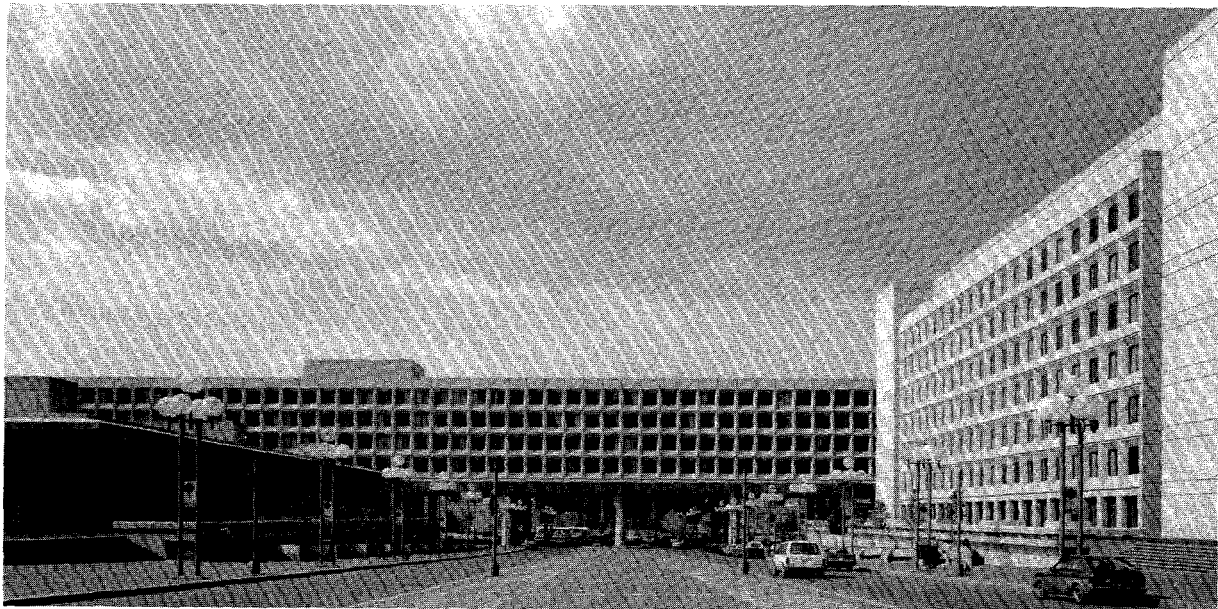


# Annual Report to Congress 1996

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



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# PREFACE

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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 1996 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 1996, and a chart of all titles and a list of all feature articles published during the year. Appendix B lists contact information for EIA subject matter specialists. Appendix C lists the major laws which form the basis of EIA's legislative mandate.

Previous editions of this report have included three additional appendices: ordering information for all of EIA's publications (summarized from the *EIA Publications Directory*) and summary descriptions of the models and energy data collection forms currently in use (taken from the *Directory of Energy Information Administration Models* and *Directory of Energy Data Collection Forms*). All three reports are now available in electronic form in their entirety on EIA's World Wide Web site at [www.eia.doe.gov/bookshelf.html](http://www.eia.doe.gov/bookshelf.html). They are also available in printed form, free of charge, from the National Energy Information Center. Ordering information is available on the inside front cover of this report.

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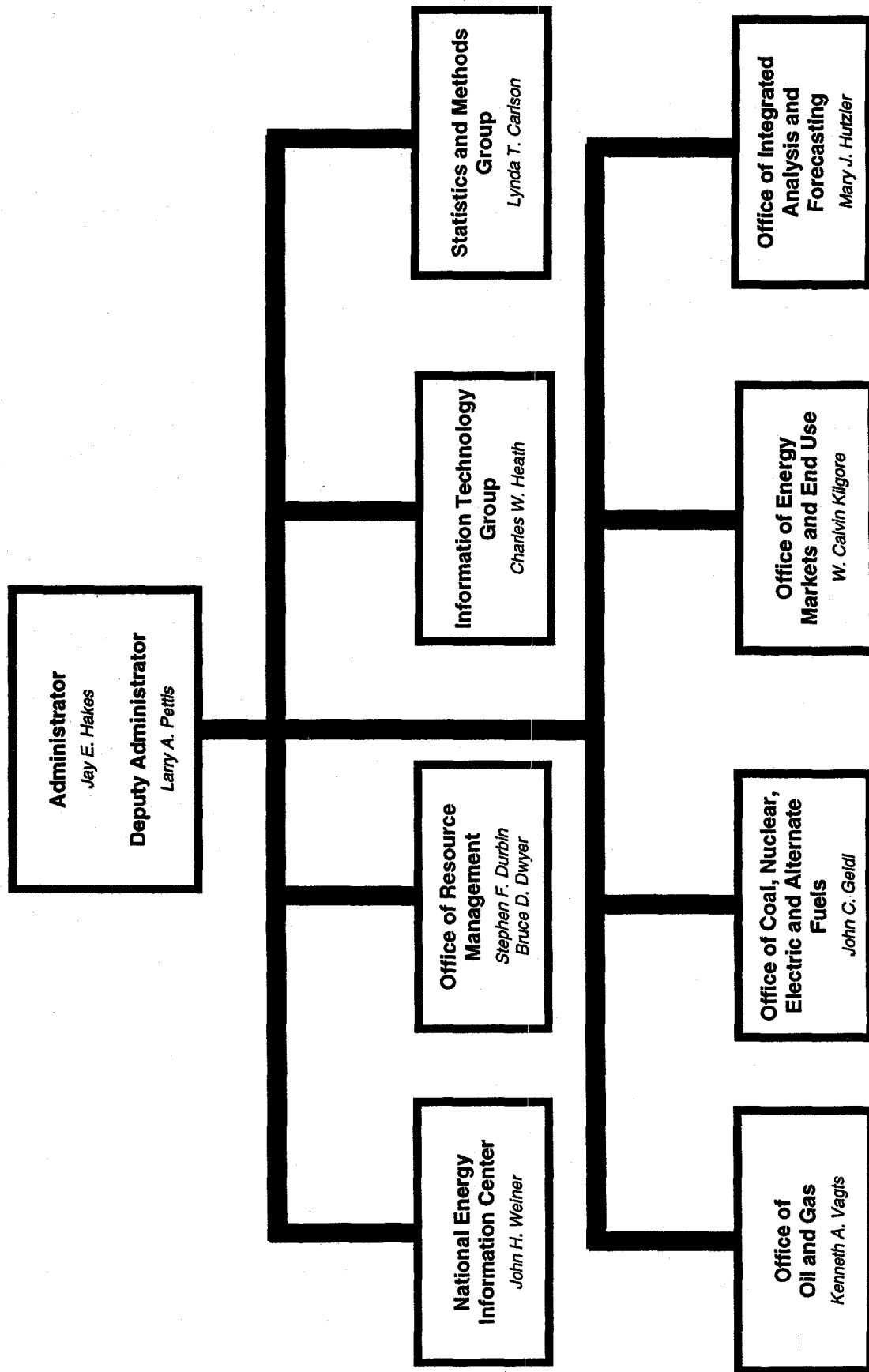
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# ENERGY INFORMATION ADMINISTRATION



Effective as of June 1, 1997

# INTRODUCTION

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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.

Three years ago, EIA was one of 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 will require 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 twentieth, provides a narrative summary of program accomplishments. Next year's report, covering Fiscal Year 1997, also will document EIA's success in meeting the specific quantitative performance targets set out in the strategic plan.

In 1996, EIA emphasized 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 1996 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.

# SELECTED PROGRAM HIGHLIGHTS

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## Information Support to Outside Organizations

In 1996, representatives of several hundred domestic agencies and organizations requested information assistance from EIA. EIA's extensive databases, analyses, forecasts, modeling support, and staff expertise were a primary source of technical assistance at an institutional level to senior managers and information professionals in government, business, and academic organizations across the Nation and around the world.

A prime example involves the National Association of State Energy Officials (NASEO). In February, Federal and State-level energy officials attending NASEO's winter meeting in Washington, DC, signed an agreement to communicate closely and exchange vital information during energy emergencies. In the agreement, EIA, NASEO, and the Department of Energy's (DOE) Office of Emergency Management adopted a communications protocol outlining the responsibilities, communication tools, and data requirements of each organization during energy disruptions. The Energy Secretary spoke at the meeting and attended the signing.

The agreement calls for:

- Development and distribution of a contact list of officials at the State and Federal levels responsible for market assessment and energy response
- Monitoring and exchange of relevant information by both DOE and participating States
- Increased use of electronic communications tools, such as the Internet and EIA's new CD-ROM, the Energy InfoDisc.

Because EIA is the Nation's leading source of energy information, the agency's primary responsibility will be to monitor and assess energy markets with regard to supply, demand, and prices on a State and regional basis. The Office of Emergency Management will coordinate emergency response for DOE.

Another example concerns the Commerce Department's International Trade Administration, which requested

EIA to author two energy chapters — one on crude oil and natural gas, and one on refining — for the Commerce Department's *U.S. Industry and Trade Outlook 1998* publication. After the report was canceled a few years ago, significant public demand caused the publication to be reinstated in FY 1996 as a public-private joint venture between the Department of Commerce and the McGraw-Hill company. The new publication, which was openly endorsed by Vice President Al Gore as a reinvention initiative, comprehensively addressed all sectors of the U.S. economy, and chapters were contributed by numerous Federal agencies.

The chapters provided background on: current and past financial performance, domestic factors (such as regulations or environmental concerns), and international factors (such as foreign ownership or joint ventures). They also discussed important energy trends and developments, including the extent to which each of the industries covered is globalized. Sources of future demand were addressed, along with a discussion of what was currently happening in key markets.

EIA has traditionally provided the energy chapters. McGraw-Hill is presently reformatting the new report to give it a glossier, private industry image and plans to sell it in a number of bookstores throughout the United States. It also will be provided to libraries in all of the States, but it will not be sold by the Federal Government. The report, which is scheduled to be published in July 1997, covers the years 1996 to 1997, 1 year out (1998), and 5 years out (2002). The data estimates in the energy chapters (U.S. industry growth projections for the next 1 and 5 years) are from EIA's *Annual Energy Outlook 1997* (*AEO 1997*) and from the Supplement to the *AEO 1997*.

During 1996, EIA also provided support to many foreign governments and international organizations, usually in the forms of briefings, papers, formal presentations, data, and methodologies. In 1996, EIA expanded its support efforts to include sharing information on electronic dissemination initiatives.

For example, three representatives from South Africa visited EIA in June 1996 as part of a general program of energy cooperation between South Africa and the United States. The visit followed the 1995 signing of a "Statement of Intent" for energy information exchange, particularly on energy data systems, and the



establishment of electronic communications between EIA and the Department of Mineral and Energy Affairs (DMEA) in South Africa. One outcome from the meeting was the establishment of the "South Africa-United States Energy Data Exchange Home Page" on the Internet. The home page includes up-to-date energy information about the two countries.

## Electricity Deregulation

The electric utility industry is in the process of transition from a regulated industry to a competitive market. Two Federal Energy Regulatory Commission (FERC) orders, issued in April 1996, encouraged wholesale competition. Order 888 addressed the issues of open access to the transmission network and stranded costs. Order 889 required utilities to establish electronic systems to share information about available transmission capacity. In addition, a substantial majority of States started activities in 1996 related to some form of retail competition, and legislative proposals on electric power restructuring were introduced in both Houses of Congress.

Given the importance of electricity to the Nation and the complex issues involved in deregulation—including recovery of stranded costs, divestiture of transmission assets, increased mergers, renewable energy incentives, energy efficiency investments, reliability, and timing of retail competition—EIA has assumed a leadership role in providing information to increase public understanding.

In July and September 1996, EIA published two Service Reports on the Final Environmental Impact Statement (FEIS) issued by FERC to estimate the cost savings and environmental impacts expected to result from Order 888. These reports were requested by Senator James Jeffords, Vice Chairman of the Senate Subcommittee on Energy Production and Regulation. The first, *A Review of FERC's Final Environmental Impact Statement for Electricity Open Access and Recovery of Stranded Costs*, summarized the purpose, methodology, and results of the FEIS, reviewed the key assumptions, compared them to other forecasts, and discussed the reasonableness of the results. The second, *An Analysis of FERC's Final Environmental Impact Statement for Electricity Open Access and Recovery of Stranded Costs*, provided an independent analysis of the impacts of the rule and discussed how growing competition in the electricity business might affect emissions.

In October, EIA convened a meeting with representatives from 17 organizations interested in the data collection

activities of EIA. The 17 organizations included electric utility-sponsored organizations, such as the Edison Electric Institute and the American Public Power Association. Organizations representing data users, nonutility power producers, electricity consumers, and power marketers also attended, as well as representatives from the Federal Energy Regulatory Commission and the National Association of Regulatory Utility Commissioners.

The purpose of the meeting was to present the status of EIA's current electric power data collection program that EIA is responsible for and to discuss how the various organizations and EIA could cooperate to redesign the program as the electricity industry changes.

The group discussion led to a recommendation that EIA conduct its analysis of how to change its electric power industry data collection program over a one- to two-year period. The organizations were interested in continuing to work further with EIA to define data requirements and wanted these discussions to be held in two phases. During the first phase, organizations representing common positions (e.g., utilities) would independently present their views on the redesign issues. During the second phase, the independent views would be shared and discussed by all groups and an attempt would then be made to synthesize the various views into a commonly acceptable proposal.

Also in 1996, EIA began the process of enhancing its modeling capabilities to incorporate wholesale and retail electricity deregulation. EIA staff analyzed the trends in costs of electricity production over the last several years and determined that important cost components have fallen in response to the industry's anticipation of deregulation. These trends were incorporated in assumptions for EIA's *Annual Energy Outlook 1997*, reducing forecasts of electricity prices by as much as 0.4 cents per kilowatthour, compared to the previous year's projections. A new model for forecasting prices in a competitive environment was developed, and it is in the process of being integrated into the National Energy Modeling System (NEMS) for the *Annual Energy Outlook 1998*. This model is also being used to analyze differences in regional electricity prices between a competitive and regulated marketplace for electricity; the results will be published in an EIA analysis report in mid-1997. EIA staff also is closely monitoring developments in each of the States with respect to their changes in laws and regulations concerning electricity, so that these changes can be incorporated into future analyses and forecasts.

A key event in EIA's public information activities concerning electricity deregulation was the publication of a basic reference document describing the history of the electric power industry, its traditional monopoly structure, and its transition to a competitive market. Prepared in 1996 and released in early 1997, *The Changing Structure of the Electric Power Industry: An Update*, provided for lay and technical readers alike "a descriptive analysis of the factors that have contributed to the interest in a competitive market, proposed legislative and regulatory actions, and the steps being taken by the various components of the industry to meet the challenges of adapting to and prevailing in a competitive environment."

In addition to being one of the leading reports accessed on the EIA Web site, *The Changing Structure* generated significant Congressional interest. On three occasions in early 1997, EIA conducted briefings for Congressional committee staff members based largely on the report. Praised for their timeliness and content, both the report and the briefings served to organize the complex issues involved in electricity deregulation and make clear the fundamental structure of the transition process.

## Energy Policy Act

The Energy Policy Act of 1992 (EPACT) contains several sections that have direct impact on EIA's data and analysis programs: Sections 407, 502, and 503 dealing with alternative fuel vehicles (AFV) and alternative transportation fuels (ATF) and Section 1605(b) dealing with greenhouse gas emissions. Section 407 of EPACT requires information that would be useful to those entering markets dealing with AFV's and the associated infrastructure. In Section 502, EPACT establishes national goals in 2000 and 2010 of replacing 10 percent and 30 percent, respectively, of U.S. consumption of motor fuels with alternative and replacement fuels. Section 503 requires estimation of demand for replacement fuels and of their greenhouse gas emissions. Section 1605(b) is part of the U.S. Government's program to develop innovative, low-cost, and nonregulatory approaches to limit emissions of greenhouse gases.

### Alternative Fuels for Transportation

In 1996, EIA developed and implemented a data collection program to provide information on the

potential markets for AFV's (highway vehicles designed to operate on fuels other than gasoline or diesel) in response to requirements of Section 407. Surveys were completed for vehicle fleets in Atlanta and Denver, and national surveys were conducted for both consumer preferences and fuel providers. These surveys were in addition to the "Alternative Fuel Vehicle Suppliers' Annual Report" (EIA-886), which EIA first conducted in 1995.

In June 1996, EIA discussed its data and analysis program for alternative-fueled vehicles at the DOE Clean Cities Conference held in Atlanta. The 48 Clean Cities encompass virtually every major metropolitan area and, hence, cover the locations where most AFV's operate in fleets. The conference was the first step in a potential partnership between EIA and DOE's Office of Alternative Fuels aimed at collecting alternative transportation fuel data of mutual interest. The Office of Alternative Fuels promotes the use of AFV's under the mandate of the EPACT. Part of their program involves getting cities to commit to promoting conditions favorable for using AFV's and ATF's. Such Clean Cities try to ensure the existence of alternative transportation refueling facilities and to encourage fleet operators to acquire and use AFV's. Each Clean City coordinator, therefore, is quite knowledgeable about all aspects of alternative fuels development in his/her area and is a valuable resource to EIA, which is considering surveying to estimate consumption of ATF's and estimating the AFV population.

Also, in June 1996, EIA presented its *Annual Energy Outlook 1996* alternative-fuel vehicle forecasts and model methodology at the International Alternative-Fuel Conference and Exhibition in Milwaukee, Wisconsin. EIA's presentation focused on the differences between the personal vehicle market and the commercial fleet vehicle market, comparisons of AFV attributes (vehicle price, vehicle range, fuel availability, cost of driving per mile, commercial availability), legislative mandates from the Low Emission Vehicle Program and the Energy Policy Act, regional AFV sales, and the impact of gasoline price projections on AFV sales. EIA also chaired a session at the conference on "Understanding Changing AFV Market Trends and Consumer Demand."

In September 1996, EIA presented these modeling results to the chief economists from the Big Three Automakers (GM, Ford, and Chrysler) and three U.S. oil companies (Amoco, ARCO, and Exxon). The model structure, vehicle attributes used as inputs to the model, and the outputs from the model in the form of AFV sales, stocks, vehicle miles traveled, and consumption by fuel and vehicle type were discussed. The outlook for AFV's

appears to be less optimistic because of lower projected prices of gasoline and the delays in implementing the schedule of current mandates, specifically the delay in legislative mandates from the Low Emission Vehicle Program in California, the rollback of business and municipal fleet provisions of EPACT to 2002, the delay in electric utility fleet provisions, and the delay of government purchases of AFV's.

"Estimating Greenhouse Gas Emissions from Replacement Fuels: Fulfilling the Energy Policy Mandate," a paper co-authored by EIA staff was included in *The Emission Inventory: Programs & Progress*. This publication contains papers presented at the Proceedings of a Specialty Conference, which was sponsored by the Air & Waste Management Association and the U.S. Environmental Protection Agency. "Estimating Greenhouse Gas Emissions" discusses the issues associated with the legislative context and needs analysis of Section 503a(4) and b(3) of the Energy Policy Act of 1992 and EIA's strategies for meeting those requirements—for example the development of a greenhouse gas emissions model (based on total fuel cycles for replacement fuels) and the collection and analysis of greenhouse gas emissions data. (See Appendix A for more information on "Periodicals of Special Interest.")

### **Voluntary Reporting of Greenhouse Gases and Emission Reductions Analysis**

Under the Voluntary Reporting of Greenhouse Gases program, participants may report any activity that reduces greenhouse gas emissions or increases carbon sequestration (capture of atmospheric carbon). Participants gain recognition for environmental stewardship while demonstrating their support for voluntary approaches to achieving environmental policy goals. The program permits any organization or individual to establish a public record of emissions, emission reductions, or sequestration achievements in a national, publicly available database.

Early in 1996, EIA spoke on "Voluntary Reporting of Greenhouse Gases" to a meeting of the Offsets Forum of the Center for Clean Air Policy. Utility executives, State energy and environmental officials, foreign diplomats, and personnel of various environmental organizations were in the audience.

Also in February, EIA's Greenhouse Gases Voluntary Reporting program jointly sponsored a conference with the DOE/EPA "Climate Change" and "Climate Wise"

programs. At the conference, titled "Profit from Energy and Emissions Tracking," EIA addressed the topic of EIA's Greenhouse Gases Voluntary Reporting Program.

By July 1996, more than 100 companies, together accounting for about 23 percent of U.S. carbon dioxide emissions, reported some 645 individual projects to reduce emissions of greenhouse gases in a U.S. Government initiative to promote voluntary approaches to environmental protection. Highlights from these reports were discussed in EIA's new report *Voluntary Reporting of Greenhouse Gases 1995*, published in July 1996. The reports submitted to EIA in 1995 were also compiled into a database in the form of a CD-ROM.

By creating a readily accessible record of efforts to reduce emissions, the voluntary reporting program supports the exchange of information on the most effective ways to reduce greenhouse gas emissions and helps to inform the public debate about activities aimed at reducing or offsetting emissions.

The United States was one of the 51 signatories who approved the "First Framework Convention on Climate Change," produced by the 1992 Rio Conference, when they met in Berlin in 1995. The original goal of the 1992 Rio Conference was to stabilize carbon emissions at 1990 levels by 2000. While the Berlin convention failed to reach consensus on firm target dates for reducing emissions by a certain percentage, they did agree that the final report must be ready for the next conference of the 51 nations in 1997. EIA has been and remains actively involved in analyzing greenhouse gas emissions and their reductions.

On June 1, EIA submitted a service report to the Environmental Protection Agency (EPA) that responded to their request to use EIA's National Energy Modeling System to develop carbon, energy, and economic impact projections by scenarios developed by the Office of Air and Radiation in EPA. The purpose of the study was to analyze the potential of technological improvements and rate of technology adoption in U.S. energy markets to reduce carbon emissions. The service report presented the assumptions and results of the analysis and compared those results to EIA's *Annual Energy Outlook 1996* reference case. Of the three cases considered, only the most optimistic case, with extremely optimistic technology assumptions, resulted in achieving stabilization at 1990 levels of anthropogenic energy-related carbon emissions; however, stabilization occurred after 2000.

On June 6 and 7, the Departments of State, Energy, Commerce, and Agriculture, and the EPA sponsored the

Climate Change Analysis Workshop, held in Springfield, Virginia. At this workshop, EPA presented a paper that was based on the results of EIA's support to EPA using the National Energy Modeling System (NEMS). An EIA staff member also delivered a paper entitled "The Macroeconomic and Sectoral Impacts of Achieving Alternative Carbon Emission Reduction Targets," which was undertaken at the request of the DOE Office of Economic Analysis and Competition in support of the joint DOE/Environmental Protection Agency Interagency Analysis Team. Five increasingly stringent emission reduction targets were evaluated, each showing significant adverse impacts on output in the economy. Five alternative implementation strategies were also considered that covered permit schemes and the use of the tax system. Also, about 50 percent of the presentations at the workshop used either NEMS for their modeling tool or EIA's *Annual Energy Outlook* as the basis for their analysis.

In November, EIA was invited to attend the Experts Modeling Forum hosted by Resources for the Future. The forum addressed the pros and cons of alternative modeling platforms for particular types of analyses to support the assessment of policies to limit greenhouse gas emissions. The general classes of platforms included macroeconomic models; hybrid models combining energy, technology, and the economy; plus computable general equilibrium models. The conference called for an eclectic blending of insights from a set of models cutting across the alternative platforms. This conference was a lead-in to further work conducted in 1997 on climate change analysis.

## Winter Fuels

Surging propane prices at the end of 1996 caused EIA staff to field a much larger-than-normal volume of calls from all stakeholders in the propane sector, including producers, residential consumers, retailers, State energy offices, and Congress. In November 1996, U.S. inventories of propane fell by nearly 5.0 million barrels, their steepest November decline since 1992, when early cold weather and heavy crop drying demand pushed inventories down by nearly 7.3 million barrels. Then, propane prices on average were 22.7 cents per gallon higher at the residential level and were on average 27.6 cents per gallon higher at the wholesale level compared with prices in November 1995. Because of a large volume of calls, EIA took the following actions:

- Published a one-page explanation of the situation titled "Surge in Midwest Leads Propane Prices Higher in November," which was posted on EIA's Web site
- Increased the collection and dissemination of the State Heating Oil and Propane price survey from semimonthly to weekly
- Discussed the availability, price, and world markets for heating oil and other fuels; heating and transportation requirements of these fuels; price volatility; and market assessment at the Seventh Annual Winter Fuels Conference, as well as at several other conferences
- Briefed staff of the Oil and Gas Forum and staff of the Congressional Northeast-Midwest Coalition.

## Respondent Burden Reduction

EIA is sensitive to the burden placed on the energy industry by our survey forms. In 1996, EIA actions resulted in considerable reduction in respondent burden, resulting in part from an agreement with the North American Electric Reliability Council (NERC) which gave utilities the option to file their annual plant capacity information through NERC, thereby eliminating the duplication of one of EIA's surveys. One hundred utilities chose this method of reporting. In September 1996, the NERC-EIA Data Coordination Task Force reconvened for the first time since the implementation of its procedures to streamline the collection and processing of data. The task force reviewed the 1996 process for these surveys and recommended improvements for future data collection and processing and has extended the agreement through 1997.

Success of this joint venture led to a similar effort between EIA and the Mine Safety and Health Administration (MSHA) at the U.S. Department of Labor. In March 1996, the EIA Administrator and the MSHA Assistant Secretary signed a Memorandum of Understanding involving the sharing of coal mine production and related information. The expected results of this effort will be a reduced reporting burden on U.S. coal-producing companies and improvement of the quality, completeness, and timeliness of coal data collected by the Federal government.

## *Uranium Industry Annual*

The *Uranium Industry Annual* is EIA's sole report on the uranium mining industry and the use of uranium in the nuclear industry. It is a report used not only by the uranium and nuclear industries, but also by Congress, the public, financial analysts, and energy analysts in their understanding of and decisions about electricity generation costs and prospects.

Over the past several years, EIA has made a concerted effort to increase the accuracy of the information in the report and to provide it in a more timely manner and at a lower cost. During that time, the team responsible for this report achieved these three goals through their initiative of designing and using an improved computer system and improving the efficiency with which the report is composed, reviewed, and approved.

EIA released the 1996 edition in both hard copy and on the EIA Home Page by the end of May, only 1 month after the last submission of data to EIA by producers and utilities. This is 5 weeks earlier than last year's release date and 5 months earlier than the release date just 3 years ago. Moreover, it was produced with less than half of the resources utilized in 1993.

The efficiency improvements have been accomplished through several incremental changes made in the way the data are collected and the report is produced. First, the "Uranium Industry Annual Survey" (EIA-858) team eliminated outdated and unnecessary steps in the uranium data collection and report production process. For example, EIA-858 is now sent to the respondents on a diskette, which has more automatic editing capabilities than before. This action reduced the amount of time respondents spent filling out the form and making corrections, thereby enabling them to submit their information in less time. It also enabled EIA staff to reduce the time and resources needed to enter, review, edit, and quality check the data.

Second, the team developed a comprehensive database to hold all of the current and historical data. This effort combined several existing databases; eliminated the problem of correcting errors in the report but not in the underlying database and virtually eliminated numerical errors in the report tables; and substantially reduced the amount of time and resources needed for quality reviews at the end of the process. In addition, the report was redesigned to make it easier to read, with more concise text, better graphics, and more focused tables. Finally, two levels of management review were eliminated from the review process. This allowed the team to make most of the critical decisions needed to carry out their plans.

# BUSINESS REENGINEERING

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The Business Reengineering Team created in 1995 completed its work and presented its recommendations to EIA management in April 1996. The recommendations included proposals dealing with data operations, survey management, quality assurance, product dissemination, customer interaction, and information technology. The organization structure and management methods of EIA were also addressed. A Business Reengineering Steering Committee, comprising senior managers and union representation, was established to review and oversee implementation of the approved recommendations and has been actively engaged in that process.

Several major recommendations have been fully implemented to date:

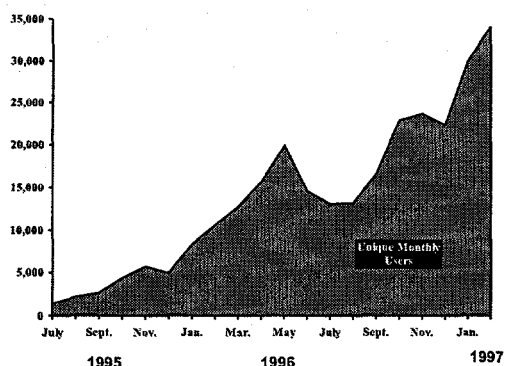
- Information technology activities have been consolidated to take agency-wide advantage of common databases and common data processing applications.
- The logical data model to support the common data collection and processing systems has been developed, and design of the system is beginning.
- Standards for personal computer configurations and desktop publishing software have been established.
- One major recommendation proposed that EIA consolidate all survey operations activities to achieve maximum efficiencies. The Steering Committee decided to establish a pilot to test potential cost savings and improvements in operations before making a decision on implementing this recommendation. The pilot involves 14 energy surveys (about 10 percent of EIA's data collection program) from petroleum, natural gas, and coal. The pilot organization was created in September 1996, and an evaluation of the results and decisions on next steps will be made in 1997.
- The role of the National Energy Information Center (NEIC) was expanded to include responsibility for the maintenance of EIA's electronic products (including the Web site and the CD-ROM). NEIC also has been charged with developing improved processes to identify customer needs, to acquire feedback on our products, and to respond to proposals for changing the product slate, both paper and electronic.

# DISSEMINATION INITIATIVES

## EIA 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 increased dramatically (Figure 1), attracting more than 40,000 unique users each month at a rate of more than 2,000 per day. EIA is a leader among Federal agencies in providing electronic access to data and reports, making information more rapidly and readily available to our customers. Not surprisingly, in 1996, the EIA Web Site ([www.eia.doe.gov](http://www.eia.doe.gov)) was named a "Best in Government" winner of a 1996 Federal Web Showcase Award. The agency received a letter of commendation from Vice President Gore (Figure 3).

Figure 1. Web Use Increases Dramatically



Virtually all EIA reports are available on the Web site. The Web site now offers a search feature that uses keywords and phrases to help users find the information they need and a comprehensive list of links to EIA publications. There are about 3,000 separate files containing data and analysis products that customers can view and download. The data and reports provide information by energy source/fuel group (petroleum, natural gas, coal, nuclear, renewable, and electricity) and by other energy topics (international, State, end use, international, financial, and forecasts).

Many of our databases and analysis applications are available on the Web site, so people can download data and save it into their own analysis applications. The Web site can be used interactively with our CD-ROM, the Energy InfoDisc. In 1996, EIA also introduced an

Interactive Query feature that works with selected database applications to simplify the process of data access. This feature allows users to specify which data series they want and instructs the server to generate the requested data in either tabular or graphic form, saving users from having to download data files and perform the aggregations themselves.

The Web site's "What's New at EIA" section lets people know what has been added to the site recently and allows them to click on their selection and see the new item immediately.

Web customers can also register for more than 20 electronic mailing lists (listserves) in order to receive various information automatically via e-mail. Our most popular listserves are EIA Press Releases, *Short-Term Energy Outlook*, "What's New at EIA," the Monthly Oil Market Chronology, Electric Power Summary, and Petroleum Market Report (Figure 2). Other listserv topics include information on individual fuels, weekly highway diesel fuel and retail motor gasoline prices, and international energy topics. More than 15,000 customers a month are using this service.

Figure 2. Press Releases Most Popular Listserv Product

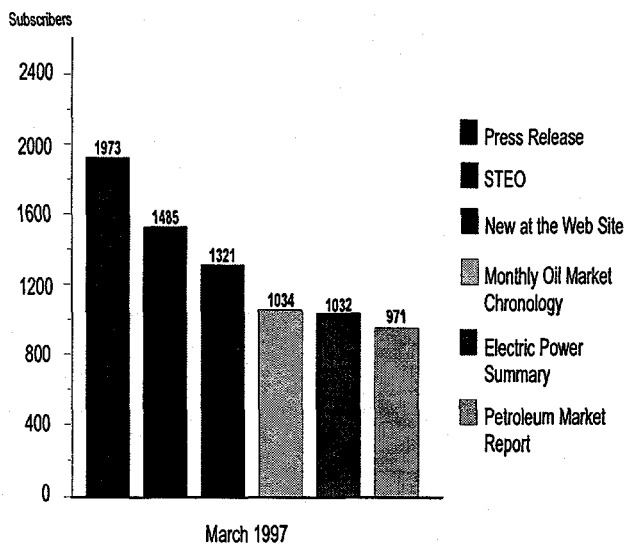
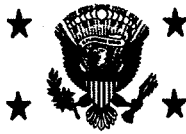


Figure 3. EIA's Web Site Named One of the "Best in Government" in 1996



THE VICE PRESIDENT  
WASHINGTON

August 9, 1996

To the winners of the Federal Web Showcase Award:

Congratulations! All of you should be very proud of the work you have done to use the World Wide Web in new and exciting ways. The Web is becoming an increasingly powerful tool for expanding public access to government information, "reinventing government," delivering government services more efficiently, and making government more open.

Your pioneering work demonstrates what is possible:

- expanded public access to a wealth of government information on health, energy, aerospace, and the activities of the Congress;
- improved visualization of environmental data; and
- more responsive human resource systems.

Of course, we are just beginning our efforts to use these new technologies effectively. We need to improve our ability to:

- conduct secure transactions with citizens and businesses;
- allow citizens to customize their view of the federal government and its services;
- move from one-way dissemination of information to two-way dialogue with the American people;
- improve tools for searching the expanding universe of government information;
- create "one-stop shops" that cut across agencies and levels of government; and
- use the Web to build and sustain interagency collaboration.

Thanks again for the time and effort you put into creating these award-winning, Web-based services. I want to encourage you to share your knowledge and expertise with your colleagues as we move our government into the 21st century.

Sincerely,

Al Gore

AG/tak



The EIA Web site offers more than 200 links to other energy-related pages, an energy events calendar, EIA contacts information, the Government Information Locator Service, and an Energy Quiz. Users can view and download EIA press releases and recent presentations by EIA's Administrator. They can get the answers to Frequently Asked Questions of both a technical and general nature. They can see and comment on EIA's analysis agenda, provide feedback, and participate in customer surveys.

The importance of using the new technology is becoming increasingly clear throughout the Federal Government. EIA is participating, in the development of FedStats ([www.fedstats.gov](http://www.fedstats.gov)), a one-stop site for easy access to statistics from more than 70 Federal agencies (Figure 4). Additionally, EIA is participating, along with other Federal statistical agencies, in an effort to make up-to-date government statistics available in a central location. As a result of that effort, EIA's monthly data on crude oil prices and net oil imports are now available on the new Economic Statistics Briefing Room Internet site. Similarly, to meet the public's demand for more timely available energy data and forecasts, the EIA report *Short-Term Energy Outlook* is now being released on the Internet more than a week earlier than it is published in the paper version.

**Figure 4. New Web Site Provides Easy Access to Statistics**



## Weekly Diesel Fuel and Gasoline Price Hotline

To monitor price changes in gasoline and diesel fuel in late spring 1996, EIA increased the frequency of its price surveys from weekly to daily for gasoline and three times a week for diesel fuel. EIA also instituted a telephone hotline to make these data readily available.

The Diesel and Gasoline Retail Price Hotline received 32,739 calls during May 1996 from customers who called to listen to a recording of the most current diesel and gasoline retail prices. The hotline has proven to be an effective means of disseminating critical information to customers who need it in a timely manner.

## EIA Natural Gas Geographic Information System

In conjunction with the U.S. Department of Transportation, EIA planned and designed the implementation of a natural gas and oil pipeline mapping system. The system entails creating standards for pipeline mapping data; exploring potential clearinghouses for the pipeline data; analyzing the technologies available to remotely link to the pipeline data; and pilot testing the standards, technologies, and clearinghouses. The results defined standards and a geographic information system (GIS) system which could be used by industry, government, and the public to cost-effectively identify and display the location of pipelines. Additional participants included the American Petroleum Institute, the American Gas Association, and the Interstate Natural Gas Association of America.

The Special Technologies Countermeasures program office of the Department of Defense requested a demonstration of the EIA's GIS dealing with natural gas (NG) to ascertain how the system could help them in defining "infrastructure dependencies" within the U.S. energy transmission and distribution networks.

Since its debut, the system has averaged 15 accessions per day and has generated requests for additional information from more than 30 organizations. To date, copies of the system have been distributed to a number of organizations, including the Interstate Natural Gas Association of America, the National Energy Board of Canada, and several major interstate natural gas pipelines. Of those requesting the system, the majority cite the availability of the pipeline mapping combined with associated natural gas databases with map displays as a tool they would find very useful in their analyses and studies of the industry.

## Energy InfoDisc

In March 1996, EIA introduced its *Energy InfoDisc* CD-ROM. This new information product offers an extensive library of EIA data and analysis publications, national and international energy databases (for example, the *Monthly Energy Review* and *World Energy*), and analysis applications. The *Energy InfoDisc* is a comprehensive, high-tech product that is easy to use yet robust enough for serious number-crunching and analysis.

The *Energy InfoDisc* is updated quarterly to provide the most current publications and data. Each issue is a "rolling bookshelf" that contains EIA publications and directories released during the previous 12 months. With each quarterly update to the CD, monthly and quarterly data publications and many annual publications and special reports are "refreshed" as new issues of these reports supplement or replace earlier issues. The energy databases and applications are also updated to include new forecasts and data.

Many useful features are included to help users navigate the CD and find the information they need. One is the advanced search engine that enables users to search and find keywords and phrases in nearly 200 documents. After "clicking" on the search icon, and typing in a keyword or topic of interest, in just a few seconds, the user will see a list of all of the current EIA publications that contain that subject. Another "click" and the document opens with the word or phrase highlighted on the page where it appears.

Another important new feature is Internet connectivity. The *Energy InfoDisc* is now a **hybrid CD-ROM**. This means it has not only the features of a CD-ROM, but it can also be an Internet session. Any Web browser that supports a frames capability will allow the user to use the CD's Web pointers to click back and forth between the current edition of the CD-ROM and the EIA Web site and locate information that may have been released more recently than the disc itself. Users without Web browsers can continue to use the built-in browser with its visually pleasing "point and click" system of links to navigate through the CD.

STAT-USA, the U.S. Department of Commerce information service for business, economic, and trade professionals, distributes the *Energy InfoDisc* through a cooperative agreement with EIA. The subscriber list has grown to more than 1,000; more than half of these are government depository libraries, which provide additional access to their many users across the country.

# PERFORMANCE MEASURES

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During 1996 EIA continued to collect information on the performance measures established in 1995. These measures focus on results, service and information quality, and customer satisfaction. Meaningful measures are important to EIA because they:

- Help us relate our overall goals and objectives to concrete work projects
- Use data to track trends
- Allow us to better understand our work
- Recognize progress and document that progress to outside groups.

In November 1996, the EIA Senior Staff agreed to 10 measures and objectives for those measures that form the basis for the EIA Performance Agreement for the Year 2002. This Agreement establishes a set of measurable short-term and mid-term objectives for EIA as envisioned by the Government Performance and Results Act of 1993. After the pilot year 1997, managers will be expected to manage towards the stated objectives by allocating resources to meet or surpass the stated objectives, and, where necessary, redesign the processes under their control.

Features of EIA's Performance Agreement are:

- The Agreement is for the agency as a whole.
- The five descriptive goals (listed below) in the Strategic Plan were used as the basis of the agreement. EIA's established set of performance measures are linked to these goals. This combination provides a solid foundation for the agency to measure the continuing success of its operations.
- The Agreement establishes performance objectives for the EIA strategic goals for the year 2002.

- The 1997 Agreement is considered a mock agreement and will be used in-house only. The 1998 Agreement is expected to be the formal performance planning document required under GPRA.
- Future issues of this *Annual Report to Congress* will become EIA's performance report documenting progress towards EIA's performance objectives.

The specific measures in the Performance Agreement track several areas, including teamwork and employee development, information quality (for example, data accuracy and relevance), media citations, electronic access, timeliness, and satisfaction with our customer service. Examples of the types of performance measures data collected are shown in Figures 5 and 6. In response to customer feedback for more timely data, EIA worked to speed up preparation and release of information, and Figure 5 shows that the average timeliness for annual, quarterly, and monthly reports all improved in 1996.

The five goals from EIA's Strategic Plan upon which this Agreement is based are:

1. We will work together to achieve the full potential of a diverse workforce through teamwork and employee development.
2. EIA will assure its data and analyses are of the highest quality and relevant to the needs of its customers.
3. EIA will provide its customers fast and easy access to public energy information.
4. We will make resource and program decisions based on customer input and conduct our business in an efficient and cost-effective manner.
5. EIA will be an objective partner in fulfilling the mission of the Department of Energy.

Figure 5. Data Accuracy of Petroleum Supply Surveys

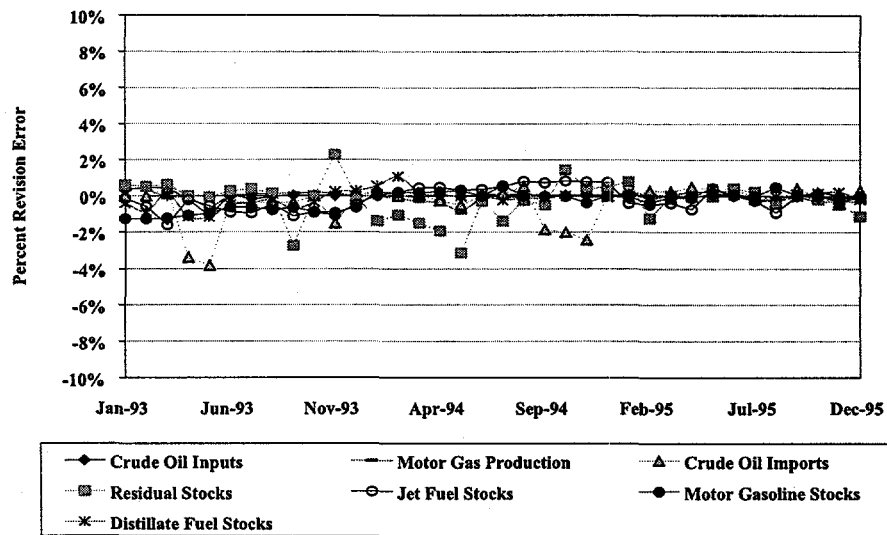
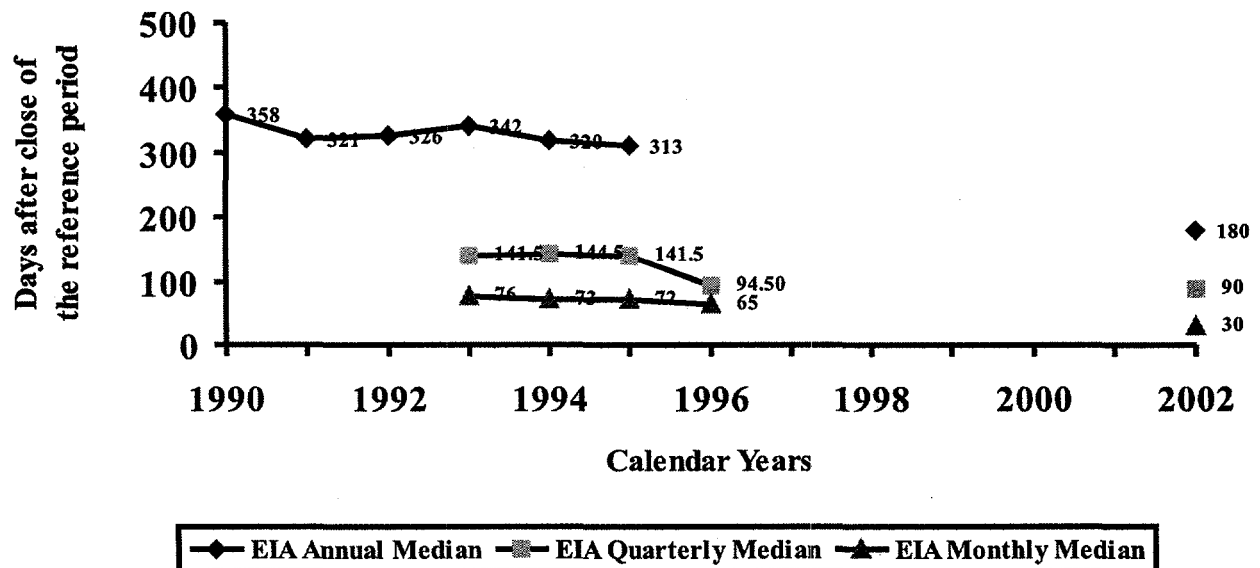


Figure 6. Timeliness of EIA Publications



# ANALYSIS AGENDA

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In 1996, EIA began a new process to select analysis projects aimed at improving their quality and relevance and putting EIA in closer contact with our customers. An Analysis Team was chartered in April 1996 to design and implement processes to (1) identify analysis themes and priorities, and (2) to propose and approve projects in alignment with these analytic themes. The goals of this new effort were to:

- Produce products using a corporate approach
- Cover top priorities first
- Remain responsive to customers
- Communicate our analysis plans to our customers.

A cross-organizational team of volunteer members was tasked with developing a set of overarching themes and priorities for EIA's FY 1997 Analysis Program. To obtain customer input, two round table meetings were held (one with Government customers and one with non-Government customers) in June and July. These meetings were open to all EIA staff and were videotaped for future reference. Customers were given a draft list of themes and asked for their thoughts on topics that EIA should be looking at during the next two years. Customers also were encouraged to comment on areas of current analysis effort that should be given more attention or downplayed. Three smaller sessions were held with:

- Senior staff of the Senate Energy and Natural Resources Committee
- Members of DOE's Policy Office
- Staff from the Congressional Budget Office.

## Themes and Priorities for EIA Analysis, listed in priority order:

1. Changes in the electric power industry
2. Impact of technological change on future energy markets
3. Energy-economic impacts of environmental quality goals
4. Energy supply and demand developments

The team used inputs from these meetings, along with EIA staff input, to develop EIA's Themes and Priorities for FY 1997.

Offices then were asked to prepare analysis proposals related to these themes. The proposals were posted on an electronic bulletin board for staff review and comment. An Analysis Review Board conducted a review of the proposals and sent recommendations to the Administrator, who approved a total of 33 analysis projects for FY 1997.

The team developed an on-line analysis information system on the Web site, providing the following information for each analysis project: the theme, an EIA office contact, a summary of the project, and a schedule. EIA customers now have easy access to an up-to-date version of EIA's entire analysis agenda for the year.

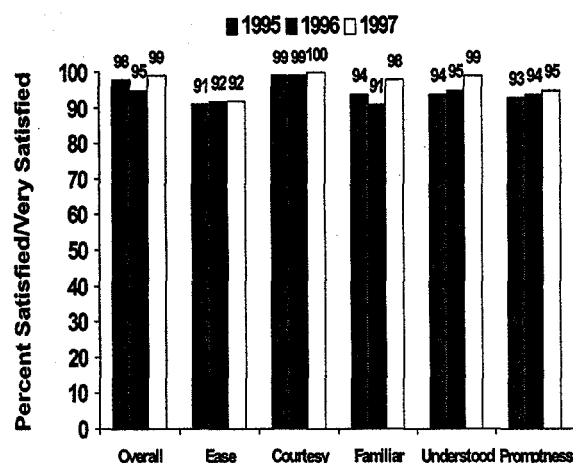
This new process was so successful in 1996 that the effort is continuing in 1997. Round table meetings were conducted in April to begin forming the themes and priorities list for FY 1998.

# CUSTOMER FEEDBACK

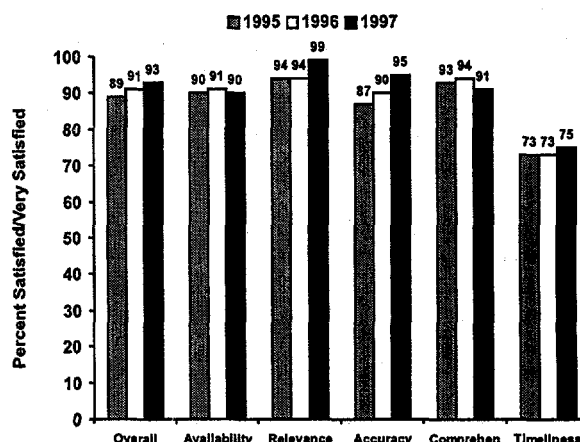
EIA continued to emphasize customer feedback as a major driver in determining and improving our products and services. During 1996 and early 1997, EIA conducted four major customer surveys: via telephone, Web site, electronic mail list (listserve), and a mailing to subscribers of one major publication (the *Weekly Petroleum Status Report*). The Web site feedback mailbox receives 20 to 30 comments a month as well. In total, EIA collected feedback from nearly 1,500 customers.

In EIA's third annual telephone survey, customers were asked about their satisfaction with five aspects of service (courtesy, ease of access to staff, familiarity with information, ability to understand customer requests, and promptness in responding to customers) and five aspects of information quality (timeliness, accuracy, relevance, comprehensiveness, and ease of access to the information). Figures 7 and 8 summarize the 3 years of survey results. Overall, ratings from customers are very high, especially for customer service. Customers satisfied or very satisfied with courtesy totaled 100 percent in 1997. A majority of customers continue to say that they want printed reports in addition to electronic data.

**Figure 7. EIA Customers Still Satisfied with Service**



**Figure 8. Overall Information Quality is Tops**



The vast majority of Web site and listserve customers said the information from EIA meets their needs and that they are satisfied with its timeliness. Although 98 percent of respondents said the Web site was easy or somewhat easy to use, specific comments from customers have suggested the need for improvements in the information on the site and in technological issues. This feedback has led to additions and modifications to improve this electronic service, including reorganizing the Home Page into more logical and functional categories; expanding the number of items available through the listserve; and increasing the number of files that can be read directly on the site, as opposed to requiring a download.

EIA customer efforts also led to a cost-saving change in publishing a weekly report. In spring 1996, a short questionnaire was mailed to all subscribers of the printed version of the *Weekly Petroleum Status Report*. At that time, the report featured high-cost overnight printing and first-class mailing, although much of the information was also available electronically. Customers were asked whether they still needed the printed version and, if yes, would they agree to a slightly longer printing cycle. Many said they did not need the paper copy and were immediately taken off the subscriber list, and those who did need the printed version said a 1-2 day delay would not affect their use. EIA was able to move to a less expensive two-day printing cycle. The result of these actions is an estimated saving of \$40,000 per year in mailing and printing costs.

Two of EIA's strategic goals are to assure that our data and analyses are of the "highest quality" and "relevant to the needs of our customers" and to "provide fast and easy access" to energy information. Asking our customers what they think is a critical way to determine how well we are meeting these goals. EIA receives a wide range of customer comments through surveys, on the Internet, at meetings, and in focus groups. Following is a sample of what EIA heard in 1996:

"Kudos to EIA for your new Web site and links. High praise for those that have labored long and paid attention to detail."

"It's great to get information from the Government and be able to use it easily."

"The best products and information in the world."

"I wish all agencies were as courteous as this one."

"Very impressed with responsiveness. EIA people always call back."

"I'm always satisfied. Quantity and quality of service just keep improving."

"It is wonderful to be able to access this information on the Web."

"Thank you! I have tried over a dozen sources and you are the first one who actually responded."

These comments from customers give EIA confidence that we are satisfying a great many users and help point the way toward areas where we need to work harder. Survey activities are ongoing in EIA, with the next customer survey planned to explore customers' satisfaction with our CD-ROM, the Energy InfoDisc.

## APPENDIX A

# PUBLICATIONS OF THE ENERGY INFORMATION ADMINISTRATION

During 1996, EIA published 256 issues of 75 individual titles, including weekly, monthly, quarterly, and annual periodicals and one-time reports; statistical and data reports; directories; and studies containing data analyses and projections. Statistical and data reports provide historical information on production, consumption, prices, and resource availability of conventional and alternate energy sources; directories serve as guides to finding energy information or to making contacts with subject-specialists; and analyses look in-depth at specific economic and technical energy subjects or make projections of future energy demand and supply.

This Appendix contains:

- Synopses of key periodicals and one-time reports released during 1996
- A list of all feature articles released, organized chronologically.
- A chart of all titles released, organized by energy source.

EIA's World Wide Web Internet site ([www.eia.doe.gov](http://www.eia.doe.gov)) offers access to 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. EIA publications are also available on the CD-ROM, the Energy InfoDisc.

Generally, single complimentary printed copies of all EIA publications are available free of charge to EIA survey respondents, public and academic libraries, Congress, the news media, Federal, State and local governments, foreign governments and international organizations, and Department of Energy contractors. Other customers must purchase printed publications from the Government Printing Office.

The following publications are available to anyone free of charge: all Service Reports, the *Annual Report to Congress*, *EIA Publications Directory*, *EIA New Releases*, *Directory of Energy Data Collection Forms*, *Energy Information Directory*, *EIA Directory of Electronic Products*, *Energy Education Resources: Kindergarten Through Grade 12*, and *Energy Information Sheets*, as well as feature articles extracted from various periodicals.

For further information and for answers to questions on energy statistics, please contact:

National Energy Information Center, EI-30  
Energy Information Administration  
Forrestal Building, Room 1F-048  
Washington, DC 20585  
(202) 586-8800 (voice)  
(202) 586-0727 (fax)  
(202) 586-1181 (TTY for the deaf)  
9 a.m. to 5 p.m., eastern time, M-F  
[infoctr@eia.doe.gov](mailto:infoctr@eia.doe.gov) (e-mail)



# SIGNIFICANT EIA REPORTS, 1996

The first two sections of Appendix A present synopses of EIA's significant 1996 Analysis, Technical, and Service Reports. EIA Analysis Reports and Technical Reports result from analysts' examinations of current and projected U.S. economic, regulatory, technical, technological, and marketing subjects and their impact on energy supply and demand. EIA Service Reports are also analyses, but they are prepared, as the name implies, as a service, upon specific request from other Executive Branch agencies or Congress. Service Reports are often based on assumptions provided by the requester. During 1996, EIA produced 6 Analytical Reports, 1 Technical Report, and 5 Service Reports.

## Analysis and Technical Reports

### *Describing Current and Potential Markets for Alternative-Fuel Vehicles (DOE/EIA-0604)*

Motor vehicles are an integral part of the American way of life. Private motor vehicles give us personal freedom and nearly unfettered mobility; and trucks, both large and small, bring goods to even the smallest towns throughout the country. Today, record numbers of vehicles are on the road and are being driven record numbers of miles.

Our reliance on motor vehicles has major implications for both international trade policy and environmental policy. Dependence on foreign oil reached its highest level in 17 years in 1994, with net imports amounting to 45 percent of consumption. Motor gasoline represented the greatest consumption of all oil products, amounting to 43 percent of all petroleum products supplied in 1994. Both foreign imports of petroleum and consumption of motor gasoline are on the rise; and, consequently, the United States remains as vulnerable as ever to oil embargoes abroad.

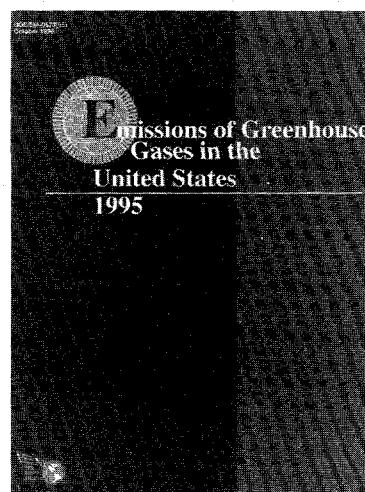
Concern that highway-vehicle combustion of gasoline produces by-products that could lead to global warming has heightened awareness of the so-called greenhouse gases. Motor vehicles are a major source of greenhouse gases, and the trends of rising numbers of motor vehicles and miles driven could lead to more harmful emissions that may ultimately affect the world's climate. One approach to curtailing such emissions is to use, instead of gasoline, alternative fuels: liquefied petroleum gas

(usually propane), compressed natural gas, electricity, or alcohol fuels.

In addition to the concerns over greenhouse-gas emissions, there is also increasing concern over pollutants which are harmful to human health. The major examples of these pollutants are atmospheric ozone and carbon monoxide. Ozone is not only directly harmful to humans, acting as a powerful irritant to the human respiratory system, but also indirectly because it absorbs ultraviolet light, which can cause skin cancer. Carbon monoxide is also harmful to human health, because it reduces the flow of oxygen to the body's organs and tissues. The Clean Air Act Amendments of 1990 authorized the U.S. Environmental Protection Agency to set National Ambient Air Quality Standards (NAAQS). These standards were set in order to address air pollution and designate standards to mediate carbon monoxide and ozone levels.

### *Emissions of Greenhouse Gases (DOE/EIA-0573(95))*

EIA was required by EPACT to prepare a report on aggregate U.S. national emissions of greenhouse gases—carbon dioxide, methane, nitrous oxide, methane, and several other greenhouse gases—for the period 1987-1990 and to issue annual updates thereafter. The result is the fourth annual update of *Emissions of Greenhouse Gases in the United States 1995*, which was published in October 1996. It presents estimates of U.S. emissions of greenhouse gases for 1988 through 1994, with some preliminary 1995 estimates.



The greenhouse effect and the global climate change presently taking place are explained as follows:

The Earth is warmed by light from the Sun. Over time, the amount of energy transmitted to the Earth's surface is equal to the amount of energy re-radiated back into space in the form of infrared radiation, and the temperature of the Earth's surface stays roughly constant. However, the temperature of the Earth is strongly influenced by the existence, density, and composition of the Earth's atmosphere. Many gases in the Earth's atmosphere absorb infrared radiation re-radiating from the Earth's surface, trapping heat in the lower atmosphere....

***Energy Consumption Series  
Residential Energy Consumption Survey Quality  
Profile (DOE/EIA-0555(96)/1)***

The Residential Energy Consumption Survey (RECS) is a periodic national survey that provides timely information about energy consumption and expenditures of U.S. households and about energy-related characteristics of housing units. The survey was first conducted in 1978 as the National Interim Energy Consumption Survey (NIECS), and the 1979 survey was called the Household Screener Survey. From 1980 through 1982, RECS was conducted annually. The next RECS was fielded in 1984, and, since then, the survey has been undertaken at 3-year intervals. The most recent RECS was conducted in 1993.

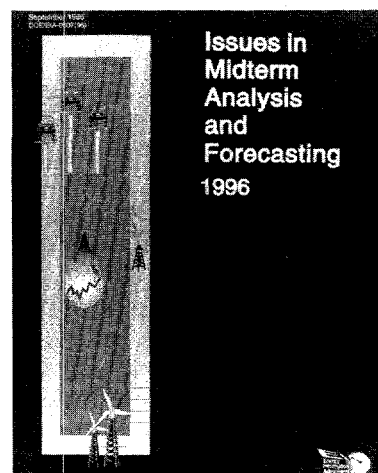
The purpose of this *RECS Quality Profile* is to present, in a convenient form, a report on what has been learned about the quality of RECS data since the survey began. In a broad sense, the term "quality" covers the relevance, timeliness, and accuracy of the survey estimates. The emphasis here will be placed on "accuracy." The report provides information about sampling and nonsampling errors, focusing on the latter. It discusses the types and sources of errors that occur and their possible effects on interpretation of RECS data, especially when used for longitudinal analysis. This information should be helpful to users of RECS data, to those responsible for the design and operation of the survey, and to persons with general interest in survey design and data quality. The final section of Chapter 9 provides specific suggestions for data users on how to gain access to RECS data and use them for cross-sectional and longitudinal analyses, along with some anticipated design changes for the 1996 RECS.

***Issues in Midterm Analysis and Forecasting 1996  
(DOE/EIA-0607(96))***

Technological progress, which is defined in this paper to include technological innovation and/or adoption, and the rates of supply productivity improvements have been major factors that have often been underestimated since the mid-1970s by energy forecasters. As a consequence of this underestimation, supply projections have been dominated by depletion effects and the resulting fossil fuel price projections have had high rates of growth—neither of which has been borne out by history. The rate of technological progress has historically far outpaced the potential depletion effects on U.S. domestic production, and that technological progress has been the principal reason for coal and natural gas price stability or declines over the past fifteen years. Technological progress on the supply side could continue to mitigate depletion effects through 2015 and beyond.

More recently, the apparent need for carbon mitigation has further focused attention on the potential role that advanced new technologies may play in achieving compliance with international carbon stabilization goals. International meetings and conferences on climate change consistently focus on the potential role of advanced technologies as the centerpiece of any carbon mitigation and climate stabilization strategy. These factors, combined with workshops held at the Energy Information Administration (EIA), indicate that integrated technology cases are of value to a broad base of industry, Federal, and Departmental customers.

This study does not attempt to evaluate the energy programs of the Federal government or their programmatic goals. If programmatic goals of Federal research and development (R&D) are achieved, increased energy savings and supply above those indicated in this report could be realized. Nor does this



study attempt to model those programmatic goals. Further, future geopolitical events—e.g., greater instability in international energy markets or environmental imperatives such as binding commitments to reduce carbon emissions—could cause an increased focus on end-use and supply improvement and implementation than represented by this study.

The goals of this analysis are: (a) to analyze the potential role of technological progress on energy supply, consumption, and prices in U.S. energy markets; and (b) to assess how success on one side of the supply or demand equation may reduce the potential benefits on the other side.

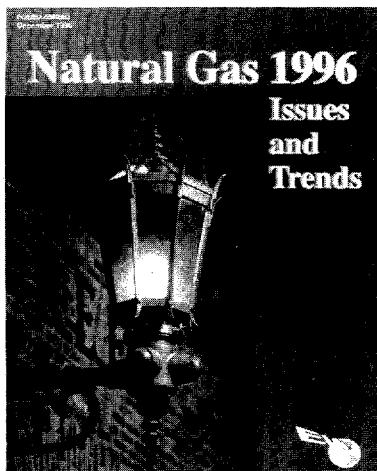
#### ***Natural Gas 1996: Issues and Trends* (DOE/EIA-0560(96))**

*Natural Gas 1996: Issues and Trends* focuses on the increasing choices available to participants in the natural gas industry, from suppliers to consumers, at a time when regulatory restraints increasingly are removed from the sale and transport of natural gas. The industry faces significant challenges, such as how to deal with price volatility. In addition, cost-conscious suppliers, marketers, distributors, and consumers now pay increased attention to inventory levels and reducing excess capacity and stocks. Highlights of recent trends and developments in the industry include, but are not limited to, the following:

- Wellhead prices in 1995 averaged \$1.55 per thousand cubic feet (Mcf), a steep decline of 16 percent from 1994 prices (Figure ES1). Monthly average prices rose sharply to \$1.84 per Mcf in December 1995 in response to cold weather and have continued higher than the December level

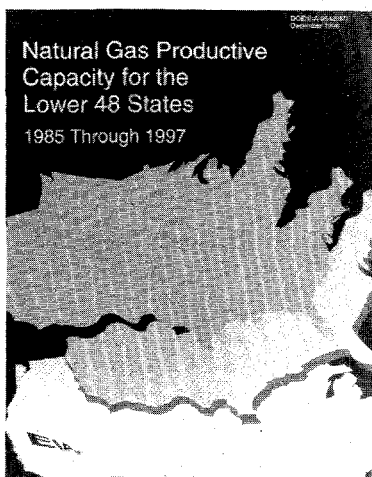
throughout 1996. The particularly high price for July 1996 of \$2.35 per Mcf was in part due to strong demand from storage customers who found their stocks at record lows after the cold winter of 1995-1996.

- Residential and commercial gas consumption during the first 11 months of 1996 was 9 percent higher than during the same period of 1995 in response to cold weather that extended into the spring. Electric utility consumption was down 9 percent during this period, in part because the average price to this sector through July exceeded that of 1995 by 35 percent. Overall end-use consumption through November 1996 averaged 3 percent above the level for the same period in 1995, continuing the general upward trend since 1986. For the year 1995, overall end-use consumption of natural gas was 19.7 trillion cubic feet, an increase of 4 percent above the 1994 level.
- Differences between the eastern and western supply markets are evident from the different price movements for two natural gas futures contracts: the New York Mercantile Exchange (NYMEX) contract at the Henry Hub in southern Louisiana; and the relatively new Kansas City Board of Trade (KCBOT) contract at the Waha Hub in west Texas. Prices for the nearby contract (for delivery the next month) on both futures markets rose from August through December 1995, but prices for the Henry Hub contract almost doubled while prices for Waha Hub contracts increased about 50 percent.
- Several recently completed and proposed pipeline expansions reflect the need to eliminate bottlenecks between western supply areas and eastern markets. During 1995, several intrastate pipeline companies in Texas increased capacity between the west Texas Waha area and market centers located in eastern Texas and Louisiana. This, and the planned expansion of 350 million cubic feet per day from the San Juan Basin (New Mexico) to the Waha area, should help to move production from western to eastern markets.



#### ***Natural Gas Productive Capacity for the Lower 48 States 1985 Through 1997* (DOE/EIA-0542(97))**

This publication is used by the Congress, Federal and State agencies, industry, and other interested parties to



obtain accurate data of the lower 48 States' natural gas production history and well-head productive capacity. Capacity projections from this report are used in EIA's *Short-Term Energy Outlook*, Quarterly Projections. The report also contains a projection of lower 48 States' gas production requirements and wellhead productive capacity. These data are essential for the evaluation of the adequacy of future gas supplies, especially in periods of peak heating or cooling demand.

Total demand for natural gas in the United States is met by a combination of natural gas production, underground gas storage, imported gas, and supplemental gaseous fuels. This report examines the natural gas production element of the total gas demand. Domestic natural gas production supplies the majority of the natural gas demand requirements for the lower 48 States. The production requirement continues to increase while drilling has remained at low levels, a fact that has raised some concern about the adequacy of future gas supplies and gas producers' ability to meet periods of peak heating or cooling demand.

A history of natural gas production and natural gas productive capacity at the wellhead, along with a projection of the same, is shown in tables and figures. EIA generates projections based on historical gas-well drilling and production data from State, Federal, and private sources. In addition to conventional gas-well gas, coalbed gas and oil-well gas are also included. Also presented for each category are charts showing the number of gas-well completions by year and the percent of total wellhead productive capacity by age. Alaska is excluded from this report because Alaskan gas does not enter the lower 48 States pipeline system.

### ***Oil Production Capacity Expansion Costs for the Persian Gulf (DOE/EIA-TR/0606)***

*Oil Production Capacity Expansion Costs for the Persian Gulf* provides estimates of development and operating costs for various size fields in countries surrounding the Persian Gulf. In addition, a forecast of the required reserve development and associated costs to meet the expected demand through the year 2010 is presented. This report takes an approach different from that normally seen in the literature. Results are based on geologic plays and their individual development costs rather than on country-level economics. Petroconsultants *Estimator* database and software provided the cost data and field properties on which this analysis is based.

Organizations requesting specific information on the cost to develop Persian Gulf oil supplies include: the International Energy Agency, the U.S. Geological Survey, and the Department of Energy's Policy Office. Other customers include Congress, Federal and State agencies, industry analysts, financial institutions, the oil and gas industry, and the general public.

This analysis is also available on a computer disk. The disk contains a Microsoft *Excel 5.0* workbook that allows a user to enter other data for each play and immediately see the results in summary tables and graphs for any other desired conditions.

## **Service Reports**

### ***An Analysis of Carbon Mitigation Cases (SR/OIAF/96-01)***

This study was undertaken at the request of the U.S. Environmental Protection Agency, Office of Air and Radiation (EPA/OAR). Its purpose is to analyze the potential of rapid technological improvements and rapid rates of technology adoption in U.S. energy markets for reducing carbon emissions. Three analytical cases, based on different sets of assumptions, were specified by EPA/OAR for the study; they incorporated the use of technologies that are significantly more efficient than those in general use today.

The analysis described in this report was produced by EIA, which used the National Energy Modeling System

(NEMS), an integrated energy-economy modeling system for U.S. energy markets, developed by EIA as a policy analysis tool to provide an integrated framework which would enable policymakers to understand the implications of proposed policies and alternative assumptions concerning energy markets.

Because the more rapid deployment of new technologies would reduce energy consumption and energy prices, the three EPA/OAR cases also address changes to the U.S. economy that would be inducted by changes in energy prices. However, macroeconomic, regulatory, and infrastructure costs (other than equipment costs) to implement the three cases were assumed by EPA/OAR to be zero or negligible, and any possible productivity loss occurring in the non-energy-intensive segments of the U.S. Economy was ignored. The assumptions for the cost, performance, dates of availability, and restrictions on the availability of less efficient competing technologies in U.S. energy markets were entirely prescribed by EPA/OAR.

***A Review of FERC's Final Environmental Impact Statement for Electricity Open Access and Recovery of Stranded Costs (SR/OIAF/96-02)***

This report reviews the Environmental Impact Statement (EIS) prepared by the Federal Energy Regulatory Commission for electricity transmission system open access (RM95-8-000) and recovery of stranded costs (RM94-7-001) rules that were issued in 1995 and 1994, respectively. This review has three parts, 1) a summary of FERC's purpose, methodology, and key results; 2) a review of the assumptions used in the EIS, comparing them to historical trends and other forecasts; and 3) a discussion of the reasonableness of results, as well as issues that could change results. This review focuses on generation changes because of the key issue in nitrogen oxides (NOx) changes.

***An Analysis of FERC's Final Environmental Impact Statement for Electricity Open Access and Recovery of Stranded Costs (SR/OIAF/96-03)***

These studies were requested by Senator James Jeffords, Vice Chairman, Subcommittee on Energy Production and Regulation, Senate Energy and Natural Resources Committee, U.S. Senate. Senator Jeffords requested that the Energy Information Administration (EIA) review the Final Environmental Impact Statement (FEIS) prepared by the Federal Energy Regulatory Commission (FERC)

for its electricity transmission system open access (published in April 1996) and use EIA's National Energy Modeling System (NEMS) to analyze the open access rule (Order 888), providing written analysis by early September. EIA was also asked to comment on how other competitive issues, outside of open access, might impact the emissions situation.

The first study summarized the purpose, methodology, and results of the FEIS, reviewed the key assumptions, compared them to other forecasts, and discussed the reasonableness of the results. The second provided an independent analysis of the impacts of the rule and discussed how growing competition in the electricity business might affect emissions.

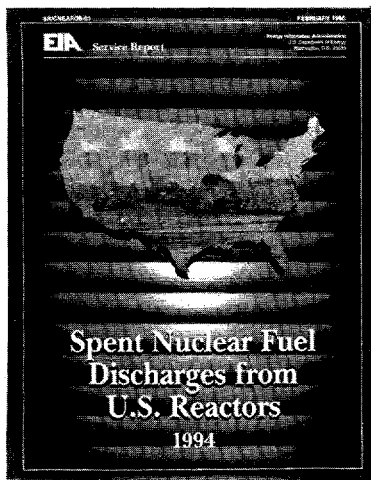
***The Impacts on U.S. Energy Markets and the Economy of Reducing Oil Imports (SR/OIAF (96-04))***

This study was undertaken at the request of the General Accounting Office (GAO). Its purpose is to evaluate the impacts on U.S. energy markets and the economy of reducing oil imports. The approach and assumptions underlying this report were specified by GAO and are attached as an Appendix. The study focuses on two approaches: (1) a set of cases with alternative world crude oil price trajectories and (2) two cases which investigate the use of an oil import tariff to achieve a target reduction in oil imports. The analysis presented uses the National Energy Modeling System, which is maintained by EIA, and the DRI/McGraw-Hill Macroeconomic Model of the U.S. Economy, a proprietary model maintained by DRI and subscribed to by EIA.

The National Energy Modeling System (NEMS) is an integrated energy-economy modeling system for U.S. energy markets, developed by the EIA as a policy analysis tool to provide an integrated framework enabling policymakers to understand the implications of proposed policies and alternative assumptions concerning energy markets.

***Spent Nuclear Fuel Discharges from U.S. Reactors 1994 (SR/CNEAF/96-01)***

*Spent Nuclear Fuel Discharges from U.S. Reactors 1994* provides current statistical data on fuel assemblies irradiated at commercial nuclear reactors operating in the United States. This 1996 report provides data on the current inventories and storage capacities at these



reactors. The report was prepared by EIA under a Memorandum of Understanding with the Office of Civilian Radioactive Waste Management.

Data are collected on Form RW-859, "Nuclear Fuel Data" survey, and provide a comprehensive statistical characterization of the industry's activities for the survey year and include some information about industry plans and commitments for the future. Detailed statistics on the data are presented in four chapters that highlight 1994 spent fuel discharges, storage capacities and inventories, canister and nonfuel component data, and assembly characteristics. Five appendices, a glossary, and bibliography are also included.

Chapter 1 provides detailed data on reactor spent fuel discharge and storage activity for 1994, nuclear power plant data, annual discharges, enrichment and burnup, and fuel stored at away-from-reactor storage facilities.

Data on site capacities and inventories at utilities and storage facilities, as well as dry storage at utilities, are presented in Chapter 2. Chapter 3 contains data on canisters and their contents and nonfuel components for each storage pool site. The final chapter presents assembly type characteristics, including data on background, fabricator summary, assembly distribution, and assembly identifiers.

The data are used by a wide audience, including Congress, Federal and State agencies, the nuclear and electric industries, and the general public. They also constitute one of the inputs to the Characteristics Data Base developed by Oak Ridge National Laboratory and maintained by TRW Environmental Safety Systems, Inc. The discharge dates, assembly types, burnups, and initial enrichments are used to calculate the gamma, neutron, and thermal source intensities. These radiological characteristics, along with reported fuel quantities and dimensions, are then used by the Civilian Radioactive Waste Management System designers in scoping studies for shielding design, thermal design, and sizing of facilities and equipment.

The DOE estimates future discharges from U.S. commercial nuclear reactors and the characteristics of those discharges based on trends of historical spent nuclear fuel data provided by the respondents and on burnup projections. The need for additional spent fuel storage capacity is based on these estimated cumulative discharges and on the estimated maximum storage capacity of both at-reactor and away-from-reactor storage facilities.

# PERIODICALS OF SPECIAL INTEREST

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Following are synopses of EIA periodicals featured in press releases during 1996.

## ***Annual Energy Outlook 1997 Shows Technology Boosts Energy Production, Restrains Consumption and Prices through 2015***

Technological advances in energy-producing and energy-using technologies can have significant impact on the production, consumption, and price of energy, the Energy Information Administration (EIA) reports in its *Annual Energy Outlook 1997 (AEO97)*. EIA's latest projections show that rapid technology development can lower energy production costs and boost production over the next 20 years, while rapid penetration of efficient technologies in end-use markets slows growth in energy demand, compared to that in the reference case. However, even in the reference case, a re-examination of recent trends in the pace of technological improvement in energy markets indicates that significant benefits in the production and consumption of energy will accrue to consumers over the forecast horizon (through 2015).

The *AEO97* reference case projections are characterized by lower prices for all energy sources than those in the *Annual Energy Outlook 1996 (AEO96)*, released in January 1996. This is primarily the result of new findings indicating that the costs of exploration, development, and extraction of fossil fuel production are declining as a result of penetration of technological advances, such as 3-D seismology and horizontal drilling and completion techniques involved in the production of oil and gas. As a result of the lower energy prices and higher projections for economic growth, total energy consumption in the reference case is higher than in *AEO96* and domestic oil production is lower. However, penetration of newer, more efficient energy-using equipment in all of the end-use sectors (including heating and cooling equipment, electric motors, and automobiles) moderates the projected growth in energy consumption from what it would otherwise have been. Higher energy consumption and slower penetration of renewable energy sources due to lower fossil fuel prices also lead to higher carbon emissions—about 25 percent higher in 2015 than in 1995.

Among the report's highlights is one on world oil prices:

- *AEO97* assumes an average world oil price of \$21 per barrel in 2015. Alternative assumptions about

oil production in the Organization of Petroleum Exporting Countries (OPEC) lead to oil prices in 2015 that are \$7 per barrel higher or lower than prices in the reference case. Petroleum consumption varies by two million barrels per day in 2015 across the high and low world oil price cases in response to the price changes. Domestic oil production ranges from 4.0 to 6.9 million barrels per day in 2015 in the low and high oil price cases, compared to a reference case forecast of 5.2 million barrels per day. Because domestic production does not fully meet the Nation's requirement for petroleum consumption, net petroleum imports (crude and products) rise over the forecast horizon, to 13.5 million barrels per day by 2015, representing 61 percent of the Nation's petroleum consumption. Dependence on net imports ranges from 51 percent in the high price case to 68 percent in the low price case, by 2015.

More detailed regional projections are available on EIA's Web site. The figures referenced above may be viewed on EIA's Web site as well.

## **U.S. Nuclear Industry Achieves Record Performance Levels**

Record performance levels were achieved at the Nation's nuclear power plants in 1995, according to EIA. Data published in EIA's March 1996 editions of the *Electric Power Monthly* and *Monthly Energy Review* show that in 1995 one measure of performance for nuclear units, the annual capacity factor, jumped nearly four percentage points to 77.5 percent, eclipsing the previous record of 73.8 percent set in 1994. Improved performance also contributed to two other records in 1995:

- Nuclear Electricity Net Generation in 1995 rose to 673 billion kilowatthours, compared with the 1994 mark of 640 billion kilowatthours.
- Nuclear Power's Portion of Utility Generated Electricity, at 22.5 percent, was greater in 1995 than in any previous year, surpassing the 1992 record of 22.1 percent. Nuclear power's share of electricity generation at utilities was second only to that of coal (55.2 percent) and contributed

more than all other energy sources combined (22.3 percent).

For historical perspective, in 1973, only 83 billion kilowatthours of electricity were generated at nuclear power plants, compared with 314 billion kilowatthours at petroleum power plants. In 1995, petroleum power plants generated 61 billion kilowatthours of electricity, accounting for 2.0 percent of total electricity generation.

The *Monthly Energy Review* and disaggregated data collected on Form EIA-759, "Monthly Power Plant Report" are available on EIA's Web site. Data published in the *Monthly Energy Review* and selected tables published in the *Electric Power Monthly* are also available on EIA's electronic publishing system bulletin board (EPUB). (For additional information, contact the National Energy Information Center.)

#### Electric Trade in the United States

As U.S. consumption of electric energy continues to increase, many electric utilities are increasing electric purchases to satisfy customer demand in lieu of constructing new power plants. Provisions in the Energy Policy Act of 1992 also continue to stimulate competition in the wholesale electricity market. The changing composition of wholesale electric trade is reflected in 1994 electric trade data released in June 1996 by EIA.

As a result of reduced funding, EIA announced that publication of its report *Electric Trade in the United States*, previously published on a biennial basis, has been discontinued. The last published report in the series, *Electric Trade in the United States 1992*, was produced in September 1994.

EIA will continue to collect and process wholesale electric trade and physical transmission line data, but will disseminate the data in electronic database format only, leaving aggregation and analysis of the data to individual users. Selected summary tables are also accessible to the public on EIA's Web site.

Wholesale Electric (Bulk Power) Trade Data for 1991, 1992, 1993, and 1994 are also accessible on EIA's Web site. While the report *Electric Trade in the United States* will no longer be published, historical data bases for bulk power for 1986, 1988, and 1990 are available. Transmission line data for 1992 and 1994 are also available. Selected summary tables are accessible on the EIA Web site.

#### EIA Forecasts World Oil Demand of 99 Million Barrels per Day in 2015, Adequate Supplies to Meet 50 Percent Growth in Total Energy Demand

Continued growth in world oil consumption, from 69 to 99 million barrels per day, will help drive a 50--percent increase in world energy demand over the next 20 years, according to the EIA report *International Energy Outlook 1996*. It projects sufficient oil supply to meet anticipated growth in demand, with a moderate rise in world prices.

Despite the projected increase in demand for oil, its share of world energy consumption is expected to shrink slightly over that of the forecast period. Demand for natural gas is expected to grow faster than that for any other fuel. The natural gas share of total world energy consumption is expected to increase by 3 percentage points over the share in the projection period, to 25 percent by 2015.

The *Outlook's* demand projections are substantially increased over last year's projections. Total world energy consumption is projected to reach 495 quadrillion British thermal units (Btu) by 2010, about 5 percent higher than projections in the 1995 report. The increase reflects stronger expectations for economic growth in developing nations which propel increased use of energy for electric power generation and for personal transportation. Electricity demand is projected to nearly double over the forecast period (particularly in the newly emerging Asian economies).

Among the forecast highlights is the projection that:

- Electricity demand is projected to nearly double over the forecast period, growing to 19 trillion kilowatthours by 2015. Growing world dependence on electricity should result in dramatic changes to the electric power industry in terms of ownership, regulation, and industrial structure (i.e., the division of the industry into its three major functions: generation, transmission, and distribution). Further, the primary fuel mix for world electricity generation is expected to change substantially over the projection period. For example, the natural gas share increases by 5 percentage points, from 16 percent in 1995 to 21 percent in 2015, is due largely to its increased utilization in the OECD.

The report may be accessed electronically from EIA's Web site.



## **Greenhouse Gas Emissions Rise in 1994; Slower Growth Seen for 1995**

Greenhouse gas emissions in the United States increased by 34 million metric tons of carbon equivalent (2.1 percent) between 1993 and 1994, according to an EIA report *Emissions of Greenhouse Gases in the United States 1995*. It shows that U.S. human-caused emissions have increased by 64 million metric tons (4 percent) between 1990 and 1994, to about 1.7 billion metric tons of carbon equivalent, including about 1.4 billion tons in the form of carbon dioxide.

Human-caused emissions of greenhouse gases are believed by many scientists to affect global weather and climate. The United States Government has promised, pursuant to a multilateral treaty, the Framework Convention on Climate Change, to limit the growth of U.S. greenhouse gas emissions.

Preliminary information for 1995 indicates that weighted emissions for those gases for which estimates are available (carbon dioxide, nitrous oxide, perfluorocarbons and hydrofluorocarbons) increased by 0.9 percent (12 million metric tons of carbon equivalent), the lowest growth rate of the past three years. The slow growth was paced by reduced emissions from electric utilities: carbon dioxide emissions declined by 0.2 percent in 1995, despite growing electricity consumption (3 percent). Above-average snowfall in the West permitted hydroelectric power to substitute for natural gas and coal while, on the East Coast, utilities substituted low-emitting natural gas for higher-emitting petroleum. Power generation from existing nuclear power plants also increased.

An electronic version of the report is available on the EIA's Web site.

## **Projected Natural Gas Supplies Adequate, but Tightening, in 1996**

U.S. natural gas productive capacity is expected to meet normal production requirements through 1996, according to the Energy Information Administration report *Natural Gas Productive Capacity for the Lower 48 States, 1984 through 1994*. Gradually declining productive capacity in 1996, in conjunction with rising natural gas production, results in a tightening of the surplus capacity. To some extent, the decline in surplus capacity reflects improving efficiencies in natural gas markets that reduce the need for previous surplus capacity levels.

*Natural Gas Productive Capacity* is the fourth EIA report to examine natural gas wellhead productive capacity. This year, for the first time, EIA separated coalbed from conventional gas in New Mexico, the Rocky Mountains, and the Southeast. The report concludes that normal monthly gas demand could be met through 1996.

Exceptionally high peak-day or peak-week heating or cooling demand may exceed projected productive capacity, or production may be limited by other factors, such as pipeline availability. Nonetheless, the natural gas industry has developed methods to meet peak demand, such as deliveries from storage and peak-day shaving.

Some producing States, such as Oklahoma and Louisiana, may not be able to meet their historical share of gas demand in 1996. However, U.S. gas supplies are expected to be adequate because other areas, such as the Gulf of Mexico Federal Offshore, will continue to show a surplus productive capacity.

Surplus capacity above average production is needed to respond to variations in demand caused by weather and other factors, although expanded imports and storage of gas in recent years have increased the flexibility of the supply system.

Without the projected increases in drilling, rising domestic production to meet anticipated demand would lower surplus capacity below recent historical levels.

## **Nuclear Electric Power Increases Worldwide; EIA Projects Further Growth through 2015**

Nuclear power continued to be an important source of electricity in 1995, accounting for 22 percent of total worldwide electricity generation, according to a report by the Energy Information Administration (EIA). Worldwide, nuclear power plants generated 2,225 terawatt-hours in 1995—a 4-percent increase in world nuclear power generation from that in 1994. (One terawatt-hour is an electrical energy unit of measure equivalent to a trillion watts of power expended for an hour—enough energy to light 10 billion 100-watt light bulbs for that length of time.)

U.S. nuclear power plants continued to improve operating performance, setting a new record average capacity factor (a key measure of performance expressed as the ratio of actual power generation to the maximum possible generation) of 77.5 percent for 1995, compared with 73.8 percent for 1994.

EIA's *Nuclear Power Generation and Fuel Cycle Report 1996* projects continued worldwide growth for nuclear power in the near term, but uncertain long-term prospects. Economic concerns stem from the capital-intensive nature of plant construction and highly variable operating and maintenance costs for existing plants. Public perceptions in some countries affect acceptance of commercial nuclear plants, and spent fuel management and disposal of nuclear wastes remain unresolved issues.

Worldwide, four commercial nuclear power plants were connected to electrical power grids in 1995. One additional plant was reconnected following a 6-year shutdown. There were 437 nuclear electric generating units in operation at the end of 1995, as two plants were retired from service during the year. There were 85 nuclear power projects under construction at the end of the year, including 32 units in the Far East.

*Nuclear Power* reviews nuclear industry developments in 1995 and projects future nuclear power requirements. The report includes information that was formerly published under the annual series titled *World Nuclear Outlook*.

This report is available electronically on EIA's Web site.

### **Major U.S. Energy Companies Cutting Costs, Increasing Investment in U.S. Exploration and Development**

Throughout the early 1990's, the major U.S. energy companies successfully cut costs in all areas of operations. In refining, they reduced operating costs, partly offsetting the higher costs of environmental compliance. In oil and gas operations, the cost of adding to their reserves steadily declined. By 1994, they replaced reserves at a cost of \$4.69 per barrel, the lowest in 15 years, while adding 5.7 billion barrels of oil and gas reserves worldwide, a 20-year record.

*Major U.S. Energy Companies Reviewed in EIA's Performance Profiles:*

Amerada Hess  
Amoco  
Anadarko  
Ashland Oil  
ARCO  
BP America  
Burlington Resources  
Chevron  
Coastal

DuPont (Conoco)  
Enron  
Exxon  
Fina  
Kerr-McGee  
Mobil  
Occidental  
Oryx  
Phillips Petroleum  
Shell Oil  
Sun  
Texaco  
Union Pacific  
Unocal  
USX (Marathon)

These are among the findings of EIA presented in *Performance Profiles of Major Energy Producers 1994*. The report also contains income, investment, and profitability measures for the major U.S. energy companies (as determined by share of oil, gas, or coal production or reserves, or share of refining capacity). EIA collects this information on an ownership basis, by line of business. Financial information is available which covers oil and gas production, petroleum refining and marketing, pipelines, coal, other energy operations, and chemical and other nonenergy operations.

Environmental considerations and deregulation contributed to growing demand for natural gas in the United States. The major energy companies expect this growth to continue. New technology has fostered cost-effective development of U.S. resources. They invested more in U.S. oil and gas exploration and development (\$12.6 billion) than in foreign exploration and development (\$11.9 billion) in 1994, reversing a recent trend. The majors increased investment in U.S. offshore prospects in 1994, with an increase in exploration and development expenditures of 29 percent over investment in 1993, to \$4.8 billion. They replaced nearly 140 percent of their U.S. production from offshore oil and gas reserves in 1994.

Copies of the report, *Performance Profiles of Major Energy Producers 1994*, based on EIA's Financial Reporting System database, are available from the U.S. Government Printing Office and from the National Energy Information Center. Historical data from the Financial Reporting System for the years 1977-1994 are available on diskette.

## U.S. Energy Companies Key Players in Growing Trend to Privatize Energy Enterprises Around the Globe

Privatizations of formerly state-owned energy enterprises throughout the 1990's have presented energy investment opportunities of historic dimensions. Around the globe, energy privatizations have led to several billions of dollars in cross-border capital flows thus far, and the level of future foreign investment activity looks larger still. In former socialist countries, privatization represents an important part of the transition from centrally planned economies to free markets.

These are among the findings of EIA presented in the *Privatization and the Globalization of Energy Markets*. This report reviews recent global efforts to privatize energy resources and outlines the opportunities and challenges privatization has presented to U.S. and foreign multinational energy companies. Some of the more important regional and energy-specific privatization efforts include:

- Privatization of Electric Power Resources
- Broadening of Investment Opportunities for Major Petroleum Companies
- Transition to Private Ownership Begun by Many OECD State-Owned Companies
- Expansion of U.S. Exploration and Development in Latin America

The report is available on EIA's Web site.

## Renewable Energy Sources Provide 7 Percent of U.S. Energy Consumption

Despite technological and economic advances, renewable energy sources held steady at about a 7-percent share of total U.S. energy consumption throughout the early 1990's and continue to face strong competition from conventional energy sources, according to the EIA report *Renewable Energy Annual 1995*. Renewable energy sources play a larger role in non-utility generation of electricity, where they account for about 25 percent of the electricity generated.

EIA released these findings and other key information on the current status and prospects for future development of biomass (wood, municipal solid waste, and liquid fuels), geothermal, wind, and solar resources in the

*Renewable Energy Annual 1995*, its first comprehensive report on renewable energy.

Other report highlights:

- Nonutility Renewable Electricity Generation Continues to Grow
- Wind is Fastest Growing Renewable Energy Source
- Growth in Municipal Solid Waste has Levelled Off
- Solar Technologies and Economics Continue to Improve
- Outlook for Renewables is Uncertain
- International Market Holds Promise for Renewable Energy Development.

The report is the first in an expected series of annual reports EIA intends to publish to provide a comprehensive assessment of renewable energy. The report is available through EIA's Web site.

## Potential Residential Energy Savings Substantial With Compact Fluorescent Lighting Technology

Residential households could save 31.7 billion kilowatthours of electricity annually if they replaced their most heavily used incandescent lights with compact fluorescent lights. This is enough electricity to light about a third of all U.S. households for an entire year.

According to the EIA report *Residential Lighting: Use and Potential Savings*, released September 23, 1996, 87 percent of the 523 million lights used in residential households are incandescent--the least efficient type of light bulb. In fact, only about 9 percent of households use compact fluorescent lights, which produce 105 lumens per watt, compared to 14 to 18 lumens per watt for incandescent lights.

Although replacing incandescent bulbs with compact fluorescent bulbs would produce an immediate savings in electricity, this savings would not translate into dollars to the consumer for some time because compact fluorescent bulbs cost substantially more than incandescent bulbs. Consumers who live in the New York City Metropolitan area, where electricity rates are high, could recoup their initial compact fluorescent

investment in less than 2 years. Consumers in the Pacific Northwest, who have the lowest electricity rates, would not see a dollar savings for more than 4 years. Hence, in areas with low electricity rates, consumers may need some type of incentive or discount to encourage them to switch to compact fluorescent bulbs.

The estimates of total annual savings calculated in the report are based on the following assumptions: (1) Households would replace all incandescent bulbs used 4 or more hours per day. (2) Lights used between 4 and 12 hours per day were on for an average of 5.6 hours; those used more than 12 hours per day were on for an average of 15.3 hours. (3) The initial bulbs were 75-watt incandescents costing 75 cents and the replacement bulbs were 26-watt compact fluorescents costing 22 dollars. (4) No new fixtures or hardware would need to be purchased to accommodate the compact fluorescent bulbs.

The data in this report were collected on the Lighting Supplement Questionnaire, a one-time addition to the 1993 Residential Energy Consumption Survey (RECS). The Lighting Supplement Questionnaire was administered to a statistically selected subsample of 474 of the RECS households. It asked about the types of lights used, the number of hours per day they were on, and the rooms in which they were located.

*Residential Lighting* may be accessed electronically from EIA's Web site.

### **U.S. Demand for Petroleum, Natural Gas To Approach Record Levels in 1996, 1997**

EIA projects that U.S. demand for petroleum and natural gas will reach levels in 1996 and 1997 not seen since the 1970's. EIA's *Short-Term Energy Outlook* for first quarter 1996 assumes that a return to normal weather patterns and continued economic growth will account for much of the robust growth in oil and gas demand.

According to the *Short-Term Energy Outlook*, U.S. petroleum demand is expected to be 18.15 million barrels per day in 1996, and 18.46 barrels per day in 1997, comparable to the record highs of 1977 through 1979, due in large part to rising transportation demand.

The period of relatively low oil prices and high demand experienced in the late 1970's ended when the Iranian revolution and the war between Iran and Iraq drove the price of oil from its 1977 average of about \$12 per barrel to \$35 per barrel by 1981. The average oil price is expected to remain steady through 1996 and 1997 at the

relatively low level of \$16 per barrel, as rising production—outside as well as inside the Organization of Petroleum Exporting Countries (OPEC)—keeps pace with world oil demand.

Continued economic growth and colder winter temperatures in 1996 are expected to boost U.S. natural gas demand by 2.2 percent, to 22.1 trillion cubic feet, its highest level since 1973. In 1997 natural gas demand is expected to continue to rise by 2.0 percent, to 22.5 trillion cubic feet, mostly due to expected growth in the industrial and electricity generation sectors. The expected 1997 level would be an all-time record for the United States.

Among other highlights from this EIA quarterly report is the projection that:

- Declining oil production and rising demand in the United States mean an increase in net imports of crude oil and petroleum products of 1.22 million barrels per day between 1995 and 1997. Total net imports equal 49.5 percent of total petroleum demand in 1997 in the base case, but could easily exceed 50 percent if abnormally cold weather or stronger-than-expected economic growth occurs.

Internet access to the *Short-Term Energy Outlook* can be obtained through the EIA's Web site.

### **Wyoming Mines Positioned To Dominate Low-Sulfur Coal Supplies**

Among U.S. coal-supply regions, eastern Wyoming is in the best position to meet increasing demand for low-sulfur coal over the next 20 years as electric utilities comply with the Clean Air Act Amendments of 1990. According to a report prepared by EIA, active mines alone in eastern Wyoming control an estimated 6 billion short tons of recoverable low-sulfur coal reserves, an amount sufficient to support the projected annual coal production from that region between now and 2015.

The EIA report, *U.S. Coal Reserves: A Review and Update*, reveals that reserves at active mines in some other regions soon will be exhausted and that investments in new mines will be needed to develop new reserves, a conclusion based on the levels of coal production projected for EIA's *Annual Energy Outlook 1996*. For example, underground mines in southern West Virginia are a major source of low-sulfur bituminous coal and account for 60 percent of the coal production from that supply area. If no new reserves were to be

developed in that area, existing reserves in locations currently being mined would support projected levels of production, on average, for only about 5 years.

In addition to statistics on the projected depletion of recoverable reserves at active mines, the report presents the latest updates to the demonstrated reserve base (DRB) of coal in the United States. (The "demonstrated reserve base" refers to estimated coal resource quantities in the ground within coalbed thicknesses and depths that are likely to be minable.) Other resources of coal, beyond the DRB, occur in the ground, but less information is available on their quantities and characteristics.

The new DRB documents 496 billion short tons of potentially minable coal remaining as of January 1, 1995. Although this amount is more than 480 times the Nation's coal production in 1995, almost half of the DRB is either inaccessible or likely to be lost in the mining process. Furthermore, much of the recoverable coal may not be mined because of the impacts of unfavorable coal quality, prices, mining costs, location, and/or transportation infrastructure on coal marketability. These aspects are extremely important in meeting the environmental requirements of the Clean Air Act Amendments of 1990 and in addressing concerns over global warming and greenhouse gas emissions.

The report may be accessed electronically from EIA's Web site by selecting "Coal." The report can be viewed or downloaded via the Publications Menu and the DRB; coal reserve databases can be downloaded via the Data Menu.

### **U.S. Uranium Industry Shows Turnaround in 1995**

The U.S. uranium industry showed gains in uranium production, employment, and increased levels of market activities in 1995, according to the EIA report *Uranium Industry Annual 1995*. It reports strong performance of the domestic uranium industry that mirrors the record 1995 electricity generation from nuclear power plants reported by the EIA earlier.

Continuing its efforts to make reports available to the public sooner, the agency released the *Uranium Industry Annual 1995* within a month after submission of data by producers and utilities to EIA (compared with about three months for the last year's report). To increase public access to the report, EIA is also making it available on EIA's Web site and CD-ROM.

Highlights of the U.S. uranium raw materials industry are:

- Uranium production in 1995 by all methods was 6.0 million pounds of yellowcake (uranium oxide, or U<sub>3</sub>O<sub>8</sub>), an increase of 80 percent from the 1994 level of 3.4 million pounds. This is the highest production level since 1991. Uranium mine production increased by 38 percent in 1995 to 3.5 million pounds, an amount produced mostly by in situ leach mining.
- Employment in the raw materials sector of the uranium industry was 1,107 person years in 1995. This is the third consecutive year of increasing employment and a 13 percent increase from the 1994 level.

Highlights of uranium marketing activities in the United States are:

- A total of 43.4 million pounds of uranium were delivered to U.S. utilities in 1995 as yellowcake, uranium hexafluoride, and enriched uranium. The average price paid by utilities was \$11.25 per pound, an increase of 8 percent compared with the 1994 price.
- Uranium inventories held by utilities at year-end 1995 were 56.2 million pounds. This is a decrease of 14 percent from the year-end 1994 level and is 65 percent below the record-high level of 160.2 million pounds (year-end 1984).
- The amount of uranium in fuel assemblies loaded into U.S. commercial nuclear reactors during 1995 was 51.1 million pounds, 10.7 million pounds more than in 1994.

In addition to the Internet availability described above, copies of *Uranium Industry Annual 1995* are available from the National Energy Information Center.

### **Companies Report Greenhouse Gas Emission Reduction Efforts to EIA**

More than 100 companies, together accounting for about 23 percent of U.S. carbon dioxide emissions, reported some 645 individual projects to reduce emissions of greenhouse gases in a U.S. Government initiative to promote voluntary approaches to environmental protection.

The projects were reported to EIA under the Voluntary Reporting of Greenhouse Gases Program. The program, required by the Energy Policy Act of 1992, is part of an attempt by the U.S. Government to develop innovative, low-cost, and nonregulatory approaches to limit emissions of greenhouse gases. Results of the first year of reporting under the program are summarized by EIA in *Voluntary Reporting of Greenhouse Gases 1995*.

Electric utilities were major participants in the first year of reporting. Ninety-six electric utilities filed reports, including 12 of the 15 largest electric utilities in the United States. Utility projects include improved plant efficiencies, cogeneration, and use of non-fossil fuels, such as nuclear power. Aggregate emissions reported by electric utilities totaled about 15 percent of national carbon dioxide emissions in 1994. However, participants used varying estimation methods and more than one participant may have reported on the same activity, so emissions and reductions totals should be used with caution.

Other reported projects cover a spectrum of approaches to emissions reductions and include such activities as methane recovery and re-use projects at landfills nationwide as well as urban forestry and worldwide tree planting projects. One project reported the use of video conferencing to reduce organizational miles driven. An auto manufacturer reported on decreased emissions from new automobiles, particularly as associated with the development of substitutes for chlorofluorocarbon (CFC) compounds. Other participants reported demand-side management of energy use and public and employee training.

The Voluntary Reporting of Greenhouse Gases Program affords an opportunity for any organization or individual to establish a public record of emissions, emission reductions, or sequestration achievements in a national, publicly available database. Participants may report any activity that reduces greenhouse gas emissions or increases carbon sequestration (capture of atmospheric carbon). Participants gain recognition for environmental stewardship while demonstrating their support for voluntary approaches to achieving environmental policy goals.

Reports submitted to EIA in 1995 have been compiled into a database in the form of a CD-ROM for computers running Microsoft Windows. Anyone interested in obtaining the annual report, the database, or reporting forms for 1996, which allow for reporting on emissions reductions achieved in 1995 and prior years, may send an e-mail message to [infohgh@eia.doe.gov](mailto:infohgh@eia.doe.gov).

### **Energy Information Administration Redesigns *Weekly Petroleum Status Report***

EIA redesigned the well known report *Weekly Petroleum Status Report* to provide timelier data and broader product coverage for regional retail gasoline and diesel fuel markets. The agency also expanded coverage of spot market and futures prices for selected petroleum products.

The *Weekly Petroleum Status Report* is widely used by financial and industry analysts in both the public and private sectors. The report is available on EIA's electronic bulletin board (EPUB) every Wednesday at 9:00 a.m. and on EIA's Web site.

## **EIA Reports Published Only in Electronic Form**

Selected EIA publications are available on EIA's Web site and are disseminated principally in electronic form, via Internet e-mail listserve, EPUB (EIA's electronic bulletin board), CD-ROM, or diskette. *These reports are not published in print.* However, a limited number of photocopies are available from the National Energy Information Center for those customers without electronic access.

### ***Country Analysis Briefs***

These items provide an overview of the energy situation for all countries that are members of the Organization of Petroleum Exporting Countries (OPEC), non-OPEC countries in the Persian Gulf region, major non-OPEC oil exporters, and other countries or regions. EIA updates these items frequently and periodically features new ones.

### ***Weekly Coal Production***

This short report provides timely information on coal production, as estimated by the EIA from railroad car loadings.

### ***Cost and Quality of Fuels for Electric Utility Plants 1995 - Tables***

Publication of the report in paper copy has been discontinued. However, data tables are available from EIA's Web site.

### ***Petroleum Marketing Annual 1995***

The report provides information on crude oils and refined petroleum products.

### ***Denver Clean-City Fleets Survey***

The report provides results of a survey of private companies and local governments operating 10 or more vehicles in the Denver, Colorado, area.

## **Feature Articles**

Listed below chronologically are the 15 features published in 1996:

Feature Article: "1995 Reformulated Gasoline Market Affected Refiners Differently"

(*Petroleum Marketing Monthly*, January 1996)

Feature Article: "Energy Equipment Choices: Fuel Costs and Other Determinants"

(*Monthly Energy Review*, April 1996)

Feature Article: "Summer 1996 Gasoline Assessment"

(*Petroleum Supply Monthly*, April 1996)

Feature Article: "Noncommercial Trading in the Energy Futures Market"

(*Petroleum Marketing Monthly*, May 1996)

Feature Article: "U.S. Electric Utility Demand-Side Management: Trends and Analysis"

(*Electric Power Monthly*, May 1996)

Feature Articles: "Recent Distillate Fuel Oil Inventory Trends and Recent Trends in Motor Gasoline Stock Levels"

(*Petroleum Supply Monthly* and *Petroleum Marketing Monthly*, May 1996)

Feature Article: "Natural Gas Industry Restructuring and EIA Data Collection"

(*Natural Gas Monthly*, June 1996)

Feature Article: "Upgrading Transmission Capacity for Wholesale Electric Power Trade" (*Electric Power Monthly*, June 1996)

Feature Article: "Revisions to Monthly Natural Gas Data"

(*Natural Gas Monthly*, July 1996)

Feature Article: "Comparisons of Independent Petroleum Supply Statistics"

(*Petroleum Supply Monthly*, August 1996)

Feature Article: "Accuracy of Petroleum Supply Data and The Outlook for U.S. Import Dependence"

(*Petroleum Supply Monthly*, September 1996)

Feature Article: "Recent Trends in Crude Oil Stock Levels"

(*Petroleum Supply Monthly*, October 1996)

Feature Article: "U.S. Natural Gas Imports and Exports 1995"

(*Natural Gas Monthly*, November 1996)

Feature Articles: "Distillate Fuel Oil Assessment for Winter 1996-1997 and Propane Market Assessment for Winter 1996-1997"

(*Petroleum Supply Monthly*, November 1996; and *Petroleum Marketing Monthly*, December 1996)

Feature Article: "Crosswell Seismology: A View from Aside"

(*Petroleum Supply Monthly*, December 1996)

# Periodical Reports of the Energy Information Administration

Released for printing January 1 through December 31, 1996

	Petroleum	Petroleum and Natural Gas	Natural Gas	Electricity	Coal	Nuclear Energy	Solar and Renewable Energy	Multisource Energy	Energy Consumption	Metadata
<b>Weekly/ Biweekly</b>	Weekly Petroleum Status Report				Weekly Coal Production ( <i>electronic only</i> )					
<b>Monthly/ Bimonthly</b>	International Petroleum Statistics Report		Natural Gas Monthly	Electric Power Monthly				Monthly Energy Review		
	Petroleum Marketing Monthly									
	Petroleum Supply Monthly									
<b>Quarterly</b>					Quarterly Coal Report			Short-Term Energy Outlook: Quarterly Projections		EIA Directory of Electronic Products EIA New Releases U.S. Energy Industry Financial Developments
<b>Annual/Other</b>	Emissions of Greenhouse Gases in the United States 1995	Costs and Indices for Domestic Oil and Gas Field Equipment and Production Operations 1992-1995	Natural Gas Annual 1994, Vol. 2 Natural Gas Annual 1995	Cost and Quality of Fuels for Electric Utility Plants 1995 ( <i>electronic only</i> )	Coal Industry Annual 1995 U.S. Coal Reserves: A Review and Update	Nuclear Power Generation and Fuel Cycle Report 1996 Uranium Industry Annual 1995 Uranium Purchases Report 1995		Alternatives to Traditional Transportation Fuels 1994, Vol. 1 Alternatives to Traditional Transportation Fuels 1994, Vol. 2: Greenhouse Gas Emissions	Annual Report to Congress 1995 Directory of Energy Data Collection Forms 1995 Directory of Energy Data Collection Forms 1996	
	Fuel Oil and Kerosene Sales 1995		Natural Gas 1996: Issues and Trends	Electric Power Annual 1995, Vol. 1						
	Petroleum Marketing Annual 1995 ( <i>electronic only</i> )		Natural Gas Productive Capacity for the Lower 48 States (1985 through 1997)	Electric Power Annual 1995, Vol. 2						



# Periodical Reports of the Energy Information Administration

	Petroleum	Petroleum and Natural Gas	Natural Gas	Electricity	Coal	Nuclear Energy	Solar and Renewable Energy	Multisource Energy	Energy Consumption	Metadata
Annual/Other	Petroleum Supply Annual 1995, Vol. 1	U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 1995 Annual Report						Alternatives to Traditional Transportation Fuels 1995		Directory of Energy Information Administration Models 1996
	Petroleum Supply Annual 1995, Vol. 2							Annual Energy Outlook 1996 Annual Energy Outlook 1997 Annual Energy Review 1996 Energy Information Sheets International Energy Annual 1995 International Energy Outlook 1996 Performance Profiles of Major Energy Producers 1994 State Energy Data Report 1994, Consumption Estimates		EIA Publications Directory 1995 Energy Education Resources: Kindergarten through 12th Grade 1995

# One-Time Reports of the Energy Information Administration

Released for printing January 1 through December 31, 1986

	Petroleum and Natural Gas	Natural Gas	Electricity	Coal	Renewable and Alternate Fuels	Nuclear Energy	Energy Markets and End Use
<b>Data Reports</b> + <b>Analysis Reports</b> + <b>Documentation</b> <b>Reports</b> + <b>Technical Reports</b> + <b>Service Reports</b>	A Guide to Surveys of Motor Vehicles Fleets  Denver Clean-City Fleet Survey  Describing Current and Potential Markets for Alternative-Fueled Vehicles  Documentation of the Oil and Gas Supply Module (OGSM)  EIA Model Documentation: Petroleum Market Model of the National Energy Modeling System  Oil Production Capacity Expansion Costs for the Persian Gulf  The Impacts on U.S. Energy Markets and the Economy of Reducing Oil Imports  Voluntary Reporting of Greenhouse Gases 1995	Model Documentation: Natural Gas Transmission and Distribution Model of the National Energy Modeling System, Vol. 1	An Analysis of FERC'S Final Environmental Impact Statement for Electricity Open Access and Recovery of Stranded Costs  A Review of FERC'S Final Final Environmental Impact Statement for Electricity Open Access and Recovery of Stranded Costs  Electricity Market Module Electricity Capacity Planning Submodule—Updates for AEO 1996  Electricity Market Module Electricity Finance and Pricing Submodule—Updates for AEO 1996  Electricity Market Module Electricity Fuel Dispatch Submodule—Updates for AEO 1996  Model Documentation Report Short-Term Hydroelectric Generation Model	Model Documentation: Coal Market Module of the National Energy Modeling System	Model Documentation: Renewable Fuels Module of the National Energy Modeling System	Spent Nuclear Fuel Discharges from U.S. Reactors 1994	An Analysis of Carbon Mitigation Cases  Country Analysis Briefs  Energy Consumption Series Residential Energy Consumption Survey Quality Profile  Energy Consumption Series Residential Lighting: Use and Potential Savings  Model Developer's Appendix to the Model Documentation Report: NEMS Macroeconomic Activity Module  National Energy Modeling System: An Overview  NEMS Integrating Module Documentation Report  Privatization and the Globalization of Energy Markets  Residential Lighting Use and Potential Savings

# APPENDIX B

## ENERGY INFORMATION ADMINISTRATION ENERGY DATA AND ANALYSIS CONTACTS

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Consumption at Manufacturing Plants	Joyce Morrison	426-1470	jmorriso@eia.doe.gov
Distribution (Annual)	Tom Murphy	426-1151	tmurphy@eia.doe.gov
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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
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Reserves	Richard Bonskowski	426-1132	rbonskow@eia.doe.gov
Short-Term Projections and Analysis	Willie Hong	426-1126	bhong@eia.doe.gov
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<b>ECONOMIC: Analysis</b> FAX Number: (202)586-9753			
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Energy Taxation	Jon A. Rasmussen	586-1449	jasmuss@eia.doe.gov
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Emissions	John Colligan	426-1174	jcolliga@eia.doe.gov
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Short-Term Hydroelectric Projections	Rebecca McNerney	426-1251	rmcnerne@eia.doe.gov
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Utility Boiler Design	John Colligan	426-1174	jcolliga@eia.doe.gov
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Utility Finance--Investor-Owned	Thomas Williams	426-1267	twilliam@eia.doe.gov
Utility Finance--Publicly Owned	C. Harris-Russell	426-1163	charrisr@eia.doe.gov
Utility Fuel Consumption	Melvin Johnson	426-1172	mejhnso@eia.doe.gov
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	mejhnso@eia.doe.gov
Utility Power Production Expenses	Elsie Bess	426-1142	ebess@eia.doe.gov
Utility Publications	Sandra Smith	426-1173	ssmith@eia.doe.gov
Statistical Reports	Melvin Johnson	426-1172	mejhnso@eia.doe.gov
Generation/Sales/Revenues	Channele Donald	426-1270	cdonald@eia.doe.gov
Statistical Reports	C. Harris-Russell	426-1163	charrisr@eia.doe.gov
Operations and Financial	Thomas Williams	426-1267	twilliam@eia.doe.gov
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<b>FORECASTS</b> FAX Number: (202) 586-3045			
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/ 586-1678	swade@eia.doe.gov/ eboedeck@eia.doe.gov
Crude Oil Supply/ Midterm Projections	Ted McCallister	586-4820	tmccalli@eia.doe.gov

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Greenhouse Gases	Arthur Rypinski/ Stephen Calopedis	586-8425 586-1156	arypinski@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
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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	Bruce Bawks	586-6579	bbawks@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 (FAX: 586-9753)	dcostello@eia.doe.gov
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Energy Fuel Price/Short-Term Projections	Neil Gamson	586-2418	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	Evelyn Amerchih	586-8760	eamerchi@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
<b>INTERNATIONAL: Energy Analysis</b> FAX Number: (202) 586-9753			
Country Analysis Briefs	Douglas MacIntyre	586-9502	dmacinty@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	586-9502	dmacinty@eia.doe.gov
Contingency Analysis/Regional Issues	Erik Kreil	586-6573	ekreil@eia.doe.gov
<b>INTERNATIONAL: Energy Statistics</b> FAX Number: (202) 586-9753			
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

Fuel and/or Specific Data Area	Name	Telephone (202) unless indicated otherwise	E-Mail
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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	hmcaine@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
<b>MULTIFUEL: Consumption</b> FAX Number: (202) 586-0018			
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Commercial Buildings Sector Analysis	Eugene Burns	586-1125	eburns@eia.doe.gov
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Manufacturing Sector Characteristics	Mark Schipper	586-1136	mschipper@eia.doe.gov
Manufacturing Sector Analysis	Mark Schipper	586-1136	mschippe@eia.doe.gov
Residential Sector Characteristics	Michael Laurence	586-2453	mlaurenc@eia.doe.gov
Residential Sector Analysis	Michael Laurence	586-2453	mlaurenc@eia.doe.gov
Residential Transportation Sector Characteristics	Ron Lambrecht	586-4962	rlambrec@eia.doe.gov
Residential Transportation Sector Analysis	Ron Lambrecht	586-4962	rlambrec@eia.doe.gov



Fuel and/or Specific Data Area	Name	Telephone (202) unless indicated otherwise	E-Mail
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Transportation Program Developments — Alternative Fuels	Dwight French	586-1112	dfrench@eia.doe.gov
<b>NATURAL GAS:</b> FAX Number: (202) 586-1076			
Coalbed Methane/Tight Gas	Bob King	586-4787	rking@eia.doe.gov
Consumer and City Gate Prices	Roy Kass	426-1318	nkass@eia.doe.gov
Consumption (by sector)	Roy Kass	426-1318 (FAX: 426-1225)	nkass@eia.doe.gov
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Fuel and/or Specific Data Area	Name	Telephone (202) unless indicated otherwise	E-Mail
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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	Kenneth C.Wade	426-1248	kwade@eia.doe.gov
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<b>OIL AND GAS: Production and Reserves</b> FAX Number: (202) 586-1076			
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Reserves	John Wood	(214)767-2200/ FAX: (214)767-2204	jwood@eia.doe.gov
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Domestic Crude Oil Markets	Dave Gatton	426-1118	dgatton@eia.doe.gov
Refineries Acquisition Cost	Charles Riner	586-6610	criner@eia.doe.gov
Petroleum Product Prices	Charles Riner	586-6610	criner@eia.doe.gov
Petroleum Product Prices	Kenneth Platto	586-6364	kplatto@eia.doe.gov
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Weekly Petroleum Status Report	Larry Alverson	586-9664	lalverso@eia.doe.gov
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# APPENDIX C

## LAWS AFFECTING EIA, 1974-1996

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 the of 1986 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.