DOE/EIA-0608(99)

Voluntary Reporting of Greenhouse Gases 1999

January 2001

Energy Information Administration
Office of Integrated Analysis and Forecasting
U.S. Department of Energy
Washington, DC 20585

This publication is on the WEB at:
www.eia.doe.gov/oiaf/1605/vrrpt/index.html.

For More Information

Individuals or members of organizations wishing to report reductions in emissions of greenhouse gases under the auspices of the Voluntary Reporting of Greenhouse Gases Program can contact the Energy Information Administration (EIA) at:

Voluntary Reporting of Greenhouse Gases
Energy Information Administration
U.S. Department of Energy
Forrestal Building
EI-81, Room 2F-081
1000 Independence Avenue, SW
Washington, DC 20585

Telephone: 1-800-803-5182 or 202-586-0688
FAX: 202-586-3045
e-mail: infoghg@eia.doe.gov

For reporting purposes, the EIA has both a long form (EIA-1605) and a short form (EIA-1605EZ) available, as well as an electronic version of the form. They are available upon request or on EIA's web site at *www.eia.doe.gov/oiaf/1605/forms.html*.

The reports submitted to EIA are compiled into a database that can be obtained on CD-ROM by contacting the Voluntary Reporting of Greenhouse Gases Program Communications Center at 1-800-803-5182 or can be downloaded from EIA's web site at *www.eia.doe.gov/oiaf/1605/database.html*.

General or specific technical information concerning the contents of this report may also be obtained by contacting the Voluntary Reporting of Greenhouse Gases Program.

Preface

Title XVI, Section 1605(b) of the Energy Policy Act of 1992 (EPACT) directed the Energy Information Administration (EIA) to establish a mechanism for "the voluntary collection and reporting of information on . . . annual reductions of greenhouse gas emissions and carbon fixation achieved through any measures, including fuel switching, forest management practices, tree planting, use of renewable energy, manufacture or use of vehicles with reduced greenhouse gas emissions, appliance efficiency, methane recovery, cogeneration, chlorofluorocarbon capture and replacement, and power plant heat rate improvement . . . ."

The legislation further instructed EIA to create forms for the reporting of greenhouse gas emissions and reductions, and to establish a database of the information voluntarily reported under this subsection of EPACT. The reporting Forms EIA-1605 and EIA-1605EZ, "Voluntary Reporting of Greenhouse Gases," were first made available to the public in July 1995, providing a vehicle for voluntary reporting on activities that occurred before and during 1994. This publication summarizes data reported for 1999, the sixth year of data collection for the Voluntary Reporting of Greenhouse Gases Program.

The data reported to the program are available through several media. All nonconfidential reports received by the program are compiled into a public-access database, available either on CD-ROM or on a set of diskettes. The software is interactive and modular by design, allowing the user to select, view, or print the reports filed by the voluntary reporters, for each year of their participation. Structured queries allow the user to access and print summary reports. The user can also connect to and query the database with Microsoft Access 97 (or later versions) or other software that supports 32-bit open database connectivity (ODBC).

The Public Use Database and the current reporting software are also available at the program's FTP (File Transfer Protocol) site on the Internet at *http://www.eia.doe.gov/oiaf/1605/database.html*. Interested parties are encouraged to visit the program's home page at *http://www.eia.doe.gov/oiaf/1605/frntvrgg.html* for more information and background on the program. Software, additional copies of this report, paper reporting forms, and technical support information can be downloaded from that web site or obtained from the Voluntary Reporting of Greenhouse Gases Communications Center by e-mail at *infoghg@eia.doe.gov*, toll-free at 1-800-803-5182, or locally at 202-586-0688.

This report was prepared under the guidance of Mary J. Hutzler, Director of EIA's Office of Integrated Analysis and Forecasting. Significant contributions to the program, the current software, and the preparation of this report have been made by Paul McArdle, Stephen Calopedis, Nancy Checklick, Laura Gehlin, William LaPerch, Perry Lindstrom, Molly Milgrom, Chris Minnucci, Michael Mondshine, Dick Richards, and Charles L. Smith.

EIA would like to express special thanks to the voluntary reporters, without whom this program would not be possible.

Contents

Tables

Figures

Executive Summary

The Voluntary Reporting of Greenhouse Gases Program, required by Section 1605(b) of the Energy Policy Act of 1992, records the results of voluntary measures to reduce, avoid, or sequester greenhouse gas emissions. A total of 201 U.S. companies and other organizations reported to the Energy Information Administration (EIA) that, during 1999, they had undertaken 1,715 projects, which achieved greenhouse gas emission reductions and carbon sequestration equivalent to 226 million metric tons carbon dioxide, or about 3.4 percent of total 1999 U.S. greenhouse gas emissions. The emission reductions reported usually were measured by comparing an estimate of actual emissions with an estimate of what emissions would have been had the project not been implemented.

Since 1994, the annual number of projects reported to the Voluntary Reporting Program has increased by 166 percent, and the quantity of emission reductions reported has more than tripled (Table ES1). Although the number of entities reporting declined slightly from 207 in 1998 to 201 in 1999, it should be noted that the 1998 data have been revised upward to include reports that were submitted after the 1998 filing deadline, and it is expected that the 1999 data will also be revised upward in next year's report with the inclusion of late 1999 reports. Eighty-two of the organizations reporting for 1999 provided estimates of emissions and/or emission reductions for the entire organization. Sixty-five reporters recorded commitments to take action to reduce emissions in future years, mostly during the 2000 to 2005 time frame.

Of the 82 organizations reporting at the entity level, 78 estimated their 1999 emissions, which totaled 1.5 billion metric tons carbon dioxide equivalent, equal to about 22 percent of total U.S. greenhouse gas emissions in 1999. These 78 entity-level reporters also estimated corporate-wide emission reductions totaling 181.6 million metric tons carbon dioxide equivalent, a reduction of 12 percent relative to total greenhouse gas emissions reported by all the organizations reporting at the entity level for 1999.

The Voluntary Reporting of Greenhouse Gases Program is used as a registry by several U.S. Government-sponsored voluntary programs to limit greenhouse gas emissions.[1] Nearly half (49.8 percent) of the reporters to the Voluntary Reporting Program in 1999 were electric utilities, most of which were participants in the U.S. Department of Energy (DOE) Climate Challenge program. However, the proportion of electric utilities among the reporters has decreased steadily since the first (1994) reporting cycle—when 88 percent of the reporters were electric utilities—as a more varied set of participants have begun reporting. Participants from outside the electric power sector, representing a diverse set of industries,[2] now make up 50.2 percent of all the

Table ES1. Reporting Indicators for the Voluntary Reporting of Greenhouse Gases Program, Data Years 1994-1999

Indicator	1994	1995	1996	1997	1998(R)	1999
Number of Entities Reporting	108	142	150	162	207	201
Number of Projects Reported	645	967	1,040	1,288	1,557	1,715
Number of Entity-Level (Organization-Wide) Reports Received	40	51	56	60	76	82
Project-Level Reductions Reported (Million Metric Tons Carbon Dioxide Equivalent)	74	146	155	149	219	226

(R) = revised.

Note: 1998 data have been revised upward to include 1998 reports that were submitted after the filing deadline. It is expected that the 1999 data will also be revised upward in next year's report with the inclusion of late 1999 reports.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

[1]These programs include the U.S. Department of Energy (DOE) Climate Challenge program for electric utilities and the U.S. Environmental Protection Agency (EPA) Climate Wise program for manufacturers, Landfill Methane Outreach Program, Coalbed Methane Outreach Program, and Green Lights program, as well as the U.S. Initiative on Joint Implementation.

[2]Reporters outside the electric power industry include manufacturers such as General Motors, IBM, Dow, Johnson & Johnson; facilities such as Alcan's Sebree aluminum plant, Motorola's Austin, TX, integrated circuit fabrication plant, and three California Portland Cement Company plants; 47 operators and developers of landfill methane recovery projects; a trade association (Integrated Waste Services Association); and private voluntary organizations, such as American Forests and World Parks Endowment.

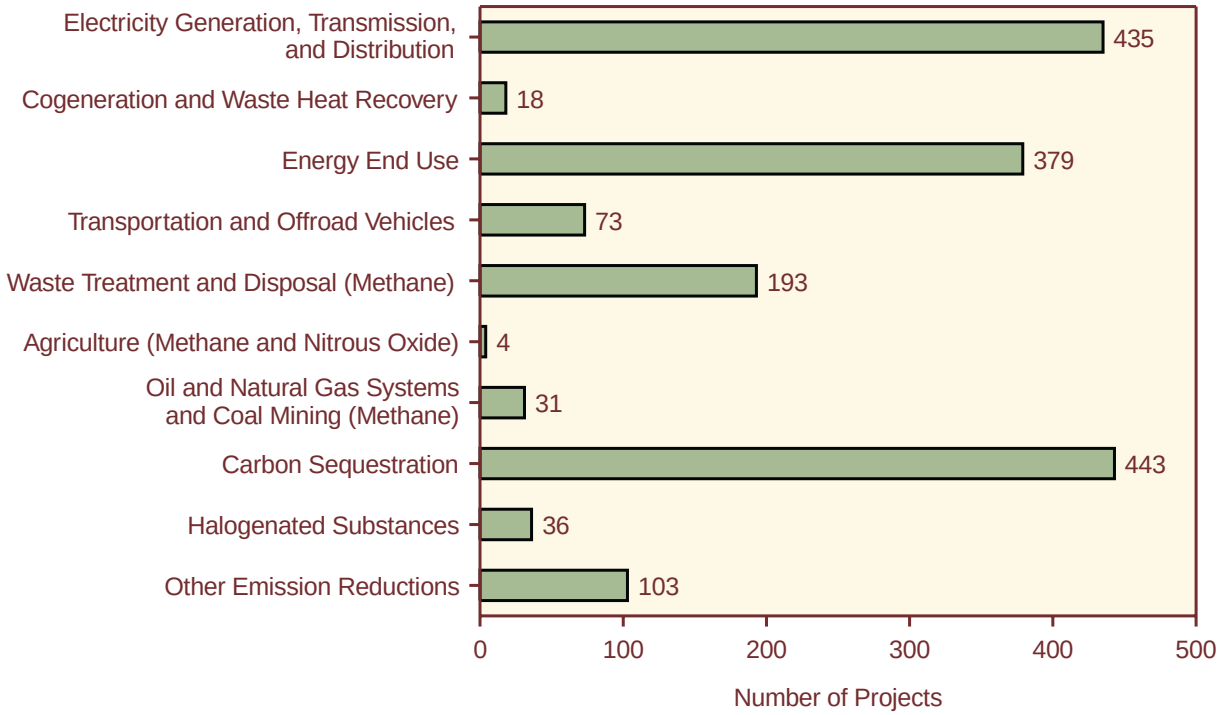
organizations reporting to the program. Each reporting cycle also normally sees an influx of a first-time reporters new to the program.[3]

Electric power sector reporters (including independent power producers) accounted for 1,198 (70 percent) of the projects reported. Also reporting were industrial concerns (168 projects), agriculture and forestry organizations (147 projects), and alternative energy providers (175 projects). Organizations in other sectors (government, commercial, and residential) submitted reports on 27 projects.

Most of the projects reported for 1999 affected energy supply or use in some way. Some 435 of the projects were related to the generation, transmission, or distribution of electricity, almost all of which were reported by electric power sector reporters (Figure ES1). Another 379 were related to energy end use, 18 were cogeneration projects, and 73 were transportation projects. Another 224 projects reduced emissions of methane from waste disposal facilities (193 projects) and from oil and natural gas systems and coal mines (31 projects), almost all of which included the displacement of fossil fuels through the use of methane as a fuel. Other projects included the reuse of fly ash in concrete (41 projects) and materials recycling (35 projects), which reduce emissions at least in part by reducing energy consumption. The largest reductions were reported for projects that improved the performance of nuclear power plants. The non-energy-related projects reported fell into two major categories: sequestration of carbon, usually in forests (443 projects), and the recycling, reuse or destruction of halogenated substances such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (36 projects).

Public interest in the Voluntary Reporting Program has continued to increase, in part because of growing awareness of climate change issues and, in part, because of public interest in the concept of credit for early reductions. In October 1997, the White House announced that it favored offering "credit for early reductions" as a means to limit future U.S. greenhouse gas emissions. Generally, a credit for early reduction program would offer regulatory credit—in the form of "carbon allowances" against a future cap on greenhouse gas emissions—for organizations that take steps to reduce their emissions now. Neither "credits" nor "reductions" were defined, however, and the exact nature of such a program is a subject of ongoing debate among

Figure ES1. Number of Projects Reported to the Voluntary Reporting of Greenhouse Gases Program by Project Type, Data Year 1999



Note: The sum of projects in each project category exceeds the total number of projects reported, because more than one project type may be assigned to a single project.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

[3]New reporters for 1999 that are outside the electric power industry include AT&T, Clairol, Pharmacia & Upjohn, Republic Metals, Rolls-Royce Corporation, Sunoco, and the Pacific Forest Trust.

policymakers, interest groups, and private organizations. Various bills have been introduced in Congress to address the issue, but no legislation has been enacted.

By creating a database of real-world emission reduction actions and actors, the data reported to the Voluntary Reporting Program can be used to gain insight into the incentive effects and beneficiaries of various credit for early action proposals. The database also provides a mechanism for identifying some of the issues that would have to be resolved in developing an accounting system for an effective credit program.

1. Voluntary Reporting 1999: An Overview

Introduction

The Energy Policy Act of 1992 (EPACT) directed the U.S. Department of Energy (DOE), with the Energy Information Administration (EIA) as the implementing agency, to develop a program to document voluntary actions that reduce emissions of greenhouse gases or remove greenhouse gases from the atmosphere (see box on page 2).[1] The Voluntary Reporting of Greenhouse Gases Program was developed in cooperation with DOE's Office of Policy and the U.S. Environmental Protection Agency (EPA). In addition to providing recognition for entities that reduce greenhouse gas emissions or sequester carbon voluntarily, this program serves to identify innovative and effective ways to reduce greenhouse gas emissions.

To date, U.S. policy initiatives aimed at reducing greenhouse gas emissions have relied on voluntary approaches. President Clinton's Climate Change Action Plan[2] sought to identify and implement actions that could reduce emissions of greenhouse gases through an array of government/industry partnerships. Most of the reporters to the Voluntary Reporting Program are affiliated with one or more government-sponsored voluntary programs.

This report presents information on the sixth reporting cycle of the Voluntary Reporting Program, which accepted reports including information on emissions, emission reductions, and carbon sequestration activities through 1999. The report is divided into seven chapters. This chapter provides an overview of participation in the Voluntary Reporting Program, a perspective on the composition of activities reported, and a review of some key issues in interpreting and evaluating achievements associated with reported emission mitigation initiatives. Chapters 2 through 6 provide a more detailed review of project-level emission reduction initiatives reported to the program. Chapter 2 examines projects in the electricity sector that reduce carbon dioxide emissions through thermal efficiency improvements or switching to lower emitting fossil fuels. Chapter 3 considers improvements in end-use efficiency and fuel switching in the residential, commercial, industrial, and transportation sectors. Efforts to improve or expand carbon sinks through such activities as reforestation, afforestation, and forest preservation are the subject of Chapter 4. Emission reduction initiatives associated with methane and halogenated substances are examined in Chapters 5 and 6, respectively. Chapter 7 reviews emissions reports from participants who provided data on aggregate entity emissions. Appendixes provide information on the development and structure of the data collection instrument, a discussion of issues in the interpretation of the data, and summary lists of reporters and projects.

The reports submitted to EIA are compiled into a database that can be obtained on CD-ROM by contacting the Voluntary Reporting of Greenhouse Gases Program Communications Center at 1-800-803-5182 or downloaded from EIA's Internet site at *http://www.eia.doe.gov/oiaf/1605/database.html*.

Benefits of the Voluntary Reporting Program

The Voluntary Reporting Program is unique among the many voluntary programs initiated during the early 1990s in its diversity of project types, participation, and approaches. The Voluntary Reporting Program's database provides abundant examples of the types of concrete actions that organizations can undertake to reduce greenhouse gas emissions. Some of the most important benefits of the Voluntary Reporting Program are:[3]

- The program has served to teach staff at many of the largest corporations in the United States how to estimate greenhouse gas emissions and has educated them on a range of possible measures to limit emissions.

[1]Title XVI of the Energy Policy Act, Public Law 102-486 (October 24, 1992), in Section 1605(a) called for an annual report on national aggregate emissions of greenhouse gases. EIA has issued the report—*Emissions of Greenhouse Gases in the United States*—every year since 1993. Section 1605(b) called for the establishment of a database on annual reductions of emissions as reported on a voluntary basis.

[2]U.S. Department of State, *Climate Action Report*, Publication 10496 (Washington, DC, July 1997), http://www.state.gov/www/global/oes/97climate_report/index.html.

[3]Testimony of Jay Hakes, former EIA Administrator, on March 30, 2000, before the Senate Committee on Energy and Natural Resources on Senate Bills S.882 and S.1776 and their potential impacts on EIA's Programs. The full text of the testimony is available on EIA's web site at http://www.eia.doe.gov/neic/speeches/hrtest3-30-00/testimony3.htm.

The Energy Policy Act of 1992, Sections 1605(b) and (c)

(b) Voluntary Reporting.—

(1) ISSUANCE OF GUIDELINES.—Not later than 18 months after the date of the enactment of this Act, the Secretary shall, after opportunity for public comment, issue guidelines for the voluntary collection and reporting of information on sources of greenhouse gases. Such guidelines shall establish procedures for the accurate voluntary reporting of information on—

(A) greenhouse gas emissions—

(i) for the baseline period of 1987 through 1990; and

(ii) for subsequent calendar years on an annual basis;

(B) annual reductions of greenhouse gas emissions and carbon fixation achieved through any measures, including fuel switching, forest management practices, tree planting, use of renewable energy, manufacture or use of vehicles with reduced greenhouse gas emissions, appliance efficiency, methane recovery, cogeneration, chlorofluorocarbon capture and replacement, and power plant heat rate improvement;

(C) reductions in greenhouse gas emissions achieved as a result of—

(i) voluntary reductions;

(ii) plant or facility closings; and

(iii) State or Federal requirements; and

(D) an aggregate calculation of greenhouse gas emissions by each reporting entity.

Such guidelines shall also establish procedures for taking into account the differential radiative activity and atmospheric lifetimes of each greenhouse gas.

(2) REPORTING PROCEDURES.—The Administrator of the Energy Information Administration shall develop forms for voluntary reporting under the guidelines established under paragraph (1), and shall make such forms available to entities wishing to report such information. Persons reporting under this subsection shall certify the accuracy of the information reported.

(3) CONFIDENTIALITY.—Trade secret and commercial or financial information that is privileged or confidential shall be protected as provided in section 552(b)(4) of title 5, United States Code.

(4) ESTABLISHMENT OF DATA BASE.—Not later than 18 months after the date of the enactment of this Act, the Secretary through the Administrator of the Energy Information Administration shall establish a data base comprised of information voluntarily reported under this subsection. Such information may be used by the reporting entity to demonstrate achieved reductions of greenhouse gases.

(c) Consultation.—

In carrying out this section, the Secretary shall consult, as appropriate, with the Administrator of the Environmental Protection Agency.

- The program has helped to provide concrete evidence for the evaluation of activities reported to the many government voluntary programs launched since 1993.
- Reporters have been able to learn about innovative emission reduction activities from the experiences of their peers.
- The program has created a "test" database of approaches to emission reductions that can be used to evaluate future policy instruments aimed at limiting emissions.
- The program has helped to illuminate many of the poorly appreciated emissions accounting issues that must be addressed in designing any future approaches to emission limitations.

Who Reported?

Reports for the 1999 data year were received from 201 participants in 24 different industries or services, representing a continuing increase in both the number and diversity of participants.[4] In comparison, reports for the

[4]Twenty entities submitted late reports for the 1998 data year, bringing the total number of reporters for 1998 to 207. The late reports were not among the 187 reports in the 1998 Public Use Database and were not included in the statistics presented in the annual report for data year 1998. It is expected that the number of 1999 data year reports will be revised upward next year with the inclusion of reports received after the 1999 database was closed.

1994 data year—the first year of the program—were received from 108 participants in 9 different industries or services (Table 1).

With 100 of the 201 reporters for 1999 actively engaged in the production and distribution of electricity, this is the first reporting cycle in which more than 50 percent of the reporters to the Voluntary Reporting Program have come from outside the electric power industry (Figure 1). In the first year of the program (data year 1994), the 95 submissions from the electric power producers represented 88 percent of the 108 reports received. The absolute number of electric power sector reporters has also declined from a high of 115 reporting for 1995 and 1997 to 100 reporting for 1999. The decline is attributed in part to the ongoing restructuring of the industry, which has been accompanied by several mergers and acquisitions involving reporters to the program.

Although other industries are not as well represented as the electric power industry, in many cases reports were received from key companies in those other industries:

Table 1. Forms Filed by Standard Industrial Classification, Data Years 1994-1999
(Number of Reports)

SIC Code[a]	Description	Data Year					
		1994	1995	1996	1997	1998[(R)]	1999
01	Agricultural Production: Crops	0	0	0	0	1	0
08	Forestry	1	2	1	1	3	3
12	Coal Mining	1	2	2	1	4	2
14	Nonmetallic Minerals, except fuels	0	0	0	0	1	1
20	Food and Kindred Products	0	0	0	0	1	1
27	Printing and Publishing	0	1	0	1	0	1
28	Chemical and Allied Products	1	3	2	3	8	5
29	Petroleum Refining and Other Related Industries	0	0	2	3	8	9
32	Stone, Clay, Glass, and Concrete Products	0	0	2	4	12	13
33	Primary Metals	2	2	4	4	5	5
34	Fabricated Metal Products, Except Machinery and Transportation Equipment	0	2	1	1	4	2
36	Electronic Equipment	1	1	2	4	4	4
37	Transportation Equipment	1	1	1	2	3	5
38	Instruments and Related Products	0	0	0	0	2	0
39	Miscellaneous Manufacturing Industries	0	1	1	0	2	2
48	Communications	0	0	0	0	0	1
49	Electric, Gas, and Sanitary Services	98	123	125	129	138	134
57	Furniture and Home Furnishings Stores	0	0	0	0	2	1
65	Real Estate	0	1	1	1	1	1
67	Holding and Other Investment Offices	0	0	1	1	1	1
80	Health Services	0	0	0	0	1	0
82	Educational Services	1	2	2	2	0	2
86	Membership Organizations	0	0	0	1	1	1
87	Engineering and Management Services	0	0	2	2	2	1
88	Private Households	2	1	1	1	1	1
89	Services Not Elsewhere Classified	0	0	0	1	1	3
91	Executive, Legislative, and General	0	0	0	0	1	2
Total		**108**	**142**	**150**	**162**	**207[b]**	**201[b]**

(R) = Revised.

[a]The Voluntary Reporting of Greenhouse Gases database was designed in 1994-1995, when the Standard Industrial Classification (SIC) system was still in use. EIA is considering modifying the database to use the North American Industry Classification System (NAICS), which was introduced in 1997 by the United States, Canada, and Mexico to provide comparability in statistics about business activity across North America.

[b]Includes 20 late reports for the 1998 data year. It is expected that the 1999 total will also be revised upward in next year's report with the inclusion of late 1999 reports. As of December 2000, EIA had received two late 1999 reports, which are not included in this report's 1999 database.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

for example, General Motors in the automotive products industry; Noranda and an operating division of Alcan in the metals industry; Sunoco, Inc., in the petroleum industry; DuPont, Johnson & Johnson, and The Dow Chemical Company in the chemicals industry; Rolls Royce in the aerospace industry; Pharmacia & Upjohn in the pharmaceuticals industry; AT&T in communications; IBM and Motorola in the electronic equipment industry; and Clairol in the consumer products industry. A complete listing of all 1999 reporters is provided in Appendix B, Table B1.

Most reporters indicated that their projects were affiliated with one or more government-sponsored voluntary programs. Of the 1,715 projects reported for 1999, 990 were affiliated with the Climate Challenge Program, 130 with the Climate Wise Recognition Program, 122 with the Landfill Methane Outreach Program, 30 with the U.S. Initiative on Joint Implementation, 24 with Energy Star Buildings, 23 with EPA's Green Lights Program, 11 with the Coalbed Methane Outreach Program, and 8 with the Natural Gas STAR Program. Other voluntary programs cited included Energy Star Computers, Energy Star Transformers, the Voluntary Aluminum Industrial Partnership, Motor Challenge, WasteWi$e, Compressed Air Challenge, Rebuild America, and the Sulfur Hexafluoride Emissions Reduction Partnership. Not all participants in the various voluntary programs provided information to the Voluntary Reporting Program.

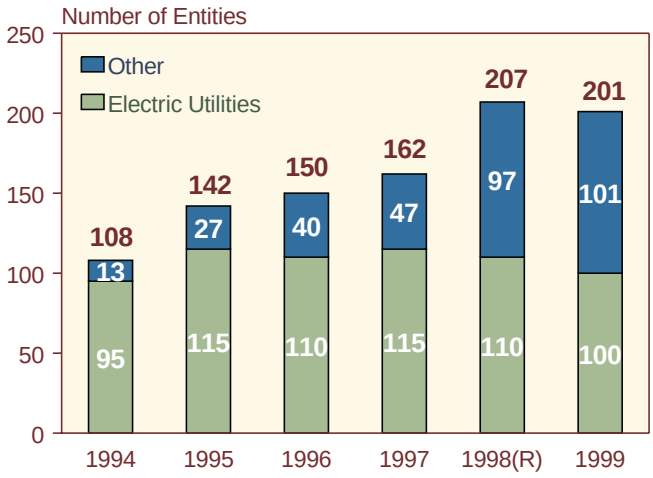
What Was Reported?

The Voluntary Reporting Program permits three distinct types of reporting:

- Project-level emissions and reductions, defined as the emission reduction consequences of a particular action
- Entity-level emissions and reductions, defined as the emissions and reductions of an entire organization, usually defined as a corporation
- Commitments to take action to reduce emissions in the future.

Most reporters (184 or 92 percent) reported project-level reductions, and 82 reported entity-level emissions and/or reductions. As these numbers imply, most (66) of the reporters that reported entity-level emissions also reported project-level emissions. One hundred eighteen organizations submitted only project-level reports, whereas 16 reported only entity-level information.

Figure 1. Electric Power Sector and Other Entities Submitting Reports to the Voluntary Reporting of Greenhouse Gases Program, Data Years 1994-1999



(R) = revised.

Note: 1998 data year includes 20 late reports that were not included in the totals presented in last year's annual report and database.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Sixty-five reporters provided information on their commitments to reduce emissions or increase sequestration in the future. One reporter's submission consisted of a project commitment describing an ongoing activity that did not reduce emissions in 1999 but which is projected to reduce emissions in future years.

Project Level

Reporters provided information on a total of 1,715 projects (Table 2). The total number of projects reported increased by 158, or 10 percent, compared with the previous reporting cycle.[5] Most of the 1,715 projects reported for 1999 were also among the 1,557 projects reported for 1998, because they continued to yield emission reductions. Projects often yield emission reductions over an extended period of time; a lighting improvement project may involve the replacement of light fixtures and bulbs that, once installed, will continue to reduce electricity consumption, and thus emissions, over a multi-year period. A project may even involve no new activity. The reforestation of an area in one year can result in the sequestration of carbon in many subsequent years, even if no additional trees are planted. Reporters continue to report the annual emission reductions and carbon sequestration achieved by such long-lived projects on a yearly basis.

[5]The number of projects reported for 1998 has increased from the 1,507 cited in the annual report for data year 1998 to 1,557 due to the receipt of several additional reports after, and revision of reports that had not been accepted by, the time the database was used to prepare the annual report and Public Use Database for 1998. See note to Table 3.

Most projects involve actions within the United States; however, some are conducted in foreign countries, designed to test various concepts of joint implementation with other nations (Table 3 and Figure 2). Fifty-three of the 87 foreign projects represent shares in two forestry programs in Belize and Malaysia sponsored by the U.S. electric utility industry through the Edison Electric Institute's UtiliTree Carbon Company.

The principal objective of the majority of projects reported for 1999 was to reduce carbon dioxide emissions (Table 2). Most of these projects reduced carbon dioxide either by reducing fossil fuel consumption or by switching to lower emitting sources of energy. Many also achieved small reductions in emissions of other gases. A total of 905 projects reduced primarily carbon dioxide emissions either through electricity supply initiatives or energy end use measures affecting stationary or mobile combustion sources. Other projects that also primarily reduced carbon dioxide emissions included the 103 "other emission reduction" projects, most of which involved either the reuse of fly ash as a cement substitute in concrete or the recycling of waste materials. Projects that primarily affected carbon

Table 2. Distribution of Projects by Reduction Objective and Project Type, Data Year 1999

Reduction Objective and Project Type	Number of Projects	Number of Reporters
Reducing Carbon Dioxide Emissions	**905**	**129**
Electricity Generation, Transmission, and Distribution	435	92
Cogeneration and Waste Heat Recovery	18	11
Energy End Use	379	98
Transportation and Offroad Vehicles	73	43
Reducing Methane and Nitrous Oxide Emissions	**228**	**67**
Waste Treatment and Disposal (Methane)	193	47
Agriculture (Methane and Nitrous Oxide)	4	3
Oil and Natural Gas Systems and Coal Mining (Methane)	31	21
Carbon Sequestration	**443**	**71**
Halogenated Substances	**36**	**27**
Other Emission Reductions	**103**	**58**
Entity-Level Reporting Only (No Projects)	**0**	**16**
Commitment Reporting Only (No Projects)	**0**	**1**
Total	**1,715**	**201**

Note: The total number of reporters for a specific reduction objective is smaller than the sum of the number of reporters for each project type within a specific reduction objective, because most reporters provided information on more than one project type.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Table 3. Geographic Scope of Reports Received and Location of Emission Reduction Projects, Data Years 1994-1999

	Reports Received				Projects Reported		
Year	U.S. Only	Foreign Only	Both U.S. and Foreign	Total	U.S.	Foreign	Total
1994	102	2	4	**108**	636	9	**645**
1995	124	2	16	**142**	931	36	**967**
1996	125	1	24	**150**	1,007	33	**1,040**
1997	130	1	31	**162**	1,216	72	**1,288**
1998	166(R)	1	40(R)	**207(R)**	1,472(R)	85(R)	**1,557(R)**
1999	160	4	37	**201**	1,628	87	**1,715**

(R) = revised
Note: The number of reports received and number of projects reported for 1998 were revised to reflect the receipt of 20 reports after the finalization of the Public Use Database for last year's annual report. For 1998, additional reports were received from ADVANE Heli-Welders, American Soils, Audros Corporation, BAYER Corporation, City Utilities of Springfield, County Sanitation Districts of Los Angeles County, DuPont Company, LAHD Energy, Inc., McNeil Generating Station, Municipal Electric Authority of Georgia, New York Power Authority, Sweeny Furniture, Tucson Electric Power Company, and separately from seven units of the Essroc Cement Corporation. The number of projects reported for 1998 has also been revised to reflect the additional projects reported, as well as revisions to reports that were not finalized in the 1998 Public Use Database.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

dioxide emissions accounted for reported reductions of 155 million metric tons carbon dioxide equivalent, representing 68 percent of the total reductions reported for 1999 on a carbon dioxide equivalent basis (Table 4).

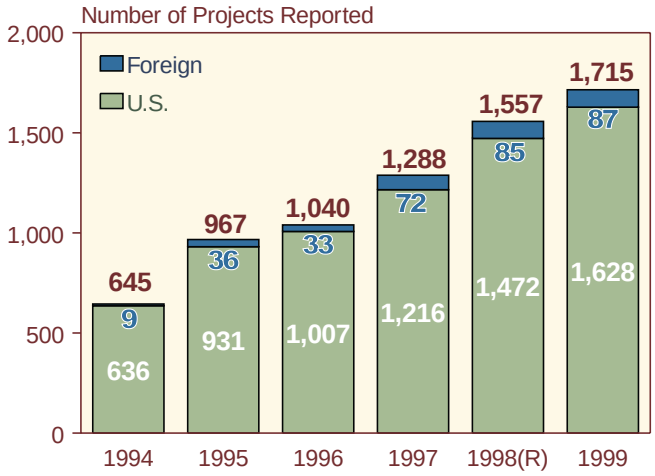
Two hundred twenty-eight (13 percent) of the reported projects reduced methane and nitrous oxide emissions from waste management systems, animal husbandry operations, oil and gas systems, or coal mines. The reported reductions from these projects totaled 57 million metric tons carbon dioxide equivalent, representing 25 percent of the total reductions reported for 1999.

Almost all of the 443 carbon sequestration projects reported increased the amount of carbon stored in sinks through various forestry measures, including afforestation, reforestation, urban forestry, forest preservation and modified management techniques. These activities accounted for 26 percent of the projects reported for 1999; however, the total reported increase in carbon sequestration, at 10 million metric tons carbon dioxide equivalent, represented only 4 percent of the total reductions reported.

Thirty-six projects reduced emissions of halogenated substances, including hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Reductions of these gases reported for 1999 exceeded 4 million metric tons carbon dioxide equivalent, representing 2 percent of the total reductions reported.

Reported emission reductions for 1999 increased by 3 percent over the reductions reported for 1998, to 226 million metric tons carbon dioxide equivalent (Table 5), and have tripled since the first year of the program (data year 1994). By gas, the largest increase in reductions reported for 1999 was a 55-percent increase in reductions of nitrous oxide emissions over the reductions reported for 1998, in large part because PECO Energy reported nitrous oxide reductions for the first time from 13 projects in 1999, totaling 160,946 metric tons carbon dioxide

Figure 2. Location of Emission Reduction and Sequestration Projects, Data Years 1994-1999



(R) = revised.

Note: 1998 data year includes 20 late reports that were not included in the totals presented in last year's annual report and database.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Table 4. Summary of Project-Level Emission Reductions and Carbon Sequestration by Reduction Objective, Data Year 1999
(Metric Tons Carbon Dioxide Equivalent)

Gas	Reductions by Project Objective				Total Reductions
	Reduce Carbon Dioxide Emissions	Reduce Methane and Nitrous Oxide Emissions	Increase Carbon Sequestration	Reduce Emissions of Halogenated Substances	
Carbon Dioxide	154,124,991	8,392,219	9,698,053	—	**172,215,263**
Methane	206,230	48,614,437	—	—	**48,820,667**
Nitrous Oxide	246,933	101,442	—	—	**348,375**
HFCs	—	—	—	-1,738[a]	**-1,738**
PFCs	6,306	—	—	3,691,507	**3,697,813**
SF_6	5,149	—	—	641,058	**646,208**
Total	**154,589,609**	**57,108,098**	**9,698,053**	**4,330,827**	**225,726,587**

[a]The negative reductions for HFCs represent increases in emissions due to the use of these gases as substitutes for ozone-depleting CFCs and HCFCs that are being phased out under the Montreal Protocol.

Notes: Totals include all emissions reductions reported. No attempt has been made to correct for double counting, where more than one entity has (or may have) reported on the same emission reduction project. The "Reduce Carbon Dioxide Emissions" category includes all other emission reduction projects reported in Section 10 of Schedule II that may also reduce significant quantities of other gases. CFCs, HCFCs, and methyl chloroform are not included in the totals because of the uncertainty associated with estimates of net global warming potential for these gases. Their direct warming effects (radiative forcing) are offset by indirect cooling effects (destruction of stratospheric ozone, another greenhouse gas).

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Table 5. Summary of Project-Level Emission Reductions and Carbon Sequestration, Data Years 1994-1999
(Metric Tons Carbon Dioxide Equivalent)

Year	Carbon Dioxide	Methane	Nitrous Oxide	HFCs	PFCs	Sulfur Hexafluoride	Total
1994 . . .	66,217,993	3,197,079	584,811	-29	3,448,668	89,979	**73,538,501**
1995 . . .	118,634,468	23,861,796	200,752	-43	3,192,463	208,893	**146,098,329**
1996 . . .	116,922,400(R)	34,015,736	201,580	17,732	3,604,265	-75,344	**154,686,370(R)**
1997 . . .	124,656,820(R)	20,233,935	197,869	-42	3,673,641	556,388	**149,318,610(R)**
1998 . . .	168,997,860(R)	45,462,456(R)	225,334	-1,738	3,777,097	672,717(R)	**219,133,726(R)**
1999 . . .	172,215,263	48,820,667	348,375	-1,738	3,697,813	646,208	**225,726,587**

(R) = revised.

Notes: Totals include all emission reductions reported. No attempt has been made to correct for double counting, where more than one entity has (or may have) reported on the same emission reduction project. Reductions of CFCs, HCFCs, and methyl chloroform are not included in the totals because of the uncertainty associated with estimates of their net global warming potential. Their direct warming effects (positive radiative forcing) are offset by indirect cooling effects (destruction of stratospheric ozone, another greenhouse gas). Totals may not equal sum of components due to independent rounding.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

equivalent. PECO reported projects that reduced the demand for power from its plants or from the PJM grid, resulting in reduced fossil fuel combustion at power plants in the region. In addition to reducing carbon dioxide emissions, the decreased fossil fuel consumption at these plants also reduced emissions of small but, on a GWP-adjusted basis, significant quantities of nitrous oxide.

Entity Level

Most of the 82 reporters providing entity-level information included data on emissions as well as emission reductions or sequestration. Four reporters provided entity-level data on emissions only, and another four reporters provided entity-level data on emission reductions or sequestration only.

Total entity-level emissions of carbon dioxide reported for 1999 were 1,425 million metric tons, which represents a 2-percent increase over the emissions reported for 1998. Reported emissions of other gases, including methane, nitrous oxide, HFCs, PFCs, and SF_6, totaled 30.7 million metric tons carbon dioxide equivalent for 1999. Total entity-level emissions of these gases reported for 1999 were 65 percent lower than those reported for 1998.

Emission reductions and sequestration reported at the entity level for 1999 totaled 181.6 million metric tons carbon dioxide equivalent, an increase of 1.5 percent over the 178.9 million metric tons reported for 1998. Ninety-one percent of the reductions reported for 1999 were for carbon dioxide, 8 percent were for methane, and the remaining 1 percent included nitrous oxide, HFCs, PFCs, and SF_6.

Commitments

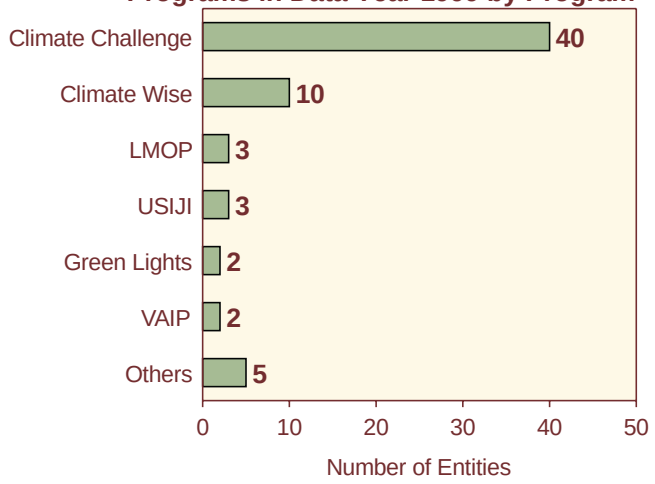
Fifty-seven entities reported formal commitments to reduce future emissions, to take action to reduce emissions in the future, or to provide financial support for activities related to greenhouse gas reductions.[6] Most (70 percent) of these entities are electric utilities participating in the Climate Challenge Program (Figure 3). Seventeen non-Climate Challenge reporters also reported commitments. Other voluntary programs represented among the commitments reported for 1999 included Climate Wise, the Voluntary Aluminum Industrial Program, the U.S. Initiative on Joint Implementation, Green Lights, the Landfill Methane Outreach Program, the Coalbed Methane Outreach Program, Cool Communities, Motor Challenge, the Sulfur Hexafluoride Emissions Reduction Partnership for Electric Power Systems, and WasteWi$e.

There are three forms of future commitment in the Voluntary Reporting Program: entity commitments, financial commitments, and project commitments. Entity and project commitments roughly parallel the entity and project aspects of emissions reporting: an entity commitment is a commitment to reduce the emissions of an entire organization; a project commitment is a commitment to take a particular action that will have the effect of reducing the reporter's emissions through a specific project. A financial commitment is a pledge to spend a particular sum of money on activities related to emission reductions, without a specific promise as to the emissions consequences of the expenditure.

Twenty-eight firms made 42 specific promises to reduce, avoid, or sequester future emissions at the entity level. Some of these entity-level commitments were to reduce

[6]Fifty-seven companies reported formal commitments in one or more of the entity-level, project-level, or financial categories accommodated by Form EIA-1605. Eight companies provided descriptions of future activities only in the Additional Information section of Schedule IV.

Figure 3. Number of Entities Reporting Commitments Associated with Voluntary Programs in Data Year 1999 by Program



Notes: LMOP = Landfill Methane Outreach Program, USIJI = United States Initiative on Joint Implementation, VAIP = Voluntary Aluminum Industry Partnership. Others include Coalbed Methane Outreach Program, Cool Communities Program, Motor Challenge Program, Sulfur Hexafluoride Emissions Reduction Partnership for Electric Power Systems, and WasteWi$e Program. The sum of entities reporting commitments associated with each program exceeds the total number of entities reporting commitments because several entities reported commitments associated with more than one program.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

emissions below a specific baseline, others to limit the growth of emissions per unit of output, and others to limit emissions by a specific amount relative to a baseline emissions growth trend. In their reports for 1999, companies committed to reducing future entity-level emissions by a total of 92.2 million metric tons carbon dioxide equivalent. Currently, about 50 percent of future emission reduction commitments are for the year 2000, with an additional 45 percent falling within the 2000 to 2005 time horizon.

Thirty-five companies reported on commitments to undertake 236 individual emission reductions projects. Some of the commitments were linked to future results from projects already underway and forming part of the reporters' submissions. Others were for projects not yet begun. Reporters indicated that the projects were expected to reduce future emissions by 161 million metric tons carbon dioxide equivalent, most of which (90 million metric tons) would be reductions of methane. This large increase in future project-level reductions of methane emissions is the result of a single commitment reported by Redstone Gas Partners, LLC, which expects that its gas recovery operations from yet-to-be-mined surface coal deposits in Montana and Wyoming will avoid methane emissions totaling about 80 million metric tons carbon dioxide equivalent over the next 10 years. Last year, the reported commitments to reduce future emissions totaled 92 million metric tons carbon dioxide equivalent, 90 percent of which was for carbon dioxide.

Twenty-seven firms made financial commitments. The total amount of funds promised was $42.5 million, of which $10.6 million was reported to have been expended in 1999.

Status of Policy Initiatives

The experience of the past year highlights the uncertainty surrounding climate change policy initiatives. The 106th Congress did not pass any of the legislation introduced after the Administration announced a proposal to reward organizations taking early, voluntary action to reduce greenhouse emissions (see box on page 9). In addition, international negotiations on a final agreement for implementing the Kyoto Protocol to the United Nations Framework Convention on Climate Change—the sixth Conference of the Parties (COP-6), held in The Hague, Netherlands—were suspended in November 2000 without agreement on a number of issues, including the appropriate amount of credit for carbon sinks, such as forests and farmlands, and the use of flexible mechanisms, such as international emissions trading and the Clean Development Mechanism (CDM), to reduce the cost of meeting the global emissions targets.[7] COP-6 is scheduled to resume in May 2001 in Bonn, Germany.[8]

Several U.S. States have undertaken legislative initiatives under the EPA's State and Local Outreach Program. Twenty-five States and Puerto Rico have developed or are developing State action plans to identify feasible and effective policies for reducing greenhouse gas emissions at the State level.[9] At least three States have taken the step of establishing emission reduction registries. The New Hampshire and California registries are explicitly intended to ensure that organizations voluntarily reducing their emissions receive appropriate consideration for emission reductions made before the implementation of any mandatory program.[10,11]

[7]"U.N. Conference Fails to Reach Accord on Global Warming," *New York Times* (November 26, 2000).
[8]"Odd Culprits in Collapse of Climate Talks," *New York Times* (November 28, 2000).
[9]U.S. Environmental Protection Agency, "Action Plans," http://yosemite.epa.gov/globalwarming/ghg.nsf/actions/StateActionPlans?Open.
[10]State of New Hampshire, Senate Bill 159, Chapter 220:1(II), http://www.state.nh.us/gencourt/bills/99bills/sb0159.html.
[11]State of California, Senate Bill 1771, Chapter 6, Article 1, Section 42801(b).

Legislation Relevant to Voluntary Reporting Introduced in the 106th Congress

Several bills dealing with credit for early action, voluntary reporting, or related topics were introduced in the 106th Congress (see web site http://thomas.loc.gov/ for details). In March 1999, Senators Chafee (R-RI), Lieberman (D-CT), and Mack (R-FL) reintroduced the Credit for Voluntary Reductions Act (S. 547) with several additional cosponsors. This bill would authorize the President to enter into agreements to provide regulatory credit, usable in a possible future domestic regulatory program limiting greenhouse gas emissions, for voluntary actions taken before such a regulatory program comes into effect. Rep. Lazio (R-NY) and 12 other representatives introduced H.R. 2520, a modified version of the Chafee bill in the House of Representatives.

The initiatives to give credit for early or voluntary action were countered by proposed legislation that would continue to rely on purely voluntary initiatives to reduce emissions and sequester carbon. Senators Murkowski (R-AK), Hagel (R-NE), Byrd (D-WV), and seven others introduced the Energy and Climate Policy Act of 1999 (S. 882). This bill would amend the Energy Policy Act of 1992 to: develop a program of public recognition for those entities that have achieved certified greenhouse gas reductions; conduct a review of potential changes to the guidelines for the Voluntary Reporting Program addressing verification, reference cases, double reporting, and participation of farmers and small businesses; and revise the guidelines for the Program to incorporate changes found by this review to be beneficial and cost-effective in improving the accuracy and reliability of the reported greenhouse gas reductions and related information. Rep. Barton (R-TX) introduced a version of the Murkowski bill in the House of Representatives as two separate bills (H.R. 3384 and H.R. 3385).

In July 1999, Sen. Wyden (D-OR) introduced the Forest Resources for the Environment and the Economy Act (S. 1457) to "amend the Energy Policy Act of 1992 to assess opportunities to increase carbon storage on national forests derived from the public domain and to facilitate voluntary and accurate reporting of forest projects that reduce atmospheric carbon dioxide concentrations, and for other purposes."

The Climate Change Energy Response Act (S. 1776), introduced by Sen. Craig (R-ID) in October 1999, was similar to the Murkowski bill (S. 882) in that it would direct the Secretary of Energy to revise the Voluntary Reporting Program guidelines, with specific requirements to address issues of verification, use of reference cases, and avoidance of duplicate reporting. The bill differed from S. 882 in that it would direct the Secretary to develop best practices for estimation of emission reductions and to review previously reported reductions to determine whether they are in conformance with these practices. The bill also includes provisions for a public awareness campaign to encourage participation of all appropriate persons (especially farmers and small businesses).

In July 2000, Rep. Lazio introduced the Clean Power Act (H.R. 4861), which proposed the creation of a carbon dioxide allowance trading program for electric utilities similar to one already established for sulfur dioxide.

In July 1999, the New Hampshire legislature passed a bill establishing a registry for greenhouse gas emission reductions and directing the Commissioner of the Department of Environmental Services to adopt rules governing reporting procedures, methods for estimating and verifying greenhouse gas emission reductions, and determination of ownership of reductions in order to prevent double counting. For accounting purposes, the proposed rules issued in October 2000 require greenhouse gas voluntary emission reductions (VERs) to be computed "in accordance with the general guidelines for the voluntary reporting of GHGs under section 1605(b) of the Energy Policy Act of 1992 . . . ."[12] The draft rules also identify specific protocols for use in quantifying VERs, including Forms EIA-1605 and EIA-1605EZ; however, reporters are permitted to use alternative protocols with the approval of the Department of Environmental Services.

In May 2000, Wisconsin enacted Senate Bill 287, which directs the Department of Natural Resources to "establish and operate a system under which the department registers reductions in emissions of greenhouse gases if the reductions are made before the reductions are required by law."[13] The bill authorizes the Department of Natural Resources to establish systems for registering reductions in greenhouse gases, fine particulate matter, mercury, and other air contaminants. The Department of Natural Resources is currently developing rules for the system.

In June 2000, New Jersey expanded its Open Market Trading Program to include emissions of greenhouse

[12]State of New Hampshire, Chapter Env-3800, Voluntary Greenhouse Gas Emissions Reductions Registry.
[13]Section 285.78 Wisconsin Statutes.

gases.[14] Through an EPA grant, the New Jersey Department of Environmental Protection (NJDEP) is also developing protocols to provide reliable methods for calculating and verifying greenhouse gas reductions.[15] The development of these protocols is intended to help support the development of greenhouse gas reduction credits and a trading program for the credits, which in turn will support NJDEP's goal of reducing the State's greenhouse emissions by 3.5 percent below 1990 levels by 2005.[16]

In September 2000, California enacted Senate Bill 1771 to establish the California Climate Action Registry.[17] Unlike New Hampshire and Wisconsin, where the legislatures delegated the authority for fleshing out the details of their respective programs to State agencies, the California law includes many specific requirements. In particular, the legislature requires that organizations report on an entity-wide basis and that emission baselines and annual emissions be expressed using various metrics depending on the organization type reporting—for example, carbon dioxide per dollar of revenue for private corporations, carbon dioxide per kilowatt hour for electricity generators, and carbon dioxide per dollar of budgetary expenditure plus amortized capital expenditures for nonprofit corporations and government agencies. The law also contains provisions for adjusting baselines to reflect any changes in the entity or its activities, including mergers, acquisitions, divestitures, and outsourcing. Verification of reported reductions by a third-party organization approved by the registry is also to be required.

Accounting Issues for Voluntary Reporting and Beyond

The Voluntary Reporting of Greenhouse Gases Program was designed primarily to serve as a mechanism by which entities could report voluntary actions intended to reduce greenhouse gas emissions and sequester carbon.[18] EIA has the responsibility, among other things, for establishing and maintaining a database of reported greenhouse reductions that also serves as a national registry of reported reductions. While the information in the database may be used by the reporting entity to demonstrate achieved reductions of greenhouse gases, the program was not designed to support credit for early reductions or emissions trading programs. The program guidelines did not attempt to resolve the issues that arise in constructing the required reporting rules that would create a set of comparable, verifiable, auditable emission and reduction reports. Such rules would also be required for the flexible mechanisms, such as the Clean Development Mechanism, Activities Implemented Jointly, and Joint Implementation, included in the United Nations Framework Convention on Climate Change and its Kyoto Protocol.

The Voluntary Reporting of Greenhouse Gases Program allows reporters considerable flexibility in the scope and content of their reports. As a result, companies can report their emissions and reductions in several different ways, and potentially more than one reporter can claim the same reduction. Some commentators on the program have characterized this aspect as a defect: a problem needing a solution. A more restrictive program, however, could limit the number of entities reporting, as well as the types of activities reported. Therefore, because it tends to increase participation in voluntary reporting, flexibility can be viewed as a useful attribute of the program for the following reasons:

- The educational and public recognition aspects of the program are enhanced by maximizing the participation and do not necessarily require a complete and fully-defined system of property rights to a reported emission reduction.
- The Voluntary Reporting Program can be viewed as a survey of emission accounting methods and theories actually in use, and a set of illustrations of the potential accounting and baseline problems that must be confronted in designing future policy instruments. A more structured approach might have been less useful for identifying and analyzing these emissions accounting issues.
- The Voluntary Reporting database illustrates the range and diversity of concrete actions that firms can undertake to limit greenhouse gas emissions, including many not imagined by the designers of the program. A more structured approach might have excluded some of the more original and innovative projects reported to the program.

[14] Center for Clean Air Policy, "Highlights of State Initiatives on Global Climate Change" (November 2000), http://www.ccap.org.

[15] New Jersey Department of Environmental Protection, Sustainability Greenhouse Action Plan, Addendum (January 2000), http://www.state.nj.us/dep/dsr/gcc/gcc-download.htm.

[16] "Sustainability Initiatives Underway in New Jersey; Corporate & Environmental Leaders Support State's Plan," New Jersey Department of Environmental Protection News Release (April 17, 2000), http://www.state.nj.us/dep/newsrel/releases/00_0030.htm.

[17] California Health and Safety Code, Section 1, Chapter 6, Sections 42800 through 42870.

[18] This discussion of accounting issues is based on testimony given by Jay Hakes, former EIA Administrator, on March 30, 2000, before the Senate Committee on Energy and Natural Resources on Senate Bills S. 882 and S. 1776 and their potential impacts on EIA's Programs. The full text of the testimony is available on EIA's web site at http://www.eia.doe.gov/neic/speeches/hrtest3-30-00/testimony3.htm.

These features make the Voluntary Reporting Program useful in evaluating the design and consequences of any proposed credit for early action program as well as the Kyoto Protocol's flexible mechanisms. By creating a database of real-world emission reduction actions and actors, the data reported to the Voluntary Reporting Program can be used to gain insight into the incentive effects and beneficiaries of various credit for early action and related proposals. The Voluntary Reporting of Greenhouse Gases database has provided a mechanism for identifying some of the issues that would have to be resolved in developing an accounting system for quantifying emissions, emission reductions, and sequestration. Such an accounting system will have to answer the following questions:

- Who can report?
- What is a reduction?
- Who owns the reduction?
- Would the reduction have happened anyway?
- How does one verify reports?

Who Can Report?

Section 1605(b) of the Energy Policy Act of 1992 mentioned only "entities" and "persons" as prospective reporters. Several overlapping concepts of "who can report" surfaced at the public hearings for the guidelines for the Voluntary Reporting Program, all of which were accommodated. These included:

- **A legal person: i.e., an individual, household, corporation, or trade association.** In this approach, emissions and reductions are calculated and reported at the corporate level.
- **A facility or group of facilities.** Emissions and reductions are calculated as those of a particular facility, defined as a single plant in a specified location, or perhaps even a single stack within a plant. A corporation or legal person acquires responsibility for emissions and reductions through ownership of one or more specified facilities.
- **A "project" or activity.** Reductions are defined by comparing the emissions from some set of sources deemed relevant with an estimate of what emissions would have been if a particular action or bundle of actions had not been undertaken.

What is a Reduction?

Perhaps the most intuitive definition of a reduction is one measured against an historical baseline, which represents the use of a "basic reference case." In this approach, the reduction is defined as the difference between the emissions of an entity or facility in a prior, baseline year, usually 1990, and in the current year. This approach is best suited to reporters whose activities have not appreciably changed since the baseline year. It presents particular problems for firms that have participated in mergers, acquisitions, or divestitures, or have made significant changes in the composition of their business. Startup companies or new facilities that have no history cannot use historical baselines. The historical baseline approach is also not well suited to measuring the reductions achieved by projects, because projects are often entirely new activities with no history.

Alternatively, many reporters define their reductions by comparison with what would have happened in the absence of a specified set of actions. Thus, corporate emissions may have risen, but they are less than they would have been in the absence of corporate action. This approach is called, in the Voluntary Reporting Program, a "modified reference case" or a "hypothetical baseline." It is important to point out, however, that a hypothetical baseline is a best guess of what the future would have been in the absence of a project, and there is no way *per se* to prove or disprove it. Most of the projects reported to the Voluntary Reporting Program use a hypothetical baseline to calculate emission reductions or sequestration.

The "unit of production" approach is a variant of the fixed historical baseline, where the reporter normalizes baseline emissions to reflect changes in production. If emissions per unit of output have declined, by comparison either with levels in a prior year or with what they would have been in the absence of some actions, then the reporter has a reduction. This approach works reasonably well for organizations that have a well-defined product that is homogeneous across companies and over time: for example, kilowatthours generated or sold, tons of steel, or barrels of crude oil. As products increase in complexity, this approach gradually breaks down. Tons of semiconductors, for example, is a meaningless measure of output.

The alternative measures of reductions have their advantages and disadvantages. Basic reference cases are objective and relatively easily verifiable. On the other hand, absolute reductions are often the product of circumstance rather than action, while modified reference cases (which are more difficult to verify) explicitly measure the results of actions. Unit-of-production reference cases are useful only in a limited number of cases, and they can combine some of the disadvantages of both basic and modified reference cases.

Who Owns the Reduction?

Two theories of emissions ownership coexist in the Voluntary Reporting Program. The most intuitive, and commonplace, is called "direct emissions" and "direct reductions." If a reporter owns or uses (e.g., leases) the

emission source, that reporter owns the emission as well as any reductions from this source. The advantage of limiting ownership to direct emissions is that it generally prevents multiple ownership of the same emission or reduction. However, this approach excludes many important emission reduction methods, including all activities that tend to reduce electricity consumption, the activities of energy service companies, and the provision of energy-efficient or emission reducing capital goods.

The alternative theory of ownership is based on causation: if an organization causes an emission or reduction, it is responsible for that emission, even if it does not own the emission source. Emissions or reductions from sources not owned by the reporter are referred to as "indirect." The most important example of indirect emissions is those produced through the consumption of electricity. If entities reduce their consumption of electricity, they cause their electric utility to reduce its emissions. This approach permits reporting of any action that has an influence on national emissions. However, the concept of "causing an emission" is inherently more ambiguous than "owning the smoke stack," and in many cases more than one firm may credibly claim to have helped cause an emission reduction.

EIA requires that reporters explicitly identify all emissions and reductions as either direct or indirect so that potentially double-counted reductions can be identified.

Would the Reduction Have Happened Anyway?

This issue is often discussed in other contexts under the term "additionality." It has been suggested that many emission reduction projects do not represent "real" reductions because they would have been undertaken "anyway" in the normal course of business. However, creating an operational definition of additionality is difficult, because the "normal course of business" is a hypothetical concept. For the purposes of voluntary reporting—which include publicizing the types of actions that limit national greenhouse gas emissions and providing recognition for the companies that undertake those actions voluntarily—determining the additionality of projects is unnecessary. For the purposes of a credit for early reduction program, however, additionality is an issue that needs to be considered.

How Does One Verify Reports?

The Department of Energy decided not to require verification by an independent third party after considering this issue during the development of the guidelines for the Voluntary Reporting Program. However, reporters must certify the accuracy of their 1605(b) reports. Also, filing a false statement on a U.S. Government form is illegal. EIA reviews each report received for comprehensiveness, arithmetic accuracy, internal consistency, and plausibility and makes suggestions for improving the accuracy and clarity of reports; however, the reporter is ultimately responsible for the accuracy of any report submitted to the Voluntary Reporting Program.

In general, reports submitted to EIA are factually accurate. Meaningful verification of the accuracy of 1605(b) reporting would require putting in place common baselines and accounting standards that would limit the scope for the application of judgment in preparing and reviewing claims of emission reductions. For example, if the accounting treatment for indirect emissions from electricity purchases is undefined, then a particular set of facts about a reporter could result in two different estimates of emissions: one including electricity purchases and one excluding electricity purchases. A third-party verifier can verify the facts about the reporter but cannot determine whether or not indirect emissions from electricity purchases ought to be included and, consequently, cannot determine whether the total emissions reported are correct or not.

2. Reducing Emissions from Electric Power

Electricity Sector

The electric power industry emitted approximately 2,252 million metric tons of carbon dioxide in 1999, 40 percent of total U.S. carbon dioxide emissions. Electric utilities accounted for 1,953 million metric tons (87 percent), and nonutility power producers accounted for 299 million metric tons (13 percent).[19] Carbon dioxide emissions result from the combustion of fossil fuels—coal, oil, and natural gas—during electricity generation. For example, coal, which accounts for 81 percent of electric power industry carbon dioxide emissions, is the primary energy source for U.S. electricity generation and has the highest rate of carbon dioxide emissions per unit of energy used among fossil fuels. When it is burned, coal emits about 70 percent more carbon dioxide per unit of energy consumed than does natural gas.

Between 1990 and 1999, carbon dioxide emissions from the electric power industry increased by 384 million metric tons or 21 percent, a trend that reflects U.S. economic growth and corresponding increases in energy consumption. In 1999, despite a strong economy, carbon dioxide emissions from the electric power industry increased by only 1 percent, from 2,231 million metric tons in 1998 to 2,252 million metric tons in 1999. The slower growth in emissions can be attributed primarily to mild weather in the summer of 1999.

Reported Reductions

In 1999, 453 electric power projects were reported,[20] yielding total reported emission reductions of 123.6 million metric tons carbon dioxide equivalent and an average reported reduction of 272,779 metric tons carbon dioxide equivalent per project (Table 6). Carbon content

Table 6. Number of Electric Power Projects and Emission Reductions Reported by Project Type, Data Years 1998 and 1999

Project Type	Number of Projects Reported		Emission Reductions Reported (Metric Tons Carbon Dioxide Equivalent)			
			Total		Average	
	1998	1999	1998	1999	1998	1999
Carbon Content Reduction	**201**	**221**	**92,809,911**	**103,724,223**	**461,741**	**469,340**
Availability Improvements	29	35	47,212,841	57,999,643	1,628,029	1,657,133
Fuel Switching	49	50	3,819,783	4,502,984	77,955	90,060
Increases in Lower Emitting Capacity	85	94	47,862,185	48,022,866	563,085	510,882
Other Carbon Reduction	53	55	21,876,483	22,925,991	412,764	416,836
Increasing Energy Efficiency	**277**	**260**	**24,756,276**	**23,355,265**	**89,373**	**89,828**
Generation	***192***	***177***	***21,743,017***	***20,325,014***	***113,245***	***114,831***
Efficiency Improvements	172	159	18,476,484	15,097,020	107,421	94,950
Cogeneration and Waste Heat Recovery	20	18	3,266,533	5,227,995	163,327	290,444
Transmission and Distribution	***86***	***84***	***3,023,842***	***3,040,804***	***35,161***	***36,200***
High-Efficiency Transformers	42	39	1,553,891	1,407,820	36,997	36,098
Reconductoring	28	30	1,576,158	1,721,326	56,291	57,378
Distribution Voltage Upgrades	28	30	1,748,252	1,928,928	62,438	64,298
Other Transmission and Distribution	23	21	724,660	919,748	31,507	43,798
Total Electric Power Projects	**448**	**453**	**116,034,180**	**123,568,697**	**259,005**	**272,779**

Note: More than one project type may be assigned to a single project; therefore, the sums of the projects and reductions in each project type category may exceed the total numbers of projects and reductions in the totals and subtotals.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

[19]Data on U.S. carbon dioxide emissions from electricity generation is taken from the EIA report, *Emissions of Greenhouse Gases in the United States 1999*, DOE/EIA-0573(99) (Washington, DC, October 2000).

[20]More than one project type may be assigned to a single project; therefore, the sums of the projects and reductions in many project type categories exceed the total numbers of projects and reductions reported.

reduction projects were the most numerous in 1999 (221 projects) and produced the most emission reductions (103.7 million metric tons carbon dioxide equivalent). The largest average emission reductions per project were also attributed to carbon content reduction projects, with the project type "availability improvements" averaging 1.7 million metric tons carbon dioxide equivalent per project. The smallest total of emission reductions reported for a project type was for "other transmission and distribution," at 919,748 metric tons carbon dioxide equivalent. The smallest average emission reductions per project were attributed to "high efficiency transformers," at 36,098 metric tons carbon dioxide equivalent per project.

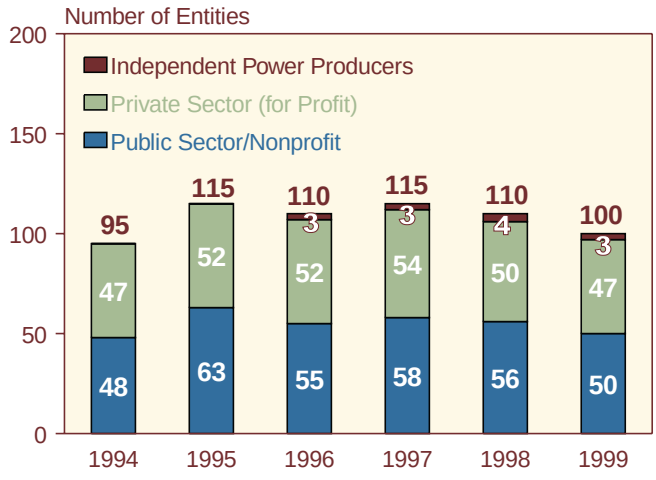
Overview of Projects Reported

For the 1999 reporting year, a total of 100 electric power providers reported to the Voluntary Reporting Program (Figure 4). This is a decrease from the peak of 115 electric power providers reporting in 1995 and 1997 but an increase from the 95 reporters for the first reporting year, 1994. Since 1997, merger activity in the electric power industry as a result of deregulation has reduced the pool of electric utilities reporting to the Voluntary Reporting Program.

Electric power providers make up 52 percent of the total 184 project-level reporters for data year 1999. In the electricity sector, half (50) of the electric power industry reporters were public sector or nonprofit organizations, including electric cooperatives, municipal utilities, and other public-sector entities such as the Tennessee Valley Authority (TVA). Forty-seven entities were private-sector organizations, mostly investor-owned utilities (IOUs). Three were independent power producers (IPPs).

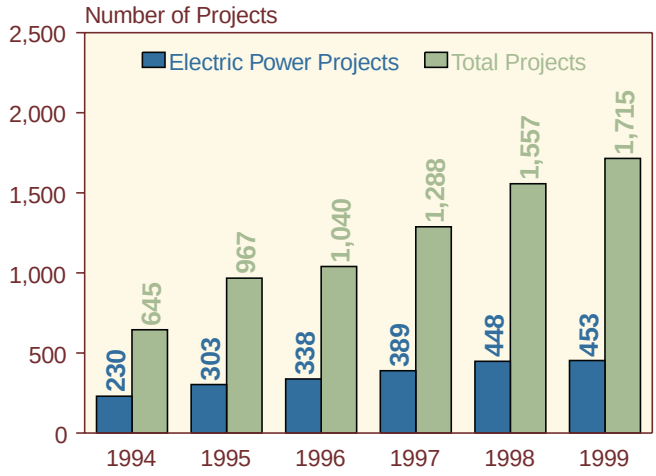
A total of 453 electric power projects were reported for 1999 (Figure 5), a 1-percent increase from the 1998 reporting year total of 448 and a 97-percent increase from the 230 projects reported for 1994. Electric power projects are the most numerous in the Voluntary Reporting Program, accounting for 26 percent of all projects reported for 1999. Electric power projects are reported in a variety of project types. Section 1 projects, those entailing electricity generation, transmission, and distribution, dominate electric power projects with 435 projects, or 96 percent of total electric power projects. Section 1 projects include such activities as fuel switching, heat rate improvements, and reductions in line losses associated with electricity transmission and distribution. Section 2 projects, involving cogeneration and waste heat recovery, accounted for 18 projects or 4 percent of total electric power projects in 1999. In cogeneration and waste heat recovery projects, reporters

Figure 4. Number of Electric Power Reporters by Entity Type, Data Years 1994-1999



Source: Energy Information Administration, Forms EIA-1605 EIA-1605EZ.

Figure 5. Electric Power Projects and Total Projects Reported, Data Years 1994-1999



Source: Energy Information Administration, Forms EIA-1605 EIA-1605EZ.

describe the electricity metering configuration and the end use of thermal energy.

Combined, Section 1 and 2 electric power projects reported reductions equal to 123.6 million metric tons carbon dioxide equivalent, or 55 percent of all project-level greenhouse gas reductions reported under the Voluntary Reporting Program. The reductions reported for electric power projects in 1999 were 6 percent higher than in 1998 and 140 percent higher than in 1994.

Many of the largest projects reported to the Voluntary Reporting Program are electric power projects. In 1999, 25 electric power projects reported reductions of 1 million metric tons carbon dioxide equivalent or more. Electric power projects represented 54 percent of all the projects for which emission reductions over 1 million

metric tons carbon dioxide equivalent were reported, and about two-thirds of those electric power projects were related to nuclear power.

Electric power projects usually reduce emissions in one of two ways. A project may displace higher emitting fossil fuels (e.g., coal) with lower emitting fuels (e.g., natural gas) or with non-emitting renewable (such as hydropower, geothermal, solar, and wind) or nuclear energy sources. Alternatively, a project may improve the efficiency of electricity generation, transmission, and distribution and, thereby, reduce the quantities of fossil fuel used and greenhouse gases emitted by power plants.

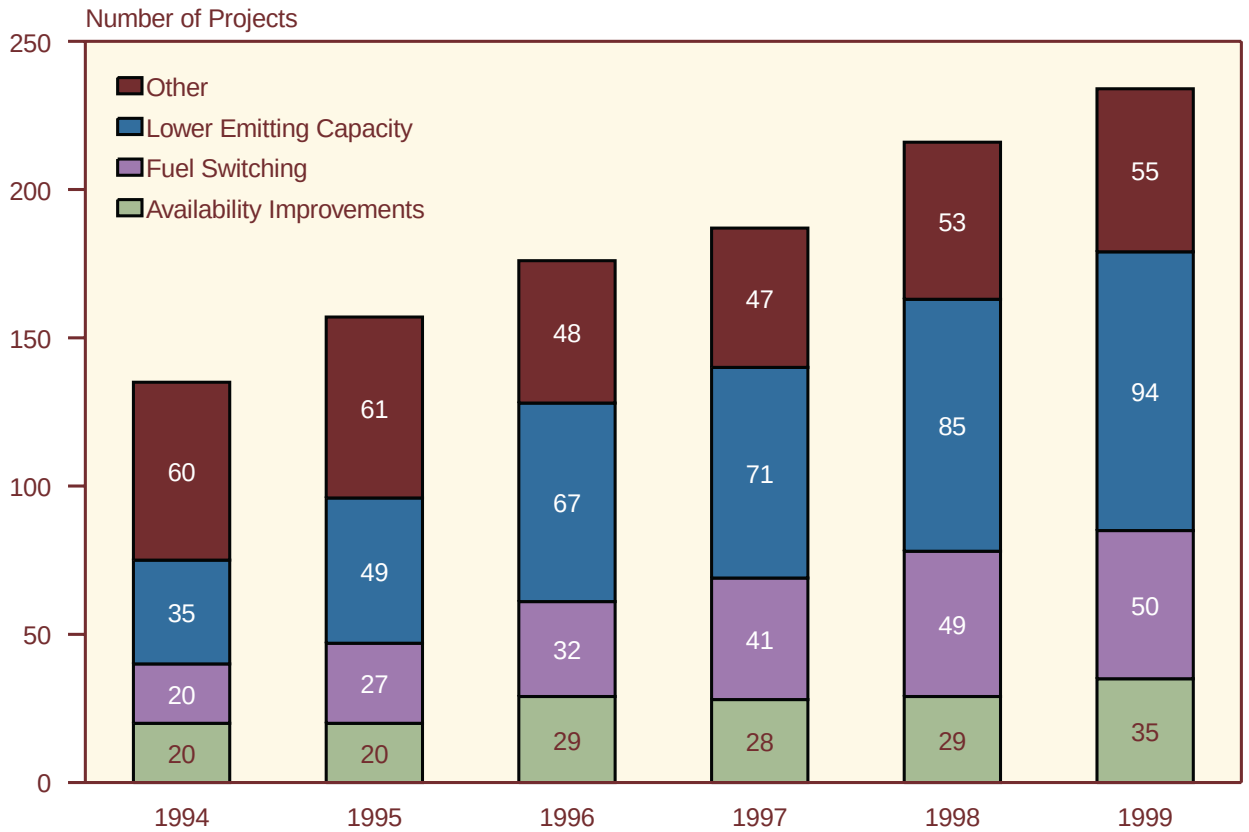
Reducing the Carbon Content of Energy Sources

Fuel-switching projects, power plant availability improvements, increases in low- or zero-emitting generation capacity, and other similar reported projects typically reduce the amount of carbon consumed to generate a unit of electricity. A total of 221 such projects were reported for 1999, including some of the largest projects reported to the Voluntary Reporting Program (Figure 6). The emission reductions reported for "carbon content reduction" electric power projects in 1999 totaled 103.7 million metric tons carbon dioxide equivalent and averaged 469,340 metric tons per project. Some carbon content reduction projects are in fact "hybrids," combining efficiency improvements with measures such as availability improvements or increases in low-emitting capacity (see box on page 16).

Availability Improvements

By increasing generation from lower emitting power plants, availability improvement projects provide a commensurate reduction in the amount of generation supplied by higher emitting plants. The number of availability improvement projects reported for 1999 was 35—6 more than the 29 reported for 1998. Availability improvement projects accounted for reported emission reductions totaling 58 million metric tons carbon dioxide equivalent in 1999. As for previous reporting years, availability improvement projects, especially those undertaken at nuclear facilities, produced some of the largest reductions in carbon dioxide emissions reported for 1999, averaging 1.7 million metric tons carbon

Figure 6. Electric Power Projects Reducing the Carbon Content of Energy Sources by Project Type, Data Years 1994-1999



Note: The sum of projects in many project categories exceeds the total number of projects reported, because more than one project type may be assigned to a single project.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Electricity Supply Carbon Reduction Projects: Definitions and Terminology

The combustion of fossil fuels to produce heat for electricity generation causes greenhouse gas emissions. In addition to substantial releases of carbon dioxide, fossil fuel combustion also emits small quantities of methane and nitrous oxide. Carbon content reduction projects typically reduce greenhouse gas emissions by replacing higher emitting fuels (such as coal) with lower emitting fuels (such as natural gas) or non-emitting energy sources (such as nuclear power or renewables). Projects that reduce the carbon content of electricity supply include the following.

Availability Improvements. By reducing the frequency and length of planned and unplanned power plant outages, availability improvement projects can result in increased use of the affected plant. This is particularly true if the plant is a *baseload* plant (i.e., a plant that is generally used on an around-the-clock basis except during plant outages), but it may hold true for other types of plants as well. If the resulting increase in generation from the affected plant displaces generation that otherwise would have been produced by a higher emitting plant, emission reductions will result. Power plant utilization is measured by the plant's *capacity factor*, defined as the ratio of the average load on the plant over a given period to its total capacity. For example, if a 200-megawatt plant operates (on average) at 75 percent of its rated capacity (i.e., at a load of 150 megawatts) over a period of a year, the plant's capacity factor is 75 percent.

Fuel Switching. The amount of carbon contained in fossil fuels and released in the form of carbon dioxide during combustion varies, depending on the type of fuel. Thus, carbon dioxide emissions from a power plant can be reduced by switching from a higher emitting fuel (such as coal) to a lower emitting fuel (such as natural gas).

Increases in Lower Emitting Capacity. By increasing the capacity of an existing lower emitting or non-emitting plant (e.g., a hydroelectric plant), or by constructing new generating capacity (e.g., wind turbines), a utility can reduce or avoid reliance on higher emitting plants. The result will be a reduction in greenhouse gas emissions from the displaced plants.

dioxide equivalent per project. Of the 35 availability improvement projects reported, almost half involved nuclear power plants. Mainly through significant advances in operating, maintenance, and refueling procedures, capacity factors at nuclear plants were increased, displacing some fossil-fuel-based power generation.

Because nuclear power plants are invariably large baseload facilities, even a fairly small improvement in plant availability can lead to a sizable reduction in fossil fuel consumption. For example, TXU Electric operates the two-unit nuclear Comanche Peak Steam Electric Station in Glen Rose, TX. Unit 1 entered commercial operation in August 1990 and Unit 2 in August 1993. Since 1991, TXU has made availability improvements to the two Comanche Peak units, chiefly by extending refueling schedules and shortening refueling outages. The Comanche Peak nuclear units were added to TXU's generation mix to meet increasing demand. Had the units not been completed, an equal amount of electricity generation would have been required from coal-fired generating units. In 1999, TXU reported emission reductions of 17.6 million metric tons of carbon dioxide resulting from decreased use of higher emitting lignite fuel as a result of the 18,090 gigawatthours of nuclear electricity generation at the Comanche Peak station.

In another example of an availability improvement project reported for data year 1999, Lower Colorado River Authority reported on availability improvements in a hydroelectric dam modernization project. The project involved the complete rehabilitation of 13 hydroelectric generation units located at the six dams operated by Lower Colorado River Authority. Rehabilitation included installing new turbines, rewinding generators, and replacing the governor system. Eight units had been completed at the time of the report, with a 16-percent increase in capacity. The estimated costs are $8 million to $10 million per year, or a total of $60 million to $80 million. For 1999, Lower Colorado River Authority reported that the resulting increase in hydroelectricity production reduced its coal consumption by 13,000 short tons and its natural gas consumption by almost 100 million standard cubic feet, with a corresponding total emission reduction of about 28,123 million metric tons of carbon dioxide.

Fuel Switching

Fifty fuel-switching projects were reported in 1999, 1 more than the 49 reported in 1998 and 30 more than the 20 reported in 1994. Sixteen of the projects involved switching to natural gas. Switching from coal or oil to natural gas lowers carbon dioxide emissions because of the lower carbon content of natural gas relative to other fossil fuels. For example, switching from bituminous coal to natural gas can reduce carbon dioxide emissions per unit of energy consumed by approximately 43 percent. Although other reported actions, such as switching from oil to gas, may not lead to reductions of the same magnitude, they also reduce greenhouse gas emissions. The fuel-switching projects reported for 1999 accounted for emission reductions totaling 4.5 million metric tons carbon dioxide equivalent, with an average of 90,060 metric tons per project.

An example of a fuel-switching project is the Roseton Generation Plant in Newburgh, NY, reported by Central Hudson Gas and Electric Corporation (now CH Energy Group, Inc.). Roseton Unit 2 was converted in December 1991 from solely an oil-fired unit to a unit capable of firing either oil or gas or co-firing both fuels, and Unit 1 was similarly converted in May 1992. For 1999, Central Hudson reported emission reductions of 185,066 metric tons of carbon dioxide as a result of its use of 7,188,200 million Btu of natural gas at the Roseton plant, displacing an equivalent amount of residual fuel oil use.

Another example of a fuel-switching project is the Biomass Initiative project reported by NiSource / NIPSCO. In September 1997, NIPSCO conducted tests of biomass fuel handling and co-firing of a mixture of urban waste wood and coal at its Michigan City Generating Station. The procedure consisted of varying fuel blends and load to analyze the impacts of co-firing on efficiency, stability, and emissions. In 1999, NIPSCO conducted additional biomass testing at its 160-megawatt Bailly Generating Station, using 3,597 metric tons of biomass to replace 2,081 metric tons of coal. The total emission reduction reported for the Biomass Initiative project in 1999 was 4,268 metric tons of carbon dioxide.

Increases in Lower Emitting Capacity

Projects involving the construction of new, lower emitting power plants or increases in the capacity of existing lower emitting plants were among the most numerous electricity supply projects reported. A total of 94 such projects were reported for 1999, up from 85 reported for 1998 and 35 for 1994. Most involved the installation of nuclear (22 projects), hydropower (21 projects), solar (15 projects), and wind capacity (19 projects) and other efficiency improvements—all with essentially no greenhouse gas emissions. Emission reductions totaling 48 million metric tons carbon dioxide equivalent were reported for increases in low-emitting capacity projects in 1999, with an average reduction of 510,882 metric tons carbon dioxide equivalent per project.

As an example, Northern States Power Company reported in 1999 an increase of 481,760 megawatthours in generation from wind power, reducing emissions by 489,628 metric tons carbon dioxide equivalent. Northern States Power installed three 65-kilowatt turbines in 1986 near Holland, MN, and in April 1993 awarded a bid to Kenetech, a wind developer based in California, for 25 megawatts of wind power. Kenetech installed 73 turbines, which went into full commercial operation in May 1994 near Lake Benton, MN, on the Buffalo Ridge, the highest documented wind resource in Minnesota. An additional 107 megawatts of capacity was on line as of July 1998. As a result of project construction in 1999, the units have a total of about 270 megawatts generating capacity.

For another example, Sacramento Municipal Utility District's (SMUD) reported on its PV Pioneer program, which is responsible for about one-third of SMUD's overall photovoltaic capacity. PV Pioneer installations generate electricity that is supplied to the SMUD grid, offsetting electric power purchases primarily from gas- and coal-fired generating plants. Since 1993, SMUD has been partnering with its customers who pay an extra monthly "green fee" to host SMUD-owned photovoltaic systems on top of their homes, each about 3 to 4 kilowatts. Further feeding solar electricity into SMUD's grid are commercial rooftop installations, ranging from 4 to 130 kilowatts, and "Solarports," which are parking lot generation systems that can also serve as electric vehicle charging stations. In addition to PV Pioneer, SMUD has installed six substation photovoltaic systems, adding about 1 megawatt in distribution support generation. In 1999, SMUD reported 28 commercial and 421 residential photovoltaic sites, which changed the consumption of 3,544 megawatthours of purchased electricity to photovoltaic energy, reducing emissions by 2,448 metric tons of carbon dioxide.

Other Carbon Reduction Projects

Fifty-five "other carbon reduction" projects were reported for 1999. This category of "other" projects includes projects that decrease high-emitting capacity, make dispatching changes only, or increase low- or zero-emitting capacity. In 1999, 18 projects used low- or zero-emitting power purchases to reduce emissions. This is a new category that was added to the Voluntary Reporting Program in 1998, to classify electric power producer / supplier purchases of power from low- or zero-emitting generation sources for resale, replacing generation or purchases of power from more carbon-intensive generation sources. The 18 low- or zero-emitting purchase projects represent an increase of 300 percent from the 6 projects reported for 1998. Another 10 projects reported for 1999 involved decreases in higher emitting capacity, and three involved changes in the dispatching of power plants. Changes in dispatch order can reduce carbon dioxide emissions if lower emitting plants are used more frequently. For 1999, reported emission reductions from "other carbon reduction" projects totaled 23 million metric tons carbon dioxide equivalent, averaging 416,836 metric tons carbon dioxide equivalent per project.

Baltimore Gas & Electric Company, for example, reported emission reductions of 86,073 metric tons of carbon dioxide from its zero / low-emitting project, "Baltimore RESCO Waste-to-Energy MWh Purchases." This project is a guaranteed purchase of surplus generation capacity from a waste-to-energy (municipal solid waste combustion) plant. The electricity purchases are assumed to displace other mixed fossil generation immediately available in the Baltimore region.

On April 29, 1999, PPL Corporation retired from service and shut down Holtwood SES, a 73-megawatt generating unit fired with anthracite coal, located in Holtwood, PA, on the east bank of the Susquehanna River. The plant had been in service since 1954. Emission reductions of 525,585 metric tons of carbon dioxide were reported as a result of the plant closing, offset by estimated emissions of 218,329 metric tons of carbon dioxide from replacement generation that likely would come from new, lower emitting natural-gas-fired units from the PJM power grid interconnection. Thus, the net emission reduction reported for the project in 1999 was 307,256 metric tons of carbon dioxide.

Increasing Energy Efficiency in Electricity Production and Distribution

Projects involving improvements in the efficiency of electricity generation, transmission, and distribution were more numerous than the other electric power projects reported for 1999 but produced smaller emission reductions on average. Efficiency improvement tends to be an ongoing effort by electric utilities, yielding a continuous stream of small, incremental improvements rather than one-time dramatic increases in efficiency. For example, heat rate improvement projects often are undertaken in response to normal plant deterioration. As power plants age, efficiency tends to erode gradually. Operators seek to maintain heat rates by replacing old, worn-out equipment. Similarly, new energy-efficient transformers are often installed gradually over a period of years, as old transformers fail.

A total of 260 "increasing energy efficiency" projects were reported for 1999, including some "hybrid" projects that combined efficiency improvements with measures such as availability improvements. The efficiency improvement projects fall into two main categories: (1) generation, involving efficiency improvements in the conversion of fossil fuels and other energy sources into electricity; and (2) transmission and distribution, involving improvements in the delivery of electricity from the power plant to the end user (see box on page 19).

Generation Projects

Efficiency Improvements. Improvements in generating efficiency were the most numerous type of efficiency project reported for 1999. A total of 159 such projects were undertaken in 1999, down by 8 percent from the number reported for 1998 but 87 percent higher than the 85 projects reported for 1994. Heat rate improvements at coal-fired power plants are a commonly reported means of increasing efficiency and reducing carbon dioxide emissions. There are numerous opportunities for improving efficiency at existing power plants, but the efficiency gains, and hence reductions in fuel consumption and emissions, are limited by technology and tend to be small. Emission reductions reported for generation efficiency improvement projects in 1999 totaled 15 million metric tons carbon dioxide equivalent, averaging 94,950 metric tons per project.

As an example, American Electric Power reported heat rate improvement activities (projects and operational changes) at its coal-fired power plants in 1999. The improvements reportedly saved 408,000 short tons of bituminous coal, 146,000 short tons of subbituminous coal, and 600,000 cubic feet of natural gas, reducing emissions by 1.2 million metric tons of carbon dioxide.

SeaWest Windpower reported a new project in 1999, Westwinds II, a repowering project that is part of a major renewable energy initiative in the area of the San Gorgonio Pass in California. The project involves the dismantling of old wind turbines from four facilities and replacing them with 62 new NEG Micon wind turbines, each with a capacity of 700 kilowatts, resulting in a total new project capacity of 43.4 megawatts. Expected output from the new facility is 150,602 megawatthours of electricity annually. The emission reductions reported for the project in 1999 were 28,723 metric tons of carbon dioxide, resulting from 52,770 megawatthours of wind-generated power.

Cogeneration and Waste Heat Recovery. A total of 18 cogeneration and waste heat recovery projects were reported in 1999, as compared with 7 projects reported for 1994. Emission reductions reported for cogeneration and waste heat recovery projects in 1999 averaged 290,444 metric tons carbon dioxide equivalent, more than any of the other types of efficiency improvement projects but less than the average for carbon content reduction projects. Industrial partners in the cogeneration projects reported for 1999 include a greenhouse, steel mills, and a heating plant in the Czech Republic. Reported end uses of the thermal energy include electricity generation, process heat applications, and space heating and cooling. The emission reductions reported for cogeneration and waste heat recovery projects in 1999 totaled 5.2 million metric tons carbon dioxide equivalent.

An example of a 1999 cogeneration and waste heat recovery project is a report by the Southern Company. During 1999, Alabama Power Company (part of Southern Company) began operating a new cogeneration facility in Washington County, AL, adjacent to an Olin chemical plant. The cogeneration facility, fired with natural gas and hydrogen, produces both electricity and process steam for the neighboring Olin plant. The facility displaces coal-fired generation with natural gas and introduced hydrogen, a byproduct at the plant, as a fuel. Steam provided from the facility eliminates the need for Olin to produce its own steam from less efficient

Efficiency Projects: Definitions and Terminology

Generation Projects

It is neither theoretically nor practically possible to convert all the thermal or other energy produced by a power plant into electrical energy. In fact, much of the energy is lost rather than converted. Typically, U.S. steam-electric generating plants operate at efficiencies of about 33 percent, meaning that two-thirds of the thermal energy produced is lost. Some more advanced power plants have higher efficiencies, but even new combined-cycle plants (in which the waste heat from a gas turbine is recovered to produce steam to drive a turbine) typically have efficiencies of only 50 to 60 percent. Generation projects seek to improve power plant efficiencies either by reducing the amount of energy lost during the conversion process or by recovering the lost energy for subsequent application.

Efficiency Improvements. By increasing the efficiency of the generation process, efficiency improvement projects at fossil-fuel-fired power plants reduce the plants' *heat rate*, defined as the amount of fossil energy (measured in Btu) needed to produce each kilowatthour of electricity. The result is a reduction in the amount of fuel that must be burned to meet generation requirements, and hence a reduction in carbon dioxide (and other greenhouse gas) emissions. Efficiency improvements at nonfossil (e.g., hydroelectric) power plants can also reduce greenhouse gas emissions. Emission reductions occur if the efficiency improvement leads to an increase in the amount of electricity generated by the affected plant, with a consequent reduction in the amount of electricity that must be generated by other (fossil fuel) plants to meet demand.

Cogeneration. Only a portion of the heat generated during the combustion of fossil fuels can be converted into electrical energy; the remainder is generally lost. Cogeneration involves the recovery of thermal energy for use in subsequent applications. Cogeneration facilities typically employ either topping or bottoming cycles. In a *topping cycle*, thermal energy is first used to produce electricity and then recovered for subsequent applications. Topping cycles are widely used in industry as well as utility power plants that sell electricity and steam to customers. In a *bottoming cycle*, the thermal energy is first used to provide process heat, from which waste heat is subsequently recovered to generate electricity. Bottoming cycle applications are less common, usually associated with high-temperature industrial processes. Because cogeneration involves the recovery and use of thermal energy that would otherwise be wasted, it reduces the amount of fossil fuel that must be burned to meet electrical and thermal energy requirements, hence reducing greenhouse gas emissions.

Transmission and Distribution Projects

The purpose of the electricity transmission and distribution system is to deliver electrical energy from the power plant to the end user. Resistance to the flow of electrical current in cables, transformers, and other components of the transmission and distribution system causes a portion of the energy (typically about 7 percent) to be lost in the form of heat. Improving the efficiency of the various system components can decrease such "line losses," reducing the amount of generation required to meet end-use demand and, thus, power plant fossil fuel consumption and greenhouse gas emissions.

High-Efficiency Transformers. Transformers, used to change the voltage between different segments of the transmission and distribution system, are a major source of system losses. Transformer losses occur as a result of impedance to the flow of current in the transformer windings and because of hysteresis and eddy currents in the steel core of the transformer. When existing transformers are replaced with high-efficiency transformers (including improved silicon steel transformers and amorphous core transformers), losses are reduced.

Reconductoring. Like transformers, conductors (including feeders and transmission lines) are a major source of transmission and distribution system losses. In general, the smaller the diameter of the conductor, the greater its resistance to the flow of electric current and the greater the consequent line losses. Reconductoring involves the replacement of existing conductors with larger diameter conductors.

Distribution Voltage Upgrades. Line losses are dependent, in part, on the voltage at which the various segments of the transmission and distribution system operate. Upgrading the voltage of any segment can reduce line losses.

coal-fired boilers. Also, a portion of the flue gas from the new cogeneration facility is extracted from the stacks and supplied to Olin for use in its carbonization system. Altogether, the reported emission reductions from the project in 1999 were more than 1 million metric tons of carbon dioxide.

Reliant Energy-HL&P owns and operates the San Jacinto Steam Electric Generating Station in La Porte Texas, which includes two combustion turbines with heat recovery steam generators and has a generating capacity of 162 megawatts. The San Jacinto Station improves the generating efficiency of the Reliant Energy-HL&P system and lowers the system carbon dioxide emission rate, resulting in lower overall emissions. San Jacinto also provides process steam to an adjacent DuPont facility, replacing three older and less efficient gas-fired boilers. For 1999, Reliant Energy-HL&P reported emission reductions of just under 1.2 million metric tons carbon dioxide equivalent for the project.

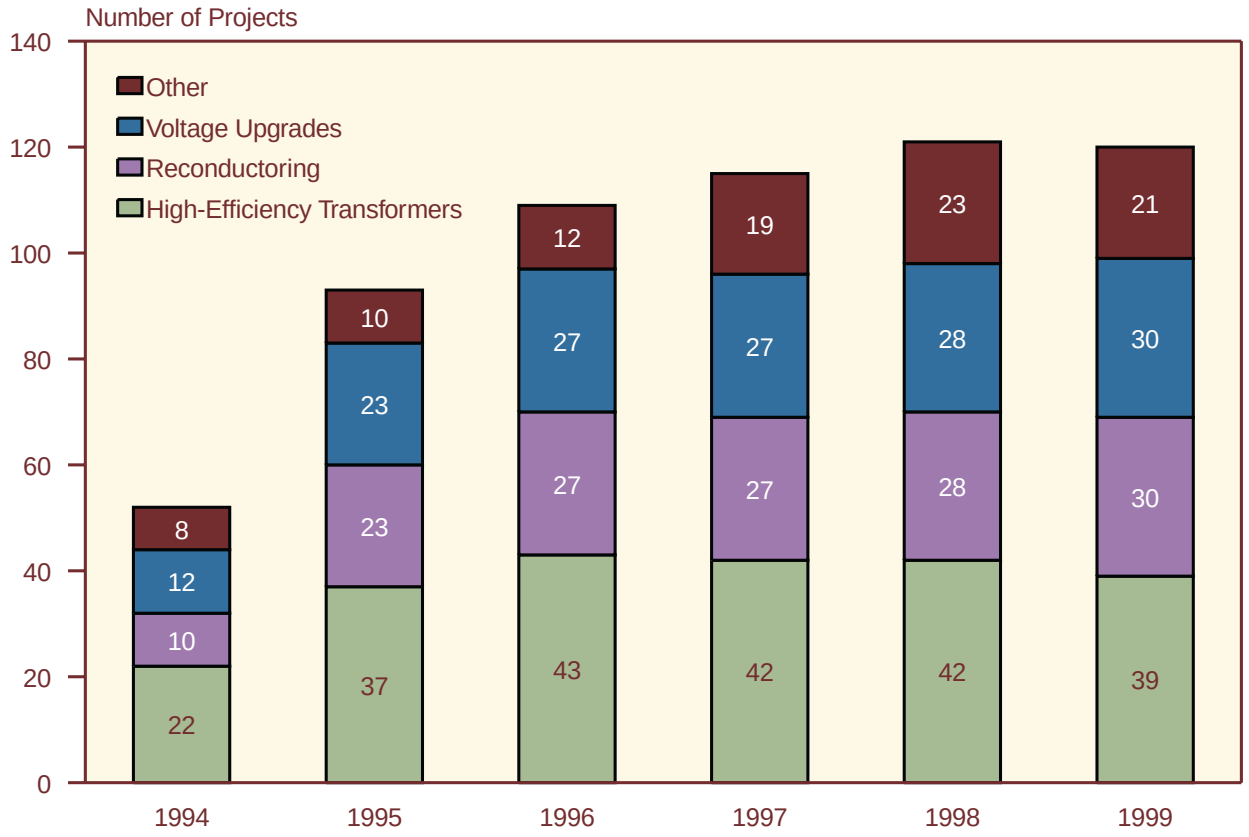
Transmission and Distribution Projects

Transmission and distribution projects, although not as numerous as generation projects, are nonetheless reported in significant numbers. In 1999, 84 transmission and distribution projects were reported, up by 5 percent from 1998 and by 89 percent from 1994. Unlike generation projects, which typically have discrete start and completion dates, efforts such as upgrading conductors and replacing transformers are ongoing activities by electric power providers. Consequently, most of the transmission and distribution efficiency improvements reported for 1999 were reported as continuations of long-standing projects rather than as new projects.

In terms of average emission reductions, transmission and distribution projects typically are somewhat smaller than generation projects. There are numerous opportunities for improving efficiencies in the delivery of electricity, but the magnitude of the efficiency gains that can be realized is limited.

In 1999, the three most frequently reported types of transmission and distribution projects (Figure 7) were high-efficiency transformers (including improved silicon steel and amorphous core transformers); reconductoring (replacing existing conductors with large-diameter conductors to reduce line losses); and

Figure 7. Reported Transmission and Distribution Projects by Type, Data Years 1994-1999



Note: The sum of projects in many project categories exceeds the total number of projects reported, because more than one project type may be assigned to a single project.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

distribution voltage upgrades (increasing the voltage at which the various segments of the system operate to reduce line losses). Other transmission and distribution projects include general transmission and distribution projects not specific to high-efficiency transformers, reconductoring, or distribution voltage upgrades. For example, transmission line improvements and capacitor installations are considered as general or "Other T&D" projects and are aggregated into the "Other T&D" category for ease of comparison with the larger project categories. A total of 39 high-efficiency transformer projects were reported for 1999 (down from 42 for 1998), making it the most frequently reported type of transmission and distribution project. Many of the reported projects were "hybrids," combining high-efficiency transformer installation with one or more other activities (e.g., reconductoring).

Another 30 projects involving reconductoring and 30 projects involving distribution voltage upgrades (again, often in combination with other activities) were reported for 1999. The reporters classified 21 projects as "general" or "other" transmission and distribution, down from 23 in 1998. Emission reductions reported for transmission and distribution projects in 1999 totaled 3.0 million metric tons carbon dioxide equivalent, averaging 36,200 metric tons carbon dioxide equivalent per project.

As an example, Wisconsin Electric Power Company reported transmission system additions and distribution system projects including high-voltage distribution conversion and system renewal projects, application of distribution capacitors, conservation voltage reduction, and replacement of electromechanical load tap changer controls. Wisconsin Electric reported a savings of 312,183 megawatthours of electricity generation from coal-fired power plants, reducing emissions by 321,778 metric tons of carbon dioxide.

National Grid USA reported in 1999 on a new project of distribution voltage upgrades for Massachusetts Electric. The upgrades for 65.14 miles saved 2,832 megawatthours of electricity, with estimated emission reductions of 1,872 metric tons of carbon dioxide.

3. Reducing Emissions from Energy End Use and Transportation

Reducing Energy Demand at Stationary Sources

Energy use at stationary sources in the residential, commercial, and industrial sectors accounted for 3.7 billion metric tons of carbon dioxide emissions in 1999—about two-thirds of U.S. carbon dioxide emissions. Emissions from stationary-source energy use included nearly 2 billion metric tons of carbon dioxide from the generation of electricity that was ultimately consumed in these three sectors. Industry was the largest of the three sectors in terms of stationary-source emissions, accounting for nearly half the total; the residential sector accounted for about 29 percent of the total energy-related emissions from stationary sources, and the commercial sector contributed an additional 24 percent.[21]

Between 1990 and 1999, carbon dioxide emissions associated with industrial, residential, and commercial energy use increased by 10.7 percent. The commercial sector is the fastest-growing emissions source, having registered a 17.2 percent increase in emissions between 1990 and 1999. Emissions from the residential sector increased by 14.1 percent over the same period, and industrial sector emissions rose by 5.8 percent.[22]

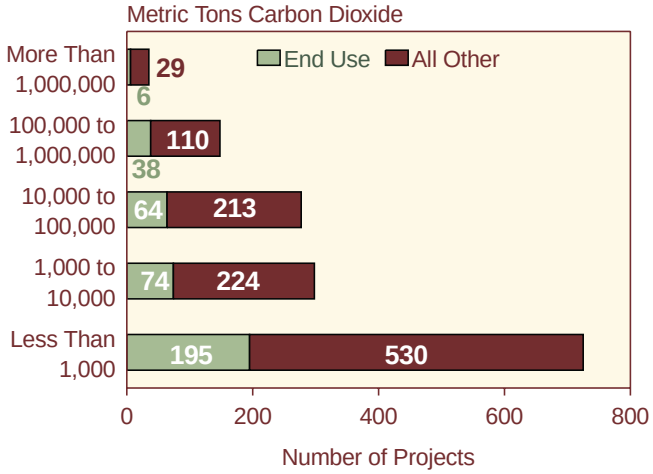
Projects Reported

Energy end-use projects accounted for 22 percent of all projects reported to the Voluntary Reporting of Greenhouse Gases Program for 1999, third behind electricity supply and carbon sequestration in the number of projects reported. These projects involve reductions in end-use demand for energy or fuel switching.

Ninety-eight entities reported energy end-use projects in 1999. Most (69) were electric power providers. The other reporters were industrial companies dominated by a group of six cement plants (divisions of Essroc Cement Corp.), chemical products companies (Allergan, Inc., Clairol, Johnson & Johnson, and Pharmacia & Upjohn), and transportation equipment companies (General Motors, Pratt & Whitney North Berwick, and Rolls-Royce Corporation).

Emission reductions reported for individual energy end-use projects ranged from less than 1 metric ton to almost 3 million metric tons, primarily because of the flexibility allowed in defining the scope of a project. Projects could range from the installation of a compact fluorescent light bulb reported by a household to a system-wide demand-side management (DSM) program reported by a large utility. Like other project types, most energy end-use projects (88 percent) fell in the emission reduction range of less than 100,000 metric tons carbon dioxide equivalent (Figure 8). Thirty-eight end-use projects reported emission reductions between 0.1 and 1 million metric tons, and six end-use projects reported reductions in excess of 1 million metric tons each. In total, reductions reported for 1999 for energy end-use projects were nearly 23.2 million metric tons carbon dioxide equivalent.

Figure 8. Reported Energy End-Use Projects Compared to All Other Projects by Size of Carbon Dioxide Reduction or Sequestration, Data Year 1999



Note: The project sizes shown are only for reported carbon dioxide reductions. "All Other" does not include end-use projects or projects for which no carbon dioxide reduction or sequestration was reported.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

[21] In terms of their contribution to total energy-related carbon dioxide emissions in 1999, the industrial sector led with a 32-percent share of the total, followed by the residential sector (19 percent) and the commercial sector (16 percent). Transportation, which is considered in the next section of this chapter, accounted for the remaining 32 percent.

[22] Energy Information Administration, *Emissions of Greenhouse Gases in the United States 1999*, DOE/EIA-0573(99) (Washington, DC, October 2000), pp. 15-27, http://www.eia.doe.gov/oiaf/1605/1605a.html.

Project Types

A total of 98 entities reported on 379 energy end-use projects for 1999. Most of the reported projects, particularly the DSM programs reported by electric utilities, targeted multiple end uses. Overall, the most frequently reported type of energy end-use project was lighting and lighting controls, followed by equipment and appliances and by heating, ventilation, and air conditioning (HVAC) (Figure 9).

The average emission reductions for energy end-use projects vary by project type (Table 7). For projects involving industrial power systems, the average was 57,579 metric tons carbon dioxide equivalent per project, compared with 397,619 metric tons per project for projects involving the energy effects of urban forestry. General energy use (found on Form EIA-1605EZ only) and industrial power systems projects reported for 1999 form the smallest emission reduction groups, whereas HVAC and load control projects form the largest.

Energy end-use projects can be carried out anywhere energy is consumed. For this report, energy end-use projects are categorized as occurring in the industrial, commercial, residential, and agricultural sectors. End-use projects reported for 1999 in the industrial sector (179) outnumbered those in the residential (125) and commercial (124) sectors, which, in turn, greatly outnumbered agricultural sector projects (22) (Figure 10). Fewer projects were reported in 1999 for the residential and agricultural sectors than were reported for the 1998 data year, down by 5 projects and 1 project, respectively. In contrast, 5 more end-use projects were reported for the commercial sector and 9 more were reported for the

New Projects

Thirty-four new energy end-use projects were reported as having begun in 1999, as compared with only 21 in 1998—a 62-percent increase. Two reporters accounted for 15 of the 34 new projects reported. Clairol, a new reporter and a part of the health and personal care company Bristol-Myers Squibb, led the reporting with 8 new projects involving lighting, HVAC, and motor drive efficiency. Clairol estimated the total carbon dioxide emission reductions resulting from its new projects at slightly over 300 metric tons in 1999.

The other primary reporter of new projects was Allergan, Inc., another health care company that began reporting to the Voluntary Reporting of Greenhouse Gases Program in the 1998 data cycle. Allergan, Inc. reported seven projects initiated in 1999 involving HVAC, lighting, and equipment efficiency and load control and estimated total emission reductions from the projects at roughly 836 metric tons carbon dioxide equivalent in 1999.

Table 7. Number of Projects and Emission Reductions Reported for Energy End-Use Projects by Project Type, Data Year 1999

Project Type	Number of Projects Reported	Emission Reductions (Metric Tons Carbon Dioxide Equivalent)	
		Total Emission Reductions	Average Emission Reductions per Project
Lighting/Lighting Controls	155	18,256,505	117,784
Equipment/Appliances	147	16,419,771	111,699
HVAC	105	18,468,733	175,893
Motor/Motor Drive	64	13,902,212	217,222
Load Control	64	12,039,352	188,115
Building Shell	63	14,667,560	232,818
General Energy Use*	15	187,078	12,472
Fuel Switching	21	5,178,641	246,602
Energy Effects of Urban Forestry	8	3,180,950	397,619
Industrial Power Systems	2	115,158	57,579
Other**	25	1,489,951	59,598
Total	**379**	**23,168,811**	**61,131**

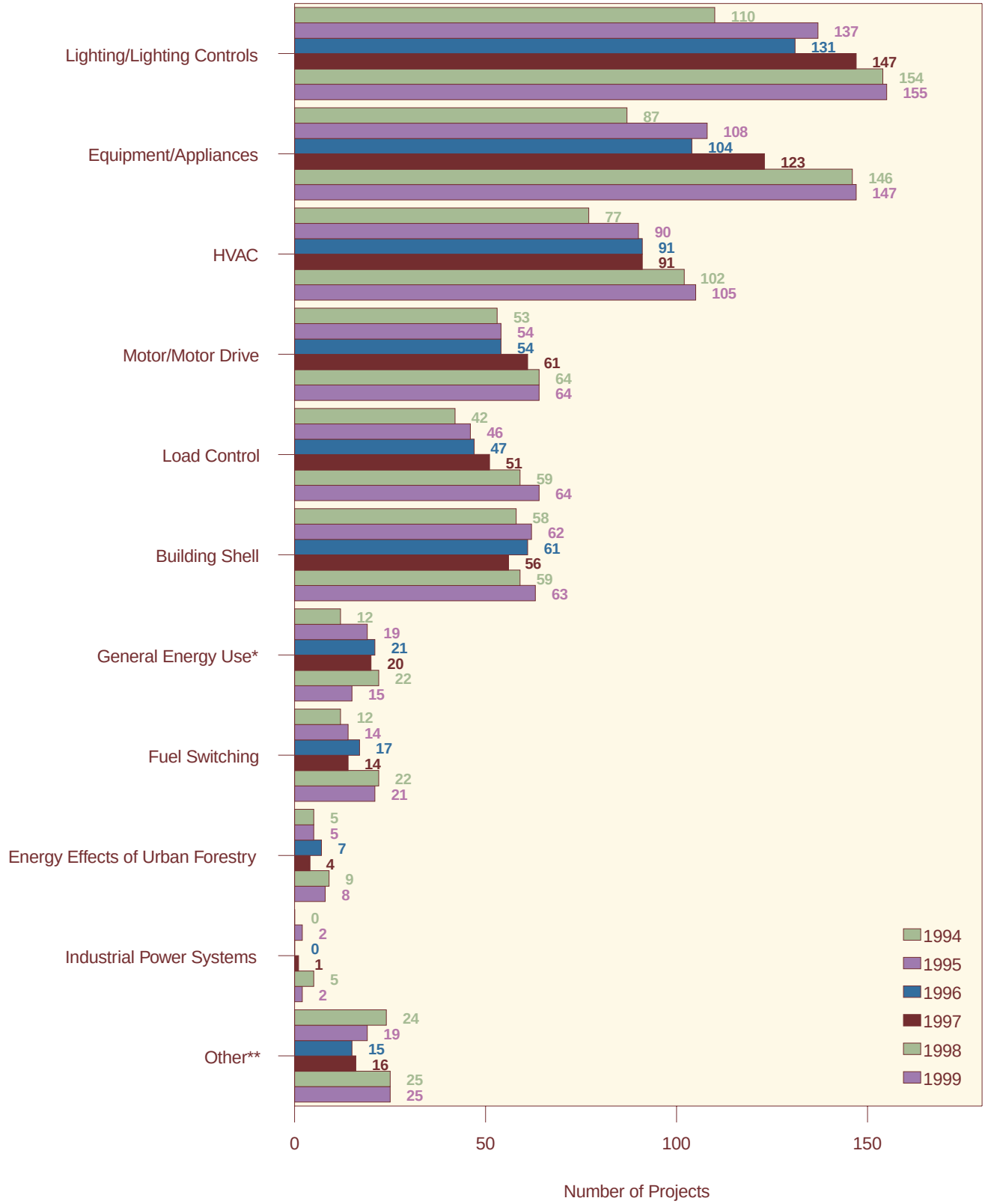
*Includes projects reported on Form EIA-1605EZ that encompass more than one project type. Because Form EIA-1605 allows reporters to identify multiple project types encompassed by a project, the General End Use category is specific to Form EIA-1605EZ reporting.

**Includes all projects that cannot meaningfully be included in any of the specific project type categories.

Notes: Project totals and emission reductions do not equal sum of components, because some projects are counted in more than one category.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Figure 9. Reported Energy End-Use Projects by Project Type, Data Years 1994-1999



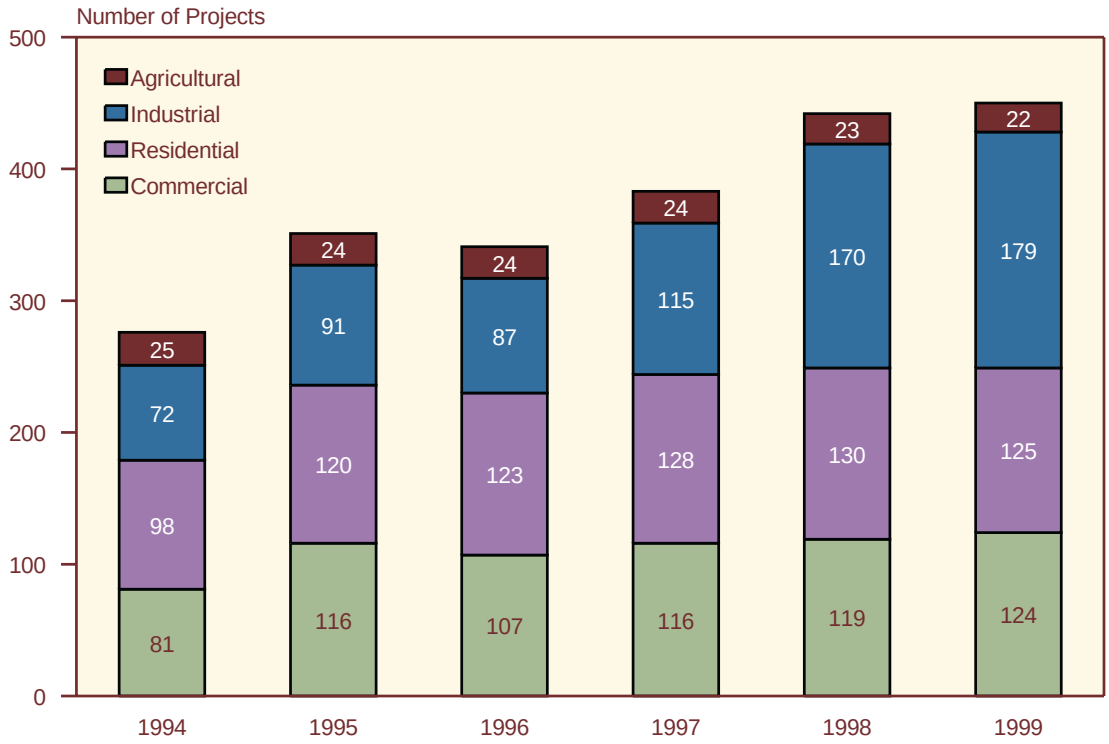
*Includes projects reported on Form EIA-1605EZ that encompass more than one project type. Because Form EIA-1605 allows reporters to identify multiple project types encompassed by a project, the General End Use category is specific to Form EIA-1605EZ reporting.

**Includes all projects that cannot meaningfully be included in any of the specific project type categories.

Note: Some projects are counted in more than one category.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Figure 10. Reported Energy End-Use Projects by Sector, Data Years 1994-1999



Notes: Excludes energy end-use projects reported on Form EIA-1605EZ. Some projects target more than one sector and may be counted in multiple categories.

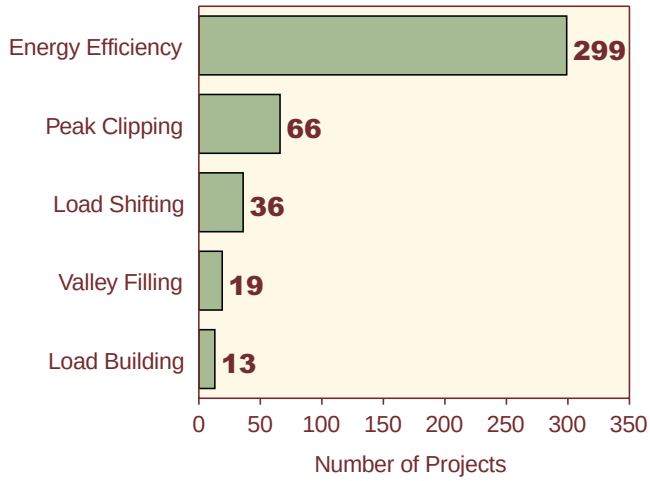
Source: Energy Information Administration, Form EIA-1605.

industrial sector, which showed the largest increase. It should be noted that many projects—particularly utility DSM programs—cover more than one end-use sector and are included in each applicable sector for the purposes of counting types of projects reported.

The average carbon dioxide equivalent emission reduction reported per project also varies by sector. Individual projects in the residential sector (146,771 metric tons carbon dioxide equivalent average per project) yielded slightly larger average carbon dioxide emission reductions than those in the commercial sector (141,517 metric tons average per project) or the industrial sector (99,219 metric tons average per project). The reductions reported for projects involving the agricultural sector (437,837 metric tons average per project) averaged almost three times those reported for projects in the residential sector. Two large-scale DSM projects involving the agricultural sector claimed the largest emission reductions reported for any project in 1999. The two projects, reported by Southern California Edison Co. and Wisconsin Electric Power Co., aggregated activities covering all four sectors. Only 2 of the 22 projects reported for the agricultural sector did not also involve other sectors.

Although the most common load shape objective of reported DSM projects was increased energy efficiency (299 projects), utilities also attempted to balance their load profiles with various other load shape objectives. Peak clipping (66 projects) was the second most common load shape objective reported, followed by load shifting (36 projects), valley filling (19 projects), and load building (13 projects) (Figure 11).

Figure 11. Reported Demand-Side Management Projects by Load Shape Objective, Data Year 1999



Notes: Excludes demand-side management projects reported on Form EIA-1605EZ. Some projects may be counted in more than one category.

Source: Energy Information Administration, Form EIA-1605.

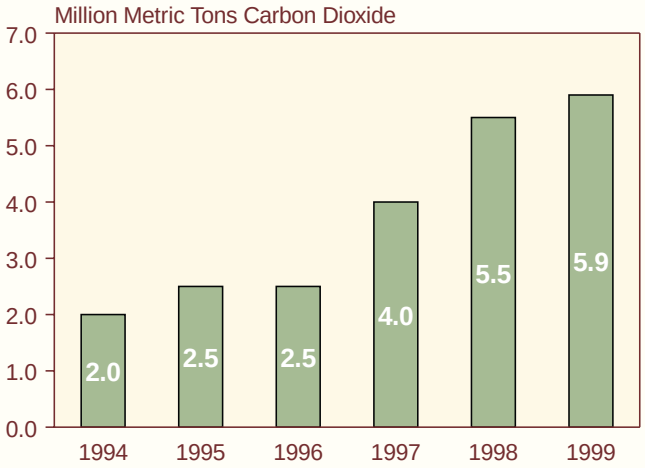
Coal Ash Reuse Projects

Coal ash, a byproduct of coal combustion, continues to be a marketable commodity for the electric utility industry. The most conventional use of coal ash is as a replacement for Portland cement in the manufacture of concrete. Reductions in carbon dioxide emissions are achieved not through reductions in energy usage but through reductions in emissions from the calcination process. Electric utilities sell coal ash produced at their facilities to avoid landfill disposal costs and to meet increasing demand for the commodity.

In 1999, the total number of entities reporting coal ash reuse projects (38) dropped slightly from the 42 entities reporting such projects in 1998. There was a matching decrease in the total number of projects reported for 1999 (41), down from 45 reported for 1998. Despite the smaller number of projects reported for 1999, the total carbon dioxide emission reductions reported increased by 7 percent from the 1998 total, to 5.9 million metric tons (see figure). The combined reductions reported for coal ash reuse projects in 1999 accounted for more than 3 percent of the carbon dioxide emission reductions reported for all projects. Almost 8 million metric tons of coal ash was reported to have been reused in 1999, primarily as a substitute for Portland cement in concrete manufacturing. A small assortment of reporters indicated that fly ash was reused in materials including road base, anti-skid material, or structural fill; however, emission reductions from these applications were not quantified. The largest quantities of coal ash reused were reported by PacifiCorp (over 700,000 metric tons) and by TXU (over 600,000 metric tons).

Reporters used different emission coefficients to estimate their carbon dioxide reductions for cement substitution, ranging from 0.8 to 1.0 metric ton per ton of coal ash reused. The coefficients varied depending on the fuel used to fire the kilns, the proportion of coal ash used in cement, and the electricity used to grind raw materials. Other coefficients were derived from the ratio of the molecular weights of carbon dioxide and calcium oxide (the chemical compounds involved in the calcination of limestone) and the ratio of the specific gravities of coal ash and cement.

Reported Reductions from Coal Ash Reuse Projects, Data Years 1994-1999



Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Load Shape Effects: Definitions and Terminology

Energy Efficiency. Projects that improve the energy efficiency of specific end-use devices and systems. Such projects usually reduce overall energy consumption, often without regard for the timing of project-induced savings. Generally, energy savings are achieved through the substitution of technically more efficient measures (i.e., equipment, systems, or operating procedures) to produce the same level of end-use service (e.g., lighting or warmth) with less energy use.

Load Building. Projects that increase energy consumption, generally without regard to the timing of the increase. Promotion of residential electric space heating systems and promotion of new industrial electrotechnologies are examples of electricity load-building projects.

Load Shifting. Projects that move energy consumption from one time to another (usually during a single day). For example, water-heater timers typically turn off the units during the daytime (when an electric utility experiences peak demands) and allow the units to operate at night (during the utility's off-peak period).

Peak Clipping. Projects that reduce energy demand at certain critical times, typically when the utility experiences system peaks. These projects generally have only small effects on overall energy use but focus sharply on reducing energy use at critical times. Load-shifting and peak-clipping differ because the former shifts much of the energy use from one time to another, whereas the latter eliminates a load without shifting it to another time period.

Valley Filling. Projects that increase off-peak energy consumption (without necessarily reducing on-peak demands). Replacement of a natural-gas-fired furnace with an electric heat pump (with backup heat provided by natural gas) is an example of valley filling. Such projects can aim to fill daily or seasonal valleys.

Reducing Transportation Fuel Use

Overview

A total of 73 transportation projects were reported for 1999 by 43 entities, all but 6 of which were electric utilities or, in the case of CLE Resources, a subsidiary of an electric utility. The 6 others were a telecommunication company (AT&T), an automobile manufacturer (Volvo Cars of North America, Inc.), a printing company (Quad/Graphics, Inc.), a food industry company (Essential Foods, Inc.), a cement producer (Arizona Portland Cement Co.), and a household. Detailed information was provided for 62 (85 percent) of the projects on Form EIA-1605. Summary information for the remaining 11 projects was reported on Form EIA-1605EZ. Forty-five (62 percent) of the projects reported for 1999 were affiliated with either the Climate Challenge or Climate Wise program.

Table 8 shows transportation project trends in the first six reporting cycles of the Voluntary Reporting Program. The projects reported for 1999 fall into three broad categories:[23]

- Alternative fuel use (34 projects or 47 percent)
- Travel reduction (32 projects or 44 percent)
- Vehicle efficiency improvements (9 projects or 12 percent).

The primary effect of the transportation projects reported was to reduce emissions of carbon dioxide, although reductions in emissions of nitrous oxide or methane were also reported for 5 projects. For 11 of the 73 projects reported, either reductions did not occur in 1999 or they were not estimated.[24] Total emission reductions in 1999 reported for the remaining 61 transportation projects were 327,627 metric tons carbon dioxide equivalent, an increase of 151 percent over the total reported for 1998 and more than 15 times the 21,280 metric tons reported in the first (1994) reporting cycle.

Five projects accounted for 85 percent of the increase in reductions reported for transportation projects in 1999 compared to those for 1998. CLE Resources reported a reduction of 101,440 metric tons of carbon dioxide for its share of a vehicle efficiency project, up from 12,216 metric tons for 1998. AT&T, a new reporter, claimed a reduction of 36,287 metric tons of carbon dioxide for a telecommuting project. Quad/Graphics, which did not submit a report for 1998, reported three demand reduction projects that together reduced carbon dioxide emissions by an estimated 41,238 metric tons in 1999.

Nearly half (47 percent) of the projects reported for 1999 involved alternative fuel vehicles (AFVs). However, the reported reductions achieved by individual AFV projects were small, accounting for only about 8 percent of the reductions reported for transportation projects in 1999 (Table 8). Vehicle efficiency projects tend to have larger effects than other transportation projects. The

Table 8. Number of Projects and Emission Reductions Reported for Transportation Projects by Project Type, Data Years 1994-1999

	Number of Projects				Emission Reductions (Metric Tons Carbon Dioxide Equivalent)			
Year	Vehicle Efficiency	Travel Reduction	Alternative Fuels	Total	Vehicle Efficiency	Travel Reduction	Alternative Fuels	Total
1994	3(R)	9	22	33	6,895(R)	1,504(R)	13,047	21,280
1995	6	19	26(R)	50	54,285	20,248	12,558(R)	86,930
1996	7	18	34(R)	58(R)	57,250	20,531	17,372(R)	95,036
1997	9(R)	22	34(R)	64(R)	69,202(R)	54,202	18,831(R)	142,183(R)
1998	10	30	35	72	88,964	20,492	21,299	130,755
1999	9	32	34	73	187,967	114,740	25,063	327,627

(R) = revised.

Note: Project and emission reduction totals may not equal sum of components because projects may be counted in more than one category. Emission reductions are those reported for the latest data year in each reporting cycle (e.g., 1998 reductions are those reported for 1998 on Forms EIA-1605 and EIA-1605EZ submitted in 1999). Reductions were not reported for the latest year for all projects.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

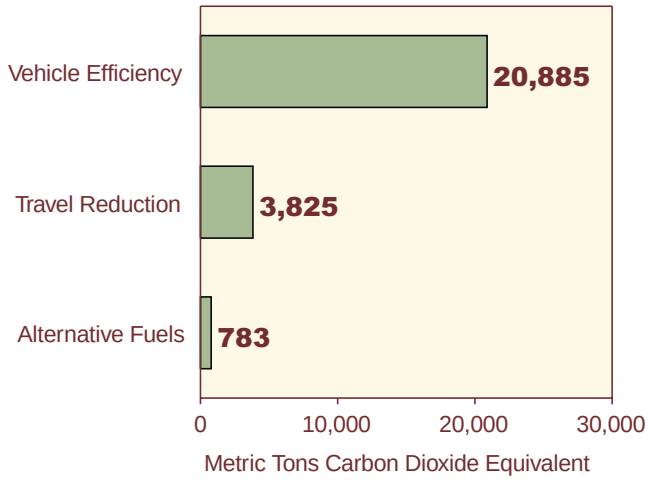
[23]The sum of projects in each category exceeds the total number of projects because some projects are counted in more than one category.

[24]In some cases, reductions for the project may have been reported for years prior to 1999. In other cases, the reductions were not estimated due to the lack of data or other difficulties in quantifying the effects of the project. Entities may elect to report projects without reporting reductions to make a public record of the fact that they have conducted an activity in fulfillment of a commitment made under a voluntary program such as Climate Challenge.

nine projects reported in this category accounted for over half (57 percent) of the estimated 1999 emission reductions for transportation. Travel reduction, which includes such activities as car pooling and van pooling, mass transit, telecommuting, and service efficiency improvements, accounted for 32 projects and about 35 percent of the reductions reported for 1999. The average emission reduction reported per project by transportation project type for 1999 is summarized in Figure 12.

Even relatively large travel reduction projects tend to have a limited effect on emissions. For example, to achieve a reduction in carbon dioxide emissions of 104 metric tons in 1999, the City of Palo Alto, CA, eliminated an estimated 328,320 vehicle miles traveled by increasing mass transit ridership. Although individual transportation initiatives may produce only modest emission reductions, many of the projects reported to the program have wide applicability and could significantly reduce national carbon dioxide emissions if they were duplicated by other companies or employed on a wide scale.

Figure 12. Average Emission Reductions for Transportation Projects by Type, Data Year 1999



Note: Mean emission reductions reflect only those projects for which estimates were reported.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Using Alternative Fuels

Alternative fuel vehicle projects involved a variety of fuels, including natural gas, electricity, propane, and M-85 (a blend of 85 percent methanol and 15 percent gasoline). More than 90 percent of the reductions reported for 1999 associated with alternative fuels were attributed to vehicles using natural gas, which was the subject of 17 project reports. Five utilities reported operating fleets of compressed natural gas (CNG) or dual-fuel CNG / gasoline vehicles of more than 100 vehicles in 1999: Wisconsin Electric Power Company (688 vehicles), PG&E Corporation (633 vehicles), NiSource (618 vehicles), TXU (266 vehicles), and Baltimore Gas and Electric (161 vehicles).

Another 17 projects involved the operation of electric vehicles. Although the emission reductions reported for electric vehicle projects in 1999 were relatively small—about 9 percent of the total reductions (carbon dioxide equivalent) reported for alternative fuel vehicles—they have increased from just 2 percent of alternative fuel vehicle reductions for 1997. Some utilities are now operating sizable fleets of electric vehicles. Southern California Edison's electric vehicles reportedly logged over 2 million miles in 1999, more than 10 times the 174,000 miles reported in 1996. The Los Angeles Department of Water and Power (LADWP) reported operating 75 electric vehicles in 1999, up from 18 in 1996. Southern Company reported that more than 100 of its employees drove electric vehicles as their primary transportation in 1999.

Two projects involved fuels other than natural gas and electricity. UNICOM and the Tennessee Valley Authority reported using M-85, and UNICOM also reported the conversion of 82 Dodge Neons to propane.

Reducing Vehicle Travel

Travel reduction accounted for 35 percent of the total reduction in carbon dioxide equivalent emissions reported for transportation projects for 1999, up from the 3 percent reported for 1994. Of the 32 projects reported in this category, 13 involved car pooling or van pooling, 10 increased mass transit ridership, 5 reduced employee vehicle use through telecommuting, 4 increased service efficiency for freight or service vehicles, and 8 involved other actions, such as work week compression, videoconferencing, and use of bicycles for commuting and utility meter reading.[25]

The largest travel reduction project was a telecommuting project reported for the first time by AT&T. This project reduced emissions by a reported 36,287 metric tons carbon dioxide equivalent in 1999 by lowering employee vehicle miles traveled by over 87 million miles. Substantial emission reductions were also reported by Quad / Graphics for a project that uses its delivery vehicles to pick up raw materials and supplies on return trips. Quad / Graphics estimates that the project reduced carbon dioxide emissions by nearly 30,522 metric tons in 1999. Reductions of more than 5,000 metric tons carbon dioxide equivalent were also reported for the following travel reduction projects:

[25]The total number of travel reduction projects is less than the sum of the projects in each subcategory because some individual projects include activities in more than one subcategory.

- Quad/Graphics reported moving to 12-hour work shifts at its printing plants (10,305 metric tons).
- LADWP reported on its employee car pooling and van pooling program (8,475 metric tons).
- TXU reported efforts to reduce fleet vehicle use (7,426 metric tons).
- Public Service Enterprise Group reported on its employee car pooling, van pooling, and mass transit programs (6,969 metric tons).
- CLE Resources reported its investment, through the Edison Electric Institute's EnviroTech investment fund, in McHugh Software, a company that developed software to improve routing for service vehicles (5,589 metric tons).

Improving Vehicle Efficiency

Nine projects involving vehicle efficiency improvements were reported, five of which claimed relatively large carbon dioxide emission reductions (more than 10,000 metric tons) in 1999. Four Midwestern utilities reported the use of aluminum railroad cars to transport coal to their plants. Ameren Corporation, which was formed by the merger of Union Electric Company and Central Illinois Public Service Company, reported reducing 1999 carbon dioxide emissions by 33,941 metric tons. Substantial reductions in carbon dioxide emissions were reported by three other utilities using aluminum coal cars: Kansas City Power & Light (21,234 metric tons), Western Resources, Inc. (16,665 metric tons), and UNICOM (14,302 metric tons).

CLE Resources, a subsidiary of Central Louisiana Electric Company, reported its investment in a company that developed and commercialized a device for monitoring and adjusting tire pressure on trucks to improve fuel efficiency. The device reduces fuel consumption by about 2.5 percent. CLE Resources made its investment through the EnviroTech fund, which was established by the Edison Electric Institute. CLE Resources reported emission reductions of 101,440 metric tons carbon dioxide equivalent for its 6-percent share of the project, based on projected sales of the device. With truck travel accounting for emissions of about 250 million metric tons of carbon dioxide annually in the United States, universal use of the tire pressure device could reduce national emissions by more than 6 million metric tons annually.[26]

[26]U.S. Department of Transportation, U.S. Bureau of Transportation Statistics, *National Transportation Statistics 1997*, DOT/VNTSC-BTS-96-4 (Washington, DC, December 1996), Table 4-8, p. 168, http://www.bts.gov/btsprod/nts/. Single-unit (2-axle, 6-tire or more) and combination trucks consumed 28,440 gallons of fuel per vehicle in 1995. Assuming an emissions factor of 19 pounds of carbon dioxide per gallon, 249 metric tons of carbon dioxide was emitted per vehicle.

4. Carbon Sequestration

Background

Carbon sequestration plays an important role in the global carbon cycle. Green plants remove (sequester) carbon from the atmosphere through photosynthesis, extracting carbon dioxide from the air, separating the carbon atom from the oxygen atoms, returning oxygen to the atmosphere, and using the carbon to make biomass in the form of roots, stems, and foliage.

Every year in the United States and throughout the world a very large amount of carbon dioxide—on the order of 100 billion metric tons—is sequestered in biomass.[27] At the same time, carbon is released to the atmosphere from vegetative respiration, combustion of wood as fuel, degradation of manufactured wood products, consumption of biomass for food by animals, and the natural decay of expired vegetation. The net numerical difference, or flux, between carbon sequestration and release can be viewed as a measure of the relative contribution of biomass to the carbon cycle. World flux associated with Earth's living matter is difficult to measure, but biomass is thought to provide a net "sink" equivalent to about 5 billion metric tons carbon dioxide per year.[28]

Forests can play an important role in offsetting human-produced carbon emissions. On average, trees are approximately 25 percent carbon by weight (live trees are approximately 50 percent water by weight, and oven-dried wood is approximately 50 percent carbon by weight).[29] The amount of carbon a plant can sequester depends on a number of variables, including species and age, but can be quite large. For example, one large sugar maple tree is capable of removing more than 450 pounds of carbon dioxide from the atmosphere in a year. At that rate, preserving 29 trees per operating automobile in the United States would offset all U.S. automobile-related carbon dioxide emissions.[30]

Carbon sequestration on a national scale is substantial. The U.S. Environmental Protection Agency, relying heavily on the work of U.S. Forest Service Researchers Richard Birdsey and Linda Heath, estimates annual U.S. carbon sequestration (generally defined according to the guidelines of the Intergovernmental Panel on Climate Change) at 211 million metric tons carbon equivalent,[31] which offsets approximately 12 percent of annual U.S. anthropogenic emissions of greenhouse gases.[32]

Projects Reported

Seventy-one entities reported projects involving forestry or natural resources that sequestered carbon or reduced emissions in 1999 (Table 9). The reporters included 58 electric utilities, 3 operating subsidiaries of an independent power producer, 6 nonprofit organizations, a real estate company, a university, a fabricated metals product manufacturer, and a computer chip manufacturer. A total of 443 carbon sequestration projects were reported, an increase of 24 percent from the 1998 data year. Forestry projects were the second most commonly reported project type after electricity supply (453), accounting for 26 percent of all the projects reported for 1999 (see Table 2 in Chapter 1). The reported forestry projects were dispersed over a wide geographic area, including 45 States and 8 foreign countries. A total of 241 domestic and 61 international forestry projects were reported.

The total sequestration and reduction in emissions reported for 1999 declined by 22 percent from the previous year, to 9,698,053 metric tons carbon dioxide (Table 9). The decline resulted primarily from the completion of a World Parks Endowment preservation project and

[27]Intergovernmental Panel on Climate Change, *Greenhouse Gas Inventory Reference Manual*, IPCC Guidelines for National Greenhouse Gas Inventories, Vol. 3 (Paris, France, 1995), p. 5.2, http://www.iea.org/ipcc.htm.

[28]Intergovernmental Panel on Climate Change, *Climate Change 1995: The Science of Climate Change* (Cambridge, UK: Cambridge University Press, 1996), p. 77.

[29]R.A. Birdsey, *Carbon Storage and Accumulation in United States Forest Ecosystems* (Washington, DC: USDA Forest Service, 1992), p. 12.

[30]Average mileage and fuel consumption for passenger cars from Energy Information Administration, *Annual Energy Review 1999*, DOE/EIA-0384(99) (Washington, DC, July 2000), p. 53. Carbon dioxide emissions per mile driven and gallon of motor fuel from U.S. Department of Energy, *Sector-Specific Issues and Reporting Methodologies Supporting the General Guidelines for the Voluntary Reporting of Greenhouse Gases Under Section 1605(b) of the Energy Policy Act of 1992*, DOE/PO-0028 (Washington, DC, October 1994), Vol. 2, p. 4.19.

[31]U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-1998*, EPA-236-R-00-001 (Washington, DC, April 2000), p. 6-2, http://www.epa.gov/globalwarming/publications/emissions/us2000/index.html.

[32]U.S. athropogenic greenhouse gases emissions were 1,832.6 million metric tons carbon equivalent in 1999. Energy Information Administration, *Emissions of Greenhouse Gases in the United States 1999*, DOE/EIA-0573(99) (Washington, DC, October 2000), p. vii.

Table 9. Number of Projects and Sequestration and Net Reductions Reported for Sequestration Projects, Data Years 1994-1999

Data Year	Number of Reporters	Number of Projects	Sequestration and Net Reductions (Metric Tons Carbon Dioxide)
1994	40	78	772,330
1995	62	199	1,247,430
1996	67	198	8,712,616(R)
1997	75(R)	309(R)	9,861,433(R)
1998	74	356	12,495,669
1999	71	443	9,698,053

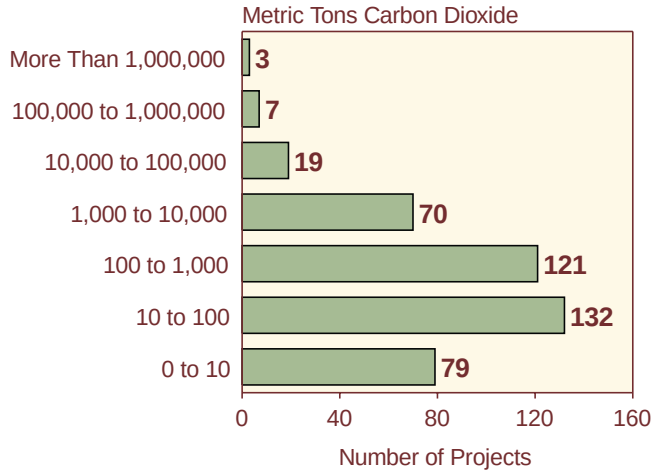
(R) = revised.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

from a downward adjustment of the sequestration estimate for the AES Thames CARE Agroforestry project.[33] Carbon sequestration projects typically are considerably smaller than projects that reduce emissions of carbon dioxide (such as electricity supply and energy end use). Of the forestry projects reported for 1999, 73 percent sequestered between 10 and 10,000 metric tons carbon dioxide equivalent (Figure 13), with a median reported reduction of about 110 metric tons.

A significant number (13 percent) of the reported projects were urban forestry projects, involving the planting of trees in urban and suburban areas.[34] Urban forestry projects are typically much smaller than forestry projects undertaken in rural or wilderness areas. The average carbon dioxide sequestration reported per urban forestry project for 1999 was just 158 metric tons. Projects in rural or wilderness areas are sometimes large: 10 such projects sequestered more than 10,000 metric tons carbon dioxide each in 1999. For the 431 projects for which data were reported, average sequestration for 1999 was 22,493 metric tons carbon dioxide equivalent per project.

Of the projects reported for 1999, most (352 or 79 percent) involved some kind of tree planting, which included afforestation, reforestation, urban forestry, and woody biomass production or agroforestry (Table 10).[35] These projects accounted for 11 percent of the sequestration (and related emission reductions) reported for 1999. Although only 39 forest preservation projects were reported, they accounted for 88 percent of the

Figure 13. Carbon Sequestration Projects by Amount of Carbon Sequestered, Data Year 1999



Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

sequestration reported for 1999. Ninety-two percent of the total sequestration for 1999 was reported on behalf of foreign projects, which include some very large forest preservation and agroforestry initiatives.

More than half (60 percent) of the reported forestry projects were undertaken in part to fulfill commitments made under the Climate Challenge program. In addition, 27 (6 percent) were undertaken as part of the U.S. Initiative on Joint Implementation (USIJI). Established under the Climate Change Action Plan (CCAP),[36] the

[33]World Parks Endowment estimated sequestration for the Bladen Sanctuary as the carbon (expressed as carbon dioxide) that would have been released had the forest been logged over a 6-year period from 1993 to 1998. World Parks Endowment estimated the avoided release for 1998 at 1.03 million metric tons carbon dioxide. No further sequestration was claimed for 1999. In its 1999 report, AES Thames revised sequestration estimates for all years for the CARE Agroforestry project. Reported sequestration for 1999 was 0.53 million metric tons carbon dioxide, as compared with 1.94 million metric tons reported for 1998, which was reduced to 0.59 million metric tons in this year's report.

[34]Urban forestry projects include projects reported as general tree planting projects on Form EIA-1605EZ.

[35]Afforestation is the planting trees in unforested areas. Reforestation is the planting of trees in forest areas that have recently been harvested. Urban forestry is the planting of trees individually or in small groups in urban or suburban settings. Agroforestry is the cultivation of trees in plantations for fuel or fiber.

[36]President William J. Clinton, *The Climate Change Action Plan* (Washington, DC, October 1993), Appendix II, http://www.gcrio.org/USCCAP/toc.html.

Table 10. Number of Sequestration Projects Reported by Project Type, Data Years 1994-1999

Data Year	1994	1995	1996	1997	1998	1999
Afforestation	26	38	38	91(R)	102	159
Reforestation	15	82	80	92	110	139
Urban Forestry	27	41(R)	42(R)	48(R)	57	58
Modified Forest Management	12	20	10	34(R)	42	43
Woody Biomass Production and Other Agroforestry	8	14	2	3	3	3
Forest Preservation	2	23(R)	30(R)	40(R)	47	39
Conservation Tillage	1	1	1	2	2	2
Other Projects	3	4	6	11	4	11

(R) = revised.

Notes: Urban forestry includes general tree planting projects reported on Form EIA-1605EZ. Some projects are counted in more than one category.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

USIJI is a pilot program that seeks to encourage foreign-based emission reduction and carbon sequestration projects conducted by U.S. and non-U.S. partners. The following USIJI-approved forestry projects were reported to the Voluntary Reporting Program: the Rio Bravo Carbon Sequestration Pilot Project (Belize); Oregon State University's RUSAFOR-SAP project (Russia); PG&E's Reduced Impact Logging Project (Malaysia); the Noel Kempf Mercado Climate Change Action Project (Bolivia), and the Bilsa Biological Reserve (Ecuador).

Afforestation and Reforestation

Of the sequestration projects reported for 1999, 292 (66 percent) involved either afforestation or reforestation. The carbon sequestration and emission reductions reported for these projects totaled about 593,981 metric tons carbon dioxide, representing 9 percent of the total sequestration reported for 1999. All but one of the 292 afforestation and reforestation projects were domestic. The exception is Oregon State University's RUSAFOR-SAP project in Russia, which includes reforestation of two sites totaling 450 hectares, 50 hectares of which suffered a forest fire in 1992, and afforestation of another two sites totaling 450 hectares.

American Forests, a nonprofit conservation organization, and American Electric Power, Inc. (AEP), a large investor-owned utility, together accounted for over half (56 percent) of the 291 domestic afforestation and reforestation projects reported for 1999. American Forests reported a total of 131 projects under its Global ReLeaf Forests program, 28 of which were initiated in 1999. Global ReLeaf supports the restoration of U.S. forest ecosystems that have been damaged by natural events or human actions. American Forests plans to plant 20 million trees through Global ReLeaf by the year 2000. Through the end of 1999, 10.8 million trees had been planted, sequestering 73,873 metric tons carbon dioxide in 1999—enough to offset carbon dioxide emissions from about 11,000 automobiles.[37] All but 6 of the Global ReLeaf projects involved reforestation. AEP reported 19 afforestation projects on land owned by its operating companies, which sequestered a reported 81,697 metric tons carbon dioxide in 1999. Four of the projects were initiated in 1999.

A large part of the increase in the number of domestic afforestation and reforestation projects can be attributed to two domestic programs initiated in 1999 by the UtiliTree Carbon Company.[38] Shares in two new UtiliTree projects were reported by 26 of the participating utilities, resulting in reports of carbon dioxide sequestration for 52 additional projects in 1999.[39] The Upper Ouachita River Valley Bottomland Hardwood Restoration and the Overflow Bottomland Hardwood Restoration projects consist of 1,000 acres and 400 acres, respectively, of marginal agricultural farmland recently acquired by the U.S. Fish and Wildlife Service. UtiliTree has planted the sites with hardwood species such as green ash, bald cypress, sweet gum, willow oak, and nuttal oak, and they will be incorporated into existing National Wildlife Refuges. Two ongoing UtiliTree projects, Western Oregon Carbon Sequestration and Mississippi Valley Hardwood Restoration, were also reported by 28 participating utilities. Thus, UtiliTree accounted for 108 (68 percent) of the afforestation projects reported for 1999.

[37] Average mileage and fuel consumption for passenger cars from Energy Information Administration, *Annual Energy Review 1999*, DOE/EIA-0384(99) (Washington, DC, July 2000), p. 53. Carbon dioxide emissions per mile driven and gallon of motor fuel from U.S. Department of Energy, *Sector-Specific Issues and Reporting Methodologies Supporting the General Guidelines for the Voluntary Reporting of Greenhouse Gases Under Section 1605(b) of the Energy Policy Act of 1992*, DOE/PO-0028 (Washington, DC, October 1994), Vol. 2, p. 4.19.

[38] The UtiliTree Carbon Company, managed by the Edison Electric Institute, is a partnership of 40 investor-owned electric utilities.

[39] One utility reported its share in only one of the two projects.

Urban Forestry

A total of 58 urban forestry projects were reported for 1999 by 37 reporters, all but two of which were electric utilities. For the 56 urban forestry projects for which estimates were developed, a total of 8,602 metric tons carbon dioxide was sequestered in 1999—an amount that would offset less than 0.1 percent of the emissions from a 1,000-megawatt coal-fired power plant.[40]

Urban forestry projects are unique, in that under some circumstances they can reduce energy consumption as well as sequester carbon. Shade trees planted near buildings reduce summer air conditioning requirements; in addition, trees can also act as windbreaks, reducing heating needs in the winter. Although the emission reductions associated with energy effects of urban forestry can be several times the sequestration benefits on a carbon dioxide equivalent basis, they are difficult to estimate. As a result, only four reporters submitted information on energy-related emission reductions for urban forestry projects (the reductions are included in the energy end use reduction totals in Chapter 3).

Forest Preservation

A total of 39 forest preservation projects were reported for 1999 by 34 reporters. All but four of the projects were foreign. The two largest forest preservation projects were reported by AES Hawaii and AES Shady Point, subsidiaries of the AES Corporation. Together, these two projects sequestered a reported 5.68 million metric tons carbon dioxide in 1999, representing 67 percent of the total sequestration reported for forest preservation projects.

Two utilities (AEP and PacifiCorp) reported on the Noel Kempf Mercado Climate Action Project in Bolivia, which was accepted by the USIJI in November 1996. The project, which involves the preservation of 634,286 hectares of land on the southern and western boundary of the Noel Kempf Mercado National Park by incorporating it into the park, includes the following components: (1) carbon dioxide emission reductions through the cessation of logging activities and the protection of forest land from conversion to agricultural use; (2) protection, regeneration, and preservation; and (3) leakage prevention.[41] The AEP and PacifiCorp shares of the project accounted for a reported increase in sequestration of 1.77 million metric tons carbon dioxide for 1999.

The World Parks Endowment reported three forest preservation projects located in Belize, Guatemala, and Ecuador that together have prevented emissions of an estimated 9.6 million metric tons carbon dioxide from 1991 through 1999. According to the World Parks Endowment, two of the preserved sites, the Bladen Sanctuary (Belize) and the Sierra de las Minas Reserve (Guatemala), would have been logged by 1998; therefore, no further increase in sequestration was reported for 1999. The third project reported was the Bilsa Biological Reserve (Ecuador), which, according to the World Parks Endowment, would have been logged from 1997 through 1999. Preserving the site avoided emissions of a reported 353,835 metric tons carbon dioxide annually over the 3-year period.

The Rio Bravo Carbon Sequestration Pilot Project, a forest preservation project in Belize, was included in the reports submitted by 28 utilities, each of which reported its prorated share of the total sequestration for the project. Begun in 1995, the project is being undertaken through a partnership between Cinergy Corporation, DTE/Detroit Edison, PacifiCorp, Wisconsin Electric Power Co., the UtiliTree Carbon Company, the Nature Conservancy, and a Belizean nongovernmental organization (Programme for Belize). The project includes the purchase of a 14,400-acre parcel of endangered forest threatened with conversion to agriculture. The entire project sequestered an estimated 807,317 metric tons carbon dioxide in 1999, of which 620,991 metric tons (77 percent) was reported to the Voluntary Reporting of Greenhouse Gases Program.[42]

Domestic forest preservation projects were reported by Alliant Energy, Tacoma Public Utilities, Wisconsin Public Service Corporation, and Whatcom Land Trust. Alliant Energy reported sequestering 1,597 metric tons carbon dioxide in 1999 by maintaining forested buffer lands around its power plants. Tacoma Public Utilities reported preserving nearly 11,000 acres of forest but did not estimate the sequestration achieved. Wisconsin Public Service Corporation reported forest preservation as a component of its afforestation and reforestation efforts, sequestering a reported 94,347 metric tons carbon dioxide in 1999. Whatcom Land Trust reported on its Canyon Lake Creek Community Forest Project, which permanently protects approximately 303 hectares of alpine forest containing one of the oldest forest stands in the Pacific Northwest. According to the Whatcom Land

[40] Assuming a power plant with a heat rate of 12,000 Btu per kilowatthour operating at 85 percent availability using subbituminous coal emitting 212.7 pounds of carbon dioxide per million Btu.

[41] Leakage refers to the migration of logging and land-clearing activities that would have occurred in the preserve to areas outside the preserve, which would offset the sequestration achievements of the project.

[42] Several UtiliTree participants and one of the utility partners did not submit reports to the Voluntary Reporting Program for data year 1999.

Trust, the planned clear-cut logging of this tract would have released an estimated 609,382 metric tons carbon dioxide in 1998. No additional sequestration was reported for 1999.

Modified Forest Management

Of the 43 modified forest management projects reported in 1999, 29 were associated with two related reduced-impact logging initiatives in Malaysia. The first initiative was a pilot project reported by PG&E Corporation for 1999.[43] Started in 1992, this project implemented new logging techniques with the goal of reducing logging damage by 50 percent. The new techniques include pre-cutting of vines, directional felling, and planned extraction of timber on impact-reducing skid trails. Twenty-eight utilities reported their shares in the second initiative—a full-scale project sponsored by the UtiliTree Carbon Company that introduced reduced-impact logging practices to 2,422 acres of forest beginning in 1997. Together, the two initiatives increased sequestration by a reported 42,377 metric tons carbon dioxide equivalent in 1999.

Between 1991 and 1999, AEP selectively harvested more than 4,300 acres of upland central hardwood and bottomland hardwood stands to improve growing space relationships and maximize growth rates. The efforts increased sequestration on the affected tracts by a reported 5,804 metric tons carbon dioxide in 1999. DTE Energy / Detroit Edison conducted similar thinning operations in previously unmanaged wood lots and reported increasing sequestration by about 1,400 metric tons in 1999. The Pacific Forest Trust, a California-based nonprofit organization, reported implementing unspecified forest management improvements on a 351-acre forest that increased sequestration in 1999 by a reported 68,194 metric tons carbon dioxide. Enhanced forest management activities were also reported by Alliant Energy and Wisconsin Public Service Corporation as components of their afforestation or reforestation activities.

Forest Plantations

Forest plantations include woody biomass production and agroforestry. Woody biomass production is the cultivation of trees in intensively managed plantations for the purpose of producing fuel or fiber. Agroforestry involves mixing trees with annual crops to provide wind shelter, stabilize soil, and produce fuel wood and fruit crops.

Woody biomass production projects were reported by Minnesota Power and J.M. Gilmer and Company. Minnesota Power has negotiated contracts with land owners for the planting of hybrid poplars, which was conducted on 2,672 acres of cleared land between 1995 and 1997. The trees, which reportedly sequestered more than 22,000 metric tons carbon dioxide in 1999, will be harvested after 12 years for use by the forest products industry or as biomass for energy production. J.M. Gilmer and Company established a short-rotation cottonwood plantation on a river bottom site in Alabama. The cottonwoods will also be harvested on a 12-year rotation and used as biofuel (displacing fossil fuel) or for pulpwood.

AES Thames reported an agroforestry project in Guatemala that involves establishing a plantation of fruit, pulp, and fuel wood trees. Using a revised estimation method, AES Thames reported that its project sequestered 480,808 metric tons carbon dioxide in 1999.

Conservation Tillage and Other Sequestration Projects

Not all the carbon sequestration projects reported for 1999 involved conventional forestry. Other projects reported involved conservation tillage, reuse of utility poles, and restoration of terrestrial, wetland, and marine habitats. New projects reported for 1999 included a wetland reclamation project reported by Atlantic Energy, Inc. and seagrass and marsh grass plantings conducted by the Greater Caribbean Energy & Environment Foundation. Atlantic Energy planted native wetland tree species to reclaim 6 acres of a wetland that had been filled with dredge spoils. Greater Caribbean Energy & Environment Foundation planted seagrass at five marine sites in Florida and Texas that had been disturbed effluents from power plant cooling towers or by other sources of pollution. Greater Caribbean also conducted plantings at a sixth site to restore marshland habitat.

Other previously reported carbon sequestration projects include the following: conservation tillage projects reported by PP&L Resources, Inc. and Alliant Energy; UNICOM's planting of Illinois prairie grasses on company properties and the reuse of utility poles; Entergy's restoration of two wetland sites totaling 5,500 acres by planting grasses and making hydrological modifications; and Alliant's restoration of 700 acres of abandoned old field to prairie / savanna habitat. These projects were reported to have sequestered a total of 67,615 metric tons carbon dioxide in 1999.

[43]This project was originally sponsored by New England Power Company and reported by its parent company, New England Electric System (NEES) Company. In August 1998, USGen New England, Inc. (USGenNE) completed the acquisition of New England Electric System (NEES) Company's hydroelectric and fossil power generation business previously operated by New England Power. As part of the acquisition, the rights to the emission reductions and carbon sequestration achieved by this and other projects were transferred to USGenNE. For 1999, the activities previously reported by USGenNE were incorporated into the report submitted by its parent, PG&E Corporation.

5. Reducing Methane Emissions

U.S. anthropogenic (human-caused) methane emissions totaled 28.8 million metric tons in 1999, nearly 3 million metric tons less than in 1990. Estimated emissions from landfills—the largest single anthropogenic source of methane in the United States—dropped from 11.25 million metric tons in 1990 to 8.94 million metric tons in 1999[44] as a result of a rapid increase in methane recovery at landfills in response to the expiring Section 29 tax credit for alternative fuels and the implementation of EPA's New Source Performance Standards and Emission Guidelines.[45] Overall, methane recovery at landfills grew from about 1.0 million metric tons in 1990 to 3.6 million metric tons in 1999.[46] Although not directly correlated, the increase in activity aimed at capturing methane from landfills is reflected in reports submitted to the Voluntary Reporting Program. For the 1999 data year, reduction activities were reported for 190 separate landfills, up from 93 in 1998 and 79 in 1997.

Another significant component of the overall decline in U.S. methane emissions has been a drop in emissions from coal mining. Methane emissions from coal mines declined from 4.3 million metric tons in 1990 to 2.9 million metric tons in 1999.[47] To a large extent, the decline is attributable to an increase in methane recovery at coal mines, from 0.25 million metric tons in 1990 to about 1.0 million metric tons in 1999. The Voluntary Reporting Program received reports on 18 emission reduction projects at coal mines. Four projects reported reductions from the White Oak Creek property, and three reported reductions from Oak Grove mine.[48] Because reductions representing only the ownership portion of the reporting entity were reported for each of the projects, reductions were not double counted. Together, these 18 projects reported total emission reductions of 584,090 metric tons of methane.

Although U.S. methane emissions from the production, transmission, and distribution of natural gas and from agricultural activities both increased somewhat between 1990 and 1999 (7.4 percent and 8.1 percent, respectively), some entities reported reductions in emissions from these sources. Reduced emissions from the natural gas system were reported for 13 projects, and reduced emissions from agricultural activities were reported for 4 projects.

Overview of Projects Reported

For the 1999 data year, 67 organizations reported a total of 228 projects to reduce methane emissions, a 40-percent increase from the 1998 data year and a 430-percent increase from the first (1994) reporting cycle (Table 11). Nearly half (105) of the projects were reported for the first time in the 1999 reporting cycle, as compared with 79 projects reported for the first time in 1998. Some projects reported in previous years were not reported in 1999.

Together, the 228 projects for which methane emission reductions were the principal outcome resulted in total reductions of 2,314,973 metric tons of methane (48,614,437 metric tons carbon dioxide equivalent). The average emission reduction per project was 10,153 metric tons of methane (213,221 metric tons carbon dioxide equivalent). In addition, methane emission reductions totaling 9,820 metric tons were reported as secondary results from other projects in 1999, bringing the total methane reductions reported for all project types in 1999 to 2,324,794 metric tons of methane (Table 12).

The average reduction per project for the 228 projects specifically aimed at reducing methane emissions in 1999 was skewed upward by several large projects. The 65 waste-to-energy plants operated by members of the Integrated Waste Services Association (IWSA) burned municipal solid waste (MSW) rather than sending it to landfills, achieving reported reductions of 194,500 metric tons of methane emissions. Several other projects combined recovery activities at multiple landfill sites. And finally, methane emission reduction projects at a

[44]Energy Information Administration, *Emissions of Greenhouse Gases in the United States 1999*, DOE/EIA-0573(99) (Washington, DC, October 2000), http://www.eia.doe.gov/oiaf/1605/ggrpt/index.html.

[45]The EPA's Landfill Methane Outreach Program (LMOP) has also contributed to the increase in methane recovery from landfills, as reflected by the large percentage of landfill gas-to-energy project developers who reported participation in LMOP as part of their submissions to the Voluntary Reporting of Greenhouse Gases Program (see Table 15, page 42, in this chapter).

[46]Energy Information Administration, *Emissions of Greenhouse Gases in the United States 1999*, DOE/EIA-0573(99) (Washington, DC, October 2000), http://www.eia.doe.gov/oiaf/1605/ggrpt/index.html.

[47]Energy Information Administration, *Emissions of Greenhouse Gases in the United States 1999*, DOE/EIA-0573(99) (Washington, DC, October 2000), http://www.eia.doe.gov/oiaf/1605/ggrpt/index.html.

[48]The White Oak Creek property is owned by USX Corporation, which leases a portion to Drummond Coal for mining at the Shoal Creek mine. The Oak Grove mine is owned by U.S. Steel Mining Corporation.

Table 11. Projects Reported with Methane Reductions as the Principal Outcome by Project Type, Data Years 1994-1999

Project Type	1994	1995	1996	1997	1998	1999
Waste Management and Disposal	***27***	***39***	***65***	***81***	***129***	***193***
Landfill Gas Recovery	24	35	60	74	118	180
Wastewater Treatment	2	2	3	5	6	5
Other	1	2	2	2	5	8
Agriculture	***3***	***3***	***3***	***3***	***4***	***4***
Energy Production and Consumption	***13***	***16***	***22***	***19***	***30***	***31***
Coal Mining	2	2	4	6	19	18
Natural Gas Production, Transmission, and Distribution	11	14	18	13	11	13
Total	**43**	**58**	**90**	**103**	**163**	**228**

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Table 12. Total Reported Methane Emission Reductions, All Project Types, Data Years 1994-1999
(Metric Tons Methane)

Reporting Form	1994	1995	1996	1997	1998	1999
EIA-1605						
Direct Reductions	25,079	8,450	409,176	378,494	1,379,162	1,355,157
Indirect Reductions	102,641	1,077,272	1,157,048	505,663	658,811	827,294
EIA-1605EZ (Direct Reductions)	24,522	50,554	53,573	79,364	126,905	142,343
Total	**152,242**	**1,136,276**	**1,619,797**	**963,521**	**2,164,879**	**2,324,794**

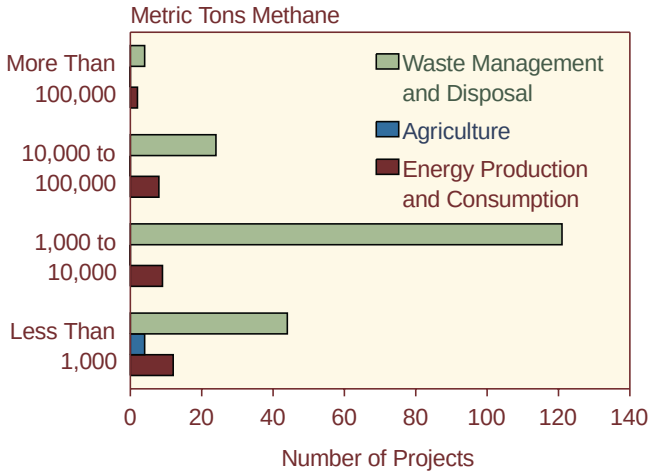
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

few very gassy coal mines were substantially larger than most of the other methane emission reduction projects reported (Figure 14). In 1999, the average reported methane reduction achieved by gas recovery projects at coal mines was 32,394 metric tons.

Methane reduction projects are more prone to double reporting than are most other greenhouse gas reduction projects (with the exception of demand-side management programs), because electricity generated from methane recovery at a landfill, coal mine, or animal waste management facility is often sold to a second party, or recovered gas is piped to a second party for use in a boiler. In such cases, the party that captures the gas may report a direct reduction and the gas or electricity purchaser an indirect reduction. Where double reporting does occur, however, double counting is avoided because electricity producers report reductions as indirect unless they have an ownership stake in the landfill or its gas resource, whereas landfill gas developers report reductions as direct. Although there may be multiple reports of the same reduction from a single project, the reduction is unlikely to be double counted, because the reductions would be accounted for separately as part of either direct or indirect totals.

Additional instances of double reporting may occur if a project is reported by two or more entities with ownership interests. Again, however, because reporters are instructed to report only the portion of overall

Figure 14. Methane Projects Reported, by Size of Methane Emission Reduction, Data Year 1999



Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

reductions equal to their ownership share, double counting should not occur. Finally, in instances where both biogas flaring and biogas recovery for energy occur at the same landfill, the projects may be reported more than once; however, the total reductions reported should not exceed the reductions actually achieved.

For the 1999 data year, nine cases were found in which both the entity that captured methane and the purchaser

of the methane or of the electricity generated from the methane also reported emission reductions. In addition, for 14 landfill projects, both methane flaring and recovery for energy were reported separately; and in three instances multiple owners of a single coal mine methane capture project reported their respective shares of the resulting emission reductions.

Reducing Methane Emissions from Waste Treatment and Disposal

Reducing emissions from waste treatment and disposal sites was by far the most frequently reported method for lowering methane emissions in 1999. The number of such projects reported for 1999 (193) was 50 percent higher than the number (129) reported for 1998 and 7 times the number (27) reported for 1994. The principal reported method for reducing methane emissions from waste management and disposal was the capture of methane generated during the anaerobic decomposition of wastes in a landfill. The methane may be flared, piped to an end-use customer, or used to generate electricity, reducing the need for generation from other, more carbon-intensive fuels. Other methods of lowering emissions from waste treatment and disposal include reducing the volume of waste reaching landfills through combustion or recycling, and capturing methane generated during anaerobic decomposition of organic material in wastewater.

The 193 waste treatment and disposal projects reported for 1999 accounted for 1,710,662 metric tons of methane emission reductions in 1999 (Table 13), or about 72 percent of all the methane reductions reported. Of the total methane reductions reported for waste treatment and disposal projects, 815,344 metric tons was reported as indirect (i.e., occurring at facilities not owned by the reporter). For 186 of the 193 projects reported, methane emission reductions were achieved at landfills, including 8 projects that lowered emissions through diversion of wastes that would have emitted methane during decomposition and 178 that captured methane from landfill gas generated at waste disposal sites.

Recovery of Landfill Gas

As waste decomposes in a landfill it produces a biogas that is approximately 50 percent carbon dioxide and 50 percent methane. As a result, landfill gas is a potentially valuable source of energy, with a heat content of about 500 British thermal units (Btu) per cubic foot, or about half that of commercially marketed natural gas. Because of its relatively low Btu content and the presence of several impurities, the typical method for using landfill gas is to burn it for electricity generation rather than upgrading it for sale to a pipeline. The electricity generated is sold to the grid. The process lowers methane emissions and reduces consumption of other fuels for electricity generation. When the electricity generated displaces oil- or coal-fired generation, carbon dioxide emissions are reduced. More recently, an increasing number of projects have involved piping landfill gas for direct use in medium-Btu boilers, thus displacing fossil fuels.

Table 13. Reported Methane Emission Reductions for Waste Treatment and Disposal Projects, Data Years 1994-1999
(Metric Tons Methane)

Reporting Form and Project Type	1994	1995	1996	1997	1998	1999
EIA-1605						
Direct Reductions	*****	**619**	**128,449**	**135,639**	**484,673**	**756,984**
Landfill Gas Recovery	*	619	128,449	135,341	451,445	756,551
Wastewater Treatment	0	0	0	298	33,267	475
Waste Combustion	0	0	0	0	-39	-42
Indirect Reductions	**99,431**	**1,061,691**	**1,142,877**	**449,595**	**644,739**	**815,344**
Landfill Gas Recovery	99,431	112,293	250,481	298,336	480,374	474,618
Wastewater Treatment	0	1	*	0	4,714	10,352
Waste Combustion	0	950,397	892,396	151,259	159,651	330,374
EIA-1605EZ (Direct Reductions)	**24,388**	**50,324**	**53,006**	**78,624**	**123,958**	**138,334**
Landfill Gas Recovery	24,388	50,324	53,006	58,434	78,447	95003
Wastewater Treatment	0	0	0	0	0	0
Waste Combustion	0	0	*	20,190	45,511	43,331
Total	**123,819**	**1,112,634**	**1,324,333**	**663,857**	**1,253,371**	**1,710,662**

*Less than 0.5 metric ton.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

For the 178 landfill gas recovery projects reported for 1999, total methane emission reductions (57 percent of which were reported as direct reductions) were 1,326,171 metric tons of methane. The average reduction per project was 7,450 metric tons. Of the projects reported, 88 recovered landfill methane for energy, 41 simply flared the gas, and 49 included both recovery for energy and flaring. One of the most active participants in the Voluntary Reporting of Greenhouse Gases Program is Ecogas, which reported methane emission reductions from its share of ownership in 18 separate landfill gas recovery projects. One of them, the Mountaingate project, recovers 4 million cubic feet of landfill gas from approximately 375 acres, containing 21 million tons of solid waste. The gas is drawn from 125 wells (ranging from 60 to 100 feet deep), cleaned, compressed, and transported 4.5 miles through a dedicated pipeline to a 40-megawatt cogeneration facility at the University of California Los Angeles (UCLA) campus.

Waste Diversion

When waste is diverted from a landfill through recycling, source reduction, or waste combustion, methane emissions that would have resulted when the waste decomposed at a landfill are avoided. Eight such projects were submitted to the Voluntary Reporting Program for 1999 under the category of waste treatment and disposal. Together, those eight projects reduced methane emissions by a total of 373,663 metric tons. The Integrated Waste Services Association (IWSA) reported reductions associated with the combustion of waste at facilities owned by its members across the United States. Because the project covered 65 waste-to-energy facilities, IWSA reported a very large reduction of 194,495 metric tons of methane in 1999. Public Service Enterprise Group also reported a waste-to-energy project that reduced emissions by 101,864 metric tons of methane. There were also many recycling projects reported under project types other than waste treatment and disposal that showed reductions in methane emissions (see box on page 41).

Reducing Methane Emissions from Wastewater Treatment Plants

When wastewater is treated under anaerobic conditions, the decomposition of its organic portion yields methane. Like methane generated from waste at landfills, the methane generated from wastewater treatment may be captured and either flared or used as an energy resource. Because captured methane has value as an energy resource, operators may use an anaerobic digester to treat the wastewater and maximize methane generation. Seven projects to capture methane generated from wastewater treatment were reported for 1999, with total reported reductions of 10,828 metric tons of methane emissions.

Three of the seven projects to reduce methane emissions from wastewater treatment were reported by the Platte River Power Authority and its four owner cities. At the Loveland wastewater treatment facility in Colorado, Platte River reported using biogas produced in an anaerobic digester to displace natural gas used in boilers and to generate electricity. At the Longmont facility in Colorado, biogas was used to maintain the operating temperature of sludge digesters. At the Drake Water facility in Fort Collins, CO, the gas was used in a boiler to meet the facility's fuel needs.

Reducing Emissions from Energy Production and Consumption

Reducing Emissions from Coal Mines

As coal is formed from organic material by natural chemical and physical processes, methane is also created. The methane is stored in the pores (open spaces) of the coal itself and in cracks and fractures in the coalbed. As coal is mined, the pressure surrounding the stored methane decreases, allowing much of it to be released into the operating coal mine. Because methane in concentrations of 5 to 15 percent is explosive, mine operators use large fans to provide a steady airflow across the mine face and ventilate the mine shaft. Because the methane is valuable as an energy resource, mine operators may also employ degasification wells to capture methane and either inject it into gas pipelines or use it to generate electricity.

For 1999, 18 projects to reduce methane emissions from coal mines were reported, with total emission reductions of 584,090 metric tons of methane (Table 14). Three projects were reported by Black Warrior Methane Corporation, which operated degasification activities at some of the gassiest mines in the Warrior Basin of Alabama. The three projects resulted in reported reductions of 243,252 metric tons of methane emissions in 1999. An additional aggregate reduction of 216,070 metric tons of methane was reported in portions, as part of four separate projects at the White Oak Creek field (owned by USX corporation) in Alabama.

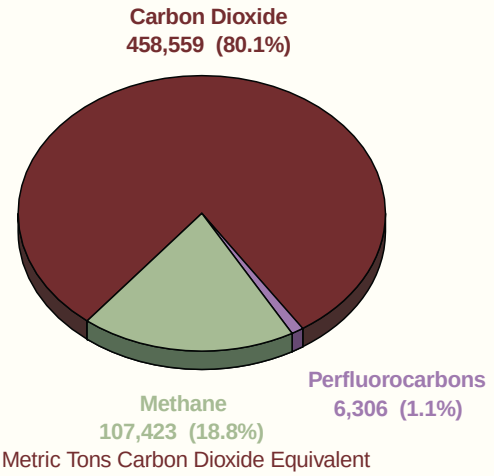
When a mine is closed it may continue to have significant although slowly declining emissions over many years. Northwest Fuel Development reported methane emission reductions of 633 metric tons in 1999 from a project to use methane recovered from abandoned coal mines to generate electricity. As the purchaser of electricity from the project, PacifiCorp also reported associated indirect reductions of 528 metric tons.

Recycling and Source Reduction Projects

The Voluntary Reporting Program has received reports on three types of waste management projects: waste diversion, recycling, and source reduction. Of the 37 recycling and source reduction projects reported for 1999, only 4 involved source reduction, and 2 of those included a combination of recycling and source reduction activities. Recycling and source reduction projects reported to the Voluntary Reporting Program for 1999 were estimated to have resulted in the avoidance of a total 711,602 metric tons of waste that would otherwise have been placed in landfills, for a combined emission reduction of 572,288 metric tons carbon dioxide equivalent. The emissions reduced included carbon dioxide (458,559 metric tons or 80 percent of the total), methane (107,423 metric tons carbon dioxide equivalent), and perfluorocarbons (PFCs) (6,306 metric tons carbon dioxide equivalent).

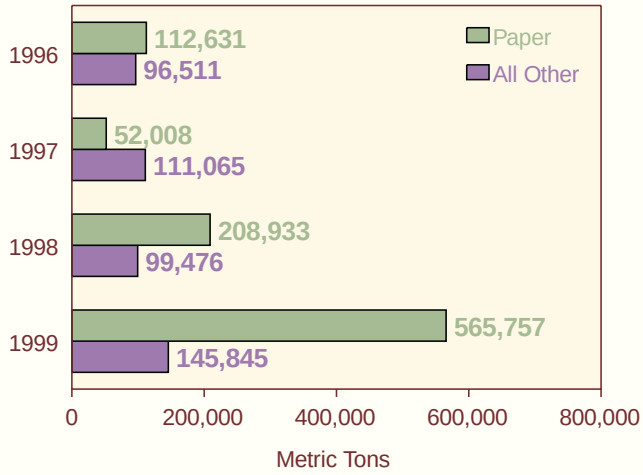
Paper made up most of the waste reported to have been recycled in the projects, as it has consistently since the 1996 reporting year. The WasteWi$e recycling project reported by Public Service Enterprise Group was one of the most comprehensive recycling programs in 1999, involving recycling and source reduction of a wide variety of materials, including wood, rubber, oil and batteries, metals, and paper.

Reported Emission Reductions from Recycling and Source Reduction Projects, Data Year 1999



Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Materials Recycled or Source Reduced: Paper and All Other Materials, Data Years 1996-1999



Notes: Other materials may include unspecified paper. No recycling projects were reported before data year 1996.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Table 14. Reported Methane Emission Reductions from Energy Production and Consumption, Data Years 1994-1999
(Metric Tons Methane)

Reporting Form and Project Type	1994	1995	1996	1997	1998	1999
EIA-1605						
Direct Reductions	**19,687**	**7,714**	**279,766**	**242,040**	**893,927**	**595,311**
Coal Mining	11,767	3,620	270,967	232,132	877,819	581,307
Natural Gas Systems	7,920	4,094	8,799	9,908	16,108	13,683
Indirect Reductions	**0**	**3,543**	**4,039**	**5,439**	**7,603**	**6,565**
Coal Mining	0	278	893	2,285	1,568	528
Natural Gas Systems	0	3,265	3,146	3,150	6,035	6,036
EIA-1605EZ	**135**	**230**	**567**	**741**	**2,393**	**2,255**
Coal Mining	0	0	22	188	2,393	2,255
Natural Gas Systems	135	230	544	553	0	0
Total	**19,822**	**11,486**	**284,371**	**248,220**	**903,923**	**604,132**

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Reducing Emissions from Natural Gas Production, Transmission, and Distribution

Methane is the principal constituent of natural gas (about 95 percent of the mixture). Natural gas is released at several stages of gas production, from the transmission and distribution system through leakage, during normal maintenance, and, rarely, as a result of accidents. Thus, methane emissions can be reduced by replacing leaky system components, improving operations and maintenance, and limiting routine venting procedures. Thirteen such projects were reported for 1999, with an average reduction of 1,542 metric tons of methane per project. The five largest projects reported represented 90 percent of the reductions reported for this source. Western Resources reported a project that reduced methane emissions by 6,024 metric tons, Public Service Company of New Mexico submitted a project with a reduction of 3,693 metric tons methane, CMS Energy reported a reduction of 3,608 metric tons methane, and NiSource reported two projects that lowered methane emissions by a total of 4,674 metric tons.

Reducing Emissions from Agriculture

Four projects reported for 1999 focused on reducing methane emissions from agricultural activities. In three cases, methane was recovered from the decomposition of animal waste in anaerobic digesters and used to generate electricity. As the purchaser of the electricity from two projects, General Public Utilities reported methane reductions of 55 metric tons. PP&L reported reductions of 124 metric tons from a biogas project at Rocky Knolls/Keener Farm. The third project was a study on reducing emissions from rice cultivation, financed by Reliant Energy (formerly Houston Lighting and Power Company).

Federal Voluntary Programs To Reduce Methane Emissions

The U.S. Government sponsors a number of voluntary programs specifically targeted to reduce methane emissions. Most prominent are the Landfill Methane Outreach Program (LMOP), the Coalbed Methane Outreach Program (CMOP), and the Natural Gas STAR Program. In addition, reducing methane is an effective method for meeting the reduction targets utilities have adopted under the Climate Challenge Voluntary program. The number of reported methane reduction projects associated with Federal voluntary programs has increased nearly fivefold since 1994, with a particularly large increase in the number of projects associated with the LMOP. Of the 193 waste treatment and disposal projects reported to the Voluntary Reporting Program for 1999, 115 were associated with the LMOP (Table 15).

Table 15. Number of Methane Reduction Projects Reported to Voluntary Reporting of Greenhouse Gas Program Associated with Other Federal Voluntary Programs, Data Years 1994-1999

Voluntary Program	1994	1995	1996	1997	1998	1999
Climate Challenge	22	27	32	36	34	39
Landfill Methane Outreach Program	6	8	29	32	90	115
Coalbed Methane Outreach Program	1	1	2	2	10	11
Natural Gas STAR	7	9	11	6	5	7
Other	0	6	2	2	1	3
Total	**30**	**42**	**70**	**67**	**133**	**165**

Note: Totals may not equal sum of components, because some projects are associated with more than one voluntary program.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

6. HFCs, PFCs, and Sulfur Hexafluoride

U.S. Emissions of HFCs, PFCs, and Sulfur Hexafluoride

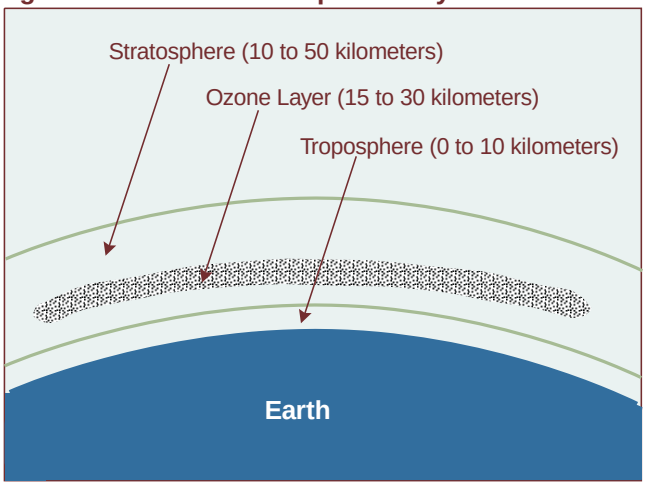
Halogenated substances are chemicals that have been engineered for a variety of industrial uses. Some are greenhouse gases with high global warming potentials (GWPs) as compared with carbon dioxide and, therefore, may have an effect on global climate disproportionate to the relatively small volumes emitted.[49] Emissions of halogenated substances can be classified into two groups according to the accuracy with which their GWPs can be determined.

The first group consists of chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), and other chlorine-containing gases. These compounds absorb infrared radiation at wavelengths that would not otherwise be absorbed, making them potent greenhouse gases with direct radiative forcing effects hundreds or thousands of times greater than that of carbon dioxide. Because they contain chlorine, however, these substances also tend to destroy the ozone layer, located in the middle to upper stratosphere (Figure 15), which absorbs damaging ultraviolet radiation from the sun. Because ozone is a greenhouse gas, the reaction tends to offset the net warming effects of the chlorine-containing halogens to varying degrees. As a result, their effective GWPs are difficult to determine.

CFC production ceased in January 1996 in accordance with the Copenhagen Amendments to the Montreal Protocol (except for production of CFCs used in metered dose inhalers for asthma patients). In addition, all HCFC production is required to be phased out by 2030. The United Nations Framework Convention on Climate Change (UNFCCC) excludes from its provisions gases covered by the Montreal Protocol and, therefore, does not address CFCs and HCFCs.

The halogenated substances in the second group, which are the focus of this chapter, include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These compounds also absorb infrared radiation that would not otherwise be absorbed in the troposphere, and they have relatively high radiative forcing impacts. In contrast to the chlorine-containing halogenated substances, these compounds do not destroy ozone. Thus, their estimated GWPs, expressed in metric tons carbon dioxide equivalent, can be more accurately evaluated. The Kyoto Protocol to the UNFCCC explicitly lists HFCs, PFCs, and SF_6 as greenhouse gases affected by its provisions.

Figure 15. Earth's Atmospheric Layers



Source: U.S. Environmental Protection Agency.

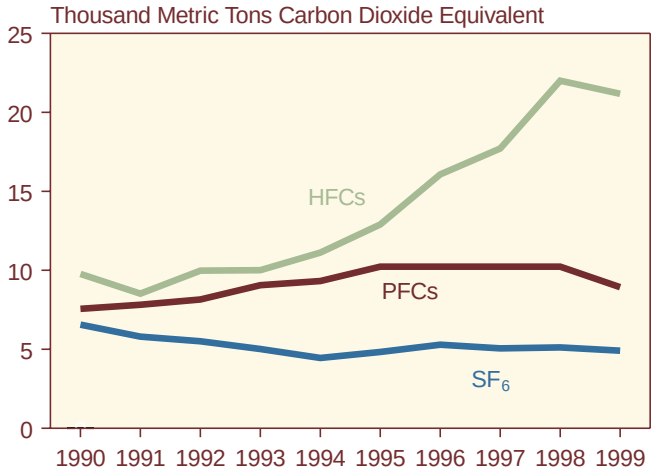
In 1999, U.S. emissions of HFCs, PFCs, and SF_6 were estimated to be 137.9 million metric tons carbon dioxide equivalent, a 57-percent increase over 1990 levels, primarily due to increases in HFC emissions.[50] Emissions of HFCs, which are used as replacements for CFCs as blowing agents, refrigerants, solvents, and in automobile air conditioners, overall have been growing during the 1990s (Figure 16). In turn, emissions of CFCs are decreasing, according to recent estimates published by the Energy Information Administration.[51] PFCs are emitted as a byproduct of aluminum smelting and are used in semiconductor manufacturing as etchants and cleaning agents. In contrast, emissions of PFCs and SF_6 have remained relatively stable since 1990.

[49] Global warming potentials from Intergovernmental Panel on Climate Change, *Climate Change 1995: The Science of Climate Change* (Cambridge, UK: Cambridge University Press, 1996), p. 121.

[50] Energy Information Administration, *Emissions of Greenhouse Gases in the United States 1999*, DOE/EIA-0573(99) (Washington, DC, October 2000), http://www.eia.doe.gov/oiaf/1605/1605a.html.

[51] Energy Information Administration, *Emissions of Greenhouse Gases in the United States 1999*, DOE/EIA-0573(99) (Washington, DC, October 2000), http://www.eia.doe.gov/oiaf/1605/1605a.html.

Figure 16. Estimated U.S. Emissions of HFCs, PFCs, and Sulfur Hexafluoride, 1990-1999



Source: Energy Information Administration, *Emissions of Greenhouse Gases in the United States 1999*, DOE/EIA-0573(99) (Washington, DC, October 2000), Table 31, p. 64.

Projects Reported

For the 1999 data year, 27 entities reported on 36 projects that reduced emissions of halogenated substances 17-percent increase in the number of entities reporting and a 3-percent increase in the number of projects reported for 1998. In addition to HFCs, PFCs, and SF_6, the 1999 projects included reported reductions of other halogenated substances, including CFCs (CFC-11, CFC-12, and CFC-113) and HCFCs (HCFC-22, HCFC-123, and HCFC-142b).

Nineteen of the entities reporting for 1999 were electric utilities; three were aluminum smelters (Alcan Ingot, Noranda Aluminum, Inc., and VANALCO, Inc.); two were from the chemical and allied products industry (Allergan, Inc. and the Dow Chemical Company); one was from the communications industry (AT&T); one was a local government in New York State (Madison County Department of Solid Waste & Sanitation); and one was from the holdings and other investment office industry (CLE Resources). Eighteen of the 19 electric utilities participated in the Climate Challenge Program sponsored by the U.S. Department of Energy (DOE). Other voluntary programs with which the projects reported in this category were affiliated include the Climate Wise Recognition Program, the Voluntary Aluminum Industrial Partnership, and the Sulfur Hexafluoride Emissions Reduction Partnership for Electric Power Systems. In addition, all of the 27 entities that reported on projects to reduce emissions of halogenated substances used the long form to report their activities to the Voluntary Reporting Program.

For 1999, emissions avoidance and recycling were the two most frequently reported project types (16 and 15 projects reported, respectively), followed by substitution of other chemicals (9 projects reported). Other types of projects reported for 1999 included the destruction of halogenated substances and the use of improved appliances. No general halogenated substance projects, where the types of activities are not specified, were reported for 1999 (Table 16). Reductions of HFCs, PFCs, and SF_6 emissions were reported for 18 projects, totaling 4,330,829 metric tons carbon dioxide equivalent (Table 17).

Emission Reductions by Gas

In terms of metric tons of native gas (i.e., not weighted for GWP), overall reported project-level reductions of perfluoromethane, perfluoroethane, and SF_6 in 1999 were lower than those reported for 1998 (Table 18), primarily because of the increased use of HCFCs and HFCs as replacements for CFCs. The largest GWP-adjusted reductions were reported for PFCs at 3,691,507 metric tons carbon dioxide equivalent (Table 17). Reported reductions of SF_6 for 1999 dropped by 31,659 metric tons carbon dioxide equivalent (5 percent) but still were triple the value reported for 1995 (Table 18).

Table 16. Number of Projects Reported for Halogenated Substances, Data Years 1994-1999

Project Type	1994	1995	1996	1997	1998	1999
General	1	1	0	1	0	0
Reclamation: Recycling	7	10	10	14	15	15
Reclamation: Destruction	0	0	1	1	0	1
Substitution	2	6	8	7	8	9
Emissions Avoidance	3	6	8	14	17	16
Use of Improved Appliances	0	1	1	1	1	1
Other Projects/Activities	1	1	0	0	0	0
Total Number of Projects	**15**	**22**	**23**	**30**	**35**	**36**

Note: Project totals may not equal sum of components because some projects may be counted in more than one category.
Sources: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Table 17. Reported Reductions of Hydrofluorocarbon, Perfluorocarbon, and Sulfur Hexafluoride Emissions, Data Year 1999

Gas	Emission Reductions Reported	
	Metric Tons of Gas	Metric Tons Carbon Dioxide Equivalent
HFC-134a	-1.3	-1,738[a]
Perfluoromethane	498.4	3,239,438
Perfluoroethane	49.1	452,070
Sulfur Hexafluoride	26.8	641,058
Reported Total	**NA**	**4,330,827**

[a]The negative reduction for HFC-134a represents an increase in emissions due to its use as a substitute for ozone-depleting CFCs and HCFCs that are being phased out under the Montreal Protocol.

NA = not applicable.

Sources: Energy Information Administration, Form EIA-1605 and EIA-1605EZ. Global warming potentials from Intergovernmental Panel on Climate Change, *Climate Change 1995: The Science of Climate Change* (Cambridge, UK: Cambridge University Press, 1996), p. 121.

Table 18. Reported Reductions in Emissions of Halogenated Substances, Data Years 1994-1999
(Metric Tons of Gas)

Gas	1994	1995	1996	1997	1998	1999
Perfluoromethane	465.77	431.00	486.12	482.00	507.00	498.38
Perfluoroethane	45.78	42.50	48.31	58.34	51.64	49.14
HFC-134a	-0.02	-0.03	-0.03	-0.03	-1.34	-1.34
HFC-152a	NR	NR	126.96	0.00	0.00	0.00
Sulfur Hexafluoride	3.76	8.74	-3.15	23.28	28.15	26.82

NR = not reported.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Hydrofluorocarbons

HFCs are used as replacements for ozone-depleting substances such as CFCs. U.S. emissions of HFCs were estimated at 78 million metric tons carbon dioxide equivalent in 1999, a 117-percent increase over 1990 levels.[52] HFCs are used to replace CFCs as blowing agents, in automobile air conditioners and refrigerators, and in other manufacturing applications, where emissions result from system leaks. In the semiconductor industry, HFCs are also used in plasma etching and chemical vapor deposition processes. HFC-23 is a byproduct of HCFC-22 manufacturing.

One project reported by UNICOM resulted in a net increase in HFC emissions of 1.3 metric tons, equivalent to 1,738 metric tons of carbon dioxide. UNICOM has operated a central cooling plant serving commercial buildings in Chicago since 1995 that uses the refrigerants HCFC-22 and HFC-134a. The plant has replaced older, leakier equipment in the individual buildings served by the plant resulting in a net reduction in emissions of ozone-depleting refrigerants (CFC-12, CFC-12, and HCFC-22) but an increase in emissions of HFC-134a.

Perfluorocarbons

The principal source of PFC emissions is aluminum smelting. PFCs are produced during aluminum production when the alumina content of the electrolytic bath falls below critical levels required by the electrolytic effect. The resulting electrical upset in the reduction cell is manifested as a rapid voltage increase. The gases formed accumulate at the anode of the reduction cell (hence the name "anode effect"). PFCs are also used in some semiconductor manufacturing processes and, consequently, may be emitted from fabrication plants.

For 1999, three companies (Alcan Ingot, Noranda Aluminum, Inc., and VANALCO, Inc.) claimed reductions in emissions of PFCs totaling 3,691,507 metric tons carbon dioxide equivalent, which accounted for 85 percent of total reported project-level emissions of PFCs, HFCs, and SF_6 in 1999. During 1999, efforts by VANALCO, Inc., and Noranda to reduce PFC emissions were focused on controlling the amount of alumina in solution to avoid anode effects and monitoring the process more closely to stop or correct them expeditiously. Noranda reported the largest individual reductions

[52]Energy Information Administration, *Emissions of Greenhouse Gases in the United States 1999*, DOE/EIA-0573(99) (Washington, DC, October 2000), http://www.eia.doe.gov/oiaf/1605/1605a.html.

among the three projects in this category for 1999. According to Noranda's report, perfluoromethane emissions were reduced by 3,165,500 metric tons carbon dioxide equivalent and perfluoroethane emissions by 441,600 metric tons carbon dioxide equivalent in 1999. Alcan Ingot reported that, as a result of its efforts to reduce anode effects, perfluoromethane emissions were reduced by 73,938 metric tons carbon dioxide equivalent and perfluoroethane emissions by 10,470 metric tons carbon dioxide equivalent. VANALCO, Inc., which also reported a project in this category, claimed no PFC reductions for 1999. The U.S. Environmental Protection Agency sponsors the Voluntary Aluminum Industrial Partnership, which seeks to reduce emissions of PFCs, carbon tetrachloride, and SF_6 during primary aluminum processing. For 1999, Alcan Ingot, Noranda, and VANALCO, Inc., all reported participation in the program.

Sulfur Hexafluoride

Sulfur hexafluoride is used as an insulator for circuit breakers, switch gear, and other electrical equipment and as a cover gas in magnesium smelting. It is also emitted during the aluminum smelting process. It has a very high GWP—23,900 times the warming effect of carbon dioxide per ton emitted. Therefore, even small amounts of SF_6 can play a disproportionate role in U.S. contributions to climate change.[53]

For 1999, 11 companies, including Allegheny Energy Inc., Baltimore Gas & Electric, and Southern Company, claimed reductions in SF_6 emissions that totaled 641,058 metric tons carbon dioxide equivalent, accounting for 15 percent of the total reported project-level reductions in emissions of PFCs, HFCs, and SF_6.

The Southern Company reported the largest single sulfur hexafluoride emission reduction for 1999 at 413,470 metric tons carbon dioxide equivalent, followed by GPU, Inc., at 72,504 metric tons, Allegheny Energy at 64,395 metric tons, and NiSource/NIPSCO at 40,762 metric tons carbon dioxide equivalent. These four project-level claims of emission reductions combined to account for 93 percent (591,130 metric tons carbon dioxide equivalent) of total reported project-level reductions of SF_6 emissions for 1999 and 14 percent of total project-level emission reductions claimed for HFCs, PFCs, and SF_6 combined (Table 19).

Table 19. Largest Reported Project-Level Reductions of Sulfur Hexafluoride Emissions by Reporter, Data Year 1999

Company	SF_6 Emission Reductions Reported		Percent of Total Reported Reductions of HFCs, PFCs, and SF_6
	Metric Tons of Gas	Metric Tons Carbon Dioxide Equivalent	
Southern Company	17.3	413,470	10
GPU, Inc.	3.0	72,504	2
Allegheny Energy, Inc.	2.7	64,395	2
NiSource/NIPSCO	1.7	40,762	1
TXU	0.9	22,441	1
Public Service Enterprise Group	0.5	11,340	<1
Pacific Gas & Electric Company	0.5	10,800	<1
Reported Total	**26.6**	**635,711**	**15**

Note: Totals may not equal sum of components due to independent rounding.
Source: Energy Information Administration, Form EIA-1605.

[53]Energy Information Administration, *Emissions of Greenhouse Gases in the United States 1999*, DOE/EIA-0573(99) (Washington, DC, October 2000), http://www.eia.doe.gov/oiaf/1605/1605a.html.

7. Entity-Level Reporting

Overview

The Voluntary Reporting Program permits three distinct types of emissions reporting:

- Entity-level emissions and reductions, defined as the emissions and reductions of an entire organization, usually defined as a corporation
- Project-level emissions and reductions, defined as the emission reductions consequences of a particular action
- Commitments to take action to reduce emissions in the future.

Chapters 2 through 6 of this report cover project-level emissions. This chapter covers entity-level emissions, emission reductions, and commitments to reduce emissions in the future. Entity reporting and project reporting are not mutually exclusive. They correspond to different views of the appropriate answer to the question, "What is a reduction?" Almost all (184, or 92 percent) of the 201 participants in the program reported project-level information on emissions and/or reductions, and 82 (41 percent) reported entity-level information. Sixty-six (33 percent) of all the participants in the program reported both entity-level information and project-level information. Thus, 80 percent of the entity-level reporters also chose to report project-level information on emissions and/or emission reductions. Sixteen firms (8 percent of the total) reported entity-level information only, whereas 118 (59 percent) submitted only project-level information. In addition, 65 (79 percent) of the 82 entity-level reporters provided information on commitments to reduce greenhouse gas emissions in the future.

Total 1999 entity-level greenhouse gas emissions reported to the Voluntary Reporting Program were 1,455.4 million metric tons carbon dioxide equivalent, or 21 percent of total estimated U.S. emissions of greenhouse gases.[54] According to entity-level reports submitted to the program, containing data through 1999, 98 percent of reported 1999 emissions—weighted by global warming potential (GWP)—were carbon dioxide.

The single largest category of reported emissions was 938.6 million metric tons carbon dioxide equivalent emitted (directly) by stationary combustion sources, mostly electric utilities. The second largest category was indirect emissions from other sources, at 366.3 million metric tons carbon dioxide equivalent. Of this amount, 340.6 million metric tons carbon dioxide equivalent (93 percent) was reported by General Motors (GM) on behalf of the entire U.S. fleet of GM-built vehicles, which accounted for 23 percent of all entity-level emissions reported for 1999. Reported reductions were, in general, were much smaller than reported emissions. Reported reductions totaled 181.6 million metric tons of carbon dioxide equivalent for 1999, or 13 percent of all reported emissions.

Entity-Level Reporting

Who Reported

Electric power producers accounted for 42 of the 82 entity-level reporters. They included Allegheny Energy Incorporated, the Southern Company, the Tennessee Valley Authority (TVA), and most of the other largest electric utilities in the United States. In addition, three subsidiaries of the AES Corporation (an independent power producer) reported on domestic power plants with emissions offset by international forestry projects. The remaining 40 entity-level reporters included aluminum smelters (Alcan and VANALCO), a communications company (AT&T), two semiconductor manufacturers (Lucent and Motorola Austin), and several large manufacturers (GM, IBM, and Johnson & Johnson). Also reporting at the entity level were cement manufacturers, including three plants of the California Portland Cement Company and six plants of the Essroc Cement Corporation, an oil company (Sunoco, Inc.), a trade association (Integrated Waste Services Association [IWSA]), and one household.

Most of the entity-level reporters indicated that they were participants in other U.S. Government-sponsored voluntary programs. Among the programs cited by reporters to the Voluntary Reporting of Greenhouse Gases Program were Climate Challenge (utilities), Climate Wise (manufacturers), Voluntary Aluminum Industrial Partnership (aluminum smelters), Landfill Methane Outreach Program (alternative energy providers), Green Lights Program (utilities and

[54]Energy Information Administration, *Emissions of Greenhouse Gases in the United States 1999*, DOE/EIA-0573(99) (Washington, DC, October 2000), http://www.eia.doe.gov/oiaf/1605/1605a.html.

manufacturers), the U.S. Initiative on Joint Implementation (utilities), Natural Gas Star (utilities), and the Sulfur Hexafluoride Emission Reduction Partnership for Electric Power Systems.

Reported Emissions

The 82 entity-level reporters claimed a total of 945.8 million metric tons of direct carbon dioxide emissions and 458.4 million metric tons of indirect carbon dioxide emissions in 1999 (Table 20). The distinction between "direct" and "indirect" emissions corresponds to differing definitions of "ownership" of emissions. A "direct" emission is defined in the Voluntary Reporting Program as an emission from a stack or exhaust pipe owned by the reporter, in most cases arising from the combustion of fuel owned by the reporter. An "indirect" emission is an emission from a source not owned by the reporter, but which has been caused by the reporter. Among entity-wide reporters, the most important examples of indirect emissions were emissions from motor vehicles built by GM and emissions arising from the purchase or sale of electric power.

As noted above, GM reported indirect emissions of 340.6 million metric tons carbon dioxide from the operation of GM-built vehicles in the United States during 1999. Emissions from GM-built vehicles declined during the 1990s, due to both the rising fuel efficiency of the GM-built vehicle fleet and a decrease in the estimated number of GM-produced vehicles on the road (resulting from a decline in market share). Although emissions did decline over time, GM elected not to claim a corporate reduction in indirect emissions under the Voluntary Reporting Program.

Reported direct emissions for 1999 were moderately concentrated. The largest direct emissions reported were from the Southern Company, with emissions of 94.4 million metric tons carbon dioxide. The second largest direct emissions reported were from the TVA, with emissions of 80.1 million metric tons carbon dioxide, followed by Entergy Services, Inc., with 59.3 million metric tons and Central and South West Corporation with 52.1 million metric tons. In addition, Allegheny Energy, Inc., DTE Energy / Detroit Edison, Duke Energy, FPL Group, First Energy Corporation, PacifiCorp, and Reliant Energy-HLP each reported direct emissions of carbon dioxide in the range of 40.0 to 50.0 million metric tons for 1999.

A typical example of indirect emissions in the Voluntary Reporting Program is the emissions arising from the purchase or sale of electricity. Manufacturers that purchase electricity usually view themselves as responsible for the electricity they consume and, consequently, for any reductions in the quantity of electricity consumed. Utilities, however, have adopted more diverse views. Most electric utilities view themselves as responsible only for the direct emissions from their stacks. This view is unambiguous, relatively easy to verify, and prevents the same emission from being reported by more than one utility; however, accounting for reductions in emissions caused by substitutions of purchased power for company-generated power adds complexity to the picture.

Some utilities (for example, PECO Energy, Northeast Utilities, Niagra Mohawk Corporation, Central and South West Corporation) viewed themselves as responsible for their direct emissions plus the indirect

Table 20. Total Reported Entity-Level Carbon Dioxide Emissions by Type of Activity, 1990-1999
(Million Metric Tons Carbon Dioxide Equivalent)

Type of Reduction	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Direct Emissions										
Stationary Combustion	808.2	608.9	712.1	740.5	820.5	825.3	841.5	896.0	952.4	938.6
Transportation	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1
Other Direct Sources	4.9	4.7	5.1	5.4	5.7	5.9	6.7	7.0	7.1	7.0
Total Direct	***813.3***	***613.7***	***717.3***	***746.1***	***826.4***	***831.4***	***848.4***	***903.1***	***959.7***	***945.8***
Indirect Emissions										
Purchased Power	71.0	68.3	67.0	73.4	73.2	79.8	104.7	117.8	121.4	115.4
Other Indirect Emissions	377.4	368.6	371.9	372.0	373.2	367.7	360.6	353.6	347.4	343.1
Total Indirect	***448.4***	***436.9***	***438.9***	***445.4***	***446.4***	***447.5***	***465.3***	***471.4***	***468.8***	***458.4***
Total Emissions	**1,276.0**	**1,050.6**	**1,156.3**	**1,191.5**	**1,273.0**	**1,278.9**	**1,332.3**	**1,392.5**	**1,448.5**	**1,424.7**
Electricity Wholesaling	7.7	13.5	8.4	7.2	4.4	5.9	-3.3	-43.6	-26.4	-20.3

Notes: Total emissions appearing in this table represent the sum of total direct emissions, emissions from purchased power, and other indirect emissions. These totals may not equal the sum of total reported emissions reported on Part IVa of Form EIA-1605, Schedule III, because the totals calculated by some electric utility reporters reflect net emissions from purchased power and electricity wholesaling.

Source: Energy Information Administration, Form EIA-1605.

emissions from electricity purchases necessary to support their customer base. This approach accounts for the possibility that a decline in generation may be associated with an increase in power purchases, but it may create the appearance of an increase in emissions when a firm is both buying and selling (i.e., trading) increasing volumes of wholesale electricity. Also, double reporting is possible, because both the buyer and seller of the electricity may claim ownership.

A few utilities (for example, Central Hudson Gas & Electric Corporation and DTE Energy) have taken a "net" view, in which they see themselves as being responsible for direct generation emissions plus indirect electricity purchase emissions, minus emissions from "wholesale" electricity sales to other utilities. This approach captures net emissions to supply an end-use customer base, but there is greater potential for double counting, because double reporting is possible for both buying and selling. Further, "generation only" electricity producers, such as independent power producers or generation and transmission cooperatives, would be in the position of defining essentially all their direct emissions as belonging to their customers.

Any organization that reports indirect emissions and reductions is presented with a methodological problem: because the reporter does not control the source of emissions, the reporter may not have sufficient information to estimate emissions accurately. In the case of power purchases, firms that buy electricity may not always know precisely what emissions are associated with their purchases. Most reporters, however, reported only direct emissions. For those who reported indirect emissions, with a few exceptions, the impact of indirect emissions was generally small in comparison with the magnitude of direct emissions.

Emissions of other greenhouse gases reported at the entity level were much smaller than the reported emissions of carbon dioxide and represented proportionately smaller shares of U.S. emissions (Table 21). Emissions of other gases tended to be concentrated, being reported by only a few companies.

Eight companies reported entity-level methane emissions for 1999, including Black Warrior Methane Corporation, the Dow Chemical Corporation, and Tampa Electric Company. Only two participants in the program (GM and IWSA) reported nitrous oxide emissions. Two companies, GM and Black Warrior Methane Corporation, accounted for 97 percent of total reported methane emissions. Black Warrior Methane accounted for 82 percent (6.3 million metric tons carbon dioxide equivalent) of the 7.7 million metric tons carbon dioxide equivalent reported for 1999, and GM accounted for 15 percent (1.2 million metric tons carbon dioxide equivalent). With respect to reported emissions of nitrous oxide, GM accounted for 99.98 percent of the 18.8 million metric tons carbon dioxide equivalent reported for 1999, and IWSA accounted for the remaining 0.02 percent.

Only two companies (GM and the Dow Chemical Company) reported HFC emissions for 1999. GM accounted for 96.6 percent (3.3 million metric tons carbon dioxide equivalent) of the HFC emissions reported for 1999 and the Dow Chemical Company 3.4 percent (0.1 million metric tons carbon dioxide equivalent). Two companies (VANALCO, Inc., and Alcan Ingot, Sebree Aluminum Plant) accounted for all the perfluorocarbon emissions reported (less than 0.5 million metric tons carbon dioxide equivalent), and four companies (the Southern Company, NiSource / NIPSCO, the Dow Chemical Company, and Sacramento Municipal Utility District) accounted for all the sulfur hexafluoride emissions reported (less than 0.5 million metric tons carbon dioxide equivalent).

Reported Reductions

The participants in the Voluntary Reporting of Greenhouse Gases Program reported entity-level emission reductions of carbon dioxide for 1999 totaling 162.7 million metric tons carbon dioxide (Table 22), equal to 8 percent of estimated total U.S. greenhouse gas emissions. The company with the highest level of reported entity-wide emission reductions of carbon dioxide for 1999 was the FPL Group with 28.8 million metric tons, followed by the TVA with 26.1 million metric tons, IWSA with 21.3 million metric tons, and the Duke

Table 21. Total Reported Entity-Level Emissions of Other Greenhouse Gases by Type of Gas, 1990-1999
(Million Metric Tons Carbon Dioxide Equivalent)

Gas	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Methane	16.1	12.9	13.3	10.1	10.2	9.4	8.5	10.1	9.7	7.7
Nitrous Oxide	18.2	19.0	19.9	20.7	21.4	21.4	20.8	20.2	19.5	18.8
Hydrofluorocarbons	*	*	*	0.2	0.8	1.3	1.8	2.3	2.9	3.5
Perfluorocarbons	1.7	1.5	1.5	1.4	1.1	0.8	0.7	0.7	0.5	0.4
Sulfur Hexafluoride	NR	0.1	0.1	0.1	1.1	1.4	1.4	1.0	0.8	0.4
Total Emissions	**36.0**	**33.5**	**34.9**	**32.6**	**34.5**	**34.3**	**33.2**	**34.3**	**33.3**	**30.7**

*Less than 0.05 million metric tons.
NR = no emissions reported.
Source: Energy Information Administration, Form EIA-1605.

Table 22. Total Reported Entity-Level Carbon Dioxide Emission Reductions by Type of Activity, 1991-1999
(Million Metric Tons Carbon Dioxide)

Type of Reduction	1991	1992	1993	1994	1995	1996	1997	1998	1999
Direct Reductions									
Stationary Combustion	29.2	52.4	53.6	67.7	90.6	95.7	98.1	109.6	123.9
Transportation	*	*	*	*	*	*	*	*	0.4
Other Direct Sources	*	*	*	0.2	0.3	0.1	0.2	0.2	0.3
Total Direct	***29.3***	***52.4***	***53.6***	***67.9***	***90.9***	***95.9***	***98.4***	***109.8***	***124.6***
Indirect Reductions									
Purchased Power	2.4	*	3.6	-0.1	-1.3	-0.1	0.7	5.5	4.4
Other Indirect Sources									
IWSA	NR	NR	NR	NR	15.8	16.5	16.0	16.1	17.1
All Other Reporters	0.6	1.1	1.9	4.2	5.6	7.2	5.6	7.7	8.2
Total Indirect	***2.9***	***1.2***	***5.4***	***4.1***	***20.1***	***23.6***	***22.2***	***29.3***	***29.7***
Carbon Sequestered	***1.8***	***2.9***	***7.1***	***7.3***	***7.8***	***7.9***	***9.1***	***9.4***	***8.4***
Total Reductions	**34.0**	**56.4**	**66.2**	**79.3**	**118.8**	**127.3**	**129.7**	**148.5**	**162.7**
Electricity Wholesaling	-5.5	-3.6	-4.1	-2.3	-4.0	-4.0	-5.6	-9.3	-7.0

*Less than 0.05 million metric tons carbon dioxide.
NR = no emissions reported.
Notes: Total reductions appearing in this table represent the sum of reductions in total direct emissions, emissions from purchased power, other indirect emissions, and carbon sequestered. These totals may not equal the sum of total reductions reported on Part IVb of Form EIA-1605, Schedule III, because the totals calculated by some electric utility reporters reflect net emission reductions from purchased power and electricity wholesaling.
Source: Energy Information Administration, Form EIA-1605.

Energy Corporation with 13.3 million metric tons. These companies combined, accounted for 56 percent (89.5 million metric tons carbon dioxide equivalent) of total reported carbon dioxide emission reductions for 1999.

The largest single reported 1999 reduction of carbon dioxide emissions was that of the TVA at 25.8 million metric tons (direct reductions from stationary combustion), followed by IWSA, reporting on behalf of the waste-to-energy industry at 17.1 million metric tons (indirect reduction from other sources), and the FPL Group at 16.6 million metric tons (direct reductions from stationary combustion). The next largest single reported carbon dioxide emissions reduction claim for 1999 was submitted by Duke Energy Corporation, which reported a reduction of 13.1 million metric tons (direct reductions from stationary combustion). These four entity-level claims of carbon dioxide emission reductions alone combined to account for 41 percent (72.7 million metric tons) of total reported entity-level claims of carbon dioxide emission reductions for 1999 (Table 23).

Most of the emission reductions reported were attributable to energy-related carbon dioxide, although the IWSA reported that its members' combustion of municipal solid waste reduced emissions of methane by 4.1 million metric tons carbon dioxide equivalent, and Black Warrior Methane Corporation reported methane emission reductions, mostly from landfill gas capture operations, of 5.1 million metric tons carbon dioxide equivalent. These reductions combined to account for 9.2 million metric tons carbon dioxide equivalent or 5.7 percent of total reported emission reductions at the entity level for 1999.

Most of the larger reported reductions were computed on the basis of "modified" reference cases—i.e., the reporter indicated that emissions were lower than they would have been without the actions taken (Table 23). TVA, for example, used a generation planning model to calculate what its emissions during the 1990s would have been if it had used the set of generating units operational in 1990 at their 1990 capacity factors and heat rates. Since 1990, TVA has greatly expanded nuclear generation. Browns Ferry Unit 2 returned to service in 1991, Browns Ferry Unit 3 returned to service in 1995, and Watts Bar Unit 1 started commercial operation in 1996. TVA's reported carbon dioxide emissions from stationary combustion sources for 1999 were 9.1 million metric tons above 1990 levels but 25.8 million metric tons below what they would have been if its 1990 generation mix and heat rates had been used.

IWSA reported two sources of reductions: (1) by burning municipal solid waste to generate electricity, its members made it possible for electric utilities to burn less coal; and (2) if the municipal solid waste had not been burned, it could reasonably have been expected to be landfilled, and some portion of the landfilled waste would have decomposed anaerobically, producing

Table 23. Largest Individual Reported Entity-Level Emission Reductions by Gas, Source Category, and Type of Reference Case, Data Year 1999

Reporter	Gas	Source	Reference Case	Reported Emission Reduction (Million Metric Tons)	Percent of Total Reported Reductions
Tennessee Valley Authority	CO_2	Stationary combustion	M	25.8	14.4
IWSA	CO_2	Other indirect sources	M	17.1	9.6
FPL Group	CO_2	Stationary combustion	M	16.6	9.3
Duke Energy Corporation	CO_2	Stationary combustion	M	13.1	7.3
FPL Group	CO_2	Indirect power purchases	B	11.4	6.3
First Energy Corporation	CO_2	Stationary combustion	M	10.5	5.8
Niagara Mohawk Corporation	CO_2	Stationary combustion	B	9.7	5.4
Black Warrior Methane Corporation	CH_4	Other direct sources	M	5.1	2.9
Baltimore Gas & Electric	CO_2	Stationary combustion	M	5.1	2.8
Florida Power Corporation	CO_2	Stationary combustion	M	5.0	2.8
Southern Company	CO_2	Stationary combustion	M	5.0	2.8
PG&E Corporation	CO_2	Stationary combustion	M	4.3	2.4
AES-Shady Point	CO_2	Sequestration	M	4.2	2.3
IWSA	CH_4	Other indirect sources	M	4.1	2.3
Entergy Services, Inc.	CO_2	Stationary combustion	M	3.8	2.1
Keyspan Energy Corporation	CO_2	Stationary combustion	B	3.7	2.1
Reliant Energy-HL&P	CO_2	Stationary combustion	M	3.5	2.0
Bethlehem Steel	CO_2	Stationary combustion	M	3.5	1.9
Total				**151.3**	**84.4**

B = Basic. M = Modified.
Source: Energy Information Administration, Form EIA-1605.

methane emissions. Thus, IWSA reported that burning the waste reduced both fossil fuel burning and methane emissions on the part of others.

Twenty-six companies reported emission reductions at the entity level using a "basic" reference case. A basic reference case is defined as total emissions in some baseline year—usually, but not always, 1990. In these cases, reductions were calculated as the difference between actual emissions in the data year and emissions in the baseline year. Of these 26 companies, 21 were utilities, including Duke Energy Corporation, Florida Power Corporation, TVA, and Northeast Utilities. Also reporting entity-level emission reductions using a "basic" reference case were the nonutility reporters Allergan, Inc., Republic Metals Group, Sunoco, Inc., International Truck and Engine Corporation, and the U.S. Department of Energy.

For 1999, the FPL Group reported the largest individual entity-level emissions reduction calculated with a basic reference case, at 11.4 million metric tons carbon dioxide, accounting for 6 percent of total reported carbon dioxide equivalent reductions during 1999. This indirect reduction was associated with the FPL Group's power purchases. In addition, the Niagara Mohawk Corporation, another entity-level reporter that relied on the use of a basic reference case to calculate emission reductions, reported the seventh largest single emissions reduction at 9.7 million metric tons carbon dioxide, representing 5 percent of total reported carbon dioxide equivalent reductions for 1999.

Future Commitments To Reduce Emissions

The Voluntary Reporting Program also permits entities to report commitments to reduce emissions or to take action to reduce emissions in the future. In previous years, virtually all companies reporting future commitments were electric utility participants in the Climate Challenge voluntary program. However, 14 (22 percent) of the 65 future commitment reporters in 1999 were not utilities.[55] They included the Dow Chemical Company, Sunoco, Inc., Noranda Aluminum, Inc., and Lucent Technologies (Table 24). Thirteen of the reporters indicated that they were participants in other voluntary programs, such as Climate Wise for manufacturers and the Voluntary Aluminum Industrial Partnership.

[55] One of the 14 reporters, CLE Resources, is the unregulated subsidiary of an investor-owned electric utility, Cleco Corporation.

Table 24. Nonutility Reporters of Entity-Level Commitments to Reduce Greenhouse Gas Emissions in the Future, Data Year 1999

Company	Industry	Voluntary Program
Allergan, Incorporated	Chemicals and Allied Products	Waste Wi$e
Alcan Ingot	Primary Metals	Voluntary Aluminum Industrial Partnership
Arizona Portland Cement Co.	Stone, Clay, Glass, and Concrete Products	Climate Wise
CLE Resources	Holding and Other Investment Offices	None
California Portland Cement Company - Colton Plant	Stone, Clay, Glass, and Concrete Products	Climate Wise
California Portland Cement Company - Mojave Plant	Stone, Clay, Glass, and Concrete Products	Climate Wise
The Dow Chemical Company	Chemicals and Allied Products	Climate Wise and Waste Wi$e
IBM	Electronic and Other Electrical Equipment	Climate Wise
International Truck & Engine Corporation	Transportation Equipment	Climate Wise and Landfill Methane Outreach Program
Lucent Technologies	Electronic and Other Electrical Equipment	Climate Wise
Motorola Austin	Electronic and Other Electrical Equipment	Climate Wise
Noranda Aluminum	Primary Metals	Voluntary Aluminum Industrial Partnership
Sunoco, Incorporated	Petroleum Refining and Other Related Industries	Climate Wise
VANALCO, Incorporated	Primary Metals	Voluntary Aluminum Industrial Partnership

Source: Energy Information Administration, Form EIA-1605.

There are three types of future commitments in the Voluntary Reporting Program: entity commitments, financial commitments, and project commitments. Entity and project commitments roughly parallel the entity and project aspects of emissions reporting: an entity commitment is a commitment to reduce the emissions of an entire organization; a project commitment is a commitment to take a particular action that will have the effect of reducing the reporter's future emissions. A financial commitment has no emissions reporting counterpart: it is a commitment to spend a particular sum of money on emission reduction activities, without a specific promise on the emissions consequences of the expenditure. Most firms reported more than a single commitment, and many reported more than one type of commitment. Entity commitments are usually to make emissions lower than some level in a target year. Project commitments are usually to reduce emissions by a particular amount over a period of years. Because project commitments can cover a range of years, they are sometimes difficult to compare directly with project-level data for a single year of "achieved reductions."

Entity-level Commitments

Twenty-seven firms reported entity commitments. They made 40 specific promises to reduce, avoid, or sequester future emissions at the corporate level. As in the case of entity reporting, some commitments were to reduce emissions below a specific baseline, others to limit the growth of emissions per unit of output, and others to limit emissions by a specific amount by comparison with a baseline emissions growth trend. Participants reporting entity-level commitments to reduce greenhouse gas emissions in the future included the Dow Chemical Company, Hawaiian Electric Company, First Energy Corporation, IBM, and Allegheny Energy.

Thirty-three (83 percent) of the 40 entity commitments to reduce future emissions involved reducing emissions by the 2000-2005 period. In their reports for 1999, reporters of entity-level commitments pledged to reduce emissions in the future by 92.2 million metric tons carbon dioxide equivalent (Table 25), with 25 percent of the total coming from the TVA (22.6 million metric tons carbon dioxide equivalent), followed by the Los Angeles

Table 25. Largest Reported Individual Entity-level Commitments to Reduce Greenhouse Gases by Gas and Reference Case Type, Data Year 1999

Company	Gas	Reference Case	Carbon Dioxide Equivalent (Million Metric Tons)	Percent of Total Reported Reduction Commitments
Tennessee Valley Authority	CO_2	M	22.6	24.5
Los Angeles Dept. of Water & Light	CO_2	B	16.4	17.8
Niagara Mohawk Corporation	CO_2	B	15.1	16.4
Florida Power & Light	CO_2	M	10.0	10.8
PECO Energy Company	CO_2	B	4.5	4.9
Wisconsin Public Service	CO_2	M	3.2	3.4
First Energy Corporation	CO_2	M	2.9	3.1
Alliant Energy	CO_2	M	2.4	2.6
Noranda Aluminum, Inc.	PFM	B	2.1	2.2
Commonwealth Bethlehem Energy, LLC	CH_4	M	2.0	2.2
Allegheny Energy, Inc.	CO_2	B	1.8	2.0
South Carolina Electric & Gas Company	CO_2	B	1.8	2.0
Alliant Energy	CO_2	M	1.8	1.9
Public Service of New Mexico	CO_2	B	1.5	1.6
Total			**88.0**	**95.5**

PFM = perfluoromethane. B = Basic. M = Modified.
Source: Energy Information Administration, Form EIA-1605.

Department of Water and Power at 18 percent (16.4 million metric tons carbon dioxide equivalent), Niagara Mohawk Power at 16 percent (15.1 million metric tons carbon dioxide equivalent), and Florida Power & Light at 11 percent (10.0 million metric tons carbon dioxide equivalent). TVA and Florida Power & Light measured their reduction commitments using modified reference cases. Niagara Mohawk Corporation and the Los Angeles Department of Water and Power used basic reference cases.

Project-level Commitments

Thirty-five companies reported on commitments to undertake 236 individual emission reductions projects. Some of the commitments were linked to future results from projects already underway and forming part of the reporters' submissions. Others were for projects not yet begun.

Reporters indicated that projects were expected to reduce future emissions by 160.9 million metric tons carbon dioxide equivalent. Of this amount, 56 percent (89.7 million metric tons) would be methane and 43 percent (68.3 million metric tons) would be carbon dioxide.

The single largest project-level commitment was made by Redstone Gas Partners, LLC (79.5 million metric tons carbon dioxide equivalent of methane), followed by the TVA (17.6 million metric tons carbon dioxide) and Texas Utilities (at 15.7 million metric tons carbon dioxide). These three project-level commitments account for 70 percent of total reported project-level commitments.

Redstone's commitment is related to its Tongue River project, which involves pre-mining degasification of coal deposits in the Powder River Basin of Wyoming and Montana. According to Redstone, extraction of the methane, which is being sold to natural gas customers in large volumes, began in 1999. This project was reported as a commitment because the avoided methane emissions would not have occurred until coal extraction began sometime in the future. In the case of TVA, the project was described as "an increase in low emitting capacity," most likely a result of TVA's nuclear program. The Texas Utilities commitment was described as "availability improvement" linked to the performance of its Comanche Peak nuclear plant.

Financial Commitments

Twenty-seven companies, 23 of which were electric utilities, made a total of 45 financial commitments to reduce greenhouse gas emissions in the future. The total amount of funds promised was $42.6 million, of which $10.6 million was reported to have been expended in 1999. The largest single reported financial commitment to reduce greenhouse gas emissions was that of the South Carolina Electric & Gas Company, which committed to spend $12.0 million on a "carbon burnout plant" to make fly ash suitable for sale to cement companies, followed by the Noranda Aluminum Company ($5.5 million), and the Ameren Corporation ($5.0 million). These three reported financial commitments combined accounted for 53 percent of the reported total in 1999. The largest single reported expenditure during 1999 was

made by the Central and South West Corporation ($2.5 million), followed by CLE Resources ($2.0 million), and the South Carolina Electric & Gas Company ($1.5 million). These three expenditures combined accounted for 56.4 percent of the total reported expenditures in 1999 to reduce greenhouse gas emissions.

Appendix A

The Voluntary Reporting Program: A Developmental Overview

Appendix A

The Voluntary Reporting Program: A Developmental Overview

Introduction

Rising global atmospheric concentrations of carbon dioxide, methane, nitrous oxide, and other "greenhouse gases" have been a subject of increasing scientific and policy concern for the past decade. Many scientists and policymakers believe that increasing atmospheric concentrations of these gases (thought to be caused by human activities, particularly, the combustion of fossil fuels) may cause significant long-term changes in global weather and climate by trapping more of the sun's heat in the atmosphere.

In 1992, President George Bush signed a multilateral treaty, the Framework Convention on Climate Change, which committed the United States to take steps, in conjunction with other signatory states, to ". . . achieve . . . stabilization of the greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."[56]

As the Framework Convention was being negotiated, the Congress began to consider measures that would help the U.S. Government develop the national "commitment" required by the treaty. One such measure was Section 1605(b) of the Energy Policy Act of 1992, which requires the Energy Information Administration (EIA) to create reporting forms and a database for the voluntary reporting of emissions and reductions in emissions of greenhouse gases. The Voluntary Reporting Program was developed in a cooperative effort with potential reporters, the Department of Energy's Office of Policy, and the U.S. Environmental Protection Agency. The program permits individuals, corporations, and other organizations to report to the EIA on actions taken that have reduced emissions of greenhouse gases or increased the sequestration of carbon.

Reporters choose to undertake the effort of preparing their voluntary submissions for a variety of reasons, such as:

- To establish a public record of their contributions to achieving a national policy objective
- To provide the opportunity for others to benefit from their experience in reducing emissions
- To demonstrate their commitment to voluntary approaches to solving or ameliorating environmental conditions
- To record the activities undertaken pursuant to voluntary programs under President Clinton's Climate Change Action Plan
- To establish a basis for requesting consideration of prior actions in a possible future "credit for early reductions" program or a possible future regulatory scheme to stabilize or reduce national emissions of greenhouse gases.

Development of the Voluntary Reporting Program

The Voluntary Reporting Program is required by Section 1695(b) of the Energy Policy Act of 1992 (see box on page 2). About 3 years elapsed from the passage of the law, in October 1992, to the completion of the first reporting cycle. The development of the Voluntary Reporting Program consisted of three phases:

- Guidelines development (October 1992 to October 1994)
- Forms development (February 1994 to July 1995)
- First report cycle (July 1995 to March 1996).

Guidelines Development

The principal clauses of Section 1605(b) of the Energy Policy Act require the U.S. Department of Energy (DOE), in consultation with the U.S. Environmental Protection Agency (EPA), to issue guidelines for reporting

[56]United Nations, "Report of the Intergovernmental Negotiating Committee for a Framework on Convention for Climate Change on the Work of the Second Part of its Fifth Session, Held at New York from 30 April to 9 May 1992," UN Document A/AC.237/18, Part II (May 15, 1992), http://www.unfcc.de.

emissions of greenhouse gases. The EIA was then required to develop a reporting framework consistent with the guidelines. The information collected was to be accessible for public use.

The development of the guidelines was assigned to DOE's Office of Policy, which began a series of public workshops to gather information about public expectations of the program. The public workshops on the guidelines ran from September 1993 to March 1994 and were held in Washington, DC, Atlanta, GA, and Chicago, IL. The workshops spanned a range of issues related to the objectives of the Voluntary Reporting Program, the definition of a "credible" report, and methods of reporting.

Differing notions of the purpose of the Voluntary Reporting Program were expressed, as well as differing views about the nature and type of information to be collected. Many potential reporters tended to stress the notion that the reporting system should be "simple and flexible." They typically opposed suggestions to construct detailed "official" definitions of baselines, reporting entities, and coverage of reports. It was argued that such definitions were premature in an experimental program, would discourage companies from reporting, and would render the program relatively narrow.

Some commenters, who were not potential reporters, argued the reverse. They urged explicit and specific definitions of "who is responsible for an emission." The individuals and organizations holding these views hoped to elicit reports that revealed absolute and verifiable emission reductions.

Following the workshops, a public review draft of the guidelines was published in May 1994. After further public comment, final guidelines were published in October 1994.[57] The guidelines contain several broad themes that have shaped the program:

- The Department held that the primary objective of the program was "broad participation." Any U.S. "legal person" (i.e., individual, corporation, trade association, or private voluntary organization) may report.
- Within the confines of the statute, reporters were given nearly complete flexibility in crafting their reports. Reporters were free to define as they saw fit the nature of the reporting entity, the emissions and reductions to be reported, methods of calculating emissions and reductions, and the type of activity deemed to cause emission reductions.
- Reporters were to be permitted to report on activities both in the United States and abroad, so long as they distinguish between domestic and foreign activities.
- Reporters were to be encouraged to report both emissions and emission reductions as comprehensively as possible, accounting for both "direct" and "indirect" emissions.
- Reporters were to be encouraged to report on emissions and emission reductions for a range of greenhouse gases.
- Reporters were to report "achieved reductions," defined as emission reductions achieved since 1990. Reductions occurring prior to 1990 or reductions expected to occur in the future are not permitted.

The guidelines did not define "property rights" in emissions. For example, the emissions from generating electricity could be the responsibility of an electric utility or the purchaser of the electricity. By accepting the validity of differing possible interpretations of who "owns" emissions, reporters were given considerable flexibility in reporting on their greenhouse gas emissions and emission reduction activities. The guidelines explicitly recognized the possibility that, in the absence of clear "property rights," two or more organizations might report on the same emission reduction activity, an eventuality called "double reporting." The flexibility of the guidelines has, of necessity, resulted in a relatively complex reporting form and database.

Forms Development

The EIA developed, in parallel, reporting forms and a database consistent with the guidelines. In early November 1994, 2 weeks after the issuance of the final guidelines, the EIA issued draft forms for public review. The draft forms were pre-tested by several firms interested in reporting, including Niagara Mohawk Power, Houston Light & Power (now Reliant Energy), and General Motors. Many useful comments were received, both from pre-testers and from the public review process.

Following the public review, the EIA sent the forms to the Office of Management and Budget (OMB) for formal clearance under the Paperwork Reduction Act, a legal requirement for any Federal data collection exercise. The OMB requested further public comment and, after reviewing the forms, cleared them for public use in May 1995. After final editing and layout revisions to enhance readability, the EIA released the forms to the public in July 1995.

[57] U.S. Department of Energy, *Voluntary Reporting of Greenhouse Gases Under Section 1605(b) of the Energy Policy Act of 1992: General Guidelines;* and *Sector-Specific Issues and Reporting Methodologies Supporting the General Guidelines for the Voluntary Reporting of Greenhouse Gases Under Section 1605(b) of the Energy Policy Act of 1992*, Volumes 1 and 2, DOE/PO-0028 (Washington, DC, October 1994), http://www.eia.doe.gov/oiaf/1605/guidelns.html.

The Voluntary Reporting Program and the Climate Change Action Plan

On April 21, 1993 (Earth Day), President Clinton committed the United States to stabilizing its emissions of greenhouse gases at 1990 levels by the year 2000. The methods by which the Government proposed to achieve this objective were described in the President's *Climate Change Action Plan*, published in October 1993.[58] That document spelled out a range of largely voluntary programs intended to limit emissions of greenhouse gases. The *Climate Change Action Plan* is updated yearly through the preparation and submission of the United States' *Climate Action Report*, under the annual requirement to the United Framework Convention on Climate Change. The most recent report, *The 1997 Climate Action Report*, was released in July 1997.[59]

As the President's Climate Change Action Plan got underway, managers of certain DOE- and EPA-sponsored voluntary emission reduction programs (as well as some participants) felt the need for a reporting system to record and describe the actions of participants in those programs. The 1605(b) Voluntary Reporting Program, already underway with an OMB-approved data collection instrument and a requirement to collect information about a broad range of emission reduction activities, was a useful vehicle for recording results of the voluntary reduction programs. Participants in the Climate Challenge program (for electric utilities) and the Climate Wise program (for manufacturing firms) were strongly encouraged to file reports with the Voluntary Reporting Program documenting their emission reduction efforts.[60]

Forms Design

The data collection forms for the Voluntary Reporting Program, as developed, endeavored to cover the complexity in categories of emissions required by the guidelines. To this end, the structure of the voluntary reporting database needed to be expansible to cover many different contingencies, including the following:

- Reporters ranged from some of the largest industrial firms in the United States to individual households.
- Reporters could report on particular actions they had taken to reduce emissions or on the emissions (and reductions) of their entire organizations.
- The statute required, and reporters requested, the ability to report on many different classes of actions that have the effect of reducing greenhouse gas emissions, ranging from energy conservation to carbon sequestration.
- The reporting format sought to identify areas where multiple reporting of the same project actually occurred, and to make possible a general assessment of the reliability and possible ownership of the reports.
- The lack of generally accepted accounting principles for greenhouse gas emissions required a design that permitted a variety of reporting formats. This led to ambiguities that the forms design tried to clarify.
- The guidelines permitted the reporting of foreign emission reduction actions.
- The guidelines permitted reporting on reductions for a range of greenhouse gases.
- Managers of voluntary programs asked the EIA to develop a mechanism for collecting participants' commitments to reduce future emissions.

The EIA developed two alternative reporting instruments: the long form (Form EIA-1605), which comprises four schedules (described in the box on page 62), and the short form (Form EIA-1605EZ). The short form is intended to cover reporting solely on emission reduction projects and for a single year only.

The text box on page 60 outlines the basic structure of the long form. The form has four schedules. The first schedule asks for the name and address of the reporter, along with some particulars about the report. The most fundamental distinction is between "project reporting" in Schedule II and "entity reporting" in Schedule III. Project reporters are reporting on specific actions they have taken to reduce emissions. Entity reporters are reporting on emissions and emission reductions for an entire organization. For example, during the sixth reporting cycle of the Voluntary Reporting Program (1999 data year), 82 reporters provided entity-level reports, and 184 reporters provided project-level reports. Sixty-six reporters filed both entity-level and project-level reports, while 16 reporters filed only entity-level reports. Within Schedule II, the report is further subdivided into ten sections, reflecting the diversity of anticipated reduction actions. Each section contains general questions that are

[58] President William J. Clinton, *The Climate Change Action Plan* (Washington, DC, October 1993), p. i, http://www.gcrio.org/USCCAP/toc.html.

[59] U.S. Department of State, *The 1997 Climate Action Report*, DOS/10496 (Washington DC, July 1997), http://www.state.gov/www/global/oes/97climate_report/index.html.

[60] Not all participants in those programs have filed 1605(b) reports. Many participants have promised to take actions in the future, which will not be reportable until the actions have produced results. Section 1605(b) obliges the EIA to receive reports of "achieved reductions," meaning the results of actions already taken. Further, many participants joined the voluntary programs after the close of the first reporting cycle in 1995. Finally, some voluntary program participants may have experienced difficulty in gathering together the necessary information to file their reports.

applicable to all ten sections, as well as other questions specific to the particular type of project, to help reporters and the EIA understand and describe the project.

In order to clarify what reporters are claiming as "their" emissions, the Voluntary Reporting Program generally distinguishes between "direct" and "indirect" emissions. A direct emission is defined as an emission from a facility actually owned by a reporter. An indirect emission is defined as an emission from a facility owned by someone else, but for which the reporter claims be responsibility. Some reporters reported only direct emissions and some reported only indirect emissions, depending on the nature of the project and the reporter's view on the ownership of the emission.

Schedule IV was added to assist participants in DOE- and EPA-sponsored voluntary programs in recording their commitments to reduce future emissions. Sixty-eight firms reported on Schedule IV during the 1999 data reporting cycle. Most Schedule IV reporters were electric utilities participating in DOE's Climate Challenge program.

Nineteen percent of the reporting entities that filed Schedule IV information for the 1999 reporting cycle were classified under Standard Industrial Classification (SIC) codes other than SIC 49 (Electric, Gas, and Sanitary Services). They included Dow Chemical Company (SIC 28), Sunoco (SIC 29), Noranda Aluminum, Inc. (SIC 33), and IBM (SIC 36).

The Structure of Form EIA-1605

Schedule I. General Information

This schedule asks for the reporter's name, address, and type of entity, and whether the report contains confidential information.

Schedule II. Project Level Emissions and Reductions

This schedule covers reporting of specific actions that the reporter has taken that have reduced emissions. It is divided into ten parts, each covering a specific type of project. Each part requests general information about the location and nature of the project, emissions, emission reductions, and (if applicable) fuel or energy savings. Each part also asks a number of questions specific to the project type that will enhance the ability of data users to assess the emission reductions claimed.

Section 1	Electric Power Generation, Transmission, and Distribution
Section 2	Cogeneration and Waste Heart Recovery
Section 3	Energy End Use
Section 4	Transportation and Off-Road Vehicles
Section 5	Waste Treatment and Disposal—Methane
Section 6	Agriculture—Methane and Nitrous Oxide
Section 7	Oil and Natural Gas Systems and Coal Mining—Methane
Section 8	Carbon Sequestration
Section 9	Halogenated Substances
Section 10	Other Emission Reduction Projects

Schedule III. Entity Level Emissions and Reductions

This schedule covers reporting on the emissions of an entire entity. It requests direct emissions (Part Ia) and reductions in direct emissions (Part Ib) from sources such as stationary combustion, transportation, and other direct sources. Schedule III also requests indirect emissions (Part IIa) and reductions in indirect emissions (Part IIb) from sources such as power transactions, which include purchased power and electricity wholesaling, and other indirect sources. Carbon sequestered, total emissions, and total reductions in emissions (Parts III, IVa, and IVb, respectively) for the entire entity are also requested on Schedule III. It should also be noted that if reporting entities had both foreign and domestic emission reduction activities, they were requested to submit two separate copies of Schedule III, Parts I through III—one representative of their domestic emission reduction activities and the other representative of their foreign emission reduction activities.

Schedule IV. Commitments to Emission Reduction or Sequestration Projects

This schedule permits reporters to outline commitments to reduce emissions some time in the future, generally as part of a Government-sponsored voluntary program. Commitments can take several forms. The reporter can describe entity-level commitments to reduce greenhouse gas emissions (Section 1). Section 2 allows the reporter to report on financial commitments in terms of dollars pledged toward emission reduction or sequestration activities or research. Section 3 can be used to report on commitments to undertake specific actions or projects whose intended objective is to reduce greenhouse gas emissions or sequester carbon.

Appendix B

Summary of Reports Received

Table B1. Reporting Entities, Data Year 1999

Reporter Name	Sector	Type of Form	Number of Projects Reported (Schedule II)	Entity-Wide Report (Schedule III)	Commitments (Schedule IV)
A&N Electric Cooperative	Electric Power	1605	2	No	Yes
Abe Krasne Home Furnishings, Inc.	Other	1605	0	Yes	No
Advanced Micro Devices, Inc.	Industry	1605EZ	15	No	No
AES Hawaii, Inc.	Electric Power	1605	1	Yes	No
AES Shady Point	Electric Power	1605	1	Yes	No
AES Thames	Electric Power	1605	1	Yes	Yes
Alabama Biomass Partners, Ltd	Alternative Energy	1605EZ	1	No	No
Alcan Ingot, Sebree Aluminum Plant	Industry	1605	1	Yes	Yes
Allegheny Energy, Inc.	Electric Power	1605	42	Yes	Yes
Allergan, Inc.	Industry	1605	17	Yes	Yes
Alliant Energy	Electric Power	1605	34	Yes	Yes
Ameren Corporation (formerly UE and CIPS)	Electric Power	1605	25	No	Yes
American Electric Power, Inc.	Electric Power	1605	49	No	No
American Forests	Agriculture & Forestry	1605	131	No	No
American Municipal Power - Ohio	Electric Power	1605	24	No	Yes
Anoka Municipal Utility	Electric Power	1605EZ	4	No	No
Arizona Electric Power Cooperative, Inc.	Electric Power	1605EZ	3	No	No
Arizona Portland Cement Co.	Industry	1605	10	Yes	Yes
Arizona Public Service Company	Electric Power	1605	0	Yes	Yes
Arthur Rypinski & Jacquelyn Porth	Other	1605	5	Yes	No
Asheville Landfill Gas, LLC	Alternative Energy	1605	1	No	No
AT&T	Industry	1605	4	Yes	No
Atlantic Energy, Inc. (AEI)	Electric Power	1605	8	No	Yes
Austin Energy	Electric Power	1605EZ	7	No	No
Avista Utilities	Electric Power	1605	4	No	No
Baltimore Gas & Electric Co.	Electric Power	1605	22	Yes	Yes
BARC Electric Cooperative	Electric Power	1605	2	No	No
The Bentech Group of Delaware, Inc.	Alternative Energy	1605	4	No	No
Bethlehem Steel Corporation	Industry	1605	0	Yes	No
Biomass Partners, LP	Alternative Energy	1605EZ	1	No	No
Black Warrior Methane Corp.	Alternative Energy	1605	3	Yes	No
Bountiful City Light & Power	Electric Power	1605	7	Yes	Yes
Burlington County Board of Chosen Freeholders	Other	1605	2	No	No
Calaveras Cement Company	Industry	1605	1	Yes	No
California Portland Cement Co. - Colton Plant	Industry	1605	8	Yes	Yes
California Portland Cement Co. - Mojave Plant	Industry	1605	5	Yes	Yes
Carolina Power & Light Company	Electric Power	1605	1	No	No
Catawba Landfill Gas, LLC	Alternative Energy	1605	1	No	No
CDX Gas, LLC	Alternative Energy	1605	1	No	No
Cedar Falls Utilities	Electric Power	1605	15	No	No
Central and South West Corporation	Electric Power	1605	15	Yes	Yes
Central Hudson Gas & Electric Corporation	Electric Power	1605	8	Yes	Yes
Choptank Electric Cooperative	Electric Power	1605	1	No	No

Table B1. Reporting Entities, Data Year 1999

Reporter Name	Sector	Type of Form	Number of Projects Reported (Schedule II)	Entity-Wide Report (Schedule III)	Commitments (Schedule IV)
City of Edmond, Oklahoma, Electric Department	Electric Power	1605EZ	3	No	No
City of Palo Alto	Electric Power	1605EZ	11	No	No
City Utilities of Springfield	Electric Power	1605	5	No	No
Clairol	Industry	1605	14	Yes	No
CLE Resources	Industry	1605	9	No	Yes
Cleco Corporation	Electric Power	1605	6	No	Yes
CMS Energy	Electric Power	1605	5	Yes	Yes
CMV Joint Venture	Alternative Energy	1605	2	No	No
Columbia Falls Aluminum Company LLC	Industry	1605	1	Yes	No
Commonwealth Bethlehem Energy, LLC	Alternative Energy	1605	1	Yes	Yes
Community Electric Cooperative	Electric Power	1605	1	No	No
Delaware Electric Cooperative	Electric Power	1605	1	No	No
Delaware Solid Waste Authority	Alternative Energy	1605	4	No	No
Delmarva Power	Electric Power	1605	16	No	No
Delta Electric Power Association	Electric Power	1605EZ	5	No	No
The Dow Chemical Company	Industry	1605	4	Yes	Yes
DTE Energy/ Detroit Edison	Electric Power	1605	33	Yes	No
Duke Energy Corporation	Electric Power	1605	11	Yes	Yes
Dynegy Midwest Generation Inc.	Electric Power	1605	29	Yes	Yes
Ecogas Corporation	Alternative Energy	1605	18	Yes	No
El Paso Production Company	Alternative Energy	1605	1	No	No
Energy Management Partners, LP	Alternative Energy	1605EZ	1	No	No
Entergy Services, Inc.	Electric Power	1605	31	Yes	Yes
Environmental Synergy, Inc.	Agriculture & Forestry	1605EZ	1	No	No
Essential Foods, Inc.	Industry	1605	1	No	No
Essroc Cement Corp. - Bessemer, PA Plant	Industry	1605	6	Yes	No
Essroc Cement Corp. - Essexville, MI Plant	Industry	1605	0	Yes	No
Essroc Cement Corp. - Frederick, MD Plant	Industry	1605	3	Yes	No
Essroc Cement Corp. - Logansport, IN Plant	Industry	1605	4	Yes	No
Essroc Cement Corp. - PA Operations	Industry	1605	3	Yes	No
Essroc Cement Corp. - San Juan, PR Plant	Industry	1605	2	Yes	No
Essroc Cement Corp. - Speed, IN Plant	Industry	1605	9	Yes	No
Estee Lauder Companies	Industry	1605	2	No	No
FirstEnergy Corporation	Electric Power	1605	29	Yes	Yes
Florida Power Corporation	Electric Power	1605	0	Yes	No
FPL Group	Electric Power	1605	3	Yes	Yes
Fred Weber, Inc.	Alternative Energy	1605EZ	1	No	No
Gas Recovery Systems	Alternative Energy	1605	10	No	No
General Motors Corporation	Industry	1605	3	Yes	No
GeoMet Inc.	Alternative Energy	1605	2	No	No
Gilead Sciences	Industry	1605EZ	2	No	No
The Gillette Company	Industry	1605	0	Yes	No
Golden Valley Electric Association, Inc	Electric Power	1605EZ	4	No	No
GPU, Inc.	Electric Power	1605	47	No	No
Granger Electric Company	Alternative Energy	1605	9	No	No

Table B1. Reporting Entities, Data Year 1999

Reporter Name	Sector	Type of Form	Number of Projects Reported (Schedule II)	Entity-Wide Report (Schedule III)	Commitments (Schedule IV)
Greater Caribbean Energy & Environment Foundation	Agriculture & Forestry	1605EZ	7	No	No
Hawaiian Electric Company, Inc.	Electric Power	1605	12	Yes	Yes
IBM	Industry	1605	0	Yes	Yes
Integrated Waste Services Association	Alternative Energy	1605	1	Yes	No
International Truck and Engine Corporation	Industry	1605	0	Yes	Yes
Iredell Landfill Gas, LLC	Alternative Energy	1605	1	No	No
J.M. Gilmer and Company, Inc.	Agriculture & Forestry	1605	3	No	No
JEA	Electric Power	1605EZ	11	No	No
Johnson & Johnson	Industry	1605	10	Yes	No
Kansas City Power & Light Company	Electric Power	1605	15	Yes	Yes
KeySpan Energy Corporation	Electric Power	1605	0	Yes	No
LAHD Energy, Inc.	Alternative Energy	1605EZ	3	No	No
Lehigh Portland Cement Company	Industry	1605	6	Yes	No
LFG Energy, Inc.	Alternative Energy	1605	2	No	No
Los Angeles Department of Water and Power	Electric Power	1605	16	Yes	Yes
Lower Colorado River Authority	Electric Power	1605	6	Yes	Yes
Lucent Technologies	Industry	1605	0	Yes	Yes
Madison County Depart. of Solid Waste & Sanitation	Alternative Energy	1605	3	No	No
McNeil Generating Station	Electric Power	1605	0	Yes	No
Mecklenburg Electric Cooperative	Electric Power	1605	1	No	No
Minnesota Power	Electric Power	1605	8	No	Yes
Minnesota Resource Recovery Association	Other	1605EZ	5	No	No
Missouri River Energy Services	Electric Power	1605EZ	6	No	No
Moorhead Public Service	Electric Power	1605EZ	6	No	No
Motorola Austin	Industry	1605	0	Yes	Yes
Nashville Electric Service	Electric Power	1605EZ	7	No	No
National Grid USA	Alternative Energy	1605	7	No	No
Natural Power, Inc.	Alternative Energy	1605	1	No	No
NC Muni Landfill Gas Partners, LP	Alternative Energy	1605	1	No	No
Nebraska Public Power District	Electric Power	1605EZ	10	No	No
NEO Corporation	Alternative Energy	1605	32	No	No
Newton Landfill Gas, LLC	Alternative Energy	1605	1	No	No
Niagara Mohawk Power Corporation	Electric Power	1605	13	Yes	Yes
NiSource/NIPSCO	Electric Power	1605	30	Yes	Yes
Noranda Aluminum Inc.	Industry	1605	1	No	Yes
North American Carbon, Inc.	Alternative Energy	1605	4	No	Yes
North Carolina Biomass Partners	Alternative Energy	1605EZ	1	No	No
North Carolina Electric Membership Corporation	Electric Power	1605EZ	1	No	No
Northeast Utilities	Electric Power	1605	0	Yes	Yes
Northern Neck Electric Cooperative	Electric Power	1605	2	No	Yes
Northern States Power Company	Electric Power	1605	20	No	Yes
Northern Virginia Electric Cooperative	Electric Power	1605	2	No	No
Northwest Fuel Development, Inc.	Alternative Energy	1605	1	No	No
Oak Creek Energy Systems Inc.	Alternative Energy	1605	1	No	No

Table B1. Reporting Entities, Data Year 1999

Reporter Name	Sector	Type of Form	Number of Projects Reported (Schedule II)	Entity-Wide Report (Schedule III)	Commitments (Schedule IV)
Old Dominion Electric Cooperative	Electric Power	1605	2	No	No
Omaha Public Power District	Electric Power	1605EZ	10	No	No
Oregon State University (State of Oregon)	Other	1605	1	No	No
The Pacific Forest Trust, Inc.	Agriculture & Forestry	1605EZ	1	No	No
PacifiCorp	Electric Power	1605	36	Yes	Yes
Palmer Capital Corporation	Alternative Energy	1605	10	No	No
PECO Energy Company	Electric Power	1605	13	Yes	Yes
PEI Power Corp.	Alternative Energy	1605	1	Yes	No
PG&E Corporation	Electric Power	1605	23	Yes	No
Pharmacia & Upjohn	Industry	1605EZ	2	No	No
Pitt Landfill Gas, LLC	Alternative Energy	1605	1	No	No
Platte River Power Authority & 4 owner cities	Electric Power	1605	24	No	No
Portland General Electric Co.	Electric Power	1605	23	Yes	No
PPL CORPORATION	Electric Power	1605	27	Yes	Yes
Pratt & Whitney North Berwick	Industry	1605	2	No	No
Prince George Electric Cooperative	Electric Power	1605	1	No	Yes
Public Service Company of New Mexico	Electric Power	1605	4	No	Yes
Public Service Enterprise Group	Electric Power	1605	15	Yes	No
Public Utility District No. 1 of Snohomish County	Electric Power	1605	9	No	No
Quad/Graphics, Inc.	Industry	1605	6	No	No
Rangely Weber Sand Unit	Industry	1605	1	No	No
Rappahannock Electric Cooperative	Electric Power	1605	3	No	No
Redstone Gas Partners LLC	Alternative Energy	1605	0	No	Yes
Reliant Energy - HL&P	Electric Power	1605	5	Yes	Yes
Republic Metals Corporation	Industry	1605	0	Yes	No
Rochester Institute of Technology	Other	1605	13	No	No
Rolls-Royce Corporation	Industry	1605	3	Yes	No
Rosewood Resources, Inc.	Alternative Energy	1605	1	No	No
Sacramento Municipal Utility District	Electric Power	1605	7	Yes	No
Salt River Project	Electric Power	1605EZ	17	No	No
Santee Cooper	Electric Power	1605	9	Yes	Yes
Seattle City Light	Electric Power	1605	18	Yes	No
SeaWest Windpower, Inc.	Alternative Energy	1605	5	No	No
Seminole Electric Cooperative, Inc.	Electric Power	1605EZ	4	No	No
Seneca Energy, Inc.	Alternative Energy	1605	2	No	No
Separation Technologies, Inc.	Industry	1605EZ	3	No	No
Shenandoah Valley Electric Cooperative	Electric Power	1605	3	No	Yes
Shrewsbury Electric Light Plant	Electric Power	1605EZ	2	No	No
South Carolina Electric & Gas Company	Electric Power	1605	13	No	Yes
Southeastern Biomass Partners, LP	Alternative Energy	1605EZ	1	No	No
Southern California Edison Co.	Electric Power	1605	9	No	No
Southern Company	Electric Power	1605	26	Yes	Yes
Southside Electric Cooperative	Electric Power	1605	1	No	No
Steuben Rural Electric Co-op	Electric Power	1605EZ	10	No	No
Sunoco, Inc.	Industry	1605	0	Yes	Yes

Table B1. Reporting Entities, Data Year 1999

Reporter Name	Sector	Type of Form	Number of Projects Reported (Schedule II)	Entity-Wide Report (Schedule III)	Commitments (Schedule IV)
Tacoma Public Utilities	Electric Power	1605EZ	7	No	No
Tampa Electric Company	Electric Power	1605	7	Yes	Yes
Tennessee Valley Authority	Electric Power	1605	22	Yes	Yes
Town of Colonie Solid Waste Management Facility	Alternative Energy	1605	1	Yes	Yes
TXU	Electric Power	1605	20	No	Yes
U. S. Steel Mining Company, LLC	Alternative Energy	1605	2	No	No
U.S. Department of Energy - Energy Management	Other	1605	0	Yes	No
U.S. Department of Energy- Office of Solar	Other	1605	1	No	No
UNICOM (Commonwealth Edison Company)	Electric Power	1605	18	No	Yes
USX Corporation	Alternative Energy	1605	1	No	No
Utah Municipal Power Agency	Electric Power	1605EZ	7	No	No
VANALCO, INC. - (Primary Aluminum Reduction Plant)	Industry	1605	1	Yes	Yes
Vermont Public Power Supply Authority	Electric Power	1605	12	No	No
Volvo Cars of North America, Inc.	Industry	1605EZ	1	No	No
Waverly Light & Power Company	Electric Power	1605	9	Yes	Yes
Western Resources, Inc.	Electric Power	1605	54	No	Yes
Whatcom Land Trust	Agriculture & Forestry	1605	1	No	No
Wisconsin Electric Power Co.	Electric Power	1605	17	No	Yes
Wisconsin Public Power Inc.	Electric Power	1605EZ	16	No	No
Wisconsin Public Service Corporation	Electric Power	1605	3	Yes	Yes
World Parks Endowment	Agriculture & Forestry	1605	3	Yes	No
Zahren Alternative Power Corporation	Alternative Energy	1605EZ	37	No	No
Zeeland Board of Public Works	Electric Power	1605EZ	3	No	No
Total Number of Projects Reported for 1999			**1,715**		
Total Number of Entities Reporting on Schedule			**184**	**82**	**65**

Note: This table excludes confidential reporters.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Table B2. Project-Level Emission Reductions and Sequestration Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter	1991	1992	1993	1994	1995	1996	1997	1998	1999
A&N Electric Cooperative									
Indirect		1	85	169	169	2,583	2,571	3,589	3,319
Total Reductions		1	85	169	169	2,583	2,571	3,589	3,319
Total for Entity		1	85	169	169	2,583	2,571	3,589	3,319
Advanced Micro Devices, Inc.									
Total (EZ)									5,996
AES Hawaii, Inc.									
Sequestration		1,530,000	1,530,000	1,530,000	1,530,000	1,530,000	1,530,000	1,530,000	1,530,000
Total for Entity		1,530,000	1,530,000	1,530,000	1,530,000	1,530,000	1,530,000	1,530,000	1,530,000
AES Shady Point									
Sequestration			4,150,000	4,150,000	4,150,000	4,150,000	4,150,000	4,150,000	4,150,000
Total for Entity			4,150,000	4,150,000	4,150,000	4,150,000	4,150,000	4,150,000	4,150,000
AES Thames									
Sequestration	498,952	63,503	263,084	335,658	435,449	399,161	399,161	535,239	480,808
Total for Entity	498,952	63,503	263,084	335,658	435,449	399,161	399,161	535,239	480,808
Alabama Biomass Partners, Ltd									
Total (EZ)									39,911
Alcan Ingot, Sebree Aluminum Plant									
Direct							0	121,459	84,407
Total Reductions							0	121,459	84,407
Total for Entity							0	121,459	84,407
Allegheny Energy, Inc.									
Direct	158,688	240,497	330,730	526,288	812,086	963,417	1,050,943	1,331,042	1,260,297
Indirect	11,209	29,542	37,098	39,192	70,262	68,287	98,337	162,672	261,517
Total Reductions	169,898	270,039	367,828	565,480	882,348	1,031,703	1,149,281	1,493,715	1,521,815
Sequestration		66	66	66	4,357	4,276	5,099	5,137	5,519
Total for Entity	169,898	270,105	367,894	565,546	886,705	1,035,980	1,154,380	1,498,852	1,527,334
Allergan, Inc.									
Direct					0	0	0	552	552
Indirect	0	0	0	0	116	116	444	3,379	4,274
Total Reductions	0	0	0	0	116	116	444	3,931	4,826
Total for Entity	0	0	0	0	116	116	444	3,931	4,826
Alliant Energy									
Direct	60,096	96,708	252,654	407,818	653,130	782,099	948,079	1,095,118	1,272,630
Indirect	17,835	27,971	41,300	59,367	73,045	137,260	172,508	201,212	504,087
Total Reductions	77,931	124,679	293,954	467,185	726,175	919,359	1,120,587	1,296,330	1,776,717
Sequestration	17	28,203	28,257	28,327	29,640	29,722	30,147	30,064	30,125
Total for Entity	77,948	152,882	322,211	495,512	755,815	949,081	1,150,734	1,326,394	1,806,842
Ameren Corporation (formerly UE and CIPS)									
Direct	1,932,744	117,298	433,327	2,042,924	363,408	1,029,094	1,111,638	530,338	784,760
Indirect	921	1,166	2,643	5,651	15,949	34,833	67,604	85,680	119,638
Total Reductions	1,933,664	118,464	435,969	2,048,575	379,357	1,063,927	1,179,242	616,018	904,398
Sequestration								818	765
Total for Entity	1,933,664	118,464	435,969	2,048,575	379,357	1,063,927	1,179,242	616,836	905,163
American Electric Power, Inc.									
Direct	4,158,476	-3,225,069	5,590,423	-260,298	4,425,037	6,924,547	1,944,817	-7,552,515	-7,485,890
Indirect	282,222	373,865	438,189	482,112	393,537	416,622	433,385	382,984	299,422
Total Reductions	4,440,698	-2,851,203	6,028,612	221,815	4,818,574	7,341,168	2,378,202	-7,169,531	-7,186,469
Sequestration	2,285	3,522	4,768	6,730	21,060	41,329	1,092,294	1,116,382	1,134,031
Total for Entity	4,442,983	-2,847,681	6,033,380	228,544	4,839,633	7,382,498	3,470,496	-6,053,149	-6,052,437
American Forests									
Sequestration	2,925	4,479	8,872	18,753	24,860	33,624	38,650	52,139	73,873
Total for Entity	2,925	4,479	8,872	18,753	24,860	33,624	38,650	52,139	73,873

Table B2. Project-Level Emission Reductions and Sequestration Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter	1991	1992	1993	1994	1995	1996	1997	1998	1999
American Municipal Power - Ohio									
Direct	31,716	68,091	141,710	183,110	162,948	177,855	214,321	251,533	
Indirect	84,729	157,550	219,725	128,630	151,375	61,535	213,293	85,141	218,840
Total Reductions	116,445	225,641	361,436	311,740	314,323	239,390	427,613	336,674	218,840
Sequestration	2	5	8	33	78	125	179	222	266
Total for Entity	116,447	225,645	361,444	311,773	314,400	239,515	427,792	336,896	219,106
Anoka Municipal Utility									
Total (EZ)									115
Arizona Electric Power Cooperative, Inc.									
Total (EZ)									97,262
Arizona Portland Cement Co.									
Direct		98,487	127,702	127,165	148,729	137,429	164,814	166,807	181,270
Indirect		2,483	3,681	4,507	5,901	8,014	8,403	7,057	11,644
Total Reductions		100,970	131,383	131,672	154,630	145,443	173,217	173,864	192,914
Total for Entity		100,970	131,383	131,672	154,630	145,443	173,217	173,864	192,914
Arthur Rypinski & Jacquelyn Porth									
Direct	2	2	3	4	4	4	4	4	4
Indirect			0	1	1	1	1	1	1
Total Reductions	2	2	3	5	5	5	5	5	5
Total for Entity	2	2	3	5	5	5	5	5	5
Asheville Landfill Gas, LLC									
Direct							29,967	86,148	75,556
Indirect							-3,924	-6,221	-6,259
Total Reductions							26,043	79,928	69,297
Total for Entity							26,043	79,928	69,297
AT&T									
Indirect						8,930	64,807	63,466	58,339
Total Reductions						8,930	64,807	63,466	58,339
Total for Entity						8,930	64,807	63,466	58,339
Atlantic Energy, Inc. (AEI)									
Direct		156,070	217,970	208,840	249,890	80,410	77,010	56,502	87,852
Indirect				23,920	21,440	22,230	23,680	11,685	14,861
Total Reductions		156,070	217,970	232,760	271,330	102,640	100,690	68,187	102,713
Sequestration								0	6
Total for Entity		156,070	217,970	232,760	271,330	102,640	100,690	68,187	102,719
Austin Energy									
Total (EZ)									1,246,366
Avista Utilities									
Direct									6,246
Indirect				22	41	69	58	102	118
Total Reductions				22	41	69	58	102	6,364
Total for Entity				22	41	69	58	102	6,364
Baltimore Gas & Electric Co.									
Direct	1,495	1,494,152	3,021,244	2,320,977	3,961,771	3,296,800	4,315,137	4,558,565	5,051,047
Indirect			88,081	120,110	123,257	104,684	108,136	126,570	144,247
Total Reductions	1,495	1,494,152	3,109,325	2,441,087	4,085,028	3,401,484	4,423,273	4,685,135	5,195,294
Sequestration					1,226	1,202	1,129	954	894
Total for Entity	1,495	1,494,152	3,109,325	2,441,087	4,086,253	3,402,686	4,424,402	4,686,089	5,196,188
BARC Electric Cooperative									
Indirect	393	670	1,539	900	1,395	1,180	2,436	3,394	1,803
Total Reductions	393	670	1,539	900	1,395	1,180	2,436	3,394	1,803
Total for Entity	393	670	1,539	900	1,395	1,180	2,436	3,394	1,803

Table B2. Project-Level Emission Reductions and Sequestration Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter	1991	1992	1993	1994	1995	1996	1997	1998	1999
The Bentech Group of Delaware, Inc.									
Direct							-45,030	-60,093	-80,087
Indirect							343,849	458,879	608,142
Total Reductions							298,819	398,786	528,055
Total for Entity							298,819	398,786	528,055
Biomass Partners, LP									
Total (EZ)									94,135
Black Warrior Methane Corp.									
Direct	4,648,015	4,359,642	4,857,346	3,886,856	4,214,188	3,953,858	4,040,539	4,586,785	5,108,284
Total Reductions	4,648,015	4,359,642	4,857,346	3,886,856	4,214,188	3,953,858	4,040,539	4,586,785	5,108,284
Total for Entity	4,648,015	4,359,642	4,857,346	3,886,856	4,214,188	3,953,858	4,040,539	4,586,785	5,108,284
Bountiful City Light & Power									
Direct	28	1,339	10,320	6,426	11,851	14,629	16,796	19,191	15,518
Total Reductions	28	1,339	10,320	6,426	11,851	14,629	16,796	19,191	15,518
Sequestration					0	0	1	1	1
Total for Entity	28	1,339	10,320	6,426	11,851	14,629	16,797	19,192	15,520
Burlington County Board of Chosen Freeholders									
Direct	620	1,199	1,764	2,336	2,882	8,985	69,017	252,299	175,991
Indirect	16,797	21,787	24,599	27,437	29,448	32,856	37,608	43,220	44,643
Total Reductions	17,416	22,986	26,363	29,774	32,331	41,841	106,625	295,519	220,634
Total for Entity	17,416	22,986	26,363	29,774	32,331	41,841	106,625	295,519	220,634
Calaveras Cement Company									
Direct				-72,266	-64,384	-63,068	-86,082	-79,163	-76,426
Indirect				-18,075	-15,754	-16,926	-20,244	-15,914	-19,410
Total Reductions				-90,341	-80,139	-79,994	-106,326	-95,078	-95,837
Total for Entity				-90,341	-80,139	-79,994	-106,326	-95,078	-95,837
California Portland Cement Co. - Colton Plant									
Direct	26,183	6,801	63,738	-11,818	-4,053	53,589	51,784	62,846	39,264
Indirect	938	1,296	3,571	2,773	3,457	4,959	5,405	3,823	4,040
Total Reductions	27,121	8,097	67,309	-9,045	-596	58,548	57,189	66,669	43,304
Total for Entity	27,121	8,097	67,309	-9,045	-596	58,548	57,189	66,669	43,304
California Portland Cement Co. - Mojave Plant									
Direct	11,929	79,005	44,691	97,384	54,634	32,403	47,533	66,489	37,557
Indirect	1,341	7,422	7,333	10,620	8,724	8,559	7,209	8,429	7,383
Total Reductions	13,270	86,427	52,024	108,004	63,358	40,962	54,742	74,918	44,940
Total for Entity	13,270	86,427	52,024	108,004	63,358	40,962	54,742	74,918	44,940
Carolina Power & Light Company									
Direct				3,493,951	4,906,992	5,182,056	5,595,117	6,974,302	7,403,076
Total Reductions				3,493,951	4,906,992	5,182,056	5,595,117	6,974,302	7,403,076
Total for Entity				3,493,951	4,906,992	5,182,056	5,595,117	6,974,302	7,403,076
Catawba Landfill Gas, LLC									
Direct								36,425	88,110
Indirect								-4,770	-11,538
Total Reductions								31,655	76,572
Total for Entity								31,655	76,572
CDX Gas, LLC									
Direct								419,727	344,646
Total Reductions								419,727	344,646
Total for Entity								419,727	344,646

Table B2. Project-Level Emission Reductions and Sequestration Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter	1991	1992	1993	1994	1995	1996	1997	1998	1999
Cedar Falls Utilities									
Direct	8,695	8,884	8,189	8,885	12,351	10,009	11,172	12,592	16,419
Indirect	319	580	842	1,081	1,170	1,445	1,934	2,199	2,632
Total Reductions	9,014	9,464	9,031	9,966	13,521	11,454	13,106	14,791	19,051
Sequestration	1	1	2	2	4	7	10	12	16
Total for Entity	9,015	9,465	9,033	9,968	13,525	11,460	13,116	14,804	19,067
Central and South West Corporation									
Direct				550,930	614,302	611,626	556,141	378,596	492,277
Indirect									91,808
Total Reductions				550,930	614,302	611,626	556,141	378,596	584,085
Sequestration				860	3,097	3,051	4,996	5,952	7,026
Total for Entity				551,789	617,399	614,677	561,136	384,548	591,110
Central Hudson Gas & Electric Corporation									
Direct	7	415,949	170,789	386,081	468,842	177,127	346,338	261,312	322,140
Indirect	718	775	4,743	13,039	27,019	14,967	29,467	34,577	41,300
Total Reductions	726	416,724	175,533	399,120	495,861	192,094	375,804	295,890	363,440
Total for Entity	726	416,724	175,533	399,120	495,861	192,094	375,804	295,890	363,440
Choptank Electric Cooperative									
Indirect	9,771	14,850	2,238	29,120	25,471	17,382	21,107	36,171	19,774
Total Reductions	9,771	14,850	2,238	29,120	25,471	17,382	21,107	36,171	19,774
Total for Entity	9,771	14,850	2,238	29,120	25,471	17,382	21,107	36,171	19,774
City of Edmond, Oklahoma, Electric Department									
Total (EZ)									2,044
City of Palo Alto									
Total (EZ)									2,469
City Utilities of Springfield									
Direct	12,501	37,703	40,315	27,696	-1,001	-38,954	50,334	57,829	37,045
Total Reductions	12,501	37,703	40,315	27,696	-1,001	-38,954	50,334	57,829	37,045
Sequestration	5	21	30	55	65	75	85	95	105
Total for Entity	12,506	37,723	40,345	27,751	-936	-38,879	50,419	57,923	37,149
Clairol									
Indirect						120	2,081	4,278	5,751
Total Reductions						120	2,081	4,278	5,751
Total for Entity						120	2,081	4,278	5,751
CLE Resources									
Indirect						5,620	17,855	49,315	110,084
Total Reductions						5,620	17,855	49,315	110,084
Total for Entity						5,620	17,855	49,315	110,084
Cleco Corporation									
Sequestration					1,839	1,805	2,217	2,280	2,487
Total for Entity					1,839	1,805	2,217	2,280	2,487
CMS Energy									
Direct	1,736,624	1,726,976	390,252	1,546,656	1,897,526	2,460,911	2,978,019	2,573,609	2,311,724
Total Reductions	1,736,624	1,726,976	390,252	1,546,656	1,897,526	2,460,911	2,978,019	2,573,609	2,311,724
Total for Entity	1,736,624	1,726,976	390,252	1,546,656	1,897,526	2,460,911	2,978,019	2,573,609	2,311,724
CMV Joint Venture									
Direct				59,799	227,681	374,397	437,717	434,130	456,878
Total Reductions				59,799	227,681	374,397	437,717	434,130	456,878
Total for Entity				59,799	227,681	374,397	437,717	434,130	456,878
Columbia Falls Aluminum Company, LLC									
Indirect						81	81	81	81
Total Reductions						81	81	81	81
Total for Entity						81	81	81	81

Table B2. Project-Level Emission Reductions and Sequestration Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter	1991	1992	1993	1994	1995	1996	1997	1998	1999
Commonwealth Bethlehem Energy, LLC									
Direct								34,553	66,422
Total Reductions								34,553	66,422
Total for Entity								34,553	66,422
Community Electric Cooperative									
Indirect	332	731	1,294	1,453	2,501	2,984	2,654	3,100	2,301
Total Reductions	332	731	1,294	1,453	2,501	2,984	2,654	3,100	2,301
Total for Entity	332	731	1,294	1,453	2,501	2,984	2,654	3,100	2,301
Delaware Electric Cooperative									
Indirect	12,910	14,547	25,280	12,416	24,027	25,526	18,201	23,749	26,449
Total Reductions	12,910	14,547	25,280	12,416	24,027	25,526	18,201	23,749	26,449
Total for Entity	12,910	14,547	25,280	12,416	24,027	25,526	18,201	23,749	26,449
Delaware Solid Waste Authority									
Direct					100,455	289,096	363,886	392,126	391,506
Total Reductions					100,455	289,096	363,886	392,126	391,506
Total for Entity					100,455	289,096	363,886	392,126	391,506
Delmarva Power									
Direct	131,031	143,264	469,359	888,551	1,433,207	1,379,883	812,513	599,800	1,052,398
Indirect	1,068	16,832	3,901	6,504	10,132	18,884	26,287	27,392	28,092
Total Reductions	132,100	160,096	473,260	895,055	1,443,339	1,398,767	838,799	627,192	1,080,490
Sequestration	14	30	50	73	1,323	1,331	1,289	1,148	1,122
Total for Entity	132,114	160,126	473,310	895,128	1,444,663	1,400,098	840,089	628,340	1,081,611
Delta Electric Power Association									
Total (EZ)									22,022
The Dow Chemical Company									
Direct					8,795	17,775	0	0	0
Total Reductions					8,795	17,775	0	0	0
Total for Entity					8,795	17,775	0	0	0
DTE Energy/ Detroit Edison									
Direct	-645,223	526,734	1,495,067	-6,427,801	-1,557,139	-1,823,154	-792,710	1,107,553	3,203,185
Indirect	-982	142,220	342,295	504,252	738,785	1,279,701	2,043,452	3,346,495	4,150,609
Total Reductions	-646,205	668,954	1,837,362	-5,923,549	-818,354	-543,453	1,250,743	4,454,048	7,353,794
Sequestration					168,064	185,899	202,911	223,965	235,795
Total for Entity	-646,205	668,954	1,837,362	-5,923,549	-650,290	-357,555	1,453,654	4,678,013	7,589,588
Duke Energy Corporation									
Direct	7,898,659	6,883,847	6,858,749	9,350,458	12,640,570	5,524,723	3,976,186	12,011,575	13,134,111
Indirect	-33,173	-15,919	29,057	72,973	166,484	126,998	219,540	285,585	152,076
Total Reductions	7,865,486	6,867,928	6,887,806	9,423,431	12,807,054	5,651,721	4,195,726	12,297,160	13,286,187
Sequestration					1,226	1,203	2,176	2,653	3,189
Total for Entity	7,865,486	6,867,928	6,887,806	9,423,431	12,808,280	5,652,924	4,197,902	12,299,813	13,289,376
Dynegy Midwest Generation Inc.									
Direct	1,934	39,385	64,857	173,340	296,305	945,989	278,580	-1,473,241	190,395
Indirect		7,038	4,598	3,819	4,274	7,727	-1,771,114	-1,022,079	10,851
Total Reductions	1,934	46,422	69,455	177,159	300,579	953,716	-1,492,533	-2,495,320	201,247
Sequestration					4,904	11,079	23,175	34,727	47,920
Total for Entity	1,934	46,422	69,455	177,159	305,483	964,794	-1,469,358	-2,460,593	249,166
Ecogas Corporation									
Direct	97,350	111,067	126,879	120,021	129,546	129,165	166,124	180,983	811,758
Total Reductions	97,350	111,067	126,879	120,021	129,546	129,165	166,124	180,983	811,758
Total for Entity	97,350	111,067	126,879	120,021	129,546	129,165	166,124	180,983	811,758

Table B2. Project-Level Emission Reductions and Sequestration Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter	1991	1992	1993	1994	1995	1996	1997	1998	1999
El Paso Production Company									
Direct						935,646	2,132,308	3,079,651	3,403,535
Total Reductions						935,646	2,132,308	3,079,651	3,403,535
Total for Entity						935,646	2,132,308	3,079,651	3,403,535
Energy Management Partners, LP									
Total (EZ)									815,716
Entergy Services, Inc.									
Direct	447,433	427,145	804,573	737,936	2,513,967	2,862,985	5,601,072	6,450,652	3,765,303
Indirect	70,418	83,249	94,393	120,298	227,757	230,687	267,217	298,035	333,864
Total Reductions	517,851	510,394	898,966	858,234	2,741,724	3,093,673	5,868,289	6,748,687	4,099,167
Sequestration					2,452	22,364	46,376	67,004	68,078
Total for Entity	517,851	510,394	898,966	858,234	2,744,176	3,116,037	5,914,665	6,815,691	4,167,245
Environmental Synergy, Inc.									
Total (EZ)									2
Essential Foods, Inc.									
Direct					18	25	25	58	69
Indirect					4	6	6	14	17
Total Reductions					23	31	31	72	86
Total for Entity					23	31	31	72	86
Essroc Cement Corp. - Bessemer, PA Plant									
Direct							2,114	28,303	40,443
Indirect						1,559	10,926	16,739	19,958
Total Reductions						1,559	13,040	45,042	60,401
Total for Entity						1,559	13,040	45,042	60,401
Essroc Cement Corp. - Frederick, MD Plant									
Direct							-234	-32,075	25,643
Total Reductions							-234	-32,075	25,643
Total for Entity							-234	-32,075	25,643
Essroc Cement Corp. - Logansport, IN Plant									
Direct									47,405
Indirect						-5,501	18,390	20,053	18,437
Total Reductions						-5,501	18,390	20,053	65,842
Total for Entity						-5,501	18,390	20,053	65,842
Essroc Cement Corp. - PA Operations									
Direct								3,882	4,446
Indirect							19,315	23,355	17,177
Total Reductions							19,315	27,237	21,623
Total for Entity							19,315	27,237	21,623
Essroc Cement Corp. - San Juan, PR Plant									
Indirect								336	1,758
Total Reductions								336	1,758
Total for Entity								336	1,758
Essroc Cement Corp. - Speed, IN Plant									
Direct				10,789	-40,135	830	45,234	72,103	51,319
Indirect						-5,076	1,620	11,916	-3,285
Total Reductions				10,789	-40,135	-4,246	46,854	84,019	48,034
Total for Entity				10,789	-40,135	-4,246	46,854	84,019	48,034
Estee Lauder Companies									
Indirect								44	544
Total Reductions								44	544
Total for Entity								44	544

Table B2. Project-Level Emission Reductions and Sequestration Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter	1991	1992	1993	1994	1995	1996	1997	1998	1999
FirstEnergy Corporation									
Direct	3,407,342	4,283,321	1,173,271	2,051,070	5,379,445	3,806,134	4,956,931	10,499,321	10,472,289
Indirect	58,283	60,471	65,570	53,721	50,704	60,544	65,096	116,923	144,643
Total Reductions	3,465,625	4,343,792	1,238,841	2,104,791	5,430,150	3,866,677	5,022,027	10,616,244	10,616,932
Sequestration		10	23	37	12,310	12,095	21,831	18,465	17,304
Total for Entity	3,465,625	4,343,802	1,238,865	2,104,828	5,442,460	3,878,772	5,043,858	10,634,709	10,634,236
FPL Group									
Indirect								35,261	132,036
Total Reductions								35,261	132,036
Total for Entity								35,261	132,036
Fred Weber, Inc.									
Total (EZ)									37,664
Gas Recovery Systems									
Direct		1,304,835	1,242,843	1,274,889	1,335,978	1,333,143	1,443,939	1,266,762	1,258,971
Total Reductions		1,304,835	1,242,843	1,274,889	1,335,978	1,333,143	1,443,939	1,266,762	1,258,971
Total for Entity		1,304,835	1,242,843	1,274,889	1,335,978	1,333,143	1,443,939	1,266,762	1,258,971
General Motors Corporation									
Direct	46,600	168,759	243,665	289,451	210,320	481,951	633,297	899,308	808,750
Indirect	66,191	249,429	351,451	420,055	280,802	419,009	536,531	863,907	763,878
Total Reductions	112,791	418,188	595,116	709,506	491,122	900,960	1,169,828	1,763,215	1,572,628
Total for Entity	112,791	418,188	595,116	709,506	491,122	900,960	1,169,828	1,763,215	1,572,628
GeoMet Inc.									
Direct				39,866	151,788	249,599	291,812	289,421	304,584
Total Reductions				39,866	151,788	249,599	291,812	289,421	304,584
Total for Entity				39,866	151,788	249,599	291,812	289,421	304,584
Gilead Sciences									
Total (EZ)									6
Golden Valley Electric Association, Inc.									
Total (EZ)									15,099
GPU, Inc.									
Direct	358,288	4,196,623	1,512,442	1,401,445	2,306,342	2,219,123	2,054,062	2,461,062	2,431,247
Indirect	639,039	200,441	183,415	192,546	157,260	160,465	401,465	597,562	752,234
Total Reductions	997,327	4,397,065	1,695,857	1,593,992	2,463,602	2,379,588	2,455,527	3,058,623	3,183,480
Sequestration		2	3	5	6,137	6,025	7,783	7,364	7,600
Total for Entity	997,327	4,397,067	1,695,861	1,593,997	2,469,739	2,385,613	2,463,310	3,065,988	3,191,080
Granger Electric Company									
Direct	-6,623	-8,051	-14,880	-35,940	-50,901	-60,821	-68,561	-72,399	148,935
Indirect	102,150	113,574	158,785	341,888	474,005	542,053	599,339	634,242	648,614
Total Reductions	95,527	105,523	143,905	305,948	423,104	481,232	530,777	561,843	797,550
Total for Entity	95,527	105,523	143,905	305,948	423,104	481,232	530,777	561,843	797,550
Greater Caribbean Energy & Environment Foundation									
Total (EZ)									*
Hawaiian Electric Company, Inc.									
Direct						16,731	51,718	44,920	45,908
Total Reductions						16,731	51,718	44,920	45,908
Sequestration					1,226	1,203	1,130	953	892
Total for Entity					1,226	17,934	52,847	45,874	46,800
Integrated Waste Services Association									
Direct					-7,806,171	-7,897,096	-7,806,234	-7,806,264	-8,532,330
Indirect	1,200,110	1,504,581	1,809,053	2,113,524	18,304,457	19,347,277	19,107,549	19,507,145	21,335,118
Total Reductions	1,200,110	1,504,581	1,809,053	2,113,524	10,498,287	11,450,181	11,301,315	11,700,880	12,802,788
Total for Entity	1,200,110	1,504,581	1,809,053	2,113,524	10,498,287	11,450,181	11,301,315	11,700,880	12,802,788

Table B2. Project-Level Emission Reductions and Sequestration Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter	1991	1992	1993	1994	1995	1996	1997	1998	1999
Iredell Landfill Gas, LLC									
Direct							23,643	53,840	80,181
Total Reductions							23,643	53,840	80,181
Total for Entity							23,643	53,840	80,181
J.M. Gilmer and Company, Inc.									
Sequestration					298	584	609	998	3,583
Total for Entity					298	584	609	998	3,583
JEA									
Total (EZ)									424,837
Johnson & Johnson									
Direct	0	19,336	28,945	32,660	38,802	42,134	49,996	56,784	69,161
Indirect	4,767	18,621	52,346	82,799	106,724	148,958	171,737	187,175	207,059
Total Reductions	4,767	37,957	81,291	115,459	145,525	191,092	221,734	243,959	276,219
Total for Entity	4,767	37,957	81,291	115,459	145,525	191,092	221,734	243,959	276,219
Kansas City Power & Light Company									
Direct	306,499	163,897	220,095	487,720	452,250	462,395	561,187	643,824	357,943
Indirect	69,712	79,435	99,539	133,644	121,722	155,099	137,869	150,898	168,452
Total Reductions	376,210	243,332	319,634	621,364	573,971	617,493	699,056	794,722	526,395
Sequestration					2,452	2,406	3,305	3,607	4,082
Total for Entity	376,210	243,332	319,634	621,364	576,423	619,899	702,361	798,329	530,477
LAHD Energy, Inc.									
Total (EZ)									47,362
Lehigh Portland Cement Company									
Direct				-61,824	60,255	54,875	102,360	103,471	140,089
Indirect				-65,113	-54,624	-18,981	-30,065	-25,399	57,346
Total Reductions				-126,937	5,631	35,894	72,296	78,072	197,436
Total for Entity				-126,937	5,631	35,894	72,296	78,072	197,436
LFG Energy, Inc.									
Direct							170,734	150,140	173,363
Indirect							14,701	12,387	6,709
Total Reductions							185,435	162,527	180,072
Total for Entity							185,435	162,527	180,072
Los Angeles Department of Water and Power									
Direct					267,999	157,780	190,912	253,176	448,830
Indirect	8,508	8,508	8,508	8,508	8,475	8,475	8,475	8,475	8,475
Total Reductions	8,508	8,508	8,508	8,508	276,473	166,255	199,387	261,651	457,305
Sequestration		1,669	2,003	2,003	2,003	2,003	2,003	2,035	2,066
Total for Entity	8,508	10,177	10,511	10,511	278,477	168,258	201,390	263,685	459,372
Lower Colorado River Authority									
Direct	15,422	26,490	41,458	59,239	98,430	226,343	266,259	285,672	280,139
Indirect	47,536	50,802	68,130	91,172	112,037	121,018	126,643	116,936	151,409
Total Reductions	62,959	77,292	109,588	150,411	210,467	347,361	392,902	402,609	431,548
Total for Entity	62,959	77,292	109,588	150,411	210,467	347,361	392,902	402,609	431,548

Table B2. Project-Level Emission Reductions and Sequestration Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter	1991	1992	1993	1994	1995	1996	1997	1998	1999
Madison County Depart. of Solid Waste & Sanitation									
Direct	0	0	0	0	0	1,334	10,097	21,718	33,720
Indirect	6,095	8,303	7,398	8,947	8,228	8,679	10,502	9,948	11,799
Total Reductions	6,095	8,303	7,398	8,947	8,228	10,013	20,599	31,666	45,519
Total for Entity	6,095	8,303	7,398	8,947	8,228	10,013	20,599	31,666	45,519
Mecklenburg Electric Cooperative									
Indirect	1,758	3,065	5,916	2,639	11,685	11,420	10,045	11,672	10,762
Total Reductions	1,758	3,065	5,916	2,639	11,685	11,420	10,045	11,672	10,762
Total for Entity	1,758	3,065	5,916	2,639	11,685	11,420	10,045	11,672	10,762
Minnesota Power									
Direct	28,455	89,462	151,699	224,096	319,891	360,788	501,043	481,549	550,130
Indirect			6,873	44,785	67,006	67,006	67,006	67,006	67,006
Total Reductions	28,455	89,462	158,571	268,881	386,896	427,794	568,048	548,555	617,136
Sequestration					4,010	18,567	22,228	22,228	22,228
Total for Entity	28,455	89,462	158,571	268,881	390,906	446,361	590,276	570,783	639,364
Minnesota Resource Recovery Association									
Total (EZ)									1,166,746
Missouri River Energy Services									
Total (EZ)									370
Moorhead Public Service									
Total (EZ)									14,765
Nashville Electric Service									
Total (EZ)									3,591
National Grid USA									
Direct									3
Indirect	91,217	229,036	361,223	519,129	697,456	809,108	927,903	1,014,524	1,088,305
Total Reductions	91,217	229,036	361,223	519,129	697,456	809,108	927,903	1,014,524	1,088,308
Total for Entity	91,217	229,036	361,223	519,129	697,456	809,108	927,903	1,014,524	1,088,308
Natural Power, Inc.									
Direct	80,396	73,361	79,470	97,496	102,182	126,904	119,867	200,825	349,252
Indirect	10,746	10,258	10,243	10,522	10,160	11,792	12,004	16,321	14,593
Total Reductions	91,141	83,619	89,713	108,018	112,342	138,696	131,871	217,146	363,845
Total for Entity	91,141	83,619	89,713	108,018	112,342	138,696	131,871	217,146	363,845
NC Muni Landfill Gas Partners, LP									
Direct					16,672	26,110	50,083	66,773	68,237
Indirect								-2,503	-2,857
Total Reductions					16,672	26,110	50,083	64,270	65,380
Total for Entity					16,672	26,110	50,083	64,270	65,380
Nebraska Public Power District									
Total (EZ)									2,025,191
NEO Corporation									
Direct					263,964	367,086	2,658,613	5,379,574	6,235,921
Total Reductions					263,964	367,086	2,658,613	5,379,574	6,235,921
Total for Entity					263,964	367,086	2,658,613	5,379,574	6,235,921
Newton Landfill Gas, LLC									
Direct						30,264	31,958	47,551	29,948
Indirect							-1,697	-6,226	-3,922
Total Reductions						30,264	30,261	41,325	26,026
Total for Entity						30,264	30,261	41,325	26,026

Table B2. Project-Level Emission Reductions and Sequestration Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter	1991	1992	1993	1994	1995	1996	1997	1998	1999
Niagara Mohawk Power Corporation									
Direct	2,490,717	1,646,690	3,090,789	4,218,173	3,599,133	4,307,052	2,959,402	3,866,781	2,420,161
Indirect	5,915	8,958	27,928	15,154	43,336	30,908	61,811	94,346	77,329
Total Reductions	2,496,631	1,655,648	3,118,717	4,233,327	3,642,469	4,337,961	3,021,213	3,961,127	2,497,490
Total for Entity	2,496,631	1,655,648	3,118,717	4,233,327	3,642,469	4,337,961	3,021,213	3,961,127	2,497,490
NiSource/NIPSCO									
Direct	6,649	9,766	12,888	17,635	54,767	337,507	1,029,963	1,482,162	1,913,560
Indirect	19,414	43	20,958	29,648	99,378	115,972	121,689	113,968	111,630
Total Reductions	26,063	9,809	33,847	47,283	154,145	453,479	1,151,652	1,596,130	2,025,190
Sequestration			12	56	1,280	1,308	1,231	1,055	994
Total for Entity	26,063	9,809	33,858	47,339	155,425	454,787	1,152,883	1,597,185	2,026,184
Noranda Aluminum Inc.									
Direct	2,793,600	3,000,500	3,074,700	3,168,400	3,148,900	3,526,400	3,506,900	3,668,300	3,607,100
Total Reductions	2,793,600	3,000,500	3,074,700	3,168,400	3,148,900	3,526,400	3,506,900	3,668,300	3,607,100
Total for Entity	2,793,600	3,000,500	3,074,700	3,168,400	3,148,900	3,526,400	3,506,900	3,668,300	3,607,100
North American Carbon, Inc.									
Indirect		31,049	70,869	126,059	177,351	205,247	208,478	246,206	314,696
Total Reductions		31,049	70,869	126,059	177,351	205,247	208,478	246,206	314,696
Total for Entity		31,049	70,869	126,059	177,351	205,247	208,478	246,206	314,696
North Carolina Biomass Partners									
Total (EZ)									73,698
North Carolina Electric Membership Corporation									
Total (EZ)									835,215
Northern Neck Electric Cooperative									
Indirect	933	893	2,126	1,435	2,431	2,832	2,060	3,338	1,564
Total Reductions	933	893	2,126	1,435	2,431	2,832	2,060	3,338	1,564
Total for Entity	933	893	2,126	1,435	2,431	2,832	2,060	3,338	1,564
Northern States Power Company									
Direct	169,683	241,085	387,763	505,814	785,581	617,655	739,367	1,078,922	1,612,665
Indirect	66,688	85,519	166,699	247,652	322,455	393,523	450,603	479,506	529,562
Total Reductions	236,372	326,605	554,462	753,467	1,108,036	1,011,178	1,189,970	1,558,428	2,142,227
Total for Entity	236,372	326,605	554,462	753,467	1,108,036	1,011,178	1,189,970	1,558,428	2,142,227
Northern Virginia Electric Cooperative									
Indirect	37	15,309	28,042	9,980	32,355	32,509	30,961	33,214	43,433
Total Reductions	37	15,309	28,042	9,980	32,355	32,509	30,961	33,214	43,433
Total for Entity	37	15,309	28,042	9,980	32,355	32,509	30,961	33,214	43,433
Northwest Fuel Development, Inc.									
Direct		499	18,625	238,635	10,396	10,560	4,494	13,945	11,647
Indirect		45	281	1,270	1,579	1,606	452	1,087	1,922
Total Reductions		544	18,906	239,905	11,975	12,165	4,946	15,032	13,570
Total for Entity		544	18,906	239,905	11,975	12,165	4,946	15,032	13,570
Oak Creek Energy Systems Inc.									
Direct						3,556	4,706	10,410	22,766
Total Reductions						3,556	4,706	10,410	22,766
Total for Entity						3,556	4,706	10,410	22,766
Old Dominion Electric Cooperative									
Indirect					60	62	62	62	62
Total Reductions					60	62	62	62	62
Sequestration					0	1	1	2	2
Total for Entity					60	63	63	63	64
Omaha Public Power District									
Total (EZ)									1,248,464

Table B2. Project-Level Emission Reductions and Sequestration Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter	1991	1992	1993	1994	1995	1996	1997	1998	1999
Oregon State University (State of Oregon)									
Direct				380	760	1,140	1,734	2,114	2,494
Total Reductions				380	760	1,140	1,734	2,114	2,494
Sequestration				636	636	1,909	4,825	6,462	7,761
Total for Entity				1,016	1,396	3,048	6,559	8,576	10,254
The Pacific Forest Trust, Inc.									
Total (EZ)									68,194
PacifiCorp									
Direct			109,261	274,296	522,710	653,287	789,714	875,809	977,318
Indirect	3,663	108,214	107,523	120,175	121,392	233,520	191,102	314,099	719,814
Total Reductions	3,663	108,214	216,785	394,471	644,102	886,808	980,816	1,189,908	1,697,132
Sequestration			361	2,116	169,553	169,443	904,141	903,411	903,073
Total for Entity	3,663	108,214	217,145	396,587	813,655	1,056,251	1,884,957	2,093,319	2,600,206
Palmer Capital Corporation									
Direct	446,862	808,063	986,953	975,984	1,169,158	1,811,508	4,080,097	4,708,565	5,092,335
Indirect	-618	-43,423	-60,970	-42,679	-32,206	-48,762	-68,558	-85,953	-153,797
Total Reductions	446,244	764,640	925,983	933,305	1,136,953	1,762,746	4,011,539	4,622,612	4,938,538
Total for Entity	446,244	764,640	925,983	933,305	1,136,953	1,762,746	4,011,539	4,622,612	4,938,538
PECO Energy Company									
Direct							-157,743	-167,481	-164,565
Indirect				62,325	851,894	1,406,539	2,772,838	3,977,189	5,608,604
Total Reductions				62,325	851,894	1,406,539	2,615,095	3,809,708	5,444,039
Total for Entity				62,325	851,894	1,406,539	2,615,095	3,809,708	5,444,039
PEI Power Corp									
Direct								51	116
Indirect								7,530	16,505
Total Reductions								7,581	16,621
Total for Entity								7,581	16,621
PG&E Corporation									
Direct	280,332	1,340,971	1,704,438	2,645,026	3,587,215	4,743,456	5,304,419	5,428,712	4,340,115
Indirect	221,883	54,503	289,572	152,990	116,494	386,641	588,814	324,351	270,982
Total Reductions	502,215	1,395,473	1,994,009	2,798,016	3,703,709	5,130,097	5,893,233	5,753,063	4,611,097
Sequestration			8,682	24,930	58,016	44,246	42,310	40,706	36,815
Total for Entity	502,215	1,395,473	2,002,691	2,822,947	3,761,725	5,174,344	5,935,543	5,793,769	4,647,913
Pharmacia & Upjohn									
Total (EZ)									1,727
Pitt Landfill Gas, LLC									
Direct								61,325	66,563
Indirect								755	985
Total Reductions								62,080	67,548
Total for Entity								62,080	67,548
Platte River Power Authority & 4 owner cities									
Direct	6,708	3,166	16,337	8,178	8,666	13,980	15,253	16,020	17,651
Indirect	34,376	33,532	43,423	38,873	38,900	50,453	72,549	48,754	63,935
Total Reductions	41,083	36,698	59,760	47,051	47,567	64,432	87,802	64,775	81,586
Total for Entity	41,083	36,698	59,760	47,051	47,567	64,432	87,802	64,775	81,586
Portland General Electric Co.									
Direct			3	8	8	12	23	39	52
Indirect	102,339	174,298	282,932	474,233	659,229	737,074	774,957	821,442	888,206
Total Reductions	102,339	174,298	282,935	474,241	659,237	737,085	774,980	821,482	888,258
Sequestration						1	135	473	900
Total for Entity	102,339	174,298	282,935	474,241	659,237	737,086	775,115	821,955	889,158

Table B2. Project-Level Emission Reductions and Sequestration Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter	1991	1992	1993	1994	1995	1996	1997	1998	1999
PPL CORPORATION									
Direct	-11,742	77,406	125,673	-399,273	-301,387	-141,496	-71,522	424,127	567,348
Indirect	102,947	125,159	152,700	337,932	736,157	1,301,291	1,228,710	2,743,994	1,275,099
Total Reductions	91,206	202,565	278,373	-61,341	434,770	1,159,795	1,157,188	3,168,121	1,842,447
Sequestration		0	6	51	1,998	2,133	7,239	7,225	7,409
Total for Entity	91,206	202,565	278,379	-61,290	436,768	1,161,928	1,164,427	3,175,345	1,849,855
Pratt & Whitney North Berwick									
Indirect									710
Total Reductions									710
Total for Entity									710
Prince George Electric Cooperative									
Indirect	15	30	45	60	60	1,386	2,264	5,147	5,125
Total Reductions	15	30	45	60	60	1,386	2,264	5,147	5,125
Total for Entity	15	30	45	60	60	1,386	2,264	5,147	5,125
Public Service Company of New Mexico									
Direct	501,446	567,896	181,988	318,976	758,940	1,328,879	1,541,554	1,490,504	2,019,835
Total Reductions	501,446	567,896	181,988	318,976	758,940	1,328,879	1,541,554	1,490,504	2,019,835
Total for Entity	501,446	567,896	181,988	318,976	758,940	1,328,879	1,541,554	1,490,504	2,019,835
Public Service Enterprise Group									
Direct						4,971	5,289	30,019	17,069
Indirect	3,242	160,795	328,378	501,052	590,015	1,177,457	1,679,980	2,418,406	2,716,564
Total Reductions	3,242	160,795	328,378	501,052	590,015	1,182,428	1,685,269	2,448,425	2,733,633
Sequestration					1,226	1,203	2,175	2,654	3,190
Total for Entity	3,242	160,795	328,378	501,052	591,240	1,183,631	1,687,445	2,451,079	2,736,824
Public Utility District No. 1 of Snohomish County									
Direct	27	45	62	78	113	154	156	134	140
Indirect	1,298	22,914	44,435	65,114	87,999	111,619	118,028	118,680	123,684
Total Reductions	1,325	22,959	44,497	65,192	88,111	111,772	118,184	118,814	123,824
Total for Entity	1,325	22,959	44,497	65,192	88,111	111,772	118,184	118,814	123,824
Quad/Graphics, Inc.									
Direct				13,767	13,767	16,348	22,466	24,953	30,522
Indirect				71,121	86,744	98,582	130,037	145,091	167,680
Total Reductions				84,888	100,512	114,930	152,503	170,044	198,202
Total for Entity				84,888	100,512	114,930	152,503	170,044	198,202
Rangely Weber Sand Unit									
Indirect	2,394,000	1,761,000	1,700,000	1,088,000	745,000	619,000	924,000	756,000	686,000
Total Reductions	2,394,000	1,761,000	1,700,000	1,088,000	745,000	619,000	924,000	756,000	686,000
Total for Entity	2,394,000	1,761,000	1,700,000	1,088,000	745,000	619,000	924,000	756,000	686,000
Rappahannock Electric Cooperative									
Indirect	2,021	1,595	12,786	5,379	-10,619	32,886	27,469	35,127	154,321
Total Reductions	2,021	1,595	12,786	5,379	-10,619	32,886	27,469	35,127	154,321
Sequestration	0	0	1	1	1	2	3	3	4
Total for Entity	2,021	1,596	12,786	5,380	-10,617	32,888	27,472	35,130	154,325
Reliant Energy - HL&P									
Direct	15,422	25,401	60,781	290,208	533,425	823,724	769,293	752,963	811,023
Indirect	139,706	160,572	194,138	225,889	563,362	663,152	641,380	708,511	688,553
Total Reductions	155,129	185,973	254,919	516,097	1,096,786	1,486,876	1,410,672	1,461,475	1,499,576
Total for Entity	155,129	185,973	254,919	516,097	1,096,786	1,486,876	1,410,672	1,461,475	1,499,576
Rochester Institute of Technology									
Indirect			331	873	1,285	1,494	2,985	2,985	6,515
Total Reductions			331	873	1,285	1,494	2,985	2,985	6,515
Total for Entity			331	873	1,285	1,494	2,985	2,985	6,515

Table B2. Project-Level Emission Reductions and Sequestration Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter	1991	1992	1993	1994	1995	1996	1997	1998	1999
Rolls-Royce Corporation									
Direct							32,413	29,252	24,418
Indirect									40,404
Total Reductions							32,413	29,252	64,822
Total for Entity							32,413	29,252	64,822
Rosewood Resources, Inc.									
Direct									175,417
Total Reductions									175,417
Total for Entity									175,417
Sacramento Municipal Utility District									
Direct				12	24	8	19	15	18
Indirect				517	923	460,052	489,296	497,239	513,459
Total Reductions				529	947	460,060	489,315	497,253	513,477
Sequestration	69	184	367	619	890	1,158	1,440	1,764	1,945
Total for Entity	69	184	367	1,148	1,837	461,218	490,754	499,017	515,422
Salt River Project									
Total (EZ)									1,867,422
Santee Cooper									
Direct	12,789	17,696	185,506	169,824	217,230	453,130	426,433	880,179	1,093,337
Indirect	12,591	17,110	13,935	10,437	48,795	66,278	92,697	107,771	87,129
Total Reductions	25,380	34,806	199,441	180,261	266,025	519,408	519,130	987,950	1,180,466
Sequestration	155	397	875	921	940	980	1,004	3,048	3,117
Total for Entity	25,535	35,203	200,316	181,183	266,965	520,387	520,134	990,998	1,183,583
Seattle City Light									
Indirect	7,228	33,239	55,803	83,397	124,478	170,799	187,319	205,408	232,995
Total Reductions	7,228	33,239	55,803	83,397	124,478	170,799	187,319	205,408	232,995
Sequestration					2	9	15	21	30
Total for Entity	7,228	33,239	55,803	83,397	124,481	170,808	187,334	205,429	233,025
SeaWest Windpower, Inc.									
Indirect			4,598	4,604	4,823	8,860	6,933	9,650	101,539
Total Reductions			4,598	4,604	4,823	8,860	6,933	9,650	101,539
Total for Entity			4,598	4,604	4,823	8,860	6,933	9,650	101,539
Seminole Electric Cooperative, Inc.									
Total (EZ)									350,916
Seneca Energy, Inc.									
Direct							171,725	260,045	375,798
Indirect							16,672	25,245	36,481
Total Reductions							188,397	285,290	412,278
Total for Entity							188,397	285,290	412,278
Separation Technologies, Inc									
Total (EZ)									253,796
Shenandoah Valley Electric Cooperative									
Indirect		229	899	922	1,107	15,244	10,106	15,556	14,950
Total Reductions		229	899	922	1,107	15,244	10,106	15,556	14,950
Sequestration			0	0	0	0	1	1	1
Total for Entity		229	899	922	1,107	15,244	10,107	15,557	14,950
Shrewsbury Electric Light Plant									
Total (EZ)									2,286

Table B2. Project-Level Emission Reductions and Sequestration Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter	1991	1992	1993	1994	1995	1996	1997	1998	1999
South Carolina Electric & Gas Company									
Direct				96,370	323,860	316,117	1,753,309	1,761,100	1,765,583
Indirect	44,522	53,097	70,861	81,333	90,622	104,581	109,590	57,968	109,765
Total Reductions	44,522	53,097	70,861	177,703	414,483	420,698	1,862,899	1,819,068	1,875,348
Sequestration			627	1,146	3,590	4,152	4,632	5,161	5,714
Total for Entity	44,522	53,097	71,488	178,849	418,072	424,850	1,867,531	1,824,229	1,881,062
Southeastern Biomass Partners, LP									
Total (EZ)									86,218
Southern California Edison Co.									
Direct	460,850	1,090,436	1,783,525	2,392,609	2,586,656	2,907,300	3,242,499	3,525,254	3,943,788
Indirect	57,969	57,969	59,783	64,773	72,393	82,191	85,910	108,046	111,493
Total Reductions	518,819	1,148,405	1,843,309	2,457,382	2,659,049	2,989,491	3,328,409	3,633,300	4,055,281
Total for Entity	518,819	1,148,405	1,843,309	2,457,382	2,659,049	2,989,491	3,328,409	3,633,300	4,055,281
Southern Company									
Direct	19,953	2,255,635	2,441,647	2,856,439	3,367,738	3,475,139	3,732,326	2,658,433	5,387,576
Indirect		48,762	106,008	235,004	348,610	417,663	762,226	935,370	1,509,980
Total Reductions	19,953	2,304,397	2,547,655	3,091,443	3,716,348	3,892,802	4,494,552	3,593,803	6,897,556
Sequestration	1,993	3,398	4,477	5,630	19,713	41,126	80,891	107,677	154,657
Total for Entity	21,946	2,307,795	2,552,132	3,097,073	3,736,061	3,933,928	4,575,443	3,701,480	7,052,213
Southside Electric Cooperative									
Indirect	-1,003	-21,794	-18,012	-3,038	-15,582	-8,494	9,428	13,080	5,170
Total Reductions	-1,003	-21,794	-18,012	-3,038	-15,582	-8,494	9,428	13,080	5,170
Total for Entity	-1,003	-21,794	-18,012	-3,038	-15,582	-8,494	9,428	13,080	5,170
Steuben Rural Electric Co-op									
Total (EZ)									2,085
Tacoma Public Utilities									
Total (EZ)									7,823
Tampa Electric Company									
Indirect	240,404	237,682	234,054	240,585	265,406	267,583	266,857	271,909	268,024
Total Reductions	240,404	237,682	234,054	240,585	265,406	267,583	266,857	271,909	268,024
Sequestration					1,226	1,203	1,130	953	892
Total for Entity	240,404	237,682	234,054	240,585	266,632	268,786	267,987	272,862	268,916
Tennessee Valley Authority									
Direct	2,860,009	8,560,064	6,971,715	7,764,654	10,284,879	22,313,696	23,904,871	25,646,483	25,758,429
Indirect	1,091	70,105	72,873	84,517	118,371	196,196	271,869	440,991	326,995
Total Reductions	2,861,100	8,630,170	7,044,589	7,849,171	10,403,251	22,509,892	24,176,739	26,087,474	26,085,424
Sequestration	1,064	1,710	2,701	3,087	31,031	31,574	31,742	28,811	28,805
Total for Entity	2,862,165	8,631,880	7,047,289	7,852,258	10,434,282	22,541,466	24,208,482	26,116,285	26,114,229
Town of Colonie Solid Waste Management Facility									
Direct							15,752	135,810	139,089
Total Reductions							15,752	135,810	139,089
Total for Entity							15,752	135,810	139,089
TXU									
Direct	6,498,981	8,103,438	11,718,783	15,542,087	17,822,892	15,997,590	18,633,451	19,521,389	18,964,274
Indirect	93,356	115,227	84,615	104,555	108,518	348,862	375,992	679,895	656,013
Total Reductions	6,592,338	8,218,665	11,803,398	15,646,642	17,931,410	16,346,452	19,009,443	20,201,284	19,620,287
Sequestration	543	1,087	1,630	2,174	5,664	7,580	13,115	16,769	19,309
Total for Entity	6,592,881	8,219,752	11,805,028	15,648,815	17,937,074	16,354,032	19,022,559	20,218,053	19,639,596
U. S. Steel Mining Company, LLC									
Direct	1,201,596	1,283,618	1,106,430	1,052,509	1,330,674	1,408,140	1,213,400	1,334,251	1,799,635
Indirect	-11,010	-9,592	-8,061	-8,247	-11,445	-10,126	-8,059	-6,468	-14,501
Total Reductions	1,190,587	1,274,027	1,098,369	1,044,261	1,319,229	1,398,014	1,205,342	1,327,783	1,785,134
Total for Entity	1,190,587	1,274,027	1,098,369	1,044,261	1,319,229	1,398,014	1,205,342	1,327,783	1,785,134

Table B2. Project-Level Emission Reductions and Sequestration Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter	1991	1992	1993	1994	1995	1996	1997	1998	1999
U.S. Department of Energy - Office of Solar									
Direct			37	37	37	37	37	37	45
Total Reductions			37	37	37	37	37	37	45
Total for Entity			37	37	37	37	37	37	45
UNICOM (Commonwealth Edison Company)									
Direct	96,602	92,575	300,649	838,515	986,874	727,784	1,234,922	1,408,116	1,155,775
Indirect	449,301	429,548	608,951	720,738	877,853	1,040,956	1,206,130	1,807,169	1,772,328
Total Reductions	545,903	522,123	909,600	1,559,254	1,864,727	1,768,740	2,441,052	3,215,285	2,928,103
Sequestration					349	483	537	562	2,296
Total for Entity	545,903	522,123	909,600	1,559,254	1,865,076	1,769,224	2,441,589	3,215,847	2,930,399
USX Corporation									
Direct					7,393	156,377	368,699	586,981	593,946
Total Reductions					7,393	156,377	368,699	586,981	593,946
Total for Entity					7,393	156,377	368,699	586,981	593,946
Utah Municipal Power Agency									
Total (EZ)									34,306
VANALCO, INC. - (Primary Aluminum Reduction Plant)									
Direct	272,520	15,760	55,620	73,220	232,660	62,120	70,460	92,720	0
Total Reductions	272,520	15,760	55,620	73,220	232,660	62,120	70,460	92,720	0
Total for Entity	272,520	15,760	55,620	73,220	232,660	62,120	70,460	92,720	0
Vermont Public Power Supply Authority									
Indirect		29	62	851	1,280	1,899	2,051	2,221	1,753
Total Reductions		29	62	851	1,280	1,899	2,051	2,221	1,753
Total for Entity		29	62	851	1,280	1,899	2,051	2,221	1,753
Volvo Cars of North America, Inc.									
Total (EZ)									10
Waverly Light & Power Company									
Direct	3,468	5,806	9,173	11,070	11,732	12,725	13,459	13,612	15,375
Indirect	1,674	3,211	4,054	7,116	6,531	5,913	5,436	5,032	5,576
Total Reductions	5,142	9,017	13,228	18,186	18,263	18,638	18,895	18,644	20,951
Sequestration	18	36	54	73	84	95	106	116	124
Total for Entity	5,160	9,053	13,282	18,259	18,347	18,733	19,001	18,761	21,075
Western Resources, Inc.									
Direct	57,595	61,981	96,261	268,953	357,060	537,000	717,450	720,312	770,540
Indirect	23,958	29,766	73,305	123,848	207,312	226,696	264,202	393,898	385,138
Total Reductions	81,553	91,747	169,566	392,801	564,372	763,696	981,652	1,114,210	1,155,678
Sequestration					6,130	8,422	7,907	6,669	6,243
Total for Entity	81,553	91,747	169,566	392,801	570,502	772,119	989,559	1,120,880	1,161,921
Whatcom Land Trust									
Sequestration								609,382	0
Total for Entity								609,382	0
Wisconsin Electric Power Co.									
Direct	467,111	955,994	1,641,207	2,234,046	2,436,286	2,824,947	3,121,151	3,000,732	3,039,948
Indirect	657,770	753,250	797,222	857,230	887,023	908,272	886,648	873,551	920,849
Total Reductions	1,124,881	1,709,244	2,438,429	3,091,277	3,323,310	3,733,219	4,007,799	3,874,283	3,960,798
Sequestration					162,658	162,658	162,495	162,420	162,355
Total for Entity	1,124,881	1,709,244	2,438,429	3,091,277	3,485,968	3,895,878	4,170,293	4,036,703	4,123,153
Wisconsin Public Power Inc.									
Total (EZ)									19,257

Table B2. Project-Level Emission Reductions and Sequestration Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter	1991	1992	1993	1994	1995	1996	1997	1998	1999
Wisconsin Public Service Corporation									
Direct	202,991	333,917	461,074	527,727	687,390	776,743	833,403	812,597	911,642
Total Reductions	202,991	333,917	461,074	527,727	687,390	776,743	833,403	812,597	911,642
Sequestration	67,612	67,612	67,612	67,612	68,560	69,518	70,492	95,291	94,347
Total for Entity	270,603	401,530	528,686	595,339	755,951	846,261	903,895	907,888	1,005,989
World Parks Endowment									
Sequestration	1,168,714	1,168,714	1,030,595	1,030,595	1,030,595	1,030,595	1,384,429	1,384,429	353,835
Total for Entity	1,168,714	1,168,714	1,030,595	1,030,595	1,030,595	1,030,595	1,384,429	1,384,429	353,835
Zahren Alternative Power Corporation									
Total (EZ)									1,688,289
Zeeland Board of Public Works									
Total (EZ)									396
Grand Totals:	**53,013,510**	**65,450,294**	**83,986,792**	**91,322,551**	**135,147,166**	**152,832,679**	**172,810,726**	**199,639,935**	**225,726,587**

Notes: "Direct" refers to direct reductions, and "Indirect" refers to indirect reductions. This table excludes data reported as confidential and reductions of those gases, such as CFCs and HCFCs, with ambiguous global warming potentials (GWPs), as determined by the Intergovernmental Panel on Climate Change. For further discussion of GWPs, see the "Greenhouse Gases in Perspective" chapter in Energy Information Administration, *Emissions of Greenhouse Gases in the United States 1999*, DOE/EIA-0573(99) (Washington, DC, October 2000), http://www.eia.doe.gov/oiaf/1605/ggrpt/emission.html.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Table B3. Entity-Level Emission Reductions Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter and Gas	1991	1992	1993	1994	1995	1996	1997	1998	1999
Abe Krasne Home Furnishings, Inc.									
Entity Total									*
AES Hawaii, Inc.									
CO_2		1,530,000	1,530,000	1,530,000	1,530,000	1,530,000	1,530,000	1,530,000	1,530,000
Entity Total		1,530,000	1,530,000	1,530,000	1,530,000	1,530,000	1,530,000	1,530,000	1,530,000
AES Shady Point									
CO_2			4,150,000	4,150,000	4,150,000	4,150,000	4,150,000	4,150,000	4,150,000
Entity Total			4,150,000	4,150,000	4,150,000	4,150,000	4,150,000	4,150,000	4,150,000
AES Thames									
CO_2	550,000	70,000	290,000	370,000	480,000	440,000	440,000	590,000	530,000
Entity Total	550,000	70,000	290,000	370,000	480,000	440,000	440,000	590,000	530,000
Alcan Ingot, Sebree Aluminum Plant									
CF_4	-2,002	27,664	-5,343	245,518	32,474	20,293	-47,392	106,399	73,938
C_2F_6	-285	3,919	-754	34,748	4,600	2,870	-6,707	15,060	10,470
Entity Total	-2,287	31,583	-6,097	280,266	37,074	23,163	-54,098	121,459	84,407
Allegheny Energy, Inc.									
SF_6							144,834	209,229	64,395
CH_4						231	288	354	411
CO_2	169,898	270,105	367,894	565,546	886,705	1,035,749	1,009,258	1,289,268	1,462,528
Entity Total	169,898	270,105	367,894	565,546	886,705	1,035,980	1,154,379	1,498,851	1,527,334
Allergan, Inc.									
CO_2	0	0	0	0	116	116	444	4,047	4,942
Entity Total	0	0	0	0	116	116	444	4,047	4,942
Alliant Energy									
CO_2	77,948	152,882	322,211	495,512	755,815	949,081	1,150,734	1,326,394	1,806,842
Entity Total	77,948	152,882	322,211	495,512	755,815	949,081	1,150,734	1,326,394	1,806,842
Arizona Portland Cement Co.									
CO_2		100,969	131,383	131,673	154,630	145,443	173,217	173,864	192,915
Entity Total		100,969	131,383	131,673	154,630	145,443	173,217	173,864	192,915
Arizona Public Service Company									
CO_2	1,703,681	1,303,436	1,078,664	1,304,753	2,678,136	2,880,803	2,231,309	1,659,314	1,086,649
Entity Total	1,703,681	1,303,436	1,078,664	1,304,753	2,678,136	2,880,803	2,231,309	1,659,314	1,086,649
Arthur Rypinski & Jacquelyn Porth									
CO_2	2	2	3	5	5	5	5	5	5
Entity Total	2	2	3	5	5	5	5	5	5
AT&T									
CH_4						2,743	5,048	7,411	8,973
CO_2						6,187	60,666	56,962	79,303
Entity Total						8,930	65,715	64,373	88,276
Baltimore Gas & Electric Co.									
CF_4			18	2,126	2,571	2,250	2,547	1,946	1,801
C_2F_6			4	300	363	317	359	275	255
SF_6							87	5,030	-6,754
CH_4			841	2,071	3,138	3,283	3,742	3,614	4,477
CO_2	1,495	1,494,152	3,108,462	2,436,589	4,080,181	3,396,836	4,417,667	4,675,224	5,196,409
Entity Total	1,495	1,494,152	3,109,325	2,441,087	4,086,253	3,402,686	4,424,402	4,686,089	5,196,188
Bethlehem Steel Corporation									
CO_2							2,294,270	3,538,021	3,981,634
Entity Total							2,294,270	3,538,021	3,981,634
Black Warrior Methane Corp.									
CH_4	4,648,015	4,359,642	4,857,346	3,886,856	4,214,188	3,953,858	4,040,539	4,586,785	5,108,284
Entity Total	4,648,015	4,359,642	4,857,346	3,886,856	4,214,188	3,953,858	4,040,539	4,586,785	5,108,284

Table B3. Entity-Level Emission Reductions Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter and Gas	1991	1992	1993	1994	1995	1996	1997	1998	1999
Bountiful City Light & Power									
CO_2	28	1,339	10,320	6,426	11,851	14,629	16,797	19,192	15,520
Entity Total	28	1,339	10,320	6,426	11,851	14,629	16,797	19,192	15,520
Calaveras Cement Company									
CO_2				103,563	81,198	104,526	127,366	109,842	110,114
Entity Total				103,563	81,198	104,526	127,366	109,842	110,114
California Portland Cement Co. - Colton Plant									
CO_2	25,680	6,147	67,792	-7,702	876	61,478	54,721	65,517	37,492
Entity Total	25,680	6,147	67,792	-7,702	876	61,478	54,721	65,517	37,492
California Portland Cement Co. - Mojave Plant									
CO_2	16,897	88,865	51,372	108,076	59,253	40,852	43,647	75,913	44,848
Entity Total	16,897	88,865	51,372	108,076	59,253	40,852	43,647	75,913	44,848
Central and South West Corporation									
Entity Total									*
Central Hudson Gas & Electric Corporation									
CH_4					5,258	9,068	13,393	13,774	13,850
CO_2	480,347	972,919	2,568,732	3,155,543	2,909,250	3,495,636	2,640,386	1,036,873	1,263,726
Entity Total	480,347	972,919	2,568,732	3,155,543	2,914,508	3,504,704	2,653,779	1,050,647	1,277,576
Clairol									
CH_4						63	189	336	525
CO_2						1,552	1,884	2,725	1,020
Entity Total						1,615	2,073	3,061	1,545
CMS Energy									
CH_4			13,983	27,967	41,950	55,933	69,917	71,193	75,765
CO_2	1,736,624	1,726,976	376,269	1,518,689	1,855,576	2,404,978	2,908,102	2,502,416	2,235,958
Entity Total	1,736,624	1,726,976	390,252	1,546,656	1,897,526	2,460,911	2,978,019	2,573,609	2,311,724
Columbia Falls Aluminum Company LLC									
Entity Total									*
Commonwealth Bethlehem Energy, LLC									
CH_4								39,835	76,432
Entity Total								39,835	76,432
The Dow Chemical Company									
HFC-23							-10,049	10,049	-15,696
HFC-134a					-8,742	-6,746	5,865	-27,104	-45,652
HFC-152a			25	0	8,794	17,775	-1	-4	-2
SF_6					-334,115	11,491	381,967	185,162	715,930
CH_4					4,001	3,239	47,437	-26,100	34,292
CO_2					386,461	-1,239,214	1,620,232	194,138	527,074
Entity Total			25	0	56,398	-1,213,456	2,045,450	336,141	1,215,946
DTE Energy/ Detroit Edison									
CO_2	-1,094,777	2,730,420	777,819	-7,022,503	-5,155,573	-5,241,060	-6,184,542	-8,660,616	-6,867,281
Entity Total	-1,094,777	2,730,420	777,819	-7,022,503	-5,155,573	-5,241,060	-6,184,542	-8,660,616	-6,867,281
Duke Energy Corporation									
CH_4							141,624	190,743	23,415
CO_2	7,865,486	6,867,928	6,887,806	9,423,431	12,808,280	5,652,924	4,056,278	12,109,070	13,265,961
Entity Total	7,865,486	6,867,928	6,887,806	9,423,431	12,808,280	5,652,924	4,197,902	12,299,813	13,289,376
Dynegy Midwest Generation Inc.									
CO_2		517,749	1,320,215	2,689,508	1,722,093	964,795	-1,491,129	-2,460,593	249,166
Entity Total		517,749	1,320,215	2,689,508	1,722,093	964,795	-1,491,129	-2,460,593	249,166
Ecogas Corporation									
CH_4	97,350	111,067	126,879	120,021	129,546	129,165	166,124	180,983	811,758
Entity Total	97,350	111,067	126,879	120,021	129,546	129,165	166,124	180,983	811,758

Table B3. Entity-Level Emission Reductions Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter and Gas	1991	1992	1993	1994	1995	1996	1997	1998	1999
Entergy Services, Inc.									
SF_6								4,692	4,692
CH_4	743	648	648	724	1,200	1,276	1,048	914	895
CO_2	517,108	509,745	898,317	857,510	2,742,976	3,114,761	5,913,617	6,810,085	4,161,656
Entity Total	517,851	510,393	898,965	858,234	2,744,176	3,116,037	5,914,665	6,815,691	4,167,243
Essroc Cement Corp. - Bessemer, PA Plant									
CO_2				32,132	-1,273	53,653	48,844	82,460	96,889
Entity Total				32,132	-1,273	53,653	48,844	82,460	96,889
Essroc Cement Corp. - Essexville, MI Plant									
CO_2				-2,402	-3,060	-3,319	-3,093	-5,054	-2,967
Entity Total				-2,402	-3,060	-3,319	-3,093	-5,054	-2,967
Essroc Cement Corp. - Frederick, MD Plant									
CO_2				26,263	-3,756	-17,924	31,236	415	37,349
Entity Total				26,263	-3,756	-17,924	31,236	415	37,349
Essroc Cement Corp. - Logansport, IN Plant									
CO_2				-20,248	10,370	43,099	38,331	49,227	43,310
Entity Total				-20,248	10,370	43,099	38,331	49,227	43,310
Essroc Cement Corp. - PA Operations									
CO_2				29,211	-68,857	-103,779	-59,850	-100,284	-155,001
Entity Total				29,211	-68,857	-103,779	-59,850	-100,284	-155,001
Essroc Cement Corp. - San Juan, PR Plant									
CO_2				14,433	19,677	-1,793	30,288	87,884	101,209
Entity Total				14,433	19,677	-1,793	30,288	87,884	101,209
Essroc Cement Corp. - Speed, IN Plant									
CO_2				11,498	-29,577	6,080	27,562	40,890	46,337
Entity Total				11,498	-29,577	6,080	27,562	40,890	46,337
FirstEnergy Corporation									
CO_2	3,465,625	4,343,804	1,238,869	2,104,835	5,442,470	3,878,785	5,043,874	10,634,738	10,634,267
Entity Total	3,465,625	4,343,804	1,238,869	2,104,835	5,442,470	3,878,785	5,043,874	10,634,738	10,634,267
Florida Power Corporation									
CO_2				4,437,347	5,607,021	3,985,430	2,934,597	3,114,658	5,040,912
Entity Total				4,437,347	5,607,021	3,985,430	2,934,597	3,114,658	5,040,912
FPL Group									
SF_6		121,275	121,275	121,275	2,024	18,701	0	25,043	71,573
CH_4								35,261	132,036
CO_2		6,080,651	13,224,142	19,432,760	22,175,107	23,423,185	23,148,943	26,189,436	28,571,967
Entity Total		6,201,926	13,345,417	19,554,035	22,177,131	23,441,886	23,148,943	26,249,740	28,775,575
General Motors Corporation									
CO_2	0	65	160	267	874	1,369	2,160	2,664	3,301
Entity Total	0	65	160	267	874	1,369	2,160	2,664	3,301
The Gillette Company									
Entity Total									*
Hawaiian Electric Company, Inc.									
CO_2		-326,587	-275,784	-352,895	-587,856	-745,706	-689,460	-1,137,610	-1,296,367
Entity Total		-326,587	-275,784	-352,895	-587,856	-745,706	-689,460	-1,137,610	-1,296,367
IBM									
CO_2	126,099	120,202	114,124	100,607	102,693	57,606	80,921	108,179	106,188
Entity Total	126,099	120,202	114,124	100,607	102,693	57,606	80,921	108,179	106,188
Integrated Waste Services Association									
CH_4					2,423,825	2,736,697	3,044,636	3,352,688	4,085,271
CO_2					15,785,016	16,510,763	15,966,452	16,057,171	17,145,793
N2O					95,617	99,836	96,461	97,305	104,054
Entity Total					18,304,457	19,347,296	19,107,549	19,507,164	21,335,118

Table B3. Entity-Level Emission Reductions Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter and Gas	1991	1992	1993	1994	1995	1996	1997	1998	1999
International Truck and Engine Corporation									
CO_2						-3,958	-9,272	6,424	-26,882
Entity Total						-3,958	-9,272	6,424	-26,882
Johnson & Johnson									
CO_2	4,767	37,957	81,289	115,457	145,522	191,088	221,730	243,955	276,214
Entity Total	4,767	37,957	81,289	115,457	145,522	191,088	221,730	243,955	276,214
Kansas City Power & Light Company									
CO_2	376,210	243,332	319,634	621,364	576,423	619,899	702,361	798,330	530,477
Entity Total	376,210	243,332	319,634	621,364	576,423	619,899	702,361	798,330	530,477
KeySpan Energy Corporation									
CH_4	262,066	453,638	517,294	537,492	505,940	366,577	309,285	274,504	184,712
CO_2	2,118,639	4,671,911	5,058,644	6,606,573	6,272,004	5,925,640	5,414,805	5,038,323	3,894,272
Entity Total	2,380,705	5,125,549	5,575,938	7,144,065	6,777,944	6,292,217	5,724,090	5,312,827	4,078,984
Lehigh Portland Cement Company									
CO_2				-126,937	5,631	35,894	72,296	78,072	197,436
Entity Total				-126,937	5,631	35,894	72,296	78,072	197,436
Los Angeles Department of Water and Power									
CO_2	1,261,529	-684,993	-160,242	-1,172,083	1,638,229	3,787,468	2,299,849	967,480	-172,758
Entity Total	1,261,529	-684,993	-160,242	-1,172,083	1,638,229	3,787,468	2,299,849	967,480	-172,758
Lower Colorado River Authority									
CO_2	62,959	77,292	109,588	150,411	210,467	347,361	392,902	402,609	431,548
Entity Total	62,959	77,292	109,588	150,411	210,467	347,361	392,902	402,609	431,548
Lucent Technologies									
CO_2	0	0	14,000	30,000	60,000	90,000	110,000	141,000	190,000
Entity Total	0	0	14,000	30,000	60,000	90,000	110,000	141,000	190,000
McNeil Generating Station									
CO_2		57,966	42,871	52,354	83,663	90,230	101,977	94,560	135,492
Entity Total		57,966	42,871	52,354	83,663	90,230	101,977	94,560	135,492
Motorola Austin									
CO_2						56,065	60,005	-48,356	35,481
Entity Total						56,065	60,005	-48,356	35,481
Niagara Mohawk Power Corporation									
CO_2	1,350,072	1,638,104	2,444,682	3,709,116	3,863,609	4,191,194	3,753,840	5,281,811	7,729,033
Entity Total	1,350,072	1,638,104	2,444,682	3,709,116	3,863,609	4,191,194	3,753,840	5,281,811	7,729,033
NiSource/NIPSCO									
CF_4				430	419	489	472	749	979
C_2F_6				58	58	67	67	108	142
SF_6			0	0	0	26,452	26,452	26,452	40,762
CH_4	4,046	5,401	6,757	6,837	13,136	46,602	65,729	71,687	105,109
CO_2	22,016	4,409	27,100	40,012	141,813	381,177	1,060,175	1,498,188	1,879,192
Entity Total	26,063	9,810	33,858	47,339	155,426	454,787	1,152,895	1,597,184	2,026,183
Northeast Utilities									
CO_2	1,206,556	3,184,219	4,200,266	3,483,590	3,166,075	2,648,980	-508,023	-263,084	1,306,346
Entity Total	1,206,556	3,184,219	4,200,266	3,483,590	3,166,075	2,648,980	-508,023	-263,084	1,306,346
PacifiCorp									
CH_4							10,470	10,470	11,097
CO_2	3,663	108,214	217,145	396,587	813,655	1,056,251	1,874,487	2,082,848	2,589,108
Entity Total	3,663	108,214	217,145	396,587	813,655	1,056,251	1,884,957	2,093,319	2,600,206
PECO Energy Company									
CO_2	5,301,110	3,513,410	1,643,060	710,858	-832,814	-554,217	594,825	-47,822	1,047,236
Entity Total	5,301,110	3,513,410	1,643,060	710,858	-832,814	-554,217	594,825	-47,822	1,047,236

Table B3. Entity-Level Emission Reductions Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter and Gas	1991	1992	1993	1994	1995	1996	1997	1998	1999
PEI Power Corp									
CO_2								7,581	16,621
Entity Total								7,581	16,621
PG&E Corporation									
SF_6									10,800
CH_4	310,015	393,782	536,435	559,277	534,225	695,776	874,835	766,493	863,157
CO_2	192,200	1,001,692	1,466,256	2,263,670	3,227,500	4,478,567	5,084,055	5,027,276	3,773,973
Entity Total	502,215	1,395,473	2,002,691	2,822,947	3,761,725	5,174,344	5,958,891	5,793,769	4,647,931
Portland General Electric Co.									
CO_2						737,086	775,115	821,955	889,164
Entity Total						737,086	775,115	821,955	889,164
PPL CORPORATION									
CH_4	60,944	62,144	60,887	97,750	210,131	287,630	292,545	290,316	283,972
CO_2	30,262	140,421	217,493	-159,040	226,637	874,298	871,882	2,885,029	1,565,883
Entity Total	91,206	202,565	278,379	-61,290	436,768	1,161,928	1,164,427	3,175,345	1,849,855
Public Service Enterprise Group									
SF_6								22,918	11,340
CH_4	190,109	2,829,799	457,393	576,461	891,600	1,217,485	1,616,201	2,181,916	2,346,230
CO_2	-186,866	-164,518	-129,014	-75,409	-300,360	-33,853	71,251	246,249	379,259
Entity Total	3,242	2,665,281	328,378	501,052	591,240	1,183,632	1,687,452	2,451,083	2,736,829
Reliant Energy - HL&P									
CO_2	2,580,034	2,923,857	590,577	1,626,582	3,120,716	3,856,443	2,950,165	4,318,200	4,212,059
Entity Total	2,580,034	2,923,857	590,577	1,626,582	3,120,716	3,856,443	2,950,165	4,318,200	4,212,059
Republic Metals Corporation									
CO_2						0	-5	44	-29
Entity Total						0	-5	44	-29
Rolls-Royce Corporation									
CH_4								0	36,603
Entity Total								0	36,603
Sacramento Municipal Utility District									
CO_2						631,236	551,646	1,148,933	944,927
Entity Total						631,236	551,646	1,148,933	944,927
Santee Cooper									
CO_2	25,535	35,203	200,316	181,183	266,965	520,387	520,134	990,998	1,183,583
Entity Total	25,535	35,203	200,316	181,183	266,965	520,387	520,134	990,998	1,183,583
Seattle City Light									
CO_2	7,228	33,239	55,803	83,397	124,481	170,808	187,334	205,429	233,025
Entity Total	7,228	33,239	55,803	83,397	124,481	170,808	187,334	205,429	233,025
Southern Company									
SF_6									413,470
CH_4		48,762	106,008	95,634	71,589	65,478	72,975	67,515	46,179
CO_2	21,946	2,259,033	2,446,124	3,001,439	3,664,472	3,868,450	4,502,468	3,633,965	6,594,244
Entity Total	21,946	2,307,795	2,552,132	3,097,073	3,736,061	3,933,928	4,575,443	3,701,480	7,053,893
Sunoco, Inc.									
CO_2	142,136	-68,027	391,267	601,193	615,431	372,475	633,719	1,165,298	1,348,661
Entity Total	142,136	-68,027	391,267	601,193	615,431	372,475	633,719	1,165,298	1,348,661
Tampa Electric Company									
CO_2	240,404	237,682	234,054	240,585	266,632	268,786	267,987	272,862	268,916
Entity Total	240,404	237,682	234,054	240,585	266,632	268,786	267,987	272,862	268,916

Table B3. Entity-Level Emission Reductions Reported, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter and Gas	1991	1992	1993	1994	1995	1996	1997	1998	1999
Tennessee Valley Authority									
HFC-134a				-29	-43	-42	-42		
CH_4	402	78,034	78,360	87,181	118,375	138,328	139,632	125,193	116,776
CO_2	2,861,763	8,553,845	6,968,929	7,764,993	10,315,950	22,403,180	24,068,893	25,991,092	25,997,452
Entity Total	2,862,165	8,631,880	7,047,289	7,852,144	10,434,282	22,541,466	24,208,482	26,116,285	26,114,229
Town of Colonie Solid Waste Management Facility									
CH_4							18,249	157,332	161,133
Entity Total							18,249	157,332	161,133
U.S. Department of Energy - Energy Management									
CO_2									1,224,699
Entity Total									1,224,699
VANALCO, INC. - (Primary Aluminum Reduction Plant)									
CF_4	221,000	13,000	45,500	58,500	188,500	52,000	58,500	78,000	0
C_2F_6	51,520	2,760	10,120	14,720	44,160	10,120	11,960	14,720	0
Entity Total	272,520	15,760	55,620	73,220	232,660	62,120	70,460	92,720	0
Waverly Light & Power Company									
CO_2	5,161	9,054	13,282	18,259	18,347	18,734	19,000	18,761	21,075
Entity Total	5,161	9,054	13,282	18,259	18,347	18,734	19,000	18,761	21,075
Wisconsin Public Service Corporation									
CO_2	288,878	420,165	546,207	620,543	791,987	878,113	956,366	968,792	1,108,075
Entity Total	288,878	420,165	546,207	620,543	791,987	878,113	956,366	968,792	1,108,075
World Parks Endowment									
CO_2	1,168,714	1,168,714	1,030,594	1,030,594	1,030,594	1,030,594	1,384,428	1,384,428	353,835
Entity Total	1,168,714	1,168,714	1,030,594	1,030,594	1,030,594	1,030,594	1,384,428	1,384,428	353,835
Grand Total	**40,570,978**	**66,475,487**	**73,202,369**	**85,921,638**	**129,305,086**	**139,905,210**	**144,351,411**	**164,462,913**	**181,585,132**

*No reductions reported.

CO_2 = carbon dioxide; CF_4 = perfluoromethane; C_2F_6 = perfluoroethane; SF_6 = sulfur hexafluoride; N_2O = nitrous oxide.

Notes: Data are shown as reported on Part IVb of Schedule III and may not equal the summed totals represented elsewhere in this report. This table excludes those gases, such as CFCs and HCFCs, with ambiguous global warming potentials (GWPs), as determined by the Intergovernmental Panel on Climate Change. For further discussion of GWPs, see the "Greenhouse Gases in Perspective" chapter in Energy Information Administration, *Emissions of Greenhouse Gases in the United States 1999*, DOE/EIA-0573(99) (Washington, DC, October 2000), http://www.eia.doe.gov/oiaf/1605/ggrpt/emission.html.

Source: Energy Information Administration, Form EIA-1605.

Table B4. Total Emission Reductions and Sequestration Reported at Project and Entity Levels, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter	Sector	Project Level	Entity Level
A&N Electric Cooperative	Electric Power	3,319	
Abe Krasne Home Furnishings, Inc.	Other		*
Advanced Micro Devices, Inc.	Industry	5,996	
AES Hawaii, Inc.	Electric Power	1,530,000	1,530,000
AES Shady Point	Electric Power	4,150,000	4,150,000
AES Thames	Electric Power	480,808	530,000
Alabama Biomass Partners, Ltd	Alternative Energy	39,911	
Alcan Ingot, Sebree Aluminum Plant	Industry	84,407	84,407
Allegheny Energy, Inc.	Electric Power	1,527,334	1,527,334
Allergan, Inc.	Industry	4,826	4,942
Alliant Energy	Electric Power	1,806,842	1,806,842
Ameren Corporation (formerly UE and CIPS)	Electric Power	905,163	
American Electric Power, Inc.	Electric Power	-6,052,437	
American Forests	Agriculture & Forestry	73,873	
American Municipal Power - Ohio	Electric Power	219,106	
Anoka Municipal Utility	Electric Power	115	
Arizona Electric Power Cooperative, Inc.	Electric Power	97,262	
Arizona Portland Cement Co.	Industry	192,914	192,915
Arizona Public Service Company	Electric Power		1,086,649
Arthur Rypinski & Jacquelyn Porth	Other	5	5
Asheville Landfill Gas, LLC	Alternative Energy	69,297	
AT&T	Industry	58,339	88,276
Atlantic Energy, Inc. (AEI)	Electric Power	102,719	
Austin Energy	Electric Power	1,246,366	
Avista Utilities	Electric Power	6,364	
Baltimore Gas & Electric Co.	Electric Power	5,196,188	5,196,188
The Bentech Group of Delaware, Inc.	Alternative Energy	528,055	
BARC Electric Cooperative	Industry	1,803	
Bethlehem Steel Corporation	Electric Power		3,981,634
Biomass Partners, LP	Alternative Energy	94,135	
Black Warrior Methane Corp.	Alternative Energy	5,108,284	5,108,284
Bountiful City Light & Power	Electric Power	15,520	15,520
Burlington County Board of Chosen Freeholders	Other	220,634	
Calaveras Cement Company	Industry	-95,837	110,114
California Portland Cement Co. - Colton Plant	Industry	43,304	37,492
California Portland Cement Co. - Mojave Plant	Industry	44,940	44,848
Carolina Power & Light Company	Electric Power	7,403,076	
Catawba Landfill Gas, LLC	Alternative Energy	76,572	
CDX Gas, LLC	Alternative Energy	344,646	
Cedar Falls Utilities	Electric Power	19,067	
Central and South West Corporation	Electric Power	591,110	
Central Hudson Gas & Electric Corporation	Electric Power	363,440	1,277,576
Choptank Electric Cooperative	Electric Power	19,774	
City of Edmond, Oklahoma, Electric Department	Electric Power	2,044	
City of Palo Alto	Electric Power	2,469	
City Utilities of Springfield	Electric Power	37,149	
Clairol	Industry	5,751	1,545
CLE Resources	Industry	110,084	
Cleco Corporation	Electric Power	2,487	
CMS Energy	Electric Power	2,311,724	2,311,724
CMV Joint Venture	Alternative Energy	456,878	
Columbia Falls Aluminum Company LLC	Industry	81	

Table B4. Total Emission Reductions and Sequestration Reported at Project and Entity Levels, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter	Sector	Project Level	Entity Level
Commonwealth Bethlehem Energy, LLC	Alternative Energy	66,422	76,432
Community Electric Cooperative	Electric Power	2,301	
Delaware Electric Cooperative	Electric Power	26,449	
Delaware Solid Waste Authority	Alternative Energy	391,506	
Delmarva Power	Electric Power	1,081,611	
Delta Electric Power Association	Electric Power	22,022	
The Dow Chemical Company	Industry	0	1,215,946
DTE Energy/ Detroit Edison	Electric Power	7,589,588	-6,867,281
Duke Energy Corporation	Electric Power	13,289,376	13,289,376
Dynegy Midwest Generation Inc.	Electric Power	249,166	249,166
Ecogas Corporation	Alternative Energy	811,758	811,758
El Paso Production Company	Alternative Energy	3,403,535	
Energy Management Partners, LP	Alternative Energy	815,716	
Entergy Services, Inc.	Electric Power	4,167,245	4,167,243
Environmental Synergy, Inc.	Agriculture & Forestry	2	
Essential Foods, Inc.	Industry	86	
Essroc Cement Corp. - Bessemer, PA Plant	Industry	60,401	96,889
Essroc Cement Corp. - Essexville, MI Plant	Industry		-2,967
Essroc Cement Corp. - Frederick, MD Plant	Industry	25,643	37,349
Essroc Cement Corp. - Logansport, IN Plant	Industry	65,842	43,310
Essroc Cement Corp. - PA Operations	Industry	21,623	-155,001
Essroc Cement Corp. - San Juan, PR Plant	Industry	1,758	101,209
Essroc Cement Corp. - Speed, IN Plant	Industry	48,034	46,337
Estee Lauder Companies	Industry	544	
FirstEnergy Corporation	Electric Power	10,634,236	10,634,267
Florida Power Corporation	Electric Power		5,040,912
FPL Group	Electric Power	132,036	28,775,575
Fred Weber, Inc.	Alternative Energy	37,664	
Gas Recovery Systems	Alternative Energy	1,258,971	
General Motors Corporation	Industry	1,572,628	3,301
GeoMet Inc.	Alternative Energy	304,584	
Gilead Sciences	Industry	6	
The Gillette Company	Industry		*
Golden Valley Electric Association, Inc	Electric Power	15,099	
GPU, Inc.	Electric Power	3,191,080	
Granger Electric Company	Alternative Energy	797,550	
Greater Caribbean Energy & Environment Foundation	Agriculture & Forestry	*	
Hawaiian Electric Company, Inc.	Electric Power	46,800	-1,296,367
IBM	Industry		106,188
Integrated Waste Services Association	Alternative Energy	12,802,788	21,335,118
International Truck and Engine Corporation	Industry		-26,882
Iredell Landfill Gas, LLC	Alternative Energy	80,181	
J.M. Gilmer and Company, Inc.	Agriculture & Forestry	3,583	
JEA	Electric Power	424,837	
Johnson & Johnson	Industry	276,219	276,214
Kansas City Power & Light Company	Electric Power	530,477	530,477
KeySpan Energy Corporation	Electric Power		4,078,984
LAHD Energy, Inc.	Alternative Energy	47,362	
Lehigh Portland Cement Company	Industry	197,436	197,436
LFG Energy, Inc.	Alternative Energy	180,072	
Los Angeles Department of Water and Power	Electric Power	459,372	-172,758
Lower Colorado River Authority	Electric Power	431,548	431,548

Table B4. Total Emission Reductions and Sequestration Reported at Project and Entity Levels, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter	Sector	Project Level	Entity Level
Lucent Technologies	Industry		190,000
Madison County Depart. of Solid Waste & Sanitation	Alternative Energy	45,519	
McNeil Generating Station	Electric Power		135,492
Mecklenburg Electric Cooperative	Electric Power	10,762	
Minnesota Power	Electric Power	639,364	
Minnesota Resource Recovery Association	Other	1,166,746	
Missouri River Energy Services	Electric Power	370	
Moorhead Public Service	Electric Power	14,765	
Motorola Austin	Industry		35,481
Nashville Electric Service	Electric Power	3,591	
National Grid USA	Alternative Energy	1,088,308	
Natural Power, Inc.	Alternative Energy	363,845	
NC Muni Landfill Gas Partners, LP	Alternative Energy	65,380	
Nebraska Public Power District	Electric Power	2,025,191	
NEO Corporation	Alternative Energy	6,235,921	
Newton Landfill Gas, LLC	Alternative Energy	26,026	
Niagara Mohawk Power Corporation	Electric Power	2,497,490	7,729,033
NiSource/NIPSCO	Electric Power	2,026,184	2,026,183
Noranda Aluminum Inc.	Industry	3,607,100	
North American Carbon, Inc.	Alternative Energy	314,696	
North Carolina Biomass Partners	Alternative Energy	73,698	
North Carolina Electric Membership Corporation	Electric Power	835,215	
Northeast Utilities	Electric Power		1,306,346
Northern Neck Electric Cooperative	Electric Power	1,564	
Northern States Power Company	Electric Power	2,142,227	
Northern Virginia Electric Cooperative	Electric Power	43,433	
Northwest Fuel Development, Inc.	Alternative Energy	13,570	
Oak Creek Energy Systems Inc.	Alternative Energy	22,766	
Old Dominion Electric Cooperative	Electric Power	64	
Omaha Public Power District	Electric Power	1,248,464	
Oregon State University (State of Oregon)	Other	10,254	
The Pacific Forest Trust, Inc.	Agriculture & Forestry	68,194	
PacifiCorp	Electric Power	2,600,206	2,600,206
Palmer Capital Corporation	Alternative Energy	4,938,538	
PECO Energy Company	Electric Power	5,444,039	1,047,236
PEI Power Corp	Alternative Energy	16,621	16,621
PG&E Corporation	Electric Power	4,647,913	4,647,931
Pharmacia & Upjohn	Industry	1,727	
Pitt Landfill Gas, LLC	Alternative Energy	67,548	
Platte River Power Authority & 4 owner cities	Electric Power	81,586	
Portland General Electric Co.	Electric Power	889,158	889,164
PPL CORPORATION	Electric Power	1,849,855	1,849,855
Pratt & Whitney North Berwick	Industry	710	
Prince George Electric Cooperative	Electric Power	5,125	
Public Service Company of New Mexico	Electric Power	2,019,835	
Public Service Enterprise Group	Electric Power	2,736,824	2,736,829
Public Utility District No. 1 of Snohomish County	Electric Power	123,824	
Quad/Graphics, Inc.	Industry	198,202	
Rangely Weber Sand Unit	Industry	686,000	
Rappahannock Electric Cooperative	Electric Power	154,325	
Reliant Energy - HL&P	Electric Power	1,499,576	4,212,059
Republic Metals Corporation	Industry		-29

Table B4. Total Emission Reductions and Sequestration Reported at Project and Entity Levels, Data Year 1999

(Metric Tons Carbon Dioxide Equivalent)

Reporter	Sector	Project Level	Entity Level
Rochester Institute of Technology	Other	6,515	
Rolls-Royce Corporation	Industry	64,822	36,603
Rosewood Resources, Inc.	Alternative Energy	175,417	
Sacramento Municipal Utility District	Electric Power	515,422	944,927
Salt River Project	Electric Power	1,867,422	
Santee Cooper	Electric Power	1,183,583	1,183,583
Seattle City Light	Electric Power	233,025	233,025
SeaWest Windpower, Inc.	Alternative Energy	101,539	
Seminole Electric Cooperative, Inc.	Electric Power	350,916	
Seneca Energy, Inc.	Alternative Energy	412,278	
Separation Technologies, Inc	Industry	253,796	
Shenandoah Valley Electric Cooperative	Electric Power	14,950	
Shrewsbury Electric Light Plant	Electric Power	2,286	
South Carolina Electric & Gas Company	Electric Power	1,881,062	
Southeastern Biomass Partners, LP	Alternative Energy	86,218	
Southern California Edison Co.	Electric Power	4,055,281	
Southern Company	Electric Power	7,052,213	7,053,893
Southside Electric Cooperative	Electric Power	5,170	
Steuben Rural Electric Co-op	Electric Power	2,085	
Sunoco, Inc.	Industry		1,348,661
Tacoma Public Utilities	Electric Power	7,823	
Tampa Electric Company	Electric Power	268,916	268,916
Tennessee Valley Authority	Electric Power	26,114,229	26,114,229
Town of Colonie Solid Waste Management Facility	Alternative Energy	139,089	161,133
TXU	Electric Power	19,639,596	
U. S. Steel Mining Company, LLC	Alternative Energy	1,785,134	
U.S. Department of Energy - Energy Management	Other		1,224,699
U.S. Department of Energy- Office of Solar	Other	45	
UNICOM (Commonwealth Edison Company)	Electric Power	2,930,399	
USX Corporation	Alternative Energy	593,946	
Utah Municipal Power Agency	Electric Power	34,306	
VANALCO, INC. - (Primary Aluminum Reduction Plant)	Industry	0	0
Vermont Public Power Supply Authority	Electric Power	1,753	
Volvo Cars of North America, Inc.	Industry	10	
Waverly Light & Power Company	Electric Power	21,075	21,075
Western Resources, Inc.	Electric Power	1,161,921	
Whatcom Land Trust	Agriculture & Forestry	0	
Wisconsin Electric Power Co.	Electric Power	4,123,153	
Wisconsin Public Power Inc.	Electric Power	19,257	
Wisconsin Public Service Corporation	Electric Power	1,005,989	1,108,075
World Parks Endowment.	Agriculture & Forestry	353,835	353,835
Zahren Alternative Power Corporation	Alternative Energy	1,688,289	
Zeeland Board of Public Works	Electric Power	396	
Total		**225,726,587**	**181,585,132**

*No reductions reported.
Note: This table excludes confidential reporters.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
A&N Electric Cooperative	EIA-1605	Demand-side Management Load Control Program	U.S.	Energy End Use
		Transmission and Distribution Efficiency Improvements	U.S.	Electric Power G & T
AES Hawaii, Inc.	EIA-1605	Mbaracayu Conservation	Foreign	Carbon Sequestration
AES Shady Point	EIA-1605	OXFAM America Amazon	Foreign	Carbon Sequestration
AES Thames	EIA-1605	CARE Agroforestry	Foreign	Carbon Sequestration
AT&T	EIA-1605	AT&T RECYCLING & INDUSTRIAL ECOLOGY R&D INTERNAL PROGRAMS	U.S.	Other
		CHILLER REPLACEMENT PROJECT	U.S.	Energy End Use
		REFRIGERANT RECOVERY/RECYCLING	U.S.	Halogenates
		TELECOMMUTING	U.S.	Transportation
Advanced Micro Devices, Inc.	EIA-1605EZ	Carbon Dioxide Reductions by Solid Waste Recycling	U.S.	Other
		Chiller Load Rebalance and Motor Replacement	U.S.	Energy End Use
		Conference Room Motion Detectors	U.S.	Energy End Use
		Cooling Tower VFDs	U.S.	Energy End Use
		Dimming Circuits	U.S.	Energy End Use
		Exhaust Reductions	U.S.	Other
		Gas Cabinet Exhaust Optimization	U.S.	Other
		HEPA Filter Air Flow Modifications	U.S.	Energy End Use
		Lighting retrofit	U.S.	Energy End Use
		Methane Reductions by Solid Waste Recycling	U.S.	Other
		Office Lighting Control Project	U.S.	Energy End Use
		Reverse Osmosis Water Recycling Project	U.S.	Energy End Use
		Temperature and Humidity Sensors	U.S.	Energy End Use
		Tree Planting	U.S.	Carbon Sequestration
		Water Treatment Degasifier Pump Replacement	U.S.	Energy End Use
Alabama Biomass Partners, Ltd	EIA-1605EZ	Biomass Waste to Energy	U.S.	Electric Power G & T
Alcan Ingot, Sebree Aluminum Plant	EIA-1605	PFC Emissions Reduction	U.S.	Halogenates
Allegheny Energy, Inc.	EIA-1605	Adjustable Speed Drives for PA Fans - Hatfield's Ferry P.S.	U.S.	Electric Power G & T
		Adjustable Speed Drives-Plastic Injection Molding Machines	U.S.	Energy End Use
		Application of Capacitors	U.S.	Electric Power G & T
		Armstrong Boiler No. 1 Emissions Reduction Project	U.S.	Electric Power G & T
		Armstrong Boiler No. 2 Emissions Reduction Project	U.S.	Electric Power G & T
		Armstrong Unit 1 - Boiler Controls Replacement	U.S.	Electric Power G & T
		Armstrong Unit 2 - Boiler Controls Replacement	U.S.	Electric Power G & T
		Auxiliary Fuel Switching	U.S.	Electric Power G & T
		Black Oak Property Tree Planting	U.S.	Carbon Sequestration
		Carryall Vehicle Program	U.S.	Transportation
		Conversion to Higher Voltage Distribution	U.S.	Electric Power G & T
		Demand-Side Management Programs	U.S.	Energy End Use
		Economic Conductor Selection	U.S.	Electric Power G & T
		Efficient Distribution Transformers	U.S.	Electric Power G & T
		Energy Star Transformer Program	U.S.	Electric Power G & T
		EnviroTech Fund - Domestic Activities	U.S.	Other
		EnviroTech Fund - Foreign Activities	Foreign	Other
		Fly Ash use as replacement for cement	U.S.	Other
		Green Lights Utility Ally Program	U.S.	Energy End Use
		Hatfield's Ferry Unit 1 - HP/IP Turbine Rotor Replacement	U.S.	Electric Power G & T
		Hatfield's Ferry Unit 1 - LP Turbine Rotor Replacement	U.S.	Electric Power G & T

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Hatfield's Ferry Unit 2 - HP/IP Turbine Rotor Replacement	U.S.	Electric Power G & T
		Hatfield's Ferry Unit 2 LP Turbine Rotor Replacement	U.S.	Electric Power G & T
		Hatfield's Ferry Unit 3 - LP Turbine Rotor Replacement	U.S.	Electric Power G & T
		Lake Lynn Hydro Electric Station Relicensing	U.S.	Electric Power G & T
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Carbon Sequestration
		Performance Monitoring Systems	U.S.	Electric Power G & T
		Potomac Edison 138/500 kV System Split	U.S.	Electric Power G & T
		R. P. Smith Unit 4 - Boiler Controls Replacement	U.S.	Electric Power G & T
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Carbon Sequestration
		Replace Small Primary Conductors	U.S.	Electric Power G & T
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Carbon Sequestration
		Rivesville Unit 6 - High Pressure Turbine Rotor Replacement	U.S.	Electric Power G & T
		Rivesville Unit No. 6 - Boiler Controls Replacement	U.S.	Electric Power G & T
		SF6 Breaker Replacement	U.S.	Halogenates
		Small Hydroelectric Station Relicensing	U.S.	Electric Power G & T
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration
		Willow Island Unit 1- Low Pressure Turbine Rotor Replacement	U.S.	Electric Power G & T
		Willow Island Unit 2 Boiler Controls Replacement	U.S.	Electric Power G & T
		Wire Replacement on Transmission Lines	U.S.	Electric Power G & T
Allergan, Inc.	EIA-1605	AMO Facility Closure	U.S.	Energy End Use
		Air Compressor System Upgrade	U.S.	Energy End Use
		Allergan Brazil Building Management System Installation	Foreign	Energy End Use
		Allergan Facility Divestiture	U.S.	Energy End Use
		Allergan Italy Facility Closure	Foreign	Energy End Use
		Allergan LOK Brazil Operation Consolidation	Foreign	Energy End Use
		Allergan Medical Plastics Energy Management System Upgrade	U.S.	Energy End Use
		Compressed Air Leak Repair	Foreign	Energy End Use
		Curtail Weekend Energy Usage	Foreign	Energy End Use
		Direct Expansion Cooler Unit Redesign	U.S.	Energy End Use
		Elimination of CFCs at Farnborough, UK	Foreign	Halogenates
		Elimination of CFCs at U.S. Plants	U.S.	Halogenates
		Elimination of Catalytic Thermal Oxidizer	U.S.	Energy End Use
		Insulate Process Lines	Foreign	Energy End Use
		Lighting Retrofits and Upgrades	U.S.	Energy End Use
		Reduction in Operating Time for Blowmolding Equipment	Foreign	Energy End Use
		Replace Mercury Vapor Lamps with Fluorescent Lamps	Foreign	Energy End Use
Alliant Energy	EIA-1605	Afforestation	U.S.	Carbon Sequestration
		Cedar Rapids Landfill Methane IES	U.S.	Waste Methane
		Columbia 1 turbine blade Efficiency improvements	U.S.	Electric Power G & T

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Columbia 1&2 Excess Air Efficiency improvements	U.S.	Electric Power G & T
		Columbia 2 economizer Efficiency improvements	U.S.	Electric Power G & T
		Columbia 2 turbine blade Heat rate improvement	U.S.	Electric Power G & T
		Conservation tillage	U.S.	Carbon Sequestration
		Edge 5 Excess Air Efficiency improvements	U.S.	Electric Power G & T
		Energy End Use - Electric IES	U.S.	Energy End Use
		Energy End Use - Electric IPC	U.S.	Energy End Use
		Energy End Use - Gas IES	U.S.	Energy End Use
		Energy End Use - Gas IPC	U.S.	Energy End Use
		Energy end use projects-Electric	U.S.	Energy End Use
		Energy end use-Gas	U.S.	Energy End Use
		Forest preservation	U.S.	Carbon Sequestration
		Fuel Switching	U.S.	Electric Power G & T
		Habitat Restoration	U.S.	Carbon Sequestration
		Mallard Ridge Landfill Methane	U.S.	Waste Methane
		Minergy Waste Generation	U.S.	Electric Power G & T
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Carbon Sequestration
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Carbon Sequestration
		Rio Bravo Carbon Sequestration Pilot Project - Component A	Foreign	Carbon Sequestration
		Tire Derived Fuel Generation	U.S.	Electric Power G & T
		Transmission line improvements	U.S.	Electric Power G & T
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Urban Forestry IES	U.S.	Energy End Use
		Urban Forestry IES	U.S.	Carbon Sequestration
		Urban Forestry IPC	U.S.	Energy End Use
		Urban Forestry IPC	U.S.	Carbon Sequestration
		Verona Landfill Methane	U.S.	Waste Methane
		WP&L Green Lights Projects	U.S.	Energy End Use
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration
		Wind Power	U.S.	Electric Power G & T
Ameren Corporation (formerly UE and CIPS) .	EIA-1605	Carpooling	U.S.	Transportation
		Conversion to a dry flyash handling system.	U.S.	Electric Power G & T
		Demand Side Management Projects	U.S.	Energy End Use
		EnviroTech Fund - Foreign	Foreign	Energy End Use
		EnviroTech Fund - US	U.S.	Energy End Use
		Flyash substitution for cement.	U.S.	Other
		Green Leaf Project	U.S.	Carbon Sequestration
		Increased Nuclear generation	U.S.	Electric Power G & T
		Install adjustable speed fan drives replacing fixed speed	U.S.	Electric Power G & T
		Meramec Power Plant Control Upgrade	U.S.	Electric Power G & T
		Meramec Power Plant Lighting Upgrade	U.S.	Energy End Use
		Milam Landfill Methane Recovery	U.S.	Waste Methane
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Carbon Sequestration
		Purchase of Light Weight Rail Cars	U.S.	Transportation

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Carbon Sequestration
		Replaced motor-generator exciters with static exciter system	U.S.	Electric Power G & T
		Rio Bravo Carbon Sequestration Pilot Program	Foreign	Carbon Sequestration
		Sioux Plant Control Upgrade	U.S.	Electric Power G & T
		Street Light Conversion	U.S.	Energy End Use
		Subtransmission Reconductoring	U.S.	Electric Power G & T
		Transformer Replacement	U.S.	Electric Power G & T
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Waste Oil Heat Recovery	U.S.	Electric Power G & T
		Western Oregon Carbon Sequestration	U.S.	Carbon Sequestration
American Electric Power, Inc.	EIA-1605	AEP Hydroelectric Facility Improvements	U.S.	Electric Power G & T
		EP-AGSPOIL-1992	U.S.	Carbon Sequestration
		AEP-AGSPOIL-1993	U.S.	Carbon Sequestration
		AEP-AGSPOIL-1994	U.S.	Carbon Sequestration
		AEP-AGSPOIL-1995	U.S.	Carbon Sequestration
		AEP-AGSPOIL-1996	U.S.	Carbon Sequestration
		AEP-AGSPOIL-1997	U.S.	Carbon Sequestration
		AEP-AGSPOIL-1998	U.S.	Carbon Sequestration
		AEP-AGSPOIL-1999	U.S.	Carbon Sequestration
		AEP-FM-1991	U.S.	Carbon Sequestration
		AEP-FM-1992	U.S.	Carbon Sequestration
		AEP-FM-1993	U.S.	Carbon Sequestration
		AEP-FM-1994	U.S.	Carbon Sequestration
		AEP-FM-1995	U.S.	Carbon Sequestration
		AEP-FM-1996	U.S.	Carbon Sequestration
		AEP-FM-1997	U.S.	Carbon Sequestration
		AEP-FM-1998	U.S.	Carbon Sequestration
		AEP-FM-1999	U.S.	Carbon Sequestration
		AEP-MARAG- 1992	U.S.	Carbon Sequestration
		AEP-MARAG-1991	U.S.	Carbon Sequestration
		AEP-MARAG-1993	U.S.	Carbon Sequestration
		AEP-MARAG-1993-2	U.S.	Carbon Sequestration
		AEP-MARAG-1994	U.S.	Carbon Sequestration
		AEP-MARAG-1994-2	U.S.	Carbon Sequestration
		AEP-MARAG-1995	U.S.	Carbon Sequestration
		AEP-MARAG-1996	U.S.	Carbon Sequestration
		AEP-MARAG-1997	U.S.	Carbon Sequestration
		AEP-MARAG-1998	U.S.	Carbon Sequestration
		AEP-MARAG-1999	U.S.	Carbon Sequestration
		Commercial/Industrial Demand Side Management Programs	U.S.	Energy End Use
		Distribution System Equipment Improvements	U.S.	Electric Power G & T
		Enviro Tech Investment Fund I Limited Partnership - US	U.S.	Other
		Enviro Tech Investment Funds - Foreign	Foreign	Other
		Fly Ash Utilization Program (Cement Replacement)	U.S.	Other
		Fuel Switch Coal to Natural Gas (Conesville Unit 1-3)	U.S.	Electric Power G & T
		Green Lights	U.S.	Energy End Use
		Heat Rate Improvement (Due to improved load optimization)	U.S.	Electric Power G & T

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Heat Rate Improvement Projects (Oper. and Equip. Changes)	U.S.	Electric Power G & T
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Noel Kempff Mercado Climate Action Project	Foreign	Carbon Sequestration
		Nuclear Plant Improved Utilization	U.S.	Electric Power G & T
		Open-Loop Transmission Groundwire Resistive Loss Reduction	U.S.	Electric Power G & T
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Carbon Sequestration
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Carbon Sequestration
		Residential Demand Side Management Programs	U.S.	Energy End Use
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Carbon Sequestration
		Transmission System Reinforcements	U.S.	Electric Power G & T
		Upper Ouachita River Valley Bottomland Hardwood Forest Restoration	U.S.	Carbon Sequestration
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration
American Forests	EIA-1605	Global ReLeaf - Alazan Bayou WMA, TX	U.S.	Carbon Sequestration
		Global ReLeaf - Green'n New Jersey, NJ	U.S.	Carbon Sequestration
		Global ReLeaf - Hens Peak Fire, Fishlake NF, UT	U.S.	Carbon Sequestration
		Global ReLeaf - Lake Sammamish Watershed, WA	U.S.	Carbon Sequestration
		Global ReLeaf - Lake Superior Watershed, WI	U.S.	Carbon Sequestration
		Global ReLeaf - Otsego Creek, NY	U.S.	Carbon Sequestration
		Global ReLeaf - Re-Greening Logging Roads, WA	U.S.	Carbon Sequestration
		Global ReLeaf - Skagit Wild & Scenic River System, WA	U.S.	Carbon Sequestration
		Global ReLeaf - Wicker Park, North Carolina	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Bayou Cocodrie NWR	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Grassy Slough, Cache River, IL	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Gunpowder Falls, Maryland	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Hart Miller Island, MD	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Marais des Cygnes, Kansas	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Moraine Hills, IL	U.S.	Carbon Sequestration
		Global ReLeaf Forests - P/P/P Riparian, Maryland	U.S.	Carbon Sequestration
		Global ReLeaf Forests - 3 Sisters Eagle Roost, CA	U.S.	Carbon Sequestration
		Global ReLeaf Forests - ASCM Preserve, Maryland	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Afton Canyon, CA	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Allegheny, Pennsylvania	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Apalacicola, Florida	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Applegate River, Oregon	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Appomattox, Virginia	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Aqua Fria, Arizona	U.S.	Carbon Sequestration
		Global ReLeaf Forests - AuSable, Michigan	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Bass River, New Jersey	U.S.	Carbon Sequestration

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Global ReLeaf Forests - Bayou Cocodrie NWR, LA	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Beaver Creek, Ohio	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Bell Farm, Kentucky	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Belleplain, New Jersey	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Beltrami, Minnesota	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Betsie River, Michigan	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Big Walnut Nature Preserve, Indiana	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Big Woods, Minnesota	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Black Ridge, Colorado	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Black River, Wisconsin	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Blackfoot-Clearwater, Montana	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Blackwater, Florida	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Boise, Idaho	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Brokenback Diversity, Wyoming	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Buffalo Creek, CO	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Cache River Bioreserve, Illinois	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Cache River, Arkansas	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Caddo Parish, Louisiana	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Carson, New Mexico	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Casper, Wyoming	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Chittenden, Michigan	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Choccolocco, Alabama	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Conecuh, Alabama	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Coshocton, Ohio	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Cossatot, Arkansas	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Croatan, North Carolina	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Cuba, New Mexico	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Darton College, Georgia	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Dawson Demo Forest, Georgia	U.S.	Carbon Sequestration
		Global ReLeaf Forests - DeSoto, Mississippi	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Double Trouble, New Jersey	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Duck Creek, Ohio	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Eastern Neck NWR, Maryland	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Econofina, Florida	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Ellis, Texas	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Fairfax, Virginia	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Farragut, Idaho	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Francis Marion, South Carolina	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Glades Preserve, Maryland	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Grailville, Ohio	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Great Plains RC & D, Oklahoma	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Greater Grand Forks, North Dakota	U.S.	Carbon Sequestration

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Global ReLeaf Forests - Greenwood WMA, New Jersey	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Hakalau, Hawaii	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Harrison, Ohio	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Holly Springs, Mississippi	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Homer, Alaska	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Indian Creek, California	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Indian Lake, Ohio	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Indian Mounds, Texas	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Janes Island State Park, Maryland	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Jordon River, Utah	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Kenosha Pass, Colorado	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Kettle Moraine, Wisconsin	U.S.	Carbon Sequestration
		Global ReLeaf Forests - King Range, California	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Kisatchie, Louisiana	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Kula Forest Preserve, Hawaii	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Lake George, Florida	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Lake Monroe, FL	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Ledge View Co. Park, Wisconsin	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Lindsay, Oklahoma	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Little River, Arkansas	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Long Island, Illinois	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Lower MI Riparian Corridors, MI	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Marys River, Nevada	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Mattole River, California	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Mescalero Apache, New Mexico	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Michaux, Pennsylvania	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Milford Neck Preserve, DE	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Monocacy NRMA, Maryland	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Moxley Farm, Maryland	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Mt. Baldy Demo, CA	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Nanticoke WMA, Maryland	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Nooksack, Washington	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Oklawaha, Florida	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Oneida County, New York	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Oneida Nation, Wisconsin	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Patapsco River, Maryland	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Perry State Forest, Ohio	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Pike, Colorado	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Pillsbury, Minnesota	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Pine Barrens, New York	U.S.	Carbon Sequestration

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Global ReLeaf Forests - Pine Creek, Idaho	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Point Remove NWR, AR	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Rio Grande NWR, Texas	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Rio Salada, New Mexico	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Rockland Forest, Florida	U.S.	Carbon Sequestration
		Global ReLeaf Forests - SW OK Riparian Forest, Oklahoma	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Sam Houston, Texas	U.S.	Carbon Sequestration
		Global ReLeaf Forests - San Pedro, Arizona	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Sanborn, South Dakota	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Sands Ponds, Missouri	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Savage River, Maryland	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Spokane, Washington	U.S.	Carbon Sequestration
		Global ReLeaf Forests - St. Catherine, Mississippi	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Starr Hill, New York	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Stephens Forest, Iowa	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Tangipahoa, Louisiana	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Telfair, Georgia	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Temple, Michigan	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Three Mile Lake, Iowa	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Two Rocks, Pennsylvania	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Voyagers, Minnesota	U.S.	Carbon Sequestration
		Global ReLeaf Forests - Island Park Caldera, ID	U.S.	Carbon Sequestration
		Global ReLeaf Forests - San Luis NWR, CA	U.S.	Carbon Sequestration
American Municipal Power - Ohio	EIA-1605	AMP-OHIO: NYPA Hydro Purchases	U.S.	Electric Power G & T
		City of Bowling Green Lighting Improvement	U.S.	Energy End Use
		City of Columbus: O'Shaughnessy Hydro	U.S.	Electric Power G & T
		City of Hamilton Hydro Electric Plant	U.S.	Electric Power G & T
		City of Hamilton: Greenup Hydro	U.S.	Electric Power G & T
		City of Niles: Lighting Improvement	U.S.	Energy End Use
		City of Painesville: Heat Rate Improvement	U.S.	Electric Power G & T
		City of Piqua: Plant Derating	U.S.	Electric Power G & T
		City of Shelby: Lighting Improvement	U.S.	Energy End Use
		City of St. Clairsville: Lighting Improvement	U.S.	Energy End Use
		City of Wadsworth: Lighting Improvement	U.S.	Energy End Use
		Line Loss Reduction	U.S.	Electric Power G & T
		Main Office Recycling Program	U.S.	Other
		Newton Falls Reconductoring Project	U.S.	Electric Power G & T
		OMEGA JV5 Belleville Hydro Plant	U.S.	Electric Power G & T
		Ohio City: Lighting Improvement	U.S.	Energy End Use
		Urban Forestry - Tree City USA	U.S.	Carbon Sequestration
		Village of Arcadia Lighting Upgrade	U.S.	Energy End Use
		Village of Custar: Lighting Improvement	U.S.	Energy End Use
		Village of Eldorado: Lighting Improvement	U.S.	Energy End Use
		Village of Lucas: Lighting Improvement	U.S.	Energy End Use
		Village of New Knoxville: Lighting Improvement	U.S.	Energy End Use
		Wadsworth Distribution Upgrade	U.S.	Electric Power G & T
		Water Furnace	U.S.	Energy End Use

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
Anoka Municipal Utility	EIA-1605EZ	Central A/C Replacement	U.S.	Energy End Use
		Demand Management	U.S.	Energy End Use
		Urban Forestry	U.S.	Carbon Sequestration
		Wind Generation	U.S.	Electric Power G & T
Arizona Electric Power Cooperative, Inc.	EIA-1605EZ	Fly Ash Sales	U.S.	Other
		Lighting & Exit Sign Replacement	U.S.	Energy End Use
		Utility Photo Voltaic - Group Membership	U.S.	Other
Arizona Portland Cement Co.	EIA-1605	100 Ton Haul Trucks	U.S.	Transportation
		Bulk Load Bin Filling	U.S.	Energy End Use
		CM7 High Efficiency Separator	U.S.	Energy End Use
		D3 Finish Grind System Improvements	U.S.	Energy End Use
		Lighting Program	U.S.	Energy End Use
		Optimize AC Raw Mill Systems	U.S.	Energy End Use
		Optimize Compressed Air System	U.S.	Energy End Use
		PGNA Analyzer	U.S.	Energy End Use
		Rimod 3000	U.S.	Energy End Use
		Upgrade the D2 Raw Mill System	U.S.	Energy End Use
Arthur Rypinski & Jacquelyn Porth	EIA-1605	Compact Fluorescent Lightbulbs	U.S.	Energy End Use
		High Efficiency Central Air Conditioning System	U.S.	Energy End Use
		High Efficiency Water Heater	U.S.	Energy End Use
		Mass Transit Commuting	U.S.	Transportation
		Super Efficient Refrigerator	U.S.	Energy End Use
Asheville Landfill Gas, LLC	EIA-1605	Buncombe County, NC Landfill	U.S.	Waste Methane
		AGI - Pedricktown Cogeneration Limited Partnership	U.S.	Cogeneration
		AGI - Vineland Cogeneration Facility	U.S.	Cogeneration
		Deepwater Natural Gas Usage	U.S.	Electric Power G & T
		Employee Telecommuting	U.S.	Transportation
		Employee Van Pooling	U.S.	Transportation
		Peach Bottom Nuclear Units #2 & 3 Uprate Program	U.S.	Electric Power G & T
		Urban Tree Planting	U.S.	Carbon Sequestration
		Wetlands Reclamation Project	U.S.	Carbon Sequestration
Austin Energy	EIA-1605EZ	Coal Combustion ByProduct Reutilization	U.S.	Other
		Demand Side Management Programs	U.S.	Energy End Use
		General Transmission/Distribution Efficiency Improvements	U.S.	Electric Power G & T
		Landfill Gas Generation (Power Purchase)	U.S.	Electric Power G & T
		Photovoltaic Generation	U.S.	Electric Power G & T
		South Texas Project	U.S.	Electric Power G & T
		West Texas Wind Turbine Power Purchase	U.S.	Electric Power G & T
Avista Utilities	EIA-1605	Commute Trip Reduction	U.S.	Transportation
		Customer Energy Efficiency	U.S.	Energy End Use
		Investment Recovery Recycling	U.S.	Other
		Office Recycling	U.S.	Other
BARC Electric Cooperative	EIA-1605	Demand-Side Management Load Control Programs	U.S.	Energy End Use
		System Line Conversions and Reconductoring	U.S.	Electric Power G & T
Baltimore Gas & Electric Co.	EIA-1605	Alternatively Fueled Vehicles	U.S.	Transportation
		Baltimore RESCO Waste-to-Energy MWh Purchases	U.S.	Electric Power G & T
		Brandon Shores Generating Station Heat Rate Improvement	U.S.	Electric Power G & T
		Brandon Shores Station Auxiliary-Load Reductions	U.S.	Energy End Use

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		C.P. Crane Generating Station Heat Rate Improvements	U.S.	Electric Power G & T
		Calvert Cliffs Nuclear Power Plant Generation Increases	U.S.	Electric Power G & T
		Coal Ash Substitution for Portland Cement	U.S.	Other
		Demand Side Management Programs	U.S.	Energy End Use
		Energy Star Buildings/Green Lights Program Participation	U.S.	Energy End Use
		Gas Systems O & M (Natural Gas Star Partnership)	U.S.	Oil & Gas Methane
		H.A. Wagner Generating Station Heat Rate Improvements	U.S.	Electric Power G & T
		Hydroelectric Generation Improvements	U.S.	Electric Power G & T
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Overflow Bottomland Hardwood Forest Restoration	U.S.	Carbon Sequestration
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Carbon Sequestration
		Refrigerant/Solvent Recycling and Reduction	U.S.	Halogenates
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Carbon Sequestration
		SF6 Handling Procedures in Electric Distribution	U.S.	Halogenates
		Solid Waste Recycling and Source Reduction	U.S.	Other
		Transmission / Distribution Improvements	U.S.	Electric Power G & T
		Upper Ouachita River Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration
Biomass Partners, LP	EIA-1605EZ	Biomass Waste to Energy	U.S.	Electric Power G & T
Black Warrior Methane Corp.	EIA-1605	Gobwell Degasification Program	U.S.	Oil & Gas Methane
		Horizontal Degasification Program	U.S.	Oil & Gas Methane
		Standard Degasification Well Program	U.S.	Oil & Gas Methane
Bountiful City Light & Power	EIA-1605	Air fuel ratio controller installed in dual fuel engine	U.S.	Electric Power G & T
		Capacitor bank installation - increasing system efficiency	U.S.	Electric Power G & T
		District heating	U.S.	Cogeneration
		Hydroelectric plant operations	U.S.	Electric Power G & T
		Residential compact fluorescent lighting program	U.S.	Energy End Use
		Street lighting replacement	U.S.	Energy End Use
		Tree planting	U.S.	Carbon Sequestration
Burlington County Board of Chosen Freeholders	EIA-1605	Burlington County Regional Recycling Program	U.S.	Other
		Landfill Gas Flaring	U.S.	Waste Methane
CDX Gas, LLC	EIA-1605	Pinnacle Mine Coalbed Methane Recovery	U.S.	Oil & Gas Methane
CLE Resources	EIA-1605	Active Power	U.S.	Energy End Use
		Cycloid	U.S.	Transportation
		Electronic Lighting (OK Industries)	U.S.	Energy End Use
		Industrial Devices Corporation (IDC)	U.S.	Energy End Use
		Lightware	U.S.	Energy End Use
		McHugh Software	U.S.	Transportation
		Revolve Technologies - Dry Gas Seals	U.S.	Oil & Gas Methane
		Revolve Technologies - Magnetic Bearings	U.S.	Energy End Use
		Valdor	U.S.	Halogenates
CMS Energy	EIA-1605	Hydro-Electric Relicensing (Consumers)	U.S.	Electric Power G & T
		Increased Nuclear Availability (Consumers)	U.S.	Electric Power G & T
		Karn 4 Fuel Switch (Consumers)	U.S.	Electric Power G & T
		Natural Gas Star Program (Consumers)	U.S.	Oil & Gas Methane

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Toledo Power Efficiency Improvements	Foreign	Electric Power G & T
CMV Joint Venture	EIA-1605	Oak Grove Coalbed Methane Recovery Project	U.S.	Oil & Gas Methane
		White Oak Creek Coalbed Methane Recovery	U.S.	Oil & Gas Methane
Calaveras Cement Company	EIA-1605	Project 1. Plant Modernization	U.S.	Energy End Use
California Portland Cement Co. - Colton Plant	EIA-1605	Energy Conservation in Office, Lab, Garage and Shop Areas	U.S.	Energy End Use
		Finish Mill System Optimization	U.S.	Energy End Use
		Install New Gravity Blend Homogenizing Silo	U.S.	Energy End Use
		Install New Raw Material Transport System	U.S.	Energy End Use
		Kiln Systems Optimization	U.S.	Energy End Use
		Optimize High Pressure Air System	U.S.	Energy End Use
		Raw Grinding System Improvements	U.S.	Energy End Use
		Reduce Plant Water Consumption	U.S.	Energy End Use
California Portland Cement Co. - Mojave Plant.	EIA-1605	New D3-1/FM6 Finish Mill System	U.S.	Energy End Use
		Optimize the D3-1 Finish Mill System	U.S.	Energy End Use
		Plant High Pressure Air System Improvements	U.S.	Energy End Use
		Pyro System Optimization	U.S.	Energy End Use
		Raw Mill Energy Efficiency Improvements	U.S.	Energy End Use
Carolina Power & Light Company	EIA-1605	Nuclear Capacity Improvement	U.S.	Electric Power G & T
Catawba Landfill Gas, LLC	EIA-1605	Catawba Landfill Gas, LLC	U.S.	Waste Methane
Cedar Falls Utilities	EIA-1605	Cedar Falls Trees	U.S.	Carbon Sequestration
		Cooling Effect of Trees	U.S.	Energy End Use
		Council Bluffs #3 ESP Hot-Side Conversion	U.S.	Electric Power G & T
		Good Cents Improved Home	U.S.	Energy End Use
		Good Cents New Home	U.S.	Energy End Use
		High-Efficiency Distribution Transformers	U.S.	Electric Power G & T
		Home Energy Survey	U.S.	Energy End Use
		Neal 4 Hot-Side ESP Conversion	U.S.	Electric Power G & T
		Small Commercial High-Efficiency Lighting	U.S.	Energy End Use
		Streeter Air-Cooled Condenser (ACC)	U.S.	Electric Power G & T
		Streeter Unit 6 Controls Upgrade	U.S.	Electric Power G & T
		Streeter Unit 6 Fuel-Switching Project	U.S.	Electric Power G & T
		Streetlight Conversion	U.S.	Energy End Use
		Water Heater Retrofits	U.S.	Energy End Use
		Windfarm	U.S.	Electric Power G & T
Central Hudson Gas & Electric Corporation	EIA-1605	Coal Ash Utilization	U.S.	Other
		Danskammer Heat Pipe Air Heater	U.S.	Electric Power G & T
		Danskammer Unit 4 Main Step-Up Transformer Replacement	U.S.	Electric Power G & T
		Demand-Side Management	U.S.	Energy End Use
		EPA Natural Gas Star Program	U.S.	Oil & Gas Methane
		Natural Gas Vehicles	U.S.	Transportation
		Roseton Gas Co-Firing	U.S.	Electric Power G & T
		Roseton Unit 2 Main Step-Up Transformer Replacement	U.S.	Electric Power G & T
Central and South West Corporation	EIA-1605	Central and South West Land Management	U.S.	Carbon Sequestration
		ClearChoice(sm) CSW Green Pricing Initiative	U.S.	Electric Power G & T
		Coal Combustion By-Product Use	U.S.	Other
		Demand Side Management (DSM) Activities	U.S.	Energy End Use
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Carbon Sequestration
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Carbon Sequestration
		Renewable Generation - Solar	U.S.	Electric Power G & T

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Renewable Generation - Wind	U.S.	Electric Power G & T
		Rio Bravo Carbon Sequestration Project	Foreign	Carbon Sequestration
		Southwest Mesa Wind Farm	U.S.	Electric Power G & T
		Transmission Efficiency Improvements	U.S.	Electric Power G & T
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Watts on Schools	U.S.	Electric Power G & T
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration
Choptank Electric Cooperative	EIA-1605	System Line Conversions and Reconductoring	U.S.	Electric Power G & T
City Utilities of Springfield	EIA-1605	HEAT RATE IMPROVEMENTS - SWPS	U.S.	Electric Power G & T
		LOW SULFUR FUEL SWITCH - SWPS	U.S.	Electric Power G & T
		Natural Gas Fleet	U.S.	Transportation
		SF6 Recovery	U.S.	Halogenates
		Urban Forestry	U.S.	Carbon Sequestration
City of Edmond, Oklahoma, Electric Department	EIA-1605EZ	High Efficiency Heat Pumps	U.S.	Energy End Use
		High Efficiency Transformers	U.S.	Electric Power G & T
		Tree/Shrub Planting	U.S.	Carbon Sequestration
City of Palo Alto	EIA-1605EZ	City employee carpooling	U.S.	Transportation
		City employee mass transit	U.S.	Transportation
		City fleet conversion to CNG	U.S.	Transportation
		City fleet conversion to EV	U.S.	Transportation
		DSM - Industrial Comprehensive Audit Program '99	U.S.	Energy End Use
		DSM - Residential Appliances '99	U.S.	Energy End Use
		DSM-Commercial AC, motor	U.S.	Energy End Use
		DSM-Commercial Lighting	U.S.	Energy End Use
		DSM-Refrigerator Replacement	U.S.	Energy End Use
		DSM-Residential CFL	U.S.	Energy End Use
		Utility Street Light conversion	U.S.	Energy End Use
Clairol	EIA-1605	Closed Chilled Water Loop	U.S.	Energy End Use
		Convert Mercury Vapor Lights to High Press. Sodium Lights	U.S.	Energy End Use
		Converted Exter. Incand. Lights to High Press. Sodium Lights	U.S.	Energy End Use
		Initiated Compressed Air Leak Prevention Program	U.S.	Energy End Use
		Install T8 Fluorescent Lamps and Electronic Ballasts	U.S.	Energy End Use
		Installed 3 High Volume Production Lines in Warehouse Area	U.S.	Energy End Use
		Installed LED Exit Signs	U.S.	Energy End Use
		Installed Variable Frequency Drives on Air Handler Motors	U.S.	Energy End Use
		Optimize Compressed Air Production	U.S.	Energy End Use
		Recycled 60% of Generated Solid Waste	U.S.	Other
		Reduce Hairspray VOC Content	U.S.	Other
		Reduced Compressor Air Intake Temperature	U.S.	Energy End Use
		Replace Incand. Lamps with Compact Fluorescent Lamps	U.S.	Energy End Use
		Replaced Selected Air Handler Motors	U.S.	Energy End Use
Cleco Corporation	EIA-1605	Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Carbon Sequestration
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Carbon Sequestration
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Carbon Sequestration

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration
Columbia Falls Aluminum Company LLC. . . .	EIA-1605	Lighting Replacement	U.S.	Energy End Use
Commonwealth Bethlehem Energy, LLC	EIA-1605	North Country Landfill Gas Utilization Facility	U.S.	Waste Methane
Community Electric Cooperative	EIA-1605	System Line Conversion and Reconductoring	U.S.	Electric Power G & T
DTE Energy/ Detroit Edison	EIA-1605	Coal Ash Reuse - Canada	Foreign	Other
		Coal Ash Reuse - U.S.	U.S.	Other
		Distribution Improvements	U.S.	Electric Power G & T
		Electric Vehicle Demonstration Project	U.S.	Transportation
		Energy Partnerships	U.S.	Energy End Use
		Forest Land Management	U.S.	Carbon Sequestration
		Geothermal Projects	U.S.	Energy End Use
		Greenwood Energy Center Fuel Switching	U.S.	Electric Power G & T
		Increased Nuclear Utilization	U.S.	Electric Power G & T
		LFG Recovery & Energy Gen - DTE Proj outside Service Area	U.S.	Waste Methane
		LFG Recovery & Energy Gen - DTE Projects in Service Area	U.S.	Waste Methane
		Landfill Energy Purchases, non-DTE Projects	U.S.	Waste Methane
		Landfill Gas Recovery Projects	U.S.	Waste Methane
		Miscellaneous Tree Plantings - 1999	U.S.	Carbon Sequestration
		Miscellaneous Tree Plantings - 1995	U.S.	Carbon Sequestration
		Miscellaneous Tree Plantings - 1996	U.S.	Carbon Sequestration
		Miscellaneous Tree Plantings - 1997	U.S.	Carbon Sequestration
		Miscellaneous Tree Plantings - 1998	U.S.	Carbon Sequestration
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Carbon Sequestration
		Plant Efficiency Improvements	U.S.	Electric Power G & T
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Carbon Sequestration
		Rio Bravo Carbon Sequestration Pilot Program	Foreign	Carbon Sequestration
		Solar Power	U.S.	Electric Power G & T
		Southeast Michigan Afforestation - 1996	U.S.	Carbon Sequestration
		Southeast Michigan Afforestation - 1997	U.S.	Carbon Sequestration
		Southeastern Michigan Afforestation - 1995	U.S.	Carbon Sequestration
		State Forest Land Afforestation - 1996	U.S.	Carbon Sequestration
		State Forest Land Afforestation - 1997	U.S.	Carbon Sequestration
		State Forest Land Afforestation - 1998	U.S.	Carbon Sequestration
		State Forest Land Afforestation - 1999	U.S.	Carbon Sequestration
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration
Delaware Electric Cooperative	EIA-1605	System Line Conversions & Reconductoring	U.S.	Electric Power G & T
Delaware Solid Waste Authority	EIA-1605	Central Solid Waste Management Center (CSWMC)	U.S.	Waste Methane
		Cherry Island Landfill (CIL)	U.S.	Waste Methane
		Pigeon Point Landfill (PPLF)	U.S.	Waste Methane
		Southern Solid Waste Management Center (SSWMC)	U.S.	Waste Methane
Delmarva Power	EIA-1605	Ash Reuse	U.S.	Other
		CNG Vehicles	U.S.	Transportation
		DP&L Facility Energy Saving	U.S.	Energy End Use
		Demand Side Management	U.S.	Energy End Use

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Edge Moor Fuel Substitution	U.S.	Electric Power G & T
		Edge Moor Landfill Gas Use	U.S.	Waste Methane
		Hay Road Combined Cycle	U.S.	Electric Power G & T
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Carbon Sequestration
		Peach Bottom Nuclear Units #2 & #3 Uprate Program	U.S.	Electric Power G & T
		Reduced Impact Logging of Nat. Forest in Malaysia	Foreign	Carbon Sequestration
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Carbon Sequestration
		T&D Loss Reduction	U.S.	Electric Power G & T
		Upper Ouachita River Valley Bottomland	U.S.	Carbon Sequestration
		Urban Tree Planting	U.S.	Carbon Sequestration
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration
Delta Electric Power Association	EIA-1605EZ	High Efficiency Transformers	U.S.	Electric Power G & T
		Load Control Interruptible Rate	U.S.	Electric Power G & T
		MV conversion to HPS Lamps	U.S.	Energy End Use
		Off Peak Pumping and Aeration	U.S.	Energy End Use
		Reconductoring	U.S.	Electric Power G & T
Duke Energy Corporation	EIA-1605	Increased Nuclear Generation at Catawba Nuclear Station	U.S.	Electric Power G & T
		Increased Nuclear Generation at McGuire Nuclear Station	U.S.	Electric Power G & T
		Increased Nuclear Generation at Oconee Nuclear Station	U.S.	Electric Power G & T
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Carbon Sequestration
		Recycling Flyash	U.S.	Other
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Carbon Sequestration
		Rio Bravo Carbon Sequestration Project	Foreign	Carbon Sequestration
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration
		White Street Landfill Gas Recovery Project	U.S.	Waste Methane
Dynegy Midwest Generation Inc.	EIA-1605	3 Flyash Sales (Balwin, Havana, Hennepin, Vermilion, Wd Rvr)	U.S.	Other
		Add Turbine Shell Heaters on Wood River 4	U.S.	Electric Power G & T
		Baldwin 2 Turbine H.E.L.P. Blades Installation	U.S.	Electric Power G & T
		Baldwin 3 Heat Rate Improvement	U.S.	Electric Power G & T
		Burn Waste Oil at Baldwin 3	U.S.	Electric Power G & T
		CNG Vehicle Conversions	U.S.	Transportation
		Cofire Plastic at Baldwin	U.S.	Electric Power G & T
		Combustion of used lubricating oil	U.S.	Electric Power G & T
		Convert Vermilion Units 1 And 2 To Natural Gas	U.S.	Electric Power G & T
		Fuel Switch To Natural Gas at Hennepin	U.S.	Electric Power G & T
		Fuel Switch To Natural Gas at Wood River	U.S.	Electric Power G & T
		Havana 6 Cooling Tower Upgrade	U.S.	Electric Power G & T
		Hennepin Gas Reburn Project	U.S.	Electric Power G & T
		Hennepin I Turbine Steam Path Upgrade	U.S.	Electric Power G & T
		Hennepin Orimulsion Reburn	U.S.	Electric Power G & T
		IDNR Tree Planting Partnership	U.S.	Carbon Sequestration
		Improve Clinton Power Station Availability	U.S.	Electric Power G & T

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Install Natural Gas Fired Aux. Boiler at Havana	U.S.	Electric Power G & T
		MISSISSIPPI RIVER VALLEY BOTTOMLAND HARDWOOD RESTORATION	U.S.	Carbon Sequestration
		New Boiler Controls at Hennepin	U.S.	Electric Power G & T
		Overflow Bottomland Hardwood Forest Restoration	U.S.	Carbon Sequestration
		REDUCED IMPACT LOGGING OF NATURAL FOREST IN MALAYSIA	Foreign	Carbon Sequestration
		Rio Bravo Carbon Sequestration Pilot Project - Component A	Foreign	Carbon Sequestration
		Tire-Derived Fuel Cofiring at Baldwin	U.S.	Electric Power G & T
		Upper Ouachita River Valley	U.S.	Carbon Sequestration
		Vermilion 1 Heat Rate Improvements	U.S.	Electric Power G & T
		Vermilion 2 Heat Rate Improvements	U.S.	Electric Power G & T
		WESTERN OREGON CARBON SEQUESTRATION PROJECT	U.S.	Carbon Sequestration
		Wood River 4 Turbine Rotor Replacement	U.S.	Electric Power G & T
Ecogas Corporation	EIA-1605	Acme Landfill Gas Recovery Plant	U.S.	Waste Methane
		Bowerman Landfill Gas Recovery Plant	U.S.	Waste Methane
		Bridgeton Landfill Gas Recovery Project	U.S.	Waste Methane
		Covel Gardens Landfill Gas Recovery Project	U.S.	Waste Methane
		Dade Landfill Gas Recovery Plant	U.S.	Waste Methane
		Dallas Landfill Gas Recovery Plant	U.S.	Waste Methane
		Davis Street Landfill Gas Recovery Plant	U.S.	Waste Methane
		Fresh Kills Landfill Gas Recovery Project	U.S.	Waste Methane
		Kearny Landfill Gas Recovery Plant	U.S.	Waste Methane
		McCarty Road Landfill Gas Recovery Plant	U.S.	Waste Methane
		Monmouth Landfill Gas Recovery Plant	U.S.	Waste Methane
		Mountaingate Landfill Gas Recovery Plant	U.S.	Waste Methane
		Olinda Landfill Gas Recovery Plant	U.S.	Waste Methane
		Rosenberg Landfill Gas Recovery Plant	U.S.	Waste Methane
		Rumpke Landfield Gas Recovery Plant	U.S.	Waste Methane
		San Antonio Landfill Gas Recovery Plant	U.S.	Waste Methane
		Skyline Landfill Gas Recovery Project	U.S.	Waste Methane
		Westside Landfill Gas Recovery Project	U.S.	Waste Methane
El Paso Production Company	EIA-1605	White Oak Creek Coalbed Methane Recovery	U.S.	Oil & Gas Methane
Energy Management Partners, LP	EIA-1605EZ	Biomass Waste to Energy	U.S.	Electric Power G & T
Entergy Services, Inc.	EIA-1605	Entergy Forestry Projects	U.S.	Carbon Sequestration
		Entergy Integrated Solutions, Inc. (Entergy SASI Lighting)	U.S.	Energy End Use
		Fly Ash use as replacement for cement	U.S.	Other
		Grand Gulf Nuclear Station Turbine Upgrade	U.S.	Electric Power G & T
		Independence Unit 1 Feedwater Heater Replacement	U.S.	Electric Power G & T
		Lake Catherine Unit 4 Efficiency Improvement Project	U.S.	Electric Power G & T
		Lewis Creek Combustion Control	U.S.	Electric Power G & T
		Little Gypsy Unit 3 #6LP Feedwater Heater Replacement	U.S.	Electric Power G & T
		Louisiana Station 1 Repowering and Unit Upgrade	U.S.	Electric Power G & T
		Michoud Unit 3 Efficiency Improvement Project	U.S.	Electric Power G & T
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Natural Gas Pipeline Leak Repairs	U.S.	Oil & Gas Methane
		Natural Gas Vehicle Program	U.S.	Transportation
		Ninemile Turbine Retrofit	U.S.	Electric Power G & T

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Carbon Sequestration
		Raise Nuclear Unit Targets on Annual Capacity Factor	U.S.	Electric Power G & T
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Carbon Sequestration
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Carbon Sequestration
		SF6 Reductions	U.S.	Halogenates
		Sabine Unit Feedwater Heater Replacement	U.S.	Electric Power G & T
		Texas Eastern Gas Compressor Replacement	U.S.	Energy End Use
		Transmission and Distribution Efficiency	U.S.	Electric Power G & T
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Vidalia Hydroelectric Station	U.S.	Electric Power G & T
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration
		Wetlands and Carbon Sequestration - Southeast LA & TX	U.S.	Carbon Sequestration
		White Bluff Unit 1 Feedwater Heater Replacement	U.S.	Electric Power G & T
		White Bluff Unit 2 Feedwater Heaters Replacement	U.S.	Electric Power G & T
		Willow Glen Unit 3 #2B Feedwater Heater Replacement	U.S.	Electric Power G & T
		Willow Glen Unit 5 Air Heater Replacement Project	U.S.	Electric Power G & T
		Willow Glen Unit 5 Kidney Trap Replacement	U.S.	Electric Power G & T
Environmental Synergy, Inc.	EIA-1605EZ	Reforestation	U.S.	Carbon Sequestration
Essential Foods, Inc.	EIA-1605	Delivery Fleet	U.S.	Transportation
Essroc Cement Corp. - Bessemer, PA Plant	EIA-1605	Project 2. Photohelics on Dust Collectors.	U.S.	Energy End Use
		Project 3. Kiln Chain Improvement	U.S.	Energy End Use
		Project 4. Kiln Alignment - #5. Reduction of Power usage	U.S.	Energy End Use
		Project 5. Power Meters for power management	U.S.	Energy End Use
		Project 6. BLX Blending	U.S.	Other
		Project 8. Tire Derived Fuel	U.S.	Energy End Use
Essroc Cement Corp. - Frederick, MD Plant	EIA-1605	Project 1. Clinker Cooler Drag Chain Enclosure	U.S.	Energy End Use
		Project 2. CKD Dust Scoops	U.S.	Energy End Use
		Project 5. Masonry Cement	U.S.	Other
Essroc Cement Corp. - Logansport, IN Plant	EIA-1605	Project 1. ID Fan Conversion to VFD	U.S.	Energy End Use
		Project 2. Variable Frequency Pumps	U.S.	Energy End Use
		Project 3. Variable Frequency Fans	U.S.	Energy End Use
		Project 4. Semi Direct Coal Firing System	U.S.	Energy End Use
Essroc Cement Corp. - PA Operations	EIA-1605	Project 5. Power Management System	U.S.	Energy End Use
		Project 6. Preheater thimbles	U.S.	Energy End Use
		Project 9. IKN Grate-Clinker Cooler	U.S.	Energy End Use
Essroc Cement Corp. - San Juan, PR Plant	EIA-1605	Project 4. Roller Mill Water Injection	U.S.	Energy End Use
		Project 7. Finish Mill Automation Control	U.S.	Energy End Use
Essroc Cement Corp. - Speed, IN Plant	EIA-1605	Project 1. Fuel Consumption Reduction Projects for Kiln #2.	U.S.	Energy End Use
		Project 10. Finish Mill Improvements	U.S.	Energy End Use
		Project 2. Roller Mill Duct	U.S.	Energy End Use
		Project 3. Power Management	U.S.	Energy End Use
		Project 4. Roller Press Installation	U.S.	Energy End Use
		Project 5. #1 Kiln Feed and Discharge End Seal Replacement	U.S.	Energy End Use
		Project 6. Roller Mill Improvements	U.S.	Energy End Use

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Project 7. Cooler Vent, kiln feed aeration, gas analyzer, sp	U.S.	Energy End Use
		Project 8. No. 2-6 Cooler Fan Replacement	U.S.	Energy End Use
Estee Lauder Companies	EIA-1605	Occupancy Sensors	U.S.	Energy End Use
		Octron Lighting	U.S.	Energy End Use
FPL Group	EIA-1605	Aroostook Valley Electric Company	U.S.	Waste Methane
		Montenay Power Plant	U.S.	Waste Methane
		Multitrade Power Plant	U.S.	Waste Methane
FirstEnergy Corporation	EIA-1605	Audit/Infiltration Single and Multi-Family	U.S.	Energy End Use
		Efficient Lighting (Industrial and Commercial)	U.S.	Energy End Use
		Efficient Lighting (Residential)	U.S.	Energy End Use
		Efficient Motors	U.S.	Energy End Use
		Energy Efficient Geothermal System	U.S.	Energy End Use
		Energy Star	U.S.	Energy End Use
		Food Service Conservation	U.S.	Energy End Use
		Fuel Switching	U.S.	Electric Power G & T
		Good Cents New Home Program	U.S.	Energy End Use
		Heat Pump Maintenance Check	U.S.	Energy End Use
		Heat Rate Improvement	U.S.	Electric Power G & T
		High Efficiency Heat Pump Rebates	U.S.	Energy End Use
		Hot Water Conservation	U.S.	Energy End Use
		Increased Generation at Davis-Besse Nuclear Power Station	U.S.	Electric Power G & T
		Increased Generation at Perry Nuclear Power Plant	U.S.	Electric Power G & T
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Carbon Sequestration
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Carbon Sequestration
		Refrigerator Recycling	U.S.	Halogenates
		Refrigerator Recycling Program	U.S.	Energy End Use
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Carbon Sequestration
		Substitution of Fly Ash for Portland Cement in Concrete	U.S.	Other
		Thermal Energy Storage - Cooling	U.S.	Energy End Use
		Tree Source	U.S.	Carbon Sequestration
		Upper Ouachita River Valley Bottomland Restoration	U.S.	Carbon Sequestration
		Various CFC Replacements	U.S.	Halogenates
		Water Heater Efficiency Improvements	U.S.	Energy End Use
		Water Heating - Conservation	U.S.	Energy End Use
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration
Fred Weber, Inc.	EIA-1605EZ	Landfill Gas Recovery	U.S.	Waste Methane
GPU, Inc.	EIA-1605	Biomass Co-firing R & D Program	U.S.	Electric Power G & T
		Building Energy Consumption Reduction Program	U.S.	Energy End Use
		Corry	U.S.	Waste Methane
		Electric Vehicles and Employee Trip Reduction Program	U.S.	Transportation
		FR & S Landfill NUG	U.S.	Waste Methane
		Front Street Generating Station Retirement	U.S.	Electric Power G & T
		GPU Service Lighting & Building Energy Efficiency Project	U.S.	Energy End Use
		Genco Lighting & Building Energy Consumption Reduction Progr	U.S.	Energy End Use

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Gilbert #3 Retirement	U.S.	Electric Power G & T
		Hamm's Landfill NUG	U.S.	Waste Methane
		Homer City Greenhouse Project	U.S.	Cogeneration
		Information Services - Green Computers	U.S.	Energy End Use
		JCP & L Green Lights Program	U.S.	Energy End Use
		JCP&L Appliance Turn-In Service Program	U.S.	Halogenates
		JCP&L DSM, Efficiency & Electrotechnology Program	U.S.	Energy End Use
		JCP&L Fuel Cell-Crawford Hill	U.S.	Cogeneration
		L & D Landfill NUG	U.S.	Waste Methane
		Lake View Landfill	U.S.	Waste Methane
		Lebanon Methane NUG	U.S.	Waste Methane
		Manchester Renewable	U.S.	Waste Methane
		Mason Dixon Farms, Inc.	U.S.	Agriculture Methane
		Met-Ed Lighting & Building Energy Consumption Reduction Prog	U.S.	Energy End Use
		Met-Ed/Penelec DSM, Efficiency & Electrotechnology Program	U.S.	Energy End Use
		Modern Landfill NUG	U.S.	Waste Methane
		Monmouth County Reclamation Center NUG	U.S.	Waste Methane
		Municipal Tree Replacement	U.S.	Carbon Sequestration
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Carbon Sequestration
		Oyster Creek Capacity/Availability Improvement Program	U.S.	Electric Power G & T
		Photovoltaics Project-User Scale Applications-(USAPV)	U.S.	Electric Power G & T
		Recycling Program	U.S.	Other
		Sayreville Generating Station Retirements	U.S.	Electric Power G & T
		Seneca Pumped Storage Upgrade	U.S.	Electric Power G & T
		Shunt Capacitor Program	U.S.	Electric Power G & T
		T & D System Improvements	U.S.	Electric Power G & T
		TMI Capacity/Availability Improvement Program	U.S.	Electric Power G & T
		Transformer Loss Evaluation Program	U.S.	Electric Power G & T
		Transmission & Distribution Facility Maintenance - JCP&L	U.S.	Halogenates
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Utilitree Malaysia	Foreign	Carbon Sequestration
		Utilitree Mississippi River Valley	U.S.	Carbon Sequestration
		Utilitree Western Oregon	U.S.	Carbon Sequestration
		Utilitree Rio Bravo	Foreign	Carbon Sequestration
		Valley Pork	U.S.	Agriculture Methane
		Video - Conferencing	U.S.	Transportation
		Werner #4 Retirement	U.S.	Electric Power G & T
		Williamsburg Generating Station Retirement	U.S.	Electric Power G & T
		Yards Creek Pumped Storage Upgrade	U.S.	Electric Power G & T
Gas Recovery Systems.	EIA-1605	GRS American Canyon Landfill	U.S.	Waste Methane
		GRS Coyote Canyon	U.S.	Waste Methane
		Guadalupe	U.S.	Waste Methane
		Kapaa	U.S.	Waste Methane
		LGP Orange County, New York	U.S.	Waste Methane
		Menlo Park	U.S.	Waste Methane
		Newby Island Landfill	U.S.	Waste Methane
		San Marcos	U.S.	Waste Methane
		Santa Cruz	U.S.	Waste Methane

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Sycamore	U.S.	Waste Methane
General Motors Corporation	EIA-1605	1991-1999 GM Annual Energy Competition & Projects	U.S.	Energy End Use
		1991-1999 Powerhouse Conversions	U.S.	Energy End Use
		1993 - 1997 Mich. Demand Side Mgt and Energy Partner Program	U.S.	Energy End Use
GeoMet Inc.	EIA-1605	Oak Grove Coalbed Methane Recovery Project	U.S.	Oil & Gas Methane
		White Oak Creek Coalbed Methane Recovery	U.S.	Oil & Gas Methane
Gilead Sciences	EIA-1605EZ	Exit Light Fixture Replacement	U.S.	Energy End Use
		Lighting Replacement	U.S.	Energy End Use
Golden Valley Electric Association, Inc	EIA-1605EZ	Energy Sense DSM Program	U.S.	Energy End Use
		Startup of Wind Turbine	U.S.	Electric Power G & T
		Tree give-away	U.S.	Carbon Sequestration
		Use of Hydropower	U.S.	Electric Power G & T
Granger Electric Company	EIA-1605	Brent Run Landfill Generating Station	U.S.	Waste Methane
		Grand Blanc Landfill Generating Station	U.S.	Waste Methane
		Granger #1 Generating Station - Wood Road Landfill	U.S.	Waste Methane
		Granger #2 Generating Station - Grand River Avenue Landfill	U.S.	Waste Methane
		Granger MotorWheel Facility	U.S.	Waste Methane
		Indianapolis/South Side Landfill Gas Project	U.S.	Waste Methane
		Lake County Landfill Gas Project	U.S.	Waste Methane
		Ottawa County Farms Landfill Generating Station	U.S.	Waste Methane
		Seymour Road Landfill Generating Station	U.S.	Waste Methane
Greater Caribbean Energy & Environment Foundation	EIA-1605EZ	Mangrove Planting (FL)	U.S.	Carbon Sequestration
		Marsh Planting (FL)	U.S.	Carbon Sequestration
		Seagrass Planting	U.S.	Carbon Sequestration
		Seagrass Planting (FL)	U.S.	Carbon Sequestration
		Seagrass Planting (FL)	U.S.	Carbon Sequestration
		Seagrass Planting (Laguna Madre, TX)	U.S.	Carbon Sequestration
		Seagrass Planting (TX)	U.S.	Carbon Sequestration
Hawaiian Electric Company, Inc.	EIA-1605	Commercial & Industrial Custom Rebate Program	U.S.	Energy End Use
		Commercial & Industrial Energy Efficiency Program	U.S.	Energy End Use
		Commercial & Industrial New Construction Program	U.S.	Energy End Use
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Overflow Bottomland Hardwood Forest Reforestation Project.	U.S.	Carbon Sequestration
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Carbon Sequestration
		Residential Eff. Water Heating Program (Existing Customers)	U.S.	Energy End Use
		Residential Efficient Water Heating (New Construction)	U.S.	Energy End Use
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Carbon Sequestration
		Showerhead Distribution	U.S.	Energy End Use
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration
Integrated Waste Services Association	EIA-1605	Waste-to-Energy - Waste Diversion	U.S.	Waste Methane
Iredell Landfill Gas, LLC	EIA-1605	Iredell County Landfill, LLC	U.S.	Waste Methane
J.M. Gilmer and Company, Inc.	EIA-1605	Flatwoods Tract Afforestation Project	U.S.	Carbon Sequestration

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Smith Place Short Rotation Woody Crop Project	U.S.	Carbon Sequestration
		Smith Place Tract Afforestation Project	U.S.	Carbon Sequestration
JEA	EIA-1605EZ	Commercial Construction Workshops	U.S.	Other
		Energy Conservation Advertisements	U.S.	Other
		Fuel Switching	U.S.	Waste Methane
		Fuel Switching - Natural Gas	U.S.	Electric Power G & T
		Heat Rate Improvement	U.S.	Electric Power G & T
		Low Income Residential	U.S.	Other
		New Home Construction Workshops	U.S.	Other
		Non-residential energy audits	U.S.	Other
		Power Factor Improvement	U.S.	Electric Power G & T
		Residential Energy Audits	U.S.	Other
		Urban Forestry	U.S.	Carbon Sequestration
Johnson & Johnson	EIA-1605	Building Shell	U.S.	Energy End Use
		Equipment and Appliances	U.S.	Energy End Use
		Fuel Switching	U.S.	Energy End Use
		HVAC	U.S.	Energy End Use
		Installation of Energy Efficient Systems	U.S.	Energy End Use
		Installation of Timer Controls and Shutdowns	U.S.	Energy End Use
		Lighting & Lighting Control	U.S.	Energy End Use
		Load Control	U.S.	Energy End Use
		Motor & Motor Drives	U.S.	Energy End Use
		Process Improvements	U.S.	Energy End Use
Kansas City Power & Light Company	EIA-1605	Aluminum Coal Cars	U.S.	Transportation
		Coal Fly Ash Recycling	U.S.	Other
		DSM - AC upgrade	U.S.	Energy End Use
		ENVIROTECH Fund	U.S.	Other
		EPA's Green Lights	U.S.	Energy End Use
		Improve heat rate	U.S.	Electric Power G & T
		Mississippi River Bottom Hardwood Restoration	U.S.	Carbon Sequestration
		New Transmission Line & Reconductoring	U.S.	Electric Power G & T
		Nuclear Unit Uprate	U.S.	Electric Power G & T
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Carbon Sequestration
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Carbon Sequestration
		Street Light Upgrade	U.S.	Energy End Use
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Utilitree - Rio Bravo Carbon Sequestration Pilot Project	Foreign	Carbon Sequestration
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration
LAHD Energy, Inc.	EIA-1605EZ	Coalbed Methane Recovery - Cambria #33	U.S.	Oil & Gas Methane
		Coalbed Methane Recovery - Nelms #1	U.S.	Oil & Gas Methane
		Coalbed Methane Recovery - Oak Park Project	U.S.	Oil & Gas Methane
LFG Energy, Inc.	EIA-1605	LFG Energy - Phases I & II	U.S.	Waste Methane
		LFG Energy Upgrade Facility	U.S.	Waste Methane
Lehigh Portland Cement Company	EIA-1605	Project 1: Plant Shutdown	U.S.	Energy End Use
		Project 2: Waste Tire Burning	U.S.	Energy End Use
		Project 3: Waste Tire Burning	U.S.	Energy End Use
		Project 4: Plant Modernization	U.S.	Energy End Use
		Project 5: Lighting retrofit	U.S.	Energy End Use
		Project 6: Motor retrofit	U.S.	Energy End Use

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
Los Angeles Department of Water and Power	EIA-1605	Cool Schools Urban Forestry - Energy Efficiency Effects	U.S.	Energy End Use
		Cool Schools Urban Forestry Project	U.S.	Carbon Sequestration
		DWP Rideshare Program	U.S.	Transportation
		Electric Vehicles	U.S.	Transportation
		Energy Efficient Transformers	U.S.	Electric Power G & T
		Fuel Switching (Fuel Oil #6 to Natural Gas)	U.S.	Electric Power G & T
		GOB Lighting Retrofit	U.S.	Energy End Use
		HVAC Program	U.S.	Energy End Use
		High Efficiency Clothes Washers	U.S.	Energy End Use
		Lighting Program - Small Commercial	U.S.	Energy End Use
		Mountain Reforestation Project	U.S.	Carbon Sequestration
		NBRS Program	U.S.	Energy End Use
		Refrigeration Tune-Up Program	U.S.	Energy End Use
		Refrigerator Replacement Program	U.S.	Energy End Use
		Scattergood Digester Gas Displacement of Natural Gas as Fuel	U.S.	Waste Methane
		Solar Power	U.S.	Electric Power G & T
Lower Colorado River Authority	EIA-1605	Coal Combustion By-Product Recycling	U.S.	Other
		Hydroelectric Dam Modernization	U.S.	Electric Power G & T
		Neural-Network Technology	U.S.	Electric Power G & T
		Residential & Commercial DSM Program	U.S.	Energy End Use
		Supply-Side Efficiency Improvements	U.S.	Electric Power G & T
		Wind Power Project	U.S.	Electric Power G & T
Madison County Depart. of Solid Waste & Sanitation	EIA-1605	Landfill Gas Recovery & Flaring	U.S.	Waste Methane
		Recycling	U.S.	Other
		Refrigerant Recovery	U.S.	Halogenates
Mecklenburg Electric Cooperative	EIA-1605	System Line Conversion and Reconductoring	U.S.	Electric Power G & T
Minnesota Power	EIA-1605	Demand Side Mgmt., Conservation and Efficiency Improvements	U.S.	Energy End Use
		Electricity Substation, SF6 Breaker Replacement	U.S.	Halogenates
		Expanded Generation from Existing Hydro Electric Resources	U.S.	Electric Power G & T
		Expanded Use of Renewable Biomass (wood waste)	U.S.	Energy End Use
		Heat Rate Improvements, Boswell Energy Center	U.S.	Electric Power G & T
		Mud Lake Substation - Reduced Transmission Losses	U.S.	Electric Power G & T
		Short Rotation Woody Crop Establishment	U.S.	Carbon Sequestration
		Waste Paper Recycling Development	U.S.	Other
Minnesota Resource Recovery Association	EIA-1605EZ	Book ReUse Center Carbon Dioxide Reductions	U.S.	Other
		Book ReUse Center Methane Reduction	U.S.	Other
		MSW Incineration	U.S.	Waste Methane
		Paper Recycling Carbon Dioxide Reductions	U.S.	Other
		Paper Recycling Methane Reductions	U.S.	Other
Missouri River Energy Services	EIA-1605EZ	1994 Tree Planting	U.S.	Carbon Sequestration
		1995 Tree Planting	U.S.	Carbon Sequestration
		1996 Tree Planting	U.S.	Carbon Sequestration
		1997 Tree Planting	U.S.	Carbon Sequestration
		1998 Tree Planting	U.S.	Carbon Sequestration
		1999 Tree Planting	U.S.	Carbon Sequestration

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
Moorhead Public Service	EIA-1605EZ	Custom Rebate for Moorhead High School	U.S.	Energy End Use
		Custom Rebate for Roffe Container	U.S.	Energy End Use
		Insulation Improvement	U.S.	Energy End Use
		Lighting Retrofit Program	U.S.	Energy End Use
		Urban Forestry (sequestration only)	U.S.	Carbon Sequestration
		Wind Turbine Generator	U.S.	Electric Power G & T
NC Muni Landfill Gas Partners, LP	EIA-1605	Henderson County NC Landfill	U.S.	Waste Methane
NEO Corporation	EIA-1605	Acme Landfill Gas Utilization Project	U.S.	Waste Methane
		Albany Landfill Gas Utilization Project	U.S.	Waste Methane
		Balefill Landfill Gas Utilization Project	U.S.	Waste Methane
		Corona Landfill Gas Utilization Project	U.S.	Waste Methane
		Cuyahoga Landfill Gas Utilization Project	U.S.	Waste Methane
		Denver Landfill Gas Utilization Project	U.S.	Waste Methane
		Edgeboro Landfill Gas Utilization Project	U.S.	Waste Methane
		Fitchburg Landfill Gas Utilization Project	U.S.	Waste Methane
		Flying Cloud Landfill Gas Utilization Project	U.S.	Waste Methane
		Fort Smith Landfill Gas Utilization Project	U.S.	Waste Methane
		Hartford Landfill Gas Utilization Project	U.S.	Waste Methane
		Kingsland Landfill Gas Utilization Project	U.S.	Waste Methane
		Kraemer Landfill Gas Utilization Project	U.S.	Waste Methane
		Lopez Landfill Gas Utilization Project	U.S.	Waste Methane
		Lowell Landfill Gas Utilization Project	U.S.	Waste Methane
		Mazzaro Landfill Gas Utilization Project	U.S.	Waste Methane
		Phoenix Landfill Gas Utilization Project	U.S.	Waste Methane
		Prima Deshecha Landfill Gas Utilization Project	U.S.	Waste Methane
		Prince William Landfill Gas Utilization Project	U.S.	Waste Methane
		Riverside Landfill Gas Utilization Project	U.S.	Waste Methane
		SKB Landfill Gas Utilization Project	U.S.	Waste Methane
		San Bernadino Landfill Gas Utilization Project	U.S.	Waste Methane
		San Diego Landfill Gas Utilization Project	U.S.	Waste Methane
		Spokane Landfill Gas Utilization Project	U.S.	Waste Methane
		Tacoma Landfill Gas Utilization Project	U.S.	Waste Methane
		Tajiguas Landfill Gas Utilization Project	U.S.	Waste Methane
		Taunton Landfill Gas Utilization Project	U.S.	Waste Methane
		Visalia Landfill Gas Utilization Project	U.S.	Waste Methane
		Volusia Landfill Gas Utilization Project	U.S.	Waste Methane
		West Covina Landfill Gas Utilization Project	U.S.	Waste Methane
		Woodville Landfill Gas Utilization Project	U.S.	Waste Methane
		Yolo Landfill Gas Utilization Project	U.S.	Waste Methane
Nashville Electric Service	EIA-1605EZ	Urban Forestry/1999 Planting	U.S.	Carbon Sequestration
		Distribution Voltage Upgrade	U.S.	Electric Power G & T
		High-efficiency transformers	U.S.	Electric Power G & T
		Urban Forestry/1995 Planting	U.S.	Carbon Sequestration
		Urban Forestry/1996 Planting	U.S.	Carbon Sequestration
		Urban Forestry/1997 Planting	U.S.	Carbon Sequestration
		Urban Forestry/1998 Planting	U.S.	Carbon Sequestration

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
National Grid USA	EIA-1605	Appliance Removal Program, Residential DSM Programs	U.S.	Halogenates
		Carpool	U.S.	Transportation
		Demand-Side Management Programs	U.S.	Energy End Use
		Distribution Reconductoring	U.S.	Electric Power G & T
		Distribution Voltage Upgrade	U.S.	Electric Power G & T
		Electric Vehicles	U.S.	Transportation
		Photovoltaic	U.S.	Electric Power G & T
Natural Power, Inc.	EIA-1605	Wilder's Grove Landfill Gas Project	U.S.	Waste Methane
Nebraska Public Power District	EIA-1605EZ	1994-1996 Distribution Improvements	U.S.	Electric Power G & T
		1994-1997 Transformer Changeouts	U.S.	Electric Power G & T
		Coal Ash Reuse	U.S.	Other
		Electric Heat Pump Program, 1998-1999	U.S.	Energy End Use
		Materials Recycling	U.S.	Other
		Nuclear Plant Improved Utilization	U.S.	Electric Power G & T
		Plant Efficiency Improvements	U.S.	Electric Power G & T
		SF6 Gas Circuit Breaker Leak Detection and Repair	U.S.	Electric Power G & T
		Tree planting	U.S.	Carbon Sequestration
		Wind Turbines	U.S.	Electric Power G & T
Newton Landfill Gas, LLC	EIA-1605	Newton Landfill, Catawba County, NC	U.S.	Waste Methane
NiSource/NIPSCO	EIA-1605	Biomass Initiative	U.S.	Electric Power G & T
		Capacitor Additions	U.S.	Electric Power G & T
		Coal Combustion Byproduct Utilization	U.S.	Other
		Electric Vehicles	U.S.	Transportation
		Employee Commute Options	U.S.	Transportation
		Employee Training	U.S.	Other
		Fuel Switching at Bynov Plant in Decin, Czech Republic	Foreign	Cogeneration
		Inland Steel - Northlake Energy	U.S.	Cogeneration
		Ispat/Inland - Cokenergy	U.S.	Cogeneration
		Landfill Methane Recovery - Deercroft	U.S.	Waste Methane
		Landfill Methane Recovery - Wheeler	U.S.	Waste Methane
		Landfill Methane Recovery-Prairie View	U.S.	Waste Methane
		Low Loss Transformers	U.S.	Electric Power G & T
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		NG Star Baystate	U.S.	Oil & Gas Methane
		National Steel- Portside Energy	U.S.	Cogeneration
		Natural Gas STAR	U.S.	Oil & Gas Methane
		Natural Gas Vehicles	U.S.	Transportation
		North Trenton Pipeline Replacement	U.S.	Oil & Gas Methane
		Overflow Bottomland Hardwood Forest Restoration	U.S.	Carbon Sequestration
		Ozone Depleting Chemicals	U.S.	Halogenates
		Recycling program	U.S.	Other
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Carbon Sequestration
		Rural Tree Planting	U.S.	Carbon Sequestration
		SF6 Reductions	U.S.	Halogenates
		US Steel - Lakeside Energy	U.S.	Cogeneration
		Upper Ouachita River Valley	U.S.	Carbon Sequestration
		Urban Tree Planting	U.S.	Carbon Sequestration
		UtiliTree- Rio Bravo Pilot	Foreign	Carbon Sequestration
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
Niagara Mohawk Power Corporation	EIA-1605	Alternative Fuel Vehicles	U.S.	Transportation
		Amorphous Metal Core Transformers	U.S.	Electric Power G & T
		Coal Ash Utilization	U.S.	Other
		Cowley Ridge Windplant	Foreign	Electric Power G & T
		Energy Efficiency and Conservation Programs (DSM)	U.S.	Energy End Use
		Identify & Rehabilitate Leaky Gas Distribution Pipe	U.S.	Oil & Gas Methane
		Installation and Operation of Photovoltaic Energy Systems	U.S.	Electric Power G & T
		Installation and Operation of Wind Turbines	U.S.	Electric Power G & T
		Investment Recovery Program (Recycling)	U.S.	Other
		Nuclear Generation Capacity Improvements	U.S.	Electric Power G & T
		Nuclear Generation Performance Improvements	U.S.	Electric Power G & T
		Partial Conversion of Oil-Fired Plant to Natural Gas	U.S.	Electric Power G & T
		Refrigerator Roundup	U.S.	Halogenates
Noranda Aluminum Inc.	EIA-1605	PFC Emission Reduction via Reductions in Anode Effects	U.S.	Halogenates
North American Carbon, Inc.	EIA-1605	Glendale Hydroelectric Project	U.S.	Electric Power G & T
		KMS Peel Energy Recovery Project	Foreign	Waste Methane
		Lower Saranac Hydroelectric Project	U.S.	Electric Power G & T
		Star Lake Hydroelectric Project	Foreign	Electric Power G & T
North Carolina Biomass Partners	EIA-1605EZ	Biomass Waste to Energy	U.S.	Electric Power G & T
North Carolina Electric Membership Corporation	EIA-1605EZ	Switch Away from Fossil Fuel Generated Power Purchases	U.S.	Electric Power G & T
Northern Neck Electric Cooperative	EIA-1605	Demand-Side Management Programs	U.S.	Energy End Use
		System Line Conversion and Reconductoring	U.S.	Electric Power G & T
Northern States Power Company.	EIA-1605	Appliance Recycling	U.S.	Halogenates
		Chippewa Falls Hydro expansion	U.S.	Electric Power G & T
		Coal ash utilization	U.S.	Other
		Demand side management (electric)	U.S.	Energy End Use
		Green Lights	U.S.	Energy End Use
		Landfill Gas Purchase	U.S.	Electric Power G & T
		Low Income Refrigerator Replacement	U.S.	Halogenates
		Nuclear Capacity Increase - Rerated	U.S.	Electric Power G & T
		Nuclear Capacity Increase-3	U.S.	Electric Power G & T
		Nuclear capacity increase	U.S.	Electric Power G & T
		Nuclear capacity increase-2	U.S.	Electric Power G & T
		Nuclear capacity restoration	U.S.	Electric Power G & T
		Recycling program	U.S.	Other
		Refuse-derived fuel	U.S.	Waste Methane
		Sioux Falls area transmission upgrades	U.S.	Electric Power G & T
		Transmission upgrade	U.S.	Electric Power G & T
		Transmission upgrade-2	U.S.	Electric Power G & T
		Upgrade for hydro capacity	U.S.	Electric Power G & T
		Wheaton Plant conversion	U.S.	Electric Power G & T
		Wind power	U.S.	Electric Power G & T
Northern Virginia Electric Cooperative	EIA-1605	Demand-side Management Load Control Programs	U.S.	Energy End Use
		System Line Conversions and Reconductoring	U.S.	Electric Power G & T
Northwest Fuel Development, Inc.	EIA-1605	Utilization of Coal Mine Gas	U.S.	Oil & Gas Methane
Oak Creek Energy Systems Inc.	EIA-1605	OCES 0a, OCES 1, OCES 2, OCES 2a	U.S.	Electric Power G & T
Old Dominion Electric Cooperative	EIA-1605	Clover Power Station - Visual Screening	U.S.	Carbon Sequestration
		Green Lights	U.S.	Energy End Use

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
Omaha Public Power District	EIA-1605EZ	Coal Heat Rate Improvement	U.S.	Electric Power G & T
		Commercial & Industrial Audits	U.S.	Energy End Use
		Heat Pump Program (RECP)	U.S.	Energy End Use
		Nuclear Capacity Factor Improvement	U.S.	Electric Power G & T
		Recycling Fly Ash	U.S.	Other
		Recycling Programs	U.S.	Other
		Right Lights	U.S.	Energy End Use
		Street Lighting Replacement	U.S.	Energy End Use
		T&D Capacitor Installations	U.S.	Electric Power G & T
		Tree Planting	U.S.	Carbon Sequestration
Oregon State University (State of Oregon)	EIA-1605	RUSAFOR-SAP	Foreign	Carbon Sequestration
PECO Energy Company	EIA-1605	Fairless Hills LFG to Energy Operation	U.S.	Waste Methane
		Grays Ferry Cogeneration and Waste Heat Recovery	U.S.	Cogeneration
		Overhaul of Conowingo Unit 10	U.S.	Electric Power G & T
		Overhaul of Conowingo Unit 5	U.S.	Electric Power G & T
		Overhaul of Conowingo Unit 8	U.S.	Electric Power G & T
		Overhaul of Conowingo Unit 9	U.S.	Electric Power G & T
		Overhaul of Muddy Run Units 1-4	U.S.	Electric Power G & T
		Overhaul of Muddy Run Units 5-8	U.S.	Electric Power G & T
		Pennsbury LFG to Energy Operation	U.S.	Waste Methane
		Rerate of Peach Bottom Unit 2	U.S.	Electric Power G & T
		Rerate of Limerick Unit 1	U.S.	Electric Power G & T
		Rerate of Limerick Unit 2	U.S.	Electric Power G & T
		Rerate of Peach Bottom Unit 3	U.S.	Electric Power G & T
PEI Power Corp	EIA-1605	PEI Power	U.S.	Cogeneration
PG&E Corporation	EIA-1605	Barre Landfill Gas to Electricity Project	U.S.	Waste Methane
		Brayton Point Station Unit No. 4 Gas Conversion	U.S.	Electric Power G & T
		Brayton Point Station Units No. 1, 2, 3 Natural Gas Usage	U.S.	Electric Power G & T
		Coal Ash Recycling as Cement Replacement	U.S.	Other
		Electric Vehicles	U.S.	Transportation
		Electrical Energy Conservation Savings	U.S.	Energy End Use
		Johnston Landfill Gas to Electricity Project	U.S.	Waste Methane
		Manchester Street Repowering	U.S.	Electric Power G & T
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Nashua Landfill Gas To Electricity Project	U.S.	Waste Methane
		Natural Gas Energy Conservation Savings	U.S.	Energy End Use
		Natural Gas Star Program	U.S.	Other
		Natural Gas Substitution for Residual Oil	U.S.	Electric Power G & T
		Natural Gas Vehicles	U.S.	Transportation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Carbon Sequestration
		Power Purchases from Natural Gas Generation	U.S.	Electric Power G & T
		Reduced Impact Logging Project (NEP Pilot Project)	Foreign	Carbon Sequestration
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Carbon Sequestration
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Carbon Sequestration
		SF6 Emission Reduction Partnership	U.S.	Halogenates
		Turnkey Landfill Gas to Electricity Project	U.S.	Waste Methane
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
PPL CORPORATION	EIA-1605	Ash Use in Cement Making	U.S.	Other
		Demand Side Management Project	U.S.	Energy End Use
		Electric Vehicles	U.S.	Transportation
		Fossil Plant Efficiency	U.S.	Electric Power G & T
		Harrisburg (AWWTP) - Electricity Purchases	U.S.	Electric Power G & T
		Harrisburg (AWWTP) - Methane Reductions	U.S.	Waste Methane
		Holtwood SES Closing	U.S.	Electric Power G & T
		Keener Enterprises - Electricity Purchases	U.S.	Electric Power G & T
		Keener Enterprises - Methane Reductions	U.S.	Agriculture Methane
		Keystone Landfill - Electricity Purchases	U.S.	Electric Power G & T
		Keystone Landfill - Methane Reductions	U.S.	Waste Methane
		Lycoming Landfill - Electricity Purchases	U.S.	Electric Power G & T
		Lycoming Landfill - Methane Reductions	U.S.	Waste Methane
		Martins Creek Gas	U.S.	Electric Power G & T
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Carbon Sequestration
		Pheasant Habitat Restoration Program (PHRP)	U.S.	Carbon Sequestration
		Susquehanna SES Strategy 2000	U.S.	Electric Power G & T
		Susquehanna Steam Electric Station Re-Rate	U.S.	Electric Power G & T
		Taylor/Amity Landfill - Electricity Purchases	U.S.	Electric Power G & T
		Taylor/Amity Landfill - Methane Reductions	U.S.	Waste Methane
		Transformer Savings	U.S.	Electric Power G & T
		Trees for the Future	U.S.	Carbon Sequestration
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Utilitree Co. - Malaysia Project	Foreign	Carbon Sequestration
		Utilitree Co. - Mississippi R. V. Project	U.S.	Carbon Sequestration
		Utilitree Co. - Rio Bravo Project	Foreign	Carbon Sequestration
		Utilitree Co. - W. Oregon Project	U.S.	Carbon Sequestration
PacifiCorp	EIA-1605	Coal Ash Recycling	U.S.	Other
		Commercial Competitive Bid - EUA/Onsite	U.S.	Energy End Use
		Competitive Bid - CES/Way	U.S.	Energy End Use
		Energy FinAnswer	U.S.	Energy End Use
		Energy FinAnswer Prescriptive	U.S.	Energy End Use
		Energy FinAnswer Retrofit	U.S.	Energy End Use
		Ethanol Production Carbon Offset Project	U.S.	Other
		H_PRO: High Efficiency Heat Pumps	U.S.	Energy End Use
		Hassle-Free Program	U.S.	Energy End Use
		Home Comfort	U.S.	Energy End Use
		Industrial Energy FinAnswer	U.S.	Energy End Use
		Irrigation FinAnswer Program	U.S.	Energy End Use
		Low Income Weatherization and Conservation Programs	U.S.	Energy End Use
		Major Accounts Program	U.S.	Energy End Use
		Manufactured Housing Acquisition Program (MAP)	U.S.	Energy End Use
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Noel Kempff Mercado Climate Action Project	Foreign	Carbon Sequestration
		Northwest Energy Efficiency Alliance (NEEA)	U.S.	Energy End Use
		Northwest Fuels Methane Recovery From Coal Mines	U.S.	Oil & Gas Methane
		PacifiCorp Facility DSM	U.S.	Energy End Use
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Carbon Sequestration
		Reforestation in Eastern Washington	U.S.	Carbon Sequestration

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Reforestation of Private Lands in Oregon - Site Class II	U.S.	Carbon Sequestration
		Reforestation of Private Lands in Oregon - Site Class III	U.S.	Carbon Sequestration
		Residential Competitive Bid - ECONS	U.S.	Energy End Use
		Residential Weatherization Programs	U.S.	Energy End Use
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Carbon Sequestration
		Salt Lake City Urban Forestry Project	U.S.	Carbon Sequestration
		Salt Lake City Urban Forestry Project	U.S.	Energy End Use
		Showerhead Program	U.S.	Energy End Use
		Small Commercial Retrofit	U.S.	Energy End Use
		Super Efficiency Refrigerator Program (SERP)	U.S.	Energy End Use
		Super Good Cents	U.S.	Energy End Use
		Utah Water Smart Kits (Schedule 5)	U.S.	Energy End Use
		Water Heater / Solar	U.S.	Energy End Use
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration
Palmer Capital Corporation	EIA-1605	Brookhaven Landfill Gas Limited Partnership	U.S.	Waste Methane
		Central Gas Limited Partnership	U.S.	Waste Methane
		Janesville Landfill Gas Corporation	U.S.	Waste Methane
		LKD Los Angeles L.P.	U.S.	Waste Methane
		Lancaster Landfill Gas Corporation	U.S.	Waste Methane
		Lebanon Landfill Gas Corporation	U.S.	Waste Methane
		Portland LFG Joint Venture	U.S.	Waste Methane
		Raleigh Landfill Gas Corporation	U.S.	Waste Methane
		Scholl Canyon LFG Limited Partnership	U.S.	Waste Methane
		Sun LFG Corporation	U.S.	Waste Methane
Pharmacia & Upjohn	EIA-1605EZ	Chilled Water Capacity Increase	U.S.	Energy End Use
		Repair or Replacement of Steam Traps	U.S.	Energy End Use
Pitt Landfill Gas, LLC	EIA-1605	Pitt Landfill Gas, LLC	U.S.	Waste Methane
Platte River Power Authority & 4 owner cities	EIA-1605	Estes Park Low-Loss Transformers	U.S.	Electric Power G & T
		Estes Park Recycling Program	U.S.	Other
		Estes Park Streetlight Conversions	U.S.	Energy End Use
		Fort Collins Building Codes	U.S.	Energy End Use
		Fort Collins City Lighting Upgrades	U.S.	Energy End Use
		Fort Collins Design Assistance	U.S.	Energy End Use
		Fort Collins Distribution System Improvements	U.S.	Electric Power G & T
		Fort Collins LED Traffic Lights	U.S.	Energy End Use
		Fort Collins Recycling Program	U.S.	Other
		Fort Collins Transportation Demand Management	U.S.	Transportation
		Fort Collins Wastewater Methane Flare	U.S.	Waste Methane
		Fort Collins Zero Interest Loan for Conservation Help	U.S.	Energy End Use
		Longmont Distribution System Improvements	U.S.	Electric Power G & T
		Longmont Efficient Lighting Projects	U.S.	Energy End Use
		Longmont Hydro Project Upgrades	U.S.	Electric Power G & T
		Longmont Wastewater Plant Waste Gas Flare	U.S.	Waste Methane
		Loveland Area Lighting Project	U.S.	Energy End Use
		Loveland Digester Gas Production and Use	U.S.	Waste Methane
		Loveland Hydroelectric Plant	U.S.	Electric Power G & T
		Loveland Recycling Program	U.S.	Other
		Loveland Thrifty Light Project	U.S.	Energy End Use
		PRPA Heat Rate Improvements at Craig Powerplant	U.S.	Electric Power G & T
		PRPA Photovoltaic Project	U.S.	Electric Power G & T

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		PRPA Wind Power Project	U.S.	Electric Power G & T
Portland General Electric Co.	EIA-1605	1995 Colstrip Units 3&4 Ruggedizing	U.S.	Electric Power G & T
		Beaver Efficiency Improvements	U.S.	Electric Power G & T
		Boardman Efficiency Improvements	U.S.	Electric Power G & T
		Building Rooftop Photovoltaic Systems	U.S.	Electric Power G & T
		Bull Run Turbine Runner Replacements	U.S.	Electric Power G & T
		Coyote Springs Efficiency Improvements	U.S.	Electric Power G & T
		Demand-Side Management Projects	U.S.	Energy End Use
		Electric Fleet Vehicles	U.S.	Transportation
		Energy Management Systems	U.S.	Energy End Use
		Faraday Units 4&5 1994	U.S.	Electric Power G & T
		Friends of Trees	U.S.	Carbon Sequestration
		Gas Lawnmower Turn In Rebate	U.S.	Energy End Use
		Green Lights Programs	U.S.	Energy End Use
		Heat Pump Rebate	U.S.	Energy End Use
		Natural Gas Fleet Vehicles	U.S.	Transportation
		Oak Grove Turbine Runner Replacements - 1991 - Units 1&2	U.S.	Electric Power G & T
		PGE Corporate Recycling Program	U.S.	Other
		Photoelectric Streetlight Controls	U.S.	Energy End Use
		River Mill Efficiency Improvements	U.S.	Electric Power G & T
		Sullivan turbine rebuilds	U.S.	Electric Power G & T
		T&D: Power Factor Correction Capacitors	U.S.	Electric Power G & T
		Transformer Efficiency Improvements	U.S.	Electric Power G & T
		Vansycle Ridge Wind Generation	U.S.	Electric Power G & T
Pratt & Whitney North Berwick	EIA-1605	Minimize Cooling Tower Operations	U.S.	Energy End Use
		Particulate Filter Replacement	U.S.	Energy End Use
Prince George Electric Cooperative	EIA-1605	Transmission and Dist. Efficiency Improvements	U.S.	Electric Power G & T
Public Service Company of New Mexico	EIA-1605	CNG Vehicles	U.S.	Transportation
		Heat Rate Improvements at San Juan Generating Station	U.S.	Electric Power G & T
		Natural Gas Leak Surveying and Replacement	U.S.	Oil & Gas Methane
		Palo Verde Generation Increase	U.S.	Electric Power G & T
Public Service Enterprise Group	EIA-1605	Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Demand Side Management	U.S.	Energy End Use
		Electric Generation from Landfill Gas	U.S.	Waste Methane
		Employee Trip Reduction	U.S.	Transportation
		Hydro Projects - United States	U.S.	Electric Power G & T
		Leak Detection and Repair of Equipment Containing SF6	U.S.	Halogenates
		Municipal Solid Waste Generators	U.S.	Waste Methane
		Natural Gas STAR	U.S.	Oil & Gas Methane
		Overflow Bottomland Hardwood Forest Restoration	U.S.	Carbon Sequestration
		Resource Recovery Coal Ash Management Program	U.S.	Other
		UtiliTree-Miss R. Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		UtiliTree-Reduce Impact of Logging of Nat. Forest, Malaysia	Foreign	Carbon Sequestration
		UtiliTree-Rio Bravo Carbon Seq. Pilot Project	Foreign	Carbon Sequestration
		UtiliTree-Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration
		Waste Wise	U.S.	Other

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
Public Utility District No. 1 of Snohomish County	EIA-1605	Battery and Solar Powered Boat Races	U.S.	Transportation
		Bicycles for Meter Readers	U.S.	Transportation
		Commute Reduction Program	U.S.	Transportation
		Conservation Voltage Reduction	U.S.	Electric Power G & T
		Demand Side Management	U.S.	Energy End Use
		Electric Car Race	U.S.	Transportation
		Scrap Metals Recycling	U.S.	Other
		Transmission Networking and Reconductoring	U.S.	Electric Power G & T
		We-cycle Office Wastepaper (WOW) Program	U.S.	Other
Quad/Graphics, Inc.	EIA-1605	12 hour work shift	U.S.	Transportation
		Duplainville return load project	U.S.	Transportation
		Energy efficient installations	U.S.	Energy End Use
		New mass transit routes	U.S.	Transportation
		Waste paper reduction program	U.S.	Other
		West Allis plant brownfield site	U.S.	Other
Rangely Weber Sand Unit	EIA-1605	Rangely CO2 Injection Project	U.S.	Other
Rappahannock Electric Cooperative	EIA-1605	Demand-Side Management Load Control Programs	U.S.	Energy End Use
		System Line Conversions and Reconductoring	U.S.	Electric Power G & T
		Tree Planting	U.S.	Carbon Sequestration
Reliant Energy - HL&P	EIA-1605	San Jacinto Steam Electric Generating Station	U.S.	Cogeneration
		Coal Fly Ash Sales	U.S.	Other
		Demand Side Management	U.S.	Energy End Use
		GT PRIME	U.S.	Electric Power G & T
		Rice Field Methane Reductions Study	U.S.	Agriculture Methane
Rochester Institute of Technology	EIA-1605	7B Dry-cooler Winter Chiller	U.S.	Energy End Use
		Building 17 Dry Cooler Installation	U.S.	Energy End Use
		Building 25 HVAC Conversion to VAV	U.S.	Energy End Use
		Building 60 Skylight Window Replacement	U.S.	Energy End Use
		Compact Fluorescent Lamps	U.S.	Energy End Use
		Gold Lamp Replacement	U.S.	Energy End Use
		HVAC CONVERSION TO VAV	U.S.	Energy End Use
		Install Variable Speed Drives in 8 Misc. Buildings	U.S.	Energy End Use
		LED Exit Signs	U.S.	Energy End Use
		Motor Replacement	U.S.	Energy End Use
		Occupancy Sensors	U.S.	Energy End Use
		T-8 Lamp Conversion	U.S.	Energy End Use
		VSD INSTALLATION	U.S.	Energy End Use
Rolls-Royce Corporation	EIA-1605	Boiler Conversion from Coal to Landfill/Natural Gas	U.S.	Energy End Use
		Peak Saving Project	U.S.	Energy End Use
		Use of Landfill Gas	U.S.	Waste Methane
Rosewood Resources, Inc.	EIA-1605	Pinnacle Mine Coalbed Methane Recovery	U.S.	Oil & Gas Methane
Sacramento Municipal Utility District	EIA-1605	Employee Commute Program	U.S.	Transportation
		Energy Efficiency Programs	U.S.	Energy End Use
		Meter Reading - Bicycles	U.S.	Transportation
		PV Pioneer	U.S.	Electric Power G & T
		Ride Electric	U.S.	Transportation
		Shade Tree Program	U.S.	Carbon Sequestration
		Sulfur Hexafluoride Inventory	U.S.	Halogenates
Salt River Project	EIA-1605EZ	AC Photovoltaic Residential System	U.S.	Energy End Use
		Alternate Work Week Schedule	U.S.	Transportation
		Bike/Bus/Walk	U.S.	Transportation
		Carpooling/Vanpooling	U.S.	Transportation

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Cooperative Photovoltaic Power Plant	U.S.	Electric Power G & T
		Electric Vehicles Demonstration and Business Use	U.S.	Transportation
		Fly Ash Sales	U.S.	Other
		Heat Rate Improvements	U.S.	Electric Power G & T
		Home with PV System for Demonstration (Chandler House)	U.S.	Energy End Use
		Landfill Gas Flaring (CH4 Avoided)	U.S.	Waste Methane
		Landfill Gas Flaring (CO2 Increase)	U.S.	Waste Methane
		Palo Verde Nuclear Generating Station Capacity Increases	U.S.	Electric Power G & T
		Recycling (CH4 Reductions)	U.S.	Other
		Recycling (CO2 Reduction)	U.S.	Other
		Replace Gasoline Lawnmowers with Electric Lawnmowers	U.S.	Energy End Use
		South Mountain CC Solar	U.S.	Energy End Use
		Telecommuting	U.S.	Transportation
Santee Cooper	EIA-1605	Cross Unit 1 Turbine Retrofit	U.S.	Electric Power G & T
		Cross Unit 2 Retrofit	U.S.	Electric Power G & T
		Demand Side Management Programs	U.S.	Energy End Use
		Fly Ash Used in Concrete Manufacture	U.S.	Other
		Forestation/Reforestation	U.S.	Carbon Sequestration
		Summer Nuclear Upgrade	U.S.	Electric Power G & T
		Winyah Unit 1 Turbine Retrofit	U.S.	Electric Power G & T
		Winyah Unit 2 Turbine Retrofit	U.S.	Electric Power G & T
		Winyah Unit 3 Turbine Retrofit	U.S.	Electric Power G & T
SeaWest Windpower, Inc.	EIA-1605	Altech III Wind Project Retrofits and Enhancements	U.S.	Electric Power G & T
		Foote Creek I Wind Power Project	U.S.	Electric Power G & T
		Foote Creek II Wind Power Project	U.S.	Electric Power G & T
		Foote Creek III Wind Power Project	U.S.	Electric Power G & T
		San Gorgonio Westwinds II Repower Project	U.S.	Electric Power G & T
Seattle City Light	EIA-1605	4kV to 26kV Distribution System Conversion	U.S.	Electric Power G & T
		Built Smart/Long-Term Super Good Cents Program (LTSGC)	U.S.	Energy End Use
		Cedar Falls turbine runner replacement	U.S.	Electric Power G & T
		Diablo Dam turbine runner replacement	U.S.	Electric Power G & T
		Energy $avings Plan (E$P)	U.S.	Energy End Use
		Energy Efficient Water Heater Rebate Program (EEWHRP)	U.S.	Energy End Use
		Energy Smart Design	U.S.	Energy End Use
		Gorge Dam turbine runner replacement	U.S.	Electric Power G & T
		Home Water Savers Program	U.S.	Energy End Use
		Low-Income Electric Program	U.S.	Energy End Use
		Multifamily Common Area Lighting Program (MF-CAL)	U.S.	Energy End Use
		Multifamily Conservation Program: Low-Income	U.S.	Energy End Use
		Multifamily Conservation Program: Standard-Income	U.S.	Energy End Use
		Neighborhood Power Weatherization/Warm Home Program (WMHM)	U.S.	Energy End Use
		Ross Dam turbine runner replacement	U.S.	Electric Power G & T
		Smart Business Rebates	U.S.	Energy End Use
		South Fork Tolt River hydroelectric project	U.S.	Electric Power G & T
		Urban Tree Replacement Program	U.S.	Carbon Sequestration
Seminole Electric Cooperative, Inc.	EIA-1605EZ	Fly Ash & Bottom Ash Reuse	U.S.	Other
		Heat Rate Improvement	U.S.	Electric Power G & T

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Lighting Replacement	U.S.	Energy End Use
		Transmission Conductor Optimization	U.S.	Electric Power G & T
Seneca Energy, Inc.	EIA-1605	Seneca Energy - Stage I	U.S.	Waste Methane
		Seneca Energy - Stage II	U.S.	Waste Methane
Separation Technologies, Inc.	EIA-1605EZ	STI fly ash process at U.S.Generating Brayton Point Station	U.S.	Other
		STI fly ash process at Balt. Gas & Electric Brandon Shores	U.S.	Other
		STI fly ash process at Carolina Power and Light Roxboro Sta.	U.S.	Other
Shenandoah Valley Electric Cooperative	EIA-1605	Demand-Side Management Load Control Programs	U.S.	Energy End Use
		System Line Conversions and Reconductoring	U.S.	Electric Power G & T
		Visual Screening-Tree Planting	U.S.	Carbon Sequestration
Shrewsbury Electric Light Plant.	EIA-1605EZ	High Efficiency Transformer	U.S.	Electric Power G & T
		Lighting Replacement	U.S.	Energy End Use
South Carolina Electric & Gas Company	EIA-1605	Coal Ash Utilization Program	U.S.	Other
		Demand Side Management Technologies	U.S.	Energy End Use
		Forest Management Plan	U.S.	Carbon Sequestration
		Misc. Plant efficiency improvements	U.S.	Electric Power G & T
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Carbon Sequestration
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Carbon Sequestration
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Carbon Sequestration
		Summer Nuclear Upgrade	U.S.	Electric Power G & T
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Wateree Station heat rate improvement	U.S.	Electric Power G & T
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration
		Williams Station improvements	U.S.	Electric Power G & T
Southeastern Biomass Partners, LP	EIA-1605EZ	Biomass Waste to Energy	U.S.	Electric Power G & T
Southern California Edison Co.	EIA-1605	Demand Side Management	U.S.	Energy End Use
		ENVEST SCE	U.S.	Energy End Use
		Electric Vehicle Program	U.S.	Transportation
		Fly Ash Sales for Concrete Production	U.S.	Other
		Internal Combustion Engine Replacement Program	U.S.	Energy End Use
		Mohave Power Project Heat Rate Improvement Program	U.S.	Electric Power G & T
		Renewable Energy Purchases - Biomass	U.S.	Electric Power G & T
		Renewable Energy Purchases - Geothermal	U.S.	Electric Power G & T
		Renewable Energy Purchases - Wind	U.S.	Electric Power G & T
Southern Company	EIA-1605	Biomass	U.S.	Electric Power G & T
		Bulk Power Transmission Improvements	U.S.	Electric Power G & T
		Carbon Sequestration on Company Lands	U.S.	Carbon Sequestration
		Carbon Sequestration on Noncompany Lands	U.S.	Carbon Sequestration
		Chevron Cogenerating Plant - Unit 5	U.S.	Cogeneration
		Demand-Side Management	U.S.	Energy End Use
		Farley Nuclear Plant Availability Improvements	U.S.	Electric Power G & T
		Farley Nuclear Plant Uprate	U.S.	Electric Power G & T
		Gas Capability at Watson 4 and 5	U.S.	Electric Power G & T
		Gas Capability at Plant McDonough	U.S.	Electric Power G & T
		Gas Capability at Plant Yates	U.S.	Electric Power G & T
		Hatch Nuclear Plant Availability Improvements	U.S.	Electric Power G & T

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Hatch Nuclear Plant Capacity Uprate	U.S.	Electric Power G & T
		Heat Rate Improvement on Coal-Fired Capacity	U.S.	Electric Power G & T
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		New Combustion Turbines	U.S.	Electric Power G & T
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Carbon Sequestration
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Carbon Sequestration
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Carbon Sequestration
		Sulfur Hexafluoride (SF6) Emissions Reductions	U.S.	Halogenates
		Transportation Research	U.S.	Transportation
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Vogtle Electric Generating Plant (Nuclear) Capacity Uprate	U.S.	Electric Power G & T
		Vogtle Electric Generating Plant Availability Improvements	U.S.	Electric Power G & T
		Washington County Cogeneration Plant	U.S.	Cogeneration
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration
Southside Electric Cooperative	EIA-1605	System Line Conversion and Reconductoring	U.S.	Electric Power G & T
Steuben Rural Electric Co-op	EIA-1605EZ	1994 Distribution Line Replacement	U.S.	Electric Power G & T
		1994 Water Heater Control Program	U.S.	Energy End Use
		1995 Water Heater Control Program	U.S.	Energy End Use
		1995 Distribution Line Replacement	U.S.	Electric Power G & T
		1996 Conductor Replacement	U.S.	Electric Power G & T
		1996 Farm Energy Efficiency	U.S.	Energy End Use
		1996 Water Heater Control Program	U.S.	Energy End Use
		1997 Conductor Replacement	U.S.	Electric Power G & T
		1997 Farm Energy Efficiency	U.S.	Energy End Use
		1997 Water Heater Control Program	U.S.	Energy End Use
TXU	EIA-1605	Alternative Fuel Vehicle Program	U.S.	Transportation
		Coal Ash Byproduct Use	U.S.	Other
		Demand-Side Management Program	U.S.	Energy End Use
		Employee Bus Pass Program	U.S.	Transportation
		Employee Carpool Program	U.S.	Transportation
		Increased Reforestation in Land Reclamation Program	U.S.	Carbon Sequestration
		Landfill Methane	U.S.	Waste Methane
		Lignite and Western Coal Blending	U.S.	Electric Power G & T
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Operation of Nuclear Generation Units	U.S.	Electric Power G & T
		Paper and Aluminum Recycling	U.S.	Other
		Power Plant Heat Rate Improvement Projects	U.S.	Electric Power G & T
		Ranger Exhaust Gas Project	U.S.	Other
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Carbon Sequestration
		Renewable Energy Development Projects	U.S.	Electric Power G & T
		SF6 Reductions	U.S.	Halogenates
		Texas Reforestation Foundation	U.S.	Carbon Sequestration
		UtiliTree Carbon Company Rio Bravo Pilot Project	Foreign	Carbon Sequestration
		Vehicle Use Reductions	U.S.	Transportation
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
Tacoma Public Utilities	EIA-1605EZ	Afforestation (Cowlitz and Nisqually)	U.S.	Carbon Sequestration
		Alternative Transportation	U.S.	Transportation
		Energy Conservation	U.S.	Energy End Use
		Forest Preservation (Nisqually and Cowlitz)	U.S.	Carbon Sequestration
		Generator Improvement (Cushman/Nisqually)	U.S.	Electric Power G & T
		Generator Improvement (Wynoochee)	U.S.	Electric Power G & T
		Reforestation (Peterman)	U.S.	Carbon Sequestration
Tampa Electric Company	EIA-1605	Fly Ash Reuse	U.S.	Other
		Malaysia Carbon Sequestration Project	Foreign	Carbon Sequestration
		Mississippi River Valley	U.S.	Carbon Sequestration
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Carbon Sequestration
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Carbon Sequestration
		Upper Ouachita River Valley Bottomland Hardwood Forest R.P.	U.S.	Carbon Sequestration
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration
Tennessee Valley Authority	EIA-1605	Afforestation On TVA Lands	U.S.	Carbon Sequestration
		Alternate Fuel Vehicles	U.S.	Transportation
		CFC Management	U.S.	Halogenates
		Comfort Plus Homes	U.S.	Energy End Use
		Flyash Sales To Concrete Industry	U.S.	Other
		Heat Rate Improvements At TVA Coal Fired Generating Units	U.S.	Electric Power G & T
		Hydro Unit Modernization	U.S.	Electric Power G & T
		Landfill Methane Recovery and Power Generation	U.S.	Waste Methane
		Mississippi River Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Outdoor Lighting Replacements By Memphis Light, Gas And Water	U.S.	Energy End Use
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Carbon Sequestration
		Paper Recycling	U.S.	Other
		Reduced Impact Logging Of Natural Forest In Malaysia	Foreign	Carbon Sequestration
		Residential Marketing Program	U.S.	Energy End Use
		Return Browns Ferry Nuclear Units 2 and 3 to Service	U.S.	Electric Power G & T
		Rio Bravo Carbon Sequestration Project	Foreign	Carbon Sequestration
		Start Watts Bar Nuclear Unit 1	U.S.	Electric Power G & T
		Transmission System Efficiency Improvements	U.S.	Electric Power G & T
		Transportation Fleet Fuel Efficiency Improvement	U.S.	Transportation
		Upper Ouachita River valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration
		Wood Waste Cofiring At Coal Fired Generating Plants	U.S.	Electric Power G & T
The Bentech Group of Delaware, Inc.	EIA-1605	Chautauqua County, Ellery Landfill	U.S.	Waste Methane
		Montgomery County, Oaks Landfill	U.S.	Waste Methane
		Pigeon Point Landfill	U.S.	Waste Methane
		Rolling Hills Landfill	U.S.	Waste Methane
The Dow Chemical Company	EIA-1605	CFC Refrigeration Systems Conversion	U.S.	Halogenates
		Replace CFC's as blowing agents to manufacture foams.	U.S.	Halogenates
		Replacing HCFCs & HFCs as Blowing Agents - U.S. Operations	U.S.	Halogenates

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Replacing HCFCs & HFCs as blowing agents - Foreign Operation	Foreign	Halogenates
The Pacific Forest Trust, Inc.	EIA-1605EZ	Modified Forest Management	U.S.	Carbon Sequestration
Town of Colonie Solid Waste Management Facility	EIA-1605	Flaring of Landfill Gas	U.S.	Waste Methane
U. S. Steel Mining Comany, LLC	EIA-1605	No. 50 Mine: Gas Recovery For Sale / Use	U.S.	Oil & Gas Methane
		Oak Grove Mine: Gas Recovery For Sale / Use	U.S.	Oil & Gas Methane
U.S. Department of Energy- Office of Solar	EIA-1605	Photovoltaics on DOE facilities in the DC metropolitan area	U.S.	Electric Power G & T
UNICOM (Commonwealth Edison Company)	EIA-1605	Afforestation	U.S.	Carbon Sequestration
		Alternative Fuel Vehicles	U.S.	Transportation
		Aluminum Railroad Cars	U.S.	Transportation
		Coal Combustion By-product utilization	U.S.	Other
		Collins Station 12345-Fuel Switch	U.S.	Electric Power G & T
		Energy Cooperative & Demand Side Management Activities	U.S.	Energy End Use
		Freon Recycling	U.S.	Other
		Fuel Switching at Bynov Plant in Decin, Czech Republic	Foreign	Cogeneration
		High Efficiency Transformers	U.S.	Electric Power G & T
		Illinois Prairie Grass Plantings	U.S.	Carbon Sequestration
		Investment Recovery/Life Cycle Management/Recycling	U.S.	Other
		Methane Gas Landfill Recovery	U.S.	Waste Methane
		Solar Panels	U.S.	Electric Power G & T
		UNICOM Thermal Cooling Plant	U.S.	Energy End Use
		Unicom Thermal Cooling Plant	U.S.	Halogenates
		Urban Tree Planting	U.S.	Carbon Sequestration
		Utility Pole Reuse	U.S.	Carbon Sequestration
		Windmill	U.S.	Electric Power G & T
USX Corporation	EIA-1605	White Oak Creek Methane Recovery	U.S.	Oil & Gas Methane
Utah Municipal Power Agency	EIA-1605EZ	Geothermal Power	U.S.	Electric Power G & T
		In-House Conservation	U.S.	Energy End Use
		Light Replacement	U.S.	Energy End Use
		Low Loss Transformers	U.S.	Electric Power G & T
		Residential Audit	U.S.	Energy End Use
		Tree Planting Program	U.S.	Carbon Sequestration
		Wind Power	U.S.	Electric Power G & T
VANALCO, INC. - (Primary Aluminum Reduction Plant)	EIA-1605	PFC Emission Reductions via Reductions in Anode Effects	U.S.	Halogenates
Vermont Public Power Supply Authority	EIA-1605	Act 250 New Construction Program	U.S.	Energy End Use
		Equipment Replacement and Remodeling Program	U.S.	Energy End Use
		Farm Efficiency Program	U.S.	Energy End Use
		Large Commercial and Industrial Audit Program	U.S.	Energy End Use
		Residential Appliance Disposal Program	U.S.	Energy End Use
		Residential Low Income Weatherization Piggyback Program	U.S.	Energy End Use
		Residential Mail Order Lighting Program	U.S.	Energy End Use
		Residential Water Heating and Lighting Efficiency Program	U.S.	Energy End Use
		Small Commercial Retrofit Program	U.S.	Energy End Use
		Street and Area Lighting Efficiency Program	U.S.	Energy End Use
		Swanton Village Hydro Expansion	U.S.	Electric Power G & T
		Transmission and Distribution System Efficiency Improvements	U.S.	Electric Power G & T
Volvo Cars of North America, Inc.	EIA-1605EZ	CNG Bi-fuel Test Fleet	U.S.	Transportation

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
Waverly Light & Power Company.	EIA-1605	Distribution System Upgrade (Project 3)	U.S.	Electric Power G & T
		Electric Vehicle (Project 4.1)	U.S.	Transportation
		Energy End-Use Programs (Project 3.1)	U.S.	Energy End Use
		Energy Savings Due to Trees Forever (Project 3.3)	U.S.	Energy End Use
		High-Pressure Sodium Lights (Project 3.2)	U.S.	Energy End Use
		Hydro (Project 2)	U.S.	Electric Power G & T
		Low-Loss Transformers (Project 4)	U.S.	Electric Power G & T
		Trees Forever (Project 8.1)	U.S.	Carbon Sequestration
		Wind Turbine (Project 1)	U.S.	Electric Power G & T
Western Resources, Inc.	EIA-1605	Coal Fly Ash Recycling	U.S.	Other
		Conversion of Company Fleet Vehicles to Alternative Fuels	U.S.	Transportation
		Distribution Capacitor Additions	U.S.	Electric Power G & T
		Electrotechnologies Marketing	U.S.	Energy End Use
		GEV1 Feedwater Heater Upgrade	U.S.	Electric Power G & T
		GEV2 Feedwater Controls Upgrade	U.S.	Electric Power G & T
		GEV2 Feedwater Heater Upgrade	U.S.	Electric Power G & T
		HEC4 Cooling Tower Upgrade	U.S.	Electric Power G & T
		JEC1 Boiler Controls Upgrade	U.S.	Electric Power G & T
		JEC1 On-Line Performance Monitoring	U.S.	Electric Power G & T
		JEC1 Precipitator Intermittent Energization	U.S.	Electric Power G & T
		JEC1 Seal Steam Recovery	U.S.	Electric Power G & T
		JEC1 Superheater Replacement	U.S.	Electric Power G & T
		JEC1 Turbine Upgrade	U.S.	Electric Power G & T
		JEC2 Boiler Controls Upgrade	U.S.	Electric Power G & T
		JEC2 On-Line Performance Monitoring	U.S.	Electric Power G & T
		JEC2 Precipitator Intermittent Energization	U.S.	Electric Power G & T
		JEC2 Seal Steam Recovery	U.S.	Electric Power G & T
		JEC2 Superheater Replacement	U.S.	Electric Power G & T
		JEC2 Turbine Upgrade	U.S.	Electric Power G & T
		JEC3 Boiler Controls Upgrade	U.S.	Electric Power G & T
		JEC3 Boiler/Turbine Controls Upgrade	U.S.	Electric Power G & T
		JEC3 On-Line Performance Monitoring	U.S.	Electric Power G & T
		JEC3 Precipitator Intermittent Energization	U.S.	Electric Power G & T
		JEC3 Seal Steam Recovery	U.S.	Electric Power G & T
		JEC3 Superheater Replacement	U.S.	Electric Power G & T
		JEC3 Turbine Upgrade	U.S.	Electric Power G & T
		LAC2 Turbine Upgrade	U.S.	Electric Power G & T
		LEC4 Controls Upgrade	U.S.	Electric Power G & T
		LEC5 Circ Water Crosstie	U.S.	Electric Power G & T
		LEC5 Controls Upgrade	U.S.	Electric Power G & T
		LEC5 Replace Flyash Evaporator	U.S.	Electric Power G & T
		LEC5 Sliding Pressure Operation	U.S.	Electric Power G & T
		LEC5 Turbine Seals	U.S.	Electric Power G & T
		LEC5 Upgrades	U.S.	Electric Power G & T
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Natural Gas Distribution System Replacement Program	U.S.	Oil & Gas Methane
		Natural Gas Transmission System Blowdown Reductions	U.S.	Oil & Gas Methane
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Carbon Sequestration
		Photovoltaic Installations	U.S.	Electric Power G & T
		Purchase of Aluminum Rail Cars	U.S.	Transportation

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Carbon Sequestration
		Residential Conservation Use Rate DSM Program	U.S.	Energy End Use
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Carbon Sequestration
		TEC7 On-Line Performance Monitoring	U.S.	Electric Power G & T
		TEC7 Precipitator Intermittent Energization	U.S.	Electric Power G & T
		TEC8 Condenser Upgrade	U.S.	Electric Power G & T
		TEC8 Precipitator Intermittent Energization	U.S.	Electric Power G & T
		Transformer Replacements	U.S.	Electric Power G & T
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Westar Wind Turbines	U.S.	Electric Power G & T
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration
		Wolf Creek Increased Capacity Rating	U.S.	Electric Power G & T
		Wolf Creek Turbine Modifications	U.S.	Electric Power G & T
Whatcom Land Trust	EIA-1605	Canyon Lake Creek Community Forest	U.S.	Carbon Sequestration
Wisconsin Electric Power Co.	EIA-1605	CFC-12 Recovery from Appliance Turn-In Program	U.S.	Halogenates
		Beneficial use of landfill methane	U.S.	Waste Methane
		Demand-side management energy efficiency programs	U.S.	Energy End Use
		Energy for Tomorrow(TM) Renewable Energy Program	U.S.	Electric Power G & T
		Fly ash substitution program	U.S.	Other
		Fossil plant heat rate improvements	U.S.	Electric Power G & T
		Fuel switching at Bynov Plant in Decin, Czech Republic	Foreign	Cogeneration
		Hydro plant improvements and additions	U.S.	Electric Power G & T
		Increased Nuclear Capacity at Point Beach Nuclear Plant	U.S.	Electric Power G & T
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Overflow Bottomland Hardwood Forest Restoration Project.	U.S.	Carbon Sequestration
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Carbon Sequestration
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Carbon Sequestration
		Transmission & distribution system loss reductions	U.S.	Electric Power G & T
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Carbon Sequestration
		Vehicle conversion to dual fuel capability	U.S.	Transportation
		Western Oregon Carbon Sequestration Project	U.S.	Carbon Sequestration
Wisconsin Public Power Inc.	EIA-1605EZ	98 Energy Education	U.S.	Other
		99 Energy Education	U.S.	Other
		Boswell Heat Rate Reduction	U.S.	Electric Power G & T
		Commercial Industrial Farm Program	U.S.	Other
		Dispatch Change - Menasha	U.S.	Electric Power G & T
		Kaukauna CT I&C Upgrade	U.S.	Electric Power G & T
		Residential Appliances	U.S.	Energy End Use
		Street Lighting	U.S.	Energy End Use
		Tree Power 1991 Plantings (9 year olds)	U.S.	Carbon Sequestration
		Tree Power 1992 Plantings (8 year olds)	U.S.	Carbon Sequestration
		Tree Power 1993 Planting (7 year olds)	U.S.	Carbon Sequestration
		Tree Power 1994 Plantings (5 year olds)	U.S.	Carbon Sequestration
		Tree Power 1995 Plantings (5 year olds)	U.S.	Carbon Sequestration

Table B5. Emission Reduction Projects Reported by Entity, Data Year 1999

Reporter	Form Type	Project	Location	Project Type
		Tree Power 1996 Plantings (4 year olds)	U.S.	Carbon Sequestration
		Tree Power 1997 Planting (3 year olds)	U.S.	Carbon Sequestration
		Tree Power 1999 Plantings (one year olds)	U.S.	Carbon Sequestration
Wisconsin Public Service Corporation	EIA-1605	Afforestation and Reforestation Efforts	U.S.	Carbon Sequestration
		Demand Side Management Programs	U.S.	Energy End Use
		Transmission Line Construction	U.S.	Electric Power G & T
World Parks Endowment	EIA-1605	Bilsa Biological Reserve	Foreign	Carbon Sequestration
		Bladen Sanctuary	Foreign	Carbon Sequestration
		Sierra de las Minas Reserve	Foreign	Carbon Sequestration
Zahren Alternative Power Corporation	EIA-1605EZ	Barre	U.S.	Waste Methane
	EIA-1605EZ	Brickyard	U.S.	Waste Methane
	EIA-1605EZ	Burlington	U.S.	Waste Methane
	EIA-1605EZ	Dolton	U.S.	Waste Methane
	EIA-1605EZ	Onondaga	U.S.	Waste Methane
	EIA-1605EZ	Oyster Bay	U.S.	Waste Methane
	EIA-1605EZ	Romeoville	U.S.	Waste Methane
	EIA-1605EZ	Streator Flare	U.S.	Waste Methane
	EIA-1605EZ	122nd Street	U.S.	Waste Methane
	EIA-1605EZ	122nd Street Flare	U.S.	Waste Methane
	EIA-1605EZ	Amity	U.S.	Waste Methane
	EIA-1605EZ	Barre Flare	U.S.	Waste Methane
	EIA-1605EZ	Brickyard Flare	U.S.	Waste Methane
	EIA-1605EZ	Burlington Flare	U.S.	Waste Methane
	EIA-1605EZ	Cape May	U.S.	Waste Methane
	EIA-1605EZ	Cape May Flare	U.S.	Waste Methane
	EIA-1605EZ	Dixon	U.S.	Waste Methane
	EIA-1605EZ	Dixon Flare	U.S.	Waste Methane
	EIA-1605EZ	Dolton Flare	U.S.	Waste Methane
	EIA-1605EZ	Garland	U.S.	Waste Methane
	EIA-1605EZ	Hamm / Sussex	U.S.	Waste Methane
	EIA-1605EZ	Manchester	U.S.	Waste Methane
	EIA-1605EZ	Manchester Flare	U.S.	Waste Methane
	EIA-1605EZ	Marina	U.S.	Waste Methane
	EIA-1605EZ	Oceanside	U.S.	Waste Methane
	EIA-1605EZ	Oyster Bay Flare	U.S.	Waste Methane
	EIA-1605EZ	Romeoville Flare	U.S.	Waste Methane
	EIA-1605EZ	Roxanna	U.S.	Waste Methane
	EIA-1605EZ	Roxanna Flare	U.S.	Waste Methane
	EIA-1605EZ	SPSA	U.S.	Waste Methane
	EIA-1605EZ	SPSA Flare	U.S.	Waste Methane
	EIA-1605EZ	Smithtown	U.S.	Waste Methane
	EIA-1605EZ	Smithtown Flare	U.S.	Waste Methane
	EIA-1605EZ	Springfield	U.S.	Waste Methane
	EIA-1605EZ	Tucson	U.S.	Waste Methane
	EIA-1605EZ	Tucson Flare	U.S.	Waste Methane
	EIA-1605EZ	Upper Rock Flare	U.S.	Waste Methane
Zeeland Board of Public Works	EIA-1605EZ	General Transmission & Distribution	U.S.	Electric Power G & T
	EIA-1605EZ	Other Transmission and Distribution Improvements	U.S.	Electric Power G & T
	EIA-1605EZ	Urban Forestry	U.S.	Carbon Sequestration

Note: This table excludes confidential reporters.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Table B6. Projects Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
Electricity Generation, Transmission, and Distribution			
A&N Electric Cooperative	Transmission and Distribution Efficiency Improvements	EIA-1605	U.S.
Alabama Biomass Partners, Ltd	Biomass Waste to Energy	EIA-1605EZ	U.S.
Allegheny Energy, Inc.	Adjustable Speed Drives for PA Fans - Hatfield's Ferry P.S.	EIA-1605	U.S.
	Application of Capacitors	EIA-1605	U.S.
	Armstrong Boiler No. 1 Emissions Reduction Project	EIA-1605	U.S.
	Armstrong Boiler No. 2 Emissions Reduction Project	EIA-1605	U.S.
	Armstrong Unit 1 - Boiler Controls Replacement	EIA-1605	U.S.
	Armstrong Unit 2 - Boiler Controls Replacement	EIA-1605	U.S.
	Auxiliary Fuel Switching	EIA-1605	U.S.
	Conversion to Higher Voltage Distribution	EIA-1605	U.S.
	Economic Conductor Selection	EIA-1605	U.S.
	Efficient Distribution Transformers	EIA-1605	U.S.
	Energy Star Transformer Program	EIA-1605	U.S.
	Hatfield's Ferry Unit 1 - HP/IP Turbine Rotor Replacement	EIA-1605	U.S.
	Hatfield's Ferry Unit 1 - LP Turbine Rotor Replacement	EIA-1605	U.S.
	Hatfield's Ferry Unit 2 - HP/IP Turbine Rotor Replacement	EIA-1605	U.S.
	Hatfield's Ferry Unit 2 LP Turbine Rotor Replacement	EIA-1605	U.S.
	Hatfield's Ferry Unit 3 - LP Turbine Rotor Replacement	EIA-1605	U.S.
	Lake Lynn Hydro Electric Station Relicensing	EIA-1605	U.S.
	Performance Monitoring Systems	EIA-1605	U.S.
	Potomac Edison 138/500 kV System Split	EIA-1605	U.S.
	R. P. Smith Unit 4 - Boiler Controls Replacement	EIA-1605	U.S.
	Replace Small Primary Conductors	EIA-1605	U.S.
	Rivesville Unit 6 - High Pressure Turbine Rotor Replacement	EIA-1605	U.S.
	Rivesville Unit No. 6 - Boiler Controls Replacement	EIA-1605	U.S.
	Small Hydroelectric Station Relicensing	EIA-1605	U.S.
	Willow Island Unit 1- Low Pressure Turbine Rotor Replacement	EIA-1605	U.S.
	Willow Island Unit 2 Boiler Controls Replacement	EIA-1605	U.S.
	Wire Replacement on Transmission Lines	EIA-1605	U.S.
Alliant Energy	Columbia 1 turbine blade Efficiency improvements	EIA-1605	U.S.
	Columbia 1&2 Excess Air Efficiency improvements	EIA-1605	U.S.
	Columbia 2 economizer Efficiency improvements	EIA-1605	U.S.
	Columbia 2 turbine blade Heat rate improvement	EIA-1605	U.S.
	Edge 5 Excess Air Efficiency improvements	EIA-1605	U.S.
	Fuel Switching	EIA-1605	U.S.
	Minergy Waste Generation	EIA-1605	U.S.
	Tire Derived Fuel Generation	EIA-1605	U.S.
	Transmission line improvements	EIA-1605	U.S.
	Wind Power	EIA-1605	U.S.
Ameren Corporation (formerly UE and CIPS)	Conversion to a dry flyash handling system.	EIA-1605	U.S.
	Increased Nuclear generation	EIA-1605	U.S.
	Install adjustable speed fan drives replacing fixed speed	EIA-1605	U.S.
	Meramec Power Plant Control Upgrade	EIA-1605	U.S.
	Replaced motor-generator exciters with static exciter system	EIA-1605	U.S.
	Sioux Plant Control Upgrade	EIA-1605	U.S.
	Subtransmission Reconductoring	EIA-1605	U.S.
	Transformer Replacement	EIA-1605	U.S.
	Waste Oil Heat Recovery	EIA-1605	U.S.
American Electric Power, Inc.	AEP Hydroelectric Facility Improvements	EIA-1605	U.S.
	Distribution System Equipment Improvements	EIA-1605	U.S.

Table B6. Projects Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
	Fuel Switch Coal to Natural Gas (Conesville Unit 1-3)	EIA-1605	U.S.
	Heat Rate Improvement (Due to improved load optimization)	EIA-1605	U.S.
	Heat Rate Improvement Projects (Oper. and Equip. Changes)	EIA-1605	U.S.
	Nuclear Plant Improved Utilization	EIA-1605	U.S.
	Open-Loop Transmission Groundwire Resistive Loss Reduction	EIA-1605	U.S.
	Transmission System Reinforcements	EIA-1605	U.S.
American Municipal Power - Ohio	AMP-OHIO: NYPA Hydro Purchases	EIA-1605	U.S.
	City of Columbus: O'Shaughnessy Hydro	EIA-1605	U.S.
	City of Hamilton Hydro Electric Plant	EIA-1605	U.S.
	City of Hamilton: Greenup Hydro	EIA-1605	U.S.
	City of Painesville: Heat Rate Improvement	EIA-1605	U.S.
	City of Piqua: Plant Derating	EIA-1605	U.S.
	Line Loss Reduction	EIA-1605	U.S.
	Newton Falls Reconductoring Project	EIA-1605	U.S.
	OMEGA JV5 Belleville Hydro Plant	EIA-1605	U.S.
	Wadsworth Distribution Upgrade	EIA-1605	U.S.
Anoka Municipal Utility	Wind Generation	EIA-1605EZ	U.S.
Atlantic Energy, Inc. (AEI)	Deepwater Natural Gas Usage	EIA-1605	U.S.
	Peach Bottom Nuclear Units #2 & 3 Uprate Program	EIA-1605	U.S.
Austin Energy	General Transmission/Distribution Efficiency Improvements	EIA-1605EZ	U.S.
	Landfill Gas Generation (Power Purchase)	EIA-1605EZ	U.S.
	Photovoltaic Generation	EIA-1605EZ	U.S.
	South Texas Project	EIA-1605EZ	U.S.
	West Texas Wind Turbine Power Purchase	EIA-1605EZ	U.S.
BARC Electric Cooperative	System Line Conversions and Reconductoring	EIA-1605	U.S.
Baltimore Gas & Electric Co.	Baltimore RESCO Waste-to-Energy MWh Purchases	EIA-1605	U.S.
	Brandon Shores Generating Station Heat Rate Improvement	EIA-1605	U.S.
	C.P. Crane Generating Station Heat Rate Improvements	EIA-1605	U.S.
	Calvert Cliffs Nuclear Power Plant Generation Increases	EIA-1605	U.S.
	H.A. Wagner Generating Station Heat Rate Improvements	EIA-1605	U.S.
	Hydroelectric Generation Improvements	EIA-1605	U.S.
	Transmission / Distribution Improvements	EIA-1605	U.S.
Biomass Partners, LP	Biomass Waste to Energy	EIA-1605EZ	U.S.
Bountiful City Light & Power	Air fuel ratio controller installed in dual fuel engine	EIA-1605	U.S.
	Capacitor bank installation - increasing system efficiency	EIA-1605	U.S.
	Hydroelectric plant operations	EIA-1605	U.S.
CMS Energy	Hydro-Electric Relicensing (Consumers)	EIA-1605	U.S.
	Increased Nuclear Availability (Consumers)	EIA-1605	U.S.
	Karn 4 Fuel Switch (Consumers)	EIA-1605	U.S.
	Toledo Power Efficiency Improvements	EIA-1605	Foreign
Carolina Power & Light Company	Nuclear Capacity Improvement	EIA-1605	U.S.
Cedar Falls Utilities	Council Bluffs #3 ESP Hot-Side Conversion	EIA-1605	U.S.
	High-Efficiency Distribution Transformers	EIA-1605	U.S.
	Neal 4 Hot-Side ESP Conversion	EIA-1605	U.S.
	Streeter Air-Cooled Condenser (ACC)	EIA-1605	U.S.
	Streeter Unit 6 Controls Upgrade	EIA-1605	U.S.
	Streeter Unit 6 Fuel-Switching Project	EIA-1605	U.S.
	Windfarm	EIA-1605	U.S.
Central Hudson Gas & Electric Corporation	Danskammer Heat Pipe Air Heater	EIA-1605	U.S.
	Danskammer Unit 4 Main Step-Up Transformer Replacement	EIA-1605	U.S.

Table B6. Projects Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
	Roseton Gas Co-Firing	EIA-1605	U.S.
	Roseton Unit 2 Main Step-Up Transformer Replacement	EIA-1605	U.S.
Central and South West Corporation	ClearChoice(sm) CSW Green Pricing Initiative	EIA-1605	U.S.
	Renewable Generation - Solar	EIA-1605	U.S.
	Renewable Generation - Wind	EIA-1605	U.S.
	Southwest Mesa Wind Farm	EIA-1605	U.S.
	Transmission Efficiency Improvements	EIA-1605	U.S.
	Watts on Schools	EIA-1605	U.S.
Choptank Electric Cooperative	System Line Conversions and Reconductoring	EIA-1605	U.S.
City Utilities of Springfield	HEAT RATE IMPROVEMENTS - SWPS	EIA-1605	U.S.
	LOW SULFUR FUEL SWITCH - SWPS	EIA-1605	U.S.
City of Edmond, Oklahoma, Electric Department	High Efficiency Transformers	EIA-1605EZ	U.S.
Community Electric Cooperative	System Line Conversion and Reconductoring	EIA-1605	U.S.
DTE Energy/ Detroit Edison	Distribution Improvements	EIA-1605	U.S.
	Greenwood Energy Center Fuel Switching	EIA-1605	U.S.
	Increased Nuclear Utilization	EIA-1605	U.S.
	Plant Efficiency Improvements	EIA-1605	U.S.
	Solar Power	EIA-1605	U.S.
Delaware Electric Cooperative	System Line Conversions & Reconductoring	EIA-1605	U.S.
Delmarva Power	Edge Moor Fuel Substitution	EIA-1605	U.S.
	Hay Road Combined Cycle	EIA-1605	U.S.
	Peach Bottom Nuclear Units #2 & #3 Uprate Program	EIA-1605	U.S.
	T&D Loss Reduction	EIA-1605	U.S.
Delta Electric Power Association	High Efficiency Transformers	EIA-1605EZ	U.S.
	Load Control Interruptible Rate	EIA-1605EZ	U.S.
	Reconductoring	EIA-1605EZ	U.S.
Duke Energy Corporation	Increased Nuclear Generation at Catawba Nuclear Station	EIA-1605	U.S.
	Increased Nuclear Generation at McGuire Nuclear Station	EIA-1605	U.S.
	Increased Nuclear Generation at Oconee Nuclear Station	EIA-1605	U.S.
Dynegy Midwest Generation Inc.	Add Turbine Shell Heaters on Wood River 4	EIA-1605	U.S.
	Baldwin 2 Turbine H.E.L.P. Blades Installation	EIA-1605	U.S.
	Baldwin 3 Heat Rate Improvement	EIA-1605	U.S.
	Burn Waste Oil at Baldwin 3	EIA-1605	U.S.
	Cofire Plastic at Baldwin	EIA-1605	U.S.
	Combustion of used lubricating oil	EIA-1605	U.S.
	Convert Vermilion Units 1 And 2 To Natural Gas	EIA-1605	U.S.
	Fuel Switch To Natural Gas at Hennepin	EIA-1605	U.S.
	Fuel Switch To Natural Gas at Wood River	EIA-1605	U.S.
	Havana 6 Cooling Tower Upgrade	EIA-1605	U.S.
	Hennepin Gas Reburn Project	EIA-1605	U.S.
	Hennepin I Turbine Steam Path Upgrade	EIA-1605	U.S.
	Hennepin Orimulsion Reburn	EIA-1605	U.S.
	Improve Clinton Power Station Availability	EIA-1605	U.S.
	Install Natural Gas Fired Aux. Boiler at Havana	EIA-1605	U.S.
	New Boiler Controls at Hennepin	EIA-1605	U.S.
	Tire-Derived Fuel Cofiring at Baldwin	EIA-1605	U.S.
	Vermilion 1 Heat Rate Improvements	EIA-1605	U.S.
	Vermilion 2 Heat Rate Improvements	EIA-1605	U.S.
	Wood River 4 Turbine Rotor Replacement	EIA-1605	U.S.
Energy Management Partners, LP	Biomass Waste to Energy	EIA-1605EZ	U.S.
Entergy Services, Inc.	Grand Gulf Nuclear Station Turbine Upgrade	EIA-1605	U.S.
	Independence Unit 1 Feedwater Heater Replacement	EIA-1605	U.S.
	Lake Catherine Unit 4 Efficiency Improvement Project	EIA-1605	U.S.
	Lewis Creek Combustion Control	EIA-1605	U.S.

Table B6. Projects Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
	Little Gypsy Unit 3 #6LP Feedwater Heater Replacement	EIA-1605	U.S.
	Louisiana Station 1 Repowering and Unit Upgrade	EIA-1605	U.S.
	Michoud Unit 3 Efficiency Improvement Project	EIA-1605	U.S.
	Ninemile Turbine Retrofit	EIA-1605	U.S.
	Raise Nuclear Unit Targets on Annual Capacity Factor	EIA-1605	U.S.
	Sabine Unit Feedwater Heater Replacement	EIA-1605	U.S.
	Transmission and Distribution Efficiency	EIA-1605	U.S.
	Vidalia Hydroelectric Station	EIA-1605	U.S.
	White Bluff Unit 1 Feedwater Heater Replacement	EIA-1605	U.S.
	White Bluff Unit 2 Feedwater Heaters Replacement	EIA-1605	U.S.
	Willow Glen Unit 3 #2B Feedwater Heater Replacement	EIA-1605	U.S.
	Willow Glen Unit 5 Air Heater Replacement Project	EIA-1605	U.S.
	Willow Glen Unit 5 Kidney Trap Replacement	EIA-1605	U.S.
FirstEnergy Corporation	Fuel Switching	EIA-1605	U.S.
	Heat Rate Improvement	EIA-1605	U.S.
	Increased Generation at Davis-Besse Nuclear Power Station	EIA-1605	U.S.
	Increased Generation at Perry Nuclear Power Plant	EIA-1605	U.S.
GPU, Inc.	Biomass Co-firing R & D Program	EIA-1605	U.S.
	Front Street Generating Station Retirement	EIA-1605	U.S.
	Gilbert #3 Retirement	EIA-1605	U.S.
	Oyster Creek Capacity/Availability Improvement Program	EIA-1605	U.S.
	Photovoltaics Project-User Scale Applications-(USAPV)	EIA-1605	U.S.
	Sayreville Generating Station Retirements	EIA-1605	U.S.
	Seneca Pumped Storage Upgrade	EIA-1605	U.S.
	Shunt Capacitor Program	EIA-1605	U.S.
	T & D System Improvements	EIA-1605	U.S.
	TMI Capacity/Availability Improvement Program	EIA-1605	U.S.
	Transformer Loss Evaluation Program	EIA-1605	U.S.
	Werner #4 Retirement	EIA-1605	U.S.
	Williamsburg Generating Station Retirement	EIA-1605	U.S.
	Yards Creek Pumped Storage Upgrade	EIA-1605	U.S.
Golden Valley Electric Association, Inc	Startup of Wind Turbine	EIA-1605EZ	U.S.
	Use of Hydropower	EIA-1605EZ	U.S.
JEA	Fuel Switching - Natural Gas	EIA-1605EZ	U.S.
	Heat Rate Improvement	EIA-1605EZ	U.S.
	Power Factor Improvement	EIA-1605EZ	U.S.
Kansas City Power & Light Company	Improve heat rate	EIA-1605	U.S.
	New Transmission Line & Reconductoring	EIA-1605	U.S.
	Nuclear Unit Uprate	EIA-1605	U.S.
Los Angeles Department of Water and Power	Energy Efficient Transformers	EIA-1605	U.S.
	Fuel Switching (Fuel Oil #6 to Natural Gas)	EIA-1605	U.S.
	Solar Power	EIA-1605	U.S.
Lower Colorado River Authority	Hydroelectric Dam Modernization	EIA-1605	U.S.
	Neural-Network Technology	EIA-1605	U.S.
	Supply-Side Efficiency Improvements	EIA-1605	U.S.
	Wind Power Project	EIA-1605	U.S.
Mecklenburg Electric Cooperative	System Line Conversion and Reconductoring	EIA-1605	U.S.
Minnesota Power	Expanded Generation from Existing Hydro Electric Resources	EIA-1605	U.S.
	Heat Rate Improvements, Boswell Energy Center	EIA-1605	U.S.
	Mud Lake Substation - Reduced Transmission Losses	EIA-1605	U.S.
Moorhead Public Service	Wind Turbine Generator	EIA-1605EZ	U.S.
Nashville Electric Service	Distribution Voltage Upgrade	EIA-1605EZ	U.S.
	High-efficiency transformers	EIA-1605EZ	U.S.

Table B6. Projects Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
National Grid USA	Distribution Reconductoring	EIA-1605	U.S.
	Distribution Voltage Upgrade	EIA-1605	U.S.
	Photovoltaic	EIA-1605	U.S.
Nebraska Public Power District	1994-1996 Distribution Improvements	EIA-1605EZ	U.S.
	1994-1997 Transformer Changeouts	EIA-1605EZ	U.S.
	Nuclear Plant Improved Utilization	EIA-1605EZ	U.S.
	Plant Efficiency Improvements	EIA-1605EZ	U.S.
	SF6 Gas Circuit Breaker Leak Detection and Repair	EIA-1605EZ	U.S.
	Wind Turbines	EIA-1605EZ	U.S.
NiSource/NIPSCO	Biomass Initiative	EIA-1605	U.S.
	Capacitor Additions	EIA-1605	U.S.
	Low Loss Transformers	EIA-1605	U.S.
Niagara Mohawk Power Corporation	Amorphous Metal Core Transformers	EIA-1605	U.S.
	Cowley Ridge Windplant	EIA-1605	Foreign
	Installation and Operation of Photovoltaic Energy Systems	EIA-1605	U.S.
	Installation and Operation of Wind Turbines	EIA-1605	U.S.
	Nuclear Generation Capacity Improvements	EIA-1605	U.S.
	Nuclear Generation Performance Improvements	EIA-1605	U.S.
	Partial Conversion of Oil-Fired Plant to Natural Gas	EIA-1605	U.S.
North American Carbon, Inc.	Glendale Hydroelectric Project	EIA-1605	U.S.
	Lower Saranac Hydroelectric Project	EIA-1605	U.S.
	Star Lake Hydroelectric Project	EIA-1605	Foreign
North Carolina Biomass Partners	Biomass Waste to Energy	EIA-1605EZ	U.S.
North Carolina Electric Membership Corporation	Switch Away from Fossil Fuel Generated Power Purchases	EIA-1605EZ	U.S.
Northern Neck Electric Cooperative	System Line Conversion and Reconductoring	EIA-1605	U.S.
Northern States Power Company	Chippewa Falls Hydro expansion	EIA-1605	U.S.
	Landfill Gas Purchase	EIA-1605	U.S.
	Nuclear Capacity Increase - Rerated	EIA-1605	U.S.
	Nuclear Capacity Increase-3	EIA-1605	U.S.
	Nuclear capacity increase	EIA-1605	U.S.
	Nuclear capacity increase-2	EIA-1605	U.S.
	Nuclear capacity restoration	EIA-1605	U.S.
	Sioux Falls area transmission upgrades	EIA-1605	U.S.
	Transmission upgrade	EIA-1605	U.S.
	Transmission upgrade-2	EIA-1605	U.S.
	Upgrade for hydro capacity	EIA-1605	U.S.
	Wheaton Plant conversion	EIA-1605	U.S.
	Wind power	EIA-1605	U.S.
Northern Virginia Electric Cooperative	System Line Conversions and Reconductoring	EIA-1605	U.S.
Oak Creek Energy Systems Inc.	OCES 0a, OCES 1, OCES 2, OCES 2a	EIA-1605	U.S.
Omaha Public Power District	Coal Heat Rate Improvement	EIA-1605EZ	U.S.
	Nuclear Capacity Factor Improvement	EIA-1605EZ	U.S.
	T&D Capacitor Installations	EIA-1605EZ	U.S.
PECO Energy Company	Overhaul of Conowingo Unit 10	EIA-1605	U.S.
	Overhaul of Conowingo Unit 5	EIA-1605	U.S.
	Overhaul of Conowingo Unit 8	EIA-1605	U.S.
	Overhaul of Conowingo Unit 9	EIA-1605	U.S.
	Overhaul of Muddy Run Units 1-4	EIA-1605	U.S.
	Overhaul of Muddy Run Units 5-8	EIA-1605	U.S.
	Rerate of Peach Bottom Unit 2	EIA-1605	U.S.
	Rerate of Limerick Unit 1	EIA-1605	U.S.
	Rerate of Limerick Unit 2	EIA-1605	U.S.
	Rerate of Peach Bottom Unit 3	EIA-1605	U.S.

Table B6. Projects Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
PG&E Corporation	Brayton Point Station Unit No. 4 Gas Conversion	EIA-1605	U.S.
	Brayton Point Station Units No. 1, 2, 3 Natural Gas Usage	EIA-1605	U.S.
	Manchester Street Repowering	EIA-1605	U.S.
	Natural Gas Substitution for Residual Oil	EIA-1605	U.S.
	Power Purchases from Natural Gas Generation	EIA-1605	U.S.
PPL CORPORATION	Fossil Plant Efficiency	EIA-1605	U.S.
	Harrisburg (AWWTP) - Electricity Purchases	EIA-1605	U.S.
	Holtwood SES Closing	EIA-1605	U.S.
	Keener Enterprises - Electricity Purchases	EIA-1605	U.S.
	Keystone Landfill - Electricity Purchases	EIA-1605	U.S.
	Lycoming Landfill - Electricity Purchases	EIA-1605	U.S.
	Martins Creek Gas	EIA-1605	U.S.
	Susquehanna SES Strategy 2000	EIA-1605	U.S.
	Susquehanna Steam Electric Station Re-Rate	EIA-1605	U.S.
	Taylor/Amity Landfill - Electricity Purchases	EIA-1605	U.S.
	Transformer Savings	EIA-1605	U.S.
Platte River Power Authority & 4 owner cities	Estes Park Low-Loss Transformers	EIA-1605	U.S.
	Fort Collins Distribution System Improvements	EIA-1605	U.S.
	Longmont Distribution System Improvements	EIA-1605	U.S.
	Longmont Hydro Project Upgrades	EIA-1605	U.S.
	Loveland Hydroelectric Plant	EIA-1605	U.S.
	PRPA Heat Rate Improvements at Craig Powerplant	EIA-1605	U.S.
	PRPA Photovoltaic Project	EIA-1605	U.S.
	PRPA Wind Power Project	EIA-1605	U.S.
Portland General Electric Co.	1995 Colstrip Units 3&4 Ruggedizing	EIA-1605	U.S.
	Beaver Efficiency Improvements	EIA-1605	U.S.
	Boardman Efficiency Improvements	EIA-1605	U.S.
	Building Rooftop Photovoltaic Systems	EIA-1605	U.S.
	Bull Run Turbine Runner Replacements	EIA-1605	U.S.
	Coyote Springs Efficiency Improvements	EIA-1605	U.S.
	Faraday Units 4&5 1994	EIA-1605	U.S.
	Oak Grove Turbine Runner Replacements - 1991 - Units 1&2	EIA-1605	U.S.
	River Mill Efficiency Improvements	EIA-1605	U.S.
	Sullivan turbine rebuilds	EIA-1605	U.S.
	T&D: Power Factor Correction Capacitors	EIA-1605	U.S.
	Transformer Efficiency Improvements	EIA-1605	U.S.
	Vansycle Ridge Wind Generation	EIA-1605	U.S.
Prince George Electric Cooperative	Transmission and Dist. Efficiency Improvements	EIA-1605	U.S.
Public Service Company of New Mexico	Heat Rate Improvements at San Juan Generating Station	EIA-1605	U.S.
	Palo Verde Generation Increase	EIA-1605	U.S.
Public Service Enterprise Group	Hydro Projects - United States	EIA-1605	U.S.
Public Utility District No. 1 of Snohomish County	Conservation Voltage Reduction	EIA-1605	U.S.
	Transmission Networking and Reconductoring	EIA-1605	U.S.
Rappahannock Electric Cooperative	System Line Conversions and Reconductoring	EIA-1605	U.S.
Reliant Energy - HL&P	GT PRIME	EIA-1605	U.S.
Sacramento Municipal Utility District	PV Pioneer	EIA-1605	U.S.
Salt River Project	Cooperative Photovoltaic Power Plant	EIA-1605EZ	U.S.
	Heat Rate Improvements	EIA-1605EZ	U.S.
	Palo Verde Nuclear Generating Station Capacity Increases	EIA-1605EZ	U.S.
Santee Cooper	Cross Unit 1 Turbine Retrofit	EIA-1605	U.S.
	Cross Unit 2 Retrofit	EIA-1605	U.S.
	Summer Nuclear Upgrade	EIA-1605	U.S.
	Winyah Unit 1 Turbine Retrofit	EIA-1605	U.S.

Table B6. Projects Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
	Winyah Unit 2 Turbine Retrofit	EIA-1605	U.S.
	Winyah Unit 3 Turbine Retrofit	EIA-1605	U.S.
SeaWest Windpower, Inc.	Altech III Wind Project Retrofits and Enhancements	EIA-1605	U.S.
	Foote Creek I Wind Power Project	EIA-1605	U.S.
	Foote Creek II Wind Power Project	EIA-1605	U.S.
	Foote Creek III Wind Power Project	EIA-1605	U.S.
	San Gorgonio Westwinds II Repower Project	EIA-1605	U.S.
Seattle City Light	4kV to 26kV Distribution System Conversion	EIA-1605	U.S.
	Cedar Falls turbine runner replacement	EIA-1605	U.S.
	Diablo Dam turbine runner replacement	EIA-1605	U.S.
	Gorge Dam turbine runner replacement	EIA-1605	U.S.
	Ross Dam turbine runner replacement	EIA-1605	U.S.
	South Fork Tolt River hydroelectric project	EIA-1605	U.S.
Seminole Electric Cooperative, Inc.	Heat Rate Improvement	EIA-1605EZ	U.S.
	Transmission Conductor Optimization	EIA-1605EZ	U.S.
Shenandoah Valley Electric Cooperative	System Line Conversions and Reconductoring	EIA-1605	U.S.
Shrewsbury Electric Light Plant	High Efficiency Transformer	EIA-1605EZ	U.S.
South Carolina Electric & Gas Company	Misc. Plant efficiency improvements	EIA-1605	U.S.
	Summer Nuclear Upgrade	EIA-1605	U.S.
	Wateree Station heat rate improvement	EIA-1605	U.S.
	Williams Station improvements	EIA-1605	U.S.
Southeastern Biomass Partners, LP	Biomass Waste to Energy	EIA-1605EZ	U.S.
Southern California Edison Co.	Mohave Power Project Heat Rate Improvement Program	EIA-1605	U.S.
	Renewable Energy Purchases - Biomass	EIA-1605	U.S.
	Renewable Energy Purchases - Geothermal	EIA-1605	U.S.
	Renewable Energy Purchases - Wind	EIA-1605	U.S.
Southern Company	Biomass	EIA-1605	U.S.
	Bulk Power Transmission Improvements	EIA-1605	U.S.
	Farley Nuclear Plant Availability Improvements	EIA-1605	U.S.
	Farley Nuclear Plant Uprate	EIA-1605	U.S.
	Gas Capability at Watson 4 and 5	EIA-1605	U.S.
	Gas Capability at Plant McDonough	EIA-1605	U.S.
	Gas Capability at Plant Yates	EIA-1605	U.S.
	Hatch Nuclear Plant Availability Improvements	EIA-1605	U.S.
	Hatch Nuclear Plant Capacity Uprate	EIA-1605	U.S.
	Heat Rate Improvement on Coal-Fired Capacity	EIA-1605	U.S.
	New Combustion Turbines	EIA-1605	U.S.
	Vogtle Electric Generating Plant (Nuclear) Capacity Uprate	EIA-1605	U.S.
	Vogtle Electric Generating Plant Availability Improvements	EIA-1605	U.S.
Southside Electric Cooperative	System Line Conversion and Reconductoring	EIA-1605	U.S.
Steuben Rural Electric Co-op	1994 Distribution Line Replacement	EIA-1605EZ	U.S.
	1995 Distribution Line Replacement	EIA-1605EZ	U.S.
	1996 Conductor Replacement	EIA-1605EZ	U.S.
	1997 Conductor Replacement	EIA-1605EZ	U.S.
TXU	Lignite and Western Coal Blending	EIA-1605	U.S.
	Operation of Nuclear Generation Units	EIA-1605	U.S.
	Power Plant Heat Rate Improvement Projects	EIA-1605	U.S.
	Renewable Energy Development Projects	EIA-1605	U.S.
Tacoma Public Utilities	Generator Improvement (Cushman/Nisqually)	EIA-1605EZ	U.S.
	Generator Improvement (Wynoochee)	EIA-1605EZ	U.S.
Tennessee Valley Authority	Heat Rate Improvements At TVA Coal Fired Generating Units	EIA-1605	U.S.
	Hydro Unit Modernization	EIA-1605	U.S.
	Return Browns Ferry Nuclear Units 2 and 3 to Service	EIA-1605	U.S.
	Start Watts Bar Nuclear Unit 1	EIA-1605	U.S.

Table B6. Projects Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
	Transmission System Efficiency Improvements	EIA-1605	U.S.
	Wood Waste Cofiring At Coal Fired Generating Plants	EIA-1605	U.S.
U.S. Department of Energy- Office of Solar	Photovoltaics on DOE facilities in the DC metropolitan area	EIA-1605	U.S.
UNICOM (Commonwealth Edison Company)	Collins Station 12345-Fuel Switch	EIA-1605	U.S.
	High Efficiency Transformers	EIA-1605	U.S.
	Solar Panels	EIA-1605	U.S.
	Windmill	EIA-1605	U.S.
Utah Municipal Power Agency	Geothermal Power	EIA-1605EZ	U.S.
	Low Loss Transformers	EIA-1605EZ	U.S.
	Wind Power	EIA-1605EZ	U.S.
Vermont Public Power Supply Authority	Swanton Village Hydro Expansion	EIA-1605	U.S.
	Transmission and Distribution System Efficiency Improvements	EIA-1605	U.S.
Waverly Light & Power Company	Distribution System Upgrade (Project 3)	EIA-1605	U.S.
	Hydro (Project 2)	EIA-1605	U.S.
	Low-Loss Transformers (Project 4)	EIA-1605	U.S.
	Wind Turbine (Project 1)	EIA-1605	U.S.
Western Resources, Inc.	Distribution Capacitor Additions	EIA-1605	U.S.
	GEV1 Feedwater Heater Upgrade	EIA-1605	U.S.
	GEV2 Feedwater Controls Upgrade	EIA-1605	U.S.
	GEV2 Feedwater Heater Upgrade	EIA-1605	U.S.
	HEC4 Cooling Tower Upgrade	EIA-1605	U.S.
	JEC1 Boiler Controls Upgrade	EIA-1605	U.S.
	JEC1 On-Line Performance Monitoring	EIA-1605	U.S.
	JEC1 Precipitator Intermittent Energization	EIA-1605	U.S.
	JEC1 Seal Steam Recovery	EIA-1605	U.S.
	JEC1 Superheater Replacement	EIA-1605	U.S.
	JEC1 Turbine Upgrade	EIA-1605	U.S.
	JEC2 Boiler Controls Upgrade	EIA-1605	U.S.
	JEC2 On-Line Performance Monitoring	EIA-1605	U.S.
	JEC2 Precipitator Intermittent Energization	EIA-1605	U.S.
	JEC2 Seal Steam Recovery	EIA-1605	U.S.
	JEC2 Superheater Replacement	EIA-1605	U.S.
	JEC2 Turbine Upgrade	EIA-1605	U.S.
	JEC3 Boiler Controls Upgrade	EIA-1605	U.S.
	JEC3 Boiler/Turbine Controls Upgrade	EIA-1605	U.S.
	JEC3 On-Line Performance Monitoring	EIA-1605	U.S.
	JEC3 Precipitator Intermittent Energization	EIA-1605	U.S.
	JEC3 Seal Steam Recovery	EIA-1605	U.S.
	JEC3 Superheater Replacement	EIA-1605	U.S.
	JEC3 Turbine Upgrade	EIA-1605	U.S.
	LAC2 Turbine Upgrade	EIA-1605	U.S.
	LEC4 Controls Upgrade	EIA-1605	U.S.
	LEC5 Circ Water Crosstie	EIA-1605	U.S.
	LEC5 Controls Upgrade	EIA-1605	U.S.
	LEC5 Replace Flyash Evaporator	EIA-1605	U.S.
	LEC5 Sliding Pressure Operation	EIA-1605	U.S.
	LEC5 Turbine Seals	EIA-1605	U.S.
	LEC5 Upgrades	EIA-1605	U.S.
	Photovoltaic Installations	EIA-1605	U.S.
	TEC7 On-Line Performance Monitoring	EIA-1605	U.S.
	TEC7 Precipitator Intermittent Energization	EIA-1605	U.S.
	TEC8 Condenser Upgrade	EIA-1605	U.S.
	TEC8 Precipitator Intermittent Energization	EIA-1605	U.S.

Table B6. Projects Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
	Transformer Replacements	EIA-1605	U.S.
	Westar Wind Turbines	EIA-1605	U.S.
	Wolf Creek Increased Capacity Rating	EIA-1605	U.S.
	Wolf Creek Turbine Modifications	EIA-1605	U.S.
Wisconsin Electric Power Co.	Energy for Tomorrow(TM) Renewable Energy Program	EIA-1605	U.S.
	Fossil plant heat rate improvements	EIA-1605	U.S.
	Hydro plant improvements and additions	EIA-1605	U.S.
	Increased Nuclear Capacity at Point Beach Nuclear Plant	EIA-1605	U.S.
	Transmission & distribution system loss reductions	EIA-1605	U.S.
Wisconsin Public Power Inc.	Boswell Heat Rate Reduction	EIA-1605EZ	U.S.
	Dispatch Change - Menasha	EIA-1605EZ	U.S.
	Kaukauna CT I&C Upgrade	EIA-1605EZ	U.S.
	Transmission Line Construction	EIA-1605	U.S.
Zeeland Board of Public Works	General Transmission & Distribution	EIA-1605EZ	U.S.
	Other Transmission and Distribution Improvements	EIA-1605EZ	U.S.
Cogeneration			
Atlantic Energy, Inc. (AEI)	AGI - Pedricktown Cogeneration Limited Partnership	EIA-1605	U.S.
	AGI - Vineland Cogeneration Facility	EIA-1605	U.S.
Bountiful City Light & Power	District heating	EIA-1605	U.S.
GPU, Inc..	Homer City Greenhouse Project	EIA-1605	U.S.
	JCP&L Fuel Cell-Crawford Hill	EIA-1605	U.S.
NiSource/NIPSCO	Fuel Switching at Bynov Plant in Decin, Czech Republic	EIA-1605	Foreign
	Inland Steel -Northlake Energy	EIA-1605	U.S.
	Ispat/Inland - Cokenergy	EIA-1605	U.S.
	National Steel- Portside Energy	EIA-1605	U.S.
	US Steel - Lakeside Energy	EIA-1605	U.S.
PECO Energy Company	Grays Ferry Cogeneration and Waste Heat Recovery	EIA-1605	U.S.
PEI Power Corp	PEI Power	EIA-1605	U.S.
Reliant Energy - HL&P	San Jacinto Steam Electric Generating Station	EIA-1605	U.S.
Southern Company	Chevron Cogenerating Plant - Unit 5	EIA-1605	U.S.
	Washington County Cogeneration Plant	EIA-1605	U.S.
UNICOM (Commonwealth Edison Company)	Fuel Switching at Bynov Plant in Decin, Czech Republic	EIA-1605	Foreign
Wisconsin Electric Power Co.	Fuel switching at Bynov Plant in Decin, Czech Republic	EIA-1605	Foreign
Energy End Use			
A&N Electric Cooperative	Demand-side Management Load Control Program	EIA-1605	U.S.
AT&T	CHILLER REPLACEMENT PROJECT	EIA-1605	U.S.
Advanced Micro Devices, Inc.	Chiller Load Rebalance and Motor Replacement	EIA-1605EZ	U.S.
	Conference Room Motion Detectors	EIA-1605EZ	U.S.
	Cooling Tower VFDs	EIA-1605EZ	U.S.
	Dimming Circuits	EIA-1605EZ	U.S.
	HEPA Filter Air Flow Modifications	EIA-1605EZ	U.S.
	Lighting retrofit	EIA-1605EZ	U.S.
	Office Lighting Control Project	EIA-1605EZ	U.S.
	Reverse Osmosis Water Recycling Project	EIA-1605EZ	U.S.
	Temperature and Humidity Sensors	EIA-1605EZ	U.S.
	Water Treatment Degasifier Pump Replacement	EIA-1605EZ	U.S.
Allegheny Energy, Inc.	Adjustable Speed Drives-Plastic Injection Molding Machines	EIA-1605	U.S.
	Demand-Side Management Programs	EIA-1605	U.S.
	Green Lights Utility Ally Program	EIA-1605	U.S.
Allergan, Inc.	AMO Facility Closure	EIA-1605	U.S.
	Air Compressor System Upgrade	EIA-1605	U.S.
	Allergan Brazil Building Management System Installation	EIA-1605	Foreign
	Allergan Facility Divestiture	EIA-1605	U.S.
	Allergan Italy Facility Closure	EIA-1605	Foreign

Table B6. Projects Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
	Allergan LOK Brazil Operation Consolidation	EIA-1605	Foreign
	Allergan Medical Plastics Energy Management System Upgrade	EIA-1605	U.S.
	Compressed Air Leak Repair	EIA-1605	Foreign
	Curtail Weekend Energy Usage	EIA-1605	Foreign
	Direct Expansion Cooler Unit Redesign	EIA-1605	U.S.
	Elimination of Catalytic Thermal Oxidizer	EIA-1605	U.S.
	Insulate Process Lines	EIA-1605	Foreign
	Lighting Retrofits and Upgrades	EIA-1605	U.S.
	Reduction in Operating Time for Blowmolding Equipment	EIA-1605	Foreign
	Replace Mercury Vapor Lamps with Fluorescent Lamps	EIA-1605	Foreign
Alliant Energy	Energy End Use - Electric IES	EIA-1605	U.S.
	Energy End Use - Electric IPC	EIA-1605	U.S.
	Energy End Use - Gas IES	EIA-1605	U.S.
	Energy End Use - Gas IPC	EIA-1605	U.S.
	Energy end use projects-Electric	EIA-1605	U.S.
	Energy end use-Gas	EIA-1605	U.S.
	Urban Forestry IES	EIA-1605	U.S.
	Urban Forestry IPC	EIA-1605	U.S.
	WP&L Green Lights Projects	EIA-1605	U.S.
Ameren Corporation (formerly UE and CIPS)	Demand Side Management Projects	EIA-1605	U.S.
	EnviroTech Fund - Foreign	EIA-1605	Foreign
	EnviroTech Fund - US	EIA-1605	U.S.
	Meramec Power Plant Lighting Upgrade	EIA-1605	U.S.
	Street Light Conversion	EIA-1605	U.S.
American Electric Power, Inc.	Commercial/Industrial Demand Side Management Programs	EIA-1605	U.S.
	Green Lights	EIA-1605	U.S.
	Residential Demand Side Management Programs	EIA-1605	U.S.
American Municipal Power - Ohio	City of Bowling Green Lighting Improvement	EIA-1605	U.S.
	City of Niles: Lighting Improvement	EIA-1605	U.S.
	City of Shelby: Lighting Improvement	EIA-1605	U.S.
	City of St. Clairsville: Lighting Improvement	EIA-1605	U.S.
	City of Wadsworth: Lighting Improvement	EIA-1605	U.S.
	Ohio City: Lighting Improvement	EIA-1605	U.S.
	Village of Arcadia Lighting Upgrade	EIA-1605	U.S.
	Village of Custar: Lighting Improvement	EIA-1605	U.S.
	Village of Eldorado: Lighting Improvement	EIA-1605	U.S.
	Village of Lucas: Lighting Improvement	EIA-1605	U.S.
	Village of New Knoxville: Lighting Improvement	EIA-1605	U.S.
	Water Furnace	EIA-1605	U.S.
Anoka Municipal Utility	Central A/C Replacement	EIA-1605EZ	U.S.
	Demand Management	EIA-1605EZ	U.S.
Arizona Electric Power Cooperative, Inc.	Lighting & Exit Sign Replacement	EIA-1605EZ	U.S.
Arizona Portland Cement Co.	Bulk Load Bin Filling	EIA-1605	U.S.
	CM7 High Efficiency Separator	EIA-1605	U.S.
	D3 Finish Grind System Improvements	EIA-1605	U.S.
	Lighting Program	EIA-1605	U.S.
	Optimize AC Raw Mill Systems	EIA-1605	U.S.
	Optimize Compressed Air System	EIA-1605	U.S.
	PGNA Analyzer	EIA-1605	U.S.
	Rimod 3000	EIA-1605	U.S.
	Upgrade the D2 Raw Mill System	EIA-1605	U.S.
Arthur Rypinski & Jacquelyn Porth.	Compact Fluorescent Lightbulbs	EIA-1605	U.S.
	High Efficiency Central Air Conditioning System	EIA-1605	U.S.

Table B6. Projects Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
	High Efficiency Water Heater	EIA-1605	U.S.
	Super Efficient Refrigerator	EIA-1605	U.S.
Austin Energy	Demand Side Management Programs	EIA-1605EZ	U.S.
Avista Utilities	Customer Energy Efficiency	EIA-1605	U.S.
BARC Electric Cooperative	Demand-Side Management Load Control Programs	EIA-1605	U.S.
Baltimore Gas & Electric Co.	Brandon Shores Station Auxiliary-Load Reductions	EIA-1605	U.S.
	Demand Side Management Programs	EIA-1605	U.S.
	Energy Star Buildings/Green Lights Program Participation	EIA-1605	U.S.
Bountiful City Light & Power	Residential compact fluorescent lighting program	EIA-1605	U.S.
	Street lighting replacement	EIA-1605	U.S.
CLE Resources	Active Power	EIA-1605	U.S.
	Electronic Lighting (OK Industries)	EIA-1605	U.S.
	Industrial Devices Corporation (IDC)	EIA-1605	U.S.
	Lightware	EIA-1605	U.S.
	Revolve Technologies - Magnetic Bearings	EIA-1605	U.S.
Calaveras Cement Company	Project 1. Plant Modernization	EIA-1605	U.S.
California Portland Cement Co. - Colton Plant.	Energy Conservation in Office, Lab, Garage and Shop Areas	EIA-1605	U.S.
	Finish Mill System Optimization	EIA-1605	U.S.
	Install New Gravity Blend Homogenizing Silo	EIA-1605	U.S.
	Install New Raw Material Transport System	EIA-1605	U.S.
	Kiln Systems Optimization	EIA-1605	U.S.
	Optimize High Pressure Air System	EIA-1605	U.S.
	Raw Grinding System Improvements	EIA-1605	U.S.
	Reduce Plant Water Consumption	EIA-1605	U.S.
California Portland Cement Co. - Mojave Plant	New D3-1/FM6 Finish Mill System	EIA-1605	U.S.
	Optimize the D3-1 Finish Mill System	EIA-1605	U.S.
	Plant High Pressure Air System Improvements	EIA-1605	U.S.
	Pyro System Optimization	EIA-1605	U.S.
	Raw Mill Energy Efficiency Improvements	EIA-1605	U.S.
Cedar Falls Utilities	Cooling Effect of Trees	EIA-1605	U.S.
	Good Cents Improved Home	EIA-1605	U.S.
	Good Cents New Home	EIA-1605	U.S.
	Home Energy Survey	EIA-1605	U.S.
	Small Commercial High-Efficiency Lighting	EIA-1605	U.S.
	Streetlight Conversion	EIA-1605	U.S.
	Water Heater Retrofits	EIA-1605	U.S.
Central Hudson Gas & Electric Corporation	Demand-Side Management	EIA-1605	U.S.
Central and South West Corporation	Demand Side Management (DSM) Activities	EIA-1605	U.S.
City of Edmond, Oklahoma, Electric Department	High Efficiency Heat Pumps	EIA-1605EZ	U.S.
City of Palo Alto	DSM - Industrial Comprehensive Audit Program '99	EIA-1605EZ	U.S.
	DSM - Residential Appliances '99	EIA-1605EZ	U.S.
	DSM-Commercial AC, motor	EIA-1605EZ	U.S.
	DSM-Commercial Lighting	EIA-1605EZ	U.S.
	DSM-Refrigerator Replacement	EIA-1605EZ	U.S.
	DSM-Residential CFL	EIA-1605EZ	U.S.
	Utility Street Light conversion	EIA-1605EZ	U.S.
Clairol	Closed Chilled Water Loop	EIA-1605	U.S.
	Convert Mercury Vapor Lights to High Press. Sodium Lights	EIA-1605	U.S.
	Converted Exter. Incand. Lights to High Press. Sodium Lights	EIA-1605	U.S.
	Initiated Compressed Air Leak Prevention Program	EIA-1605	U.S.
	Install T8 Fluorescent Lamps and Electronic Ballasts	EIA-1605	U.S.

Table B6. Projects Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
	Installed 3 High Volume Production Lines in Warehouse Area	EIA-1605	U.S.
	Installed LED Exit Signs	EIA-1605	U.S.
	Installed Variable Frequency Drives on Air Handler Motors	EIA-1605	U.S.
	Optimize Compressed Air Production	EIA-1605	U.S.
	Reduced Compressor Air Intake Temperature	EIA-1605	U.S.
	Replace Incand. Lamps with Compact Fluorescent Lamps	EIA-1605	U.S.
	Replaced Selected Air Handler Motors	EIA-1605	U.S.
Columbia Falls Aluminum Company LLC	Lighting Replacement	EIA-1605	U.S.
DTE Energy/ Detroit Edison	Energy Partnerships	EIA-1605	U.S.
	Geothermal Projects	EIA-1605	U.S.
Delmarva Power	DP&L Facility Energy Saving	EIA-1605	U.S.
	Demand Side Management	EIA-1605	U.S.
Delta Electric Power Association	MV conversion to HPS Lamps	EIA-1605EZ	U.S.
	Off Peak Pumping and Aeration	EIA-1605EZ	U.S.
Entergy Services, Inc.	Entergy Integrated Solutions, Inc. (Entergy SASI Lighting)	EIA-1605	U.S.
	Texas Eastern Gas Compressor Replacement	EIA-1605	U.S.
Essroc Cement Corp. - Bessemer, PA Plant	Project 2. Photohelics on Dust Collectors.	EIA-1605	U.S.
	Project 3. Kiln Chain Improvement	EIA-1605	U.S.
	Project 4. Kiln Alignment - #5. Reduction of Power usage	EIA-1605	U.S.
	Project 5. Power Meters for power management	EIA-1605	U.S.
	Project 8. Tire Derived Fuel	EIA-1605	U.S.
Essroc Cement Corp. - Frederick, MD Plant	Project 1. Clinker Cooler Drag Chain Enclosure	EIA-1605	U.S.
	Project 2. CKD Dust Scoops	EIA-1605	U.S.
Essroc Cement Corp. - Logansport, IN Plant	Project 1. ID Fan Conversion to VFD	EIA-1605	U.S.
	Project 2. Variable Frequency Pumps	EIA-1605	U.S.
	Project 3. Variable Frequency Fans	EIA-1605	U.S.
	Project 4. Semi Direct Coal Firing System	EIA-1605	U.S.
Essroc Cement Corp. - PA Operations	Project 5. Power Management System	EIA-1605	U.S.
	Project 6. Preheater thimbles	EIA-1605	U.S.
	Project 9. IKN Grate-Clinker Cooler	EIA-1605	U.S.
Essroc Cement Corp. - San Juan, PR Plant	Project 4. Roller Mill Water Injection	EIA-1605	U.S.
	Project 7. Finish Mill Automation Control	EIA-1605	U.S.
Essroc Cement Corp. - Speed, IN Plant	Project 1. Fuel Consumption Reduction Projects for Kiln #2.	EIA-1605	U.S.
	Project 10. Finish Mill Improvements	EIA-1605	U.S.
	Project 2. Roller Mill Duct	EIA-1605	U.S.
	Project 3. Power Management	EIA-1605	U.S.
	Project 4. Roller Press Installation	EIA-1605	U.S.
	Project 5. #1 Kiln Feed and Discharge End Seal Replacement	EIA-1605	U.S.
	Project 6. Roller Mill Improvements	EIA-1605	U.S.
	Project 7. Cooler Vent, kiln feed aeration, gas analyzer, sp	EIA-1605	U.S.
	Project 8. No. 2-6 Cooler Fan Replacement	EIA-1605	U.S.
Estee Lauder Companies	Occupancy Sensors	EIA-1605	U.S.
	Octron Lighting	EIA-1605	U.S.
FirstEnergy Corporation	Audit/Infiltration Single and Multi-Family	EIA-1605	U.S.
	Efficient Lighting (Industrial and Commercial)	EIA-1605	U.S.
	Efficient Lighting (Residential)	EIA-1605	U.S.
	Efficient Motors	EIA-1605	U.S.
	Energy Efficient Geothermal System	EIA-1605	U.S.
	Energy Star	EIA-1605	U.S.
	Food Service Conservation	EIA-1605	U.S.
	Good Cents New Home Program	EIA-1605	U.S.
	Heat Pump Maintenance Check	EIA-1605	U.S.

Table B6. Projects Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
	High Efficiency Heat Pump Rebates	EIA-1605	U.S.
	Hot Water Conservation	EIA-1605	U.S.
	Refrigerator Recycling Program	EIA-1605	U.S.
	Thermal Energy Storage - Cooling	EIA-1605	U.S.
	Water Heater Efficiency Improvements	EIA-1605	U.S.
	Water Heating - Conservation	EIA-1605	U.S.
GPU, Inc..	Building Energy Consumption Reduction Program	EIA-1605	U.S.
	GPU Service Lighting & Building Energy Efficiency Project	EIA-1605	U.S.
	Genco Lighting & Building Energy Consumption Reduction Progr	EIA-1605	U.S.
	Information Services - Green Computers	EIA-1605	U.S.
	JCP & L Green Lights Program	EIA-1605	U.S.
	JCP&L DSM, Efficiency & Electrotechnology Program	EIA-1605	U.S.
	Met-Ed Lighting & Building Energy Consumption Reduction Prog	EIA-1605	U.S.
	Met-Ed/Penelec DSM, Efficiency & Electrotechnology Program	EIA-1605	U.S.
General Motors Corporation	1991-1999 GM Annual Energy Competition & Projects	EIA-1605	U.S.
	1991-1999 Powerhouse Conversions	EIA-1605	U.S.
	1993 - 1997 Mich. Demand Side Mgt and Energy Partner Program	EIA-1605	U.S.
Gilead Sciences	Exit Light Fixture Replacement	EIA-1605EZ	U.S.
	Lighting Replacement	EIA-1605EZ	U.S.
Golden Valley Electric Association, Inc	Energy Sense DSM Program	EIA-1605EZ	U.S.
Hawaiian Electric Company, Inc.	Commercial & Industrial Custom Rebate Program	EIA-1605	U.S.
	Commercial & Industrial Energy Efficiency Program	EIA-1605	U.S.
	Commercial & Industrial New Construction Program	EIA-1605	U.S.
	Residential Eff. Water Heating Program (Existing Customers)	EIA-1605	U.S.
	Residential Efficient Water Heating (New Construction)	EIA-1605	U.S.
	Showerhead Distribution	EIA-1605	U.S.
Johnson & Johnson	Building Shell	EIA-1605	U.S.
	Equipment and Appliances	EIA-1605	U.S.
	Fuel Switching	EIA-1605	U.S.
	HVAC	EIA-1605	U.S.
	Installation of Energy Efficient Systems	EIA-1605	U.S.
	Installation of Timer Controls and Shutdowns	EIA-1605	U.S.
	Lighting & Lighting Control	EIA-1605	U.S.
	Load Control	EIA-1605	U.S.
	Motor & Motor Drives	EIA-1605	U.S.
	Process Improvements	EIA-1605	U.S.
Kansas City Power & Light Company	DSM - AC upgrade	EIA-1605	U.S.
	EPA's Green Lights	EIA-1605	U.S.
	Street Light Upgrade	EIA-1605	U.S.
Lehigh Portland Cement Company	Project 1: Plant Shutdown	EIA-1605	U.S.
	Project 2: Waste Tire Burning	EIA-1605	U.S.
	Project 3: Waste Tire Burning	EIA-1605	U.S.
	Project 4: Plant Modernization	EIA-1605	U.S.
	Project 5: Lighting retrofit	EIA-1605	U.S.
	Project 6: Motor retrofit	EIA-1605	U.S.
Los Angeles Department of Water and Power.	Cool Schools Urban Forestry - Energy Efficiency Effects	EIA-1605	U.S.
	GOB Lighting Retrofit	EIA-1605	U.S.
	HVAC Program	EIA-1605	U.S.
	High Efficiency Clothes Washers	EIA-1605	U.S.
	Lighting Program - Small Commercial	EIA-1605	U.S.

Table B6. Projects Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
	NBRS Program	EIA-1605	U.S.
	Refrigeration Tune-Up Program	EIA-1605	U.S.
	Refrigerator Replacement Program	EIA-1605	U.S.
Lower Colorado River Authority	Residential & Commercial DSM Program	EIA-1605	U.S.
Minnesota Power	Demand Side Mgmt., Conservation and Efficiency Improvements	EIA-1605	U.S.
	Expanded Use of Renewable Biomass (wood waste)	EIA-1605	U.S.
Moorhead Public Service	Custom Rebate for Moorhead High School	EIA-1605EZ	U.S.
	Custom Rebate for Roffe Container	EIA-1605EZ	U.S.
	Insulation Improvement	EIA-1605EZ	U.S.
	Lighting Retrofit Program	EIA-1605EZ	U.S.
National Grid USA	Demand-Side Management Programs	EIA-1605	U.S.
Nebraska Public Power District	Electric Heat Pump Program, 1998-1999	EIA-1605EZ	U.S.
Niagara Mohawk Power Corporation	Energy Efficiency and Conservation Programs (DSM)	EIA-1605	U.S.
Northern Neck Electric Cooperative	Demand-Side Management Programs	EIA-1605	U.S.
Northern States Power Company	Demand side management (electric)	EIA-1605	U.S.
	Green Lights	EIA-1605	U.S.
Northern Virginia Electric Cooperative	Demand-side Management Load Control Programs	EIA-1605	U.S.
Old Dominion Electric Cooperative	Green Lights	EIA-1605	U.S.
Omaha Public Power District	Commercial & Industrial Audits	EIA-1605EZ	U.S.
	Heat Pump Program (RECP)	EIA-1605EZ	U.S.
	Right Lights	EIA-1605EZ	U.S.
	Street Lighting Replacement	EIA-1605EZ	U.S.
PG&E Corporation	Electrical Energy Conservation Savings	EIA-1605	U.S.
	Natural Gas Energy Conservation Savings	EIA-1605	U.S.
PPL CORPORATION	Demand Side Management Project	EIA-1605	U.S.
PacifiCorp	Commercial Competitive Bid - EUA/Onsite	EIA-1605	U.S.
	Competitive Bid - CES/Way	EIA-1605	U.S.
	Energy FinAnswer	EIA-1605	U.S.
	Energy FinAnswer Prescriptive	EIA-1605	U.S.
	Energy FinAnswer Retrofit	EIA-1605	U.S.
	H_PRO: High Efficiency Heat Pumps	EIA-1605	U.S.
	Hassle-Free Program	EIA-1605	U.S.
	Home Comfort	EIA-1605	U.S.
	Industrial Energy FinAnswer	EIA-1605	U.S.
	Irrigation FinAnswer Program	EIA-1605	U.S.
	Low Income Weatherization and Conservation Programs	EIA-1605	U.S.
	Major Accounts Program	EIA-1605	U.S.
	Manufactured Housing Acquisition Program (MAP)	EIA-1605	U.S.
	Northwest Energy Efficiency Alliance (NEEA)	EIA-1605	U.S.
	PacifiCorp Facility DSM	EIA-1605	U.S.
	Residential Competitive Bid - ECONS	EIA-1605	U.S.
	Residential Weatherization Programs	EIA-1605	U.S.
	Salt Lake City Urban Forestry Project	EIA-1605	U.S.
	Showerhead Program	EIA-1605	U.S.
	Small Commercial Retrofit	EIA-1605	U.S.
	Super Efficiency Refrigerator Program (SERP)	EIA-1605	U.S.
	Super Good Cents	EIA-1605	U.S.
	Utah Water Smart Kits (Schedule 5)	EIA-1605	U.S.
	Water Heater / Solar	EIA-1605	U.S.
Pharmacia & Upjohn	Chilled Water Capacity Increase	EIA-1605EZ	U.S.
	Repair or Replacement of Steam Traps	EIA-1605EZ	U.S.
Platte River Power Authority & 4 owner cities	Estes Park Streetlight Conversions	EIA-1605	U.S.
	Fort Collins Building Codes	EIA-1605	U.S.
	Fort Collins City Lighting Upgrades	EIA-1605	U.S.

Table B6. Projects Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
	Fort Collins Design Assistance	EIA-1605	U.S.
	Fort Collins LED Traffic Lights	EIA-1605	U.S.
	Fort Collins Zero Interest Loan for Conservation Help	EIA-1605	U.S.
	Longmont Efficient Lighting Projects	EIA-1605	U.S.
	Loveland Area Lighting Project	EIA-1605	U.S.
	Loveland Thrifty Light Project	EIA-1605	U.S.
Portland General Electric Co.	Demand-Side Management Projects	EIA-1605	U.S.
	Energy Management Systems	EIA-1605	U.S.
	Gas Lawnmower Turn In Rebate	EIA-1605	U.S.
	Green Lights Programs	EIA-1605	U.S.
	Heat Pump Rebate	EIA-1605	U.S.
	Photoelectric Streetlight Controls	EIA-1605	U.S.
Pratt & Whitney North Berwick	Minimize Cooling Tower Operations	EIA-1605	U.S.
	Particulate Filter Replacement	EIA-1605	U.S.
Public Service Enterprise Group	Demand Side Management	EIA-1605	U.S.
Public Utility District No. 1 of Snohomish County	Demand Side Management	EIA-1605	U.S.
Quad/Graphics, Inc.	Energy efficient installations	EIA-1605	U.S.
Rappahannock Electric Cooperative	Demand-Side Management Load Control Programs	EIA-1605	U.S.
Reliant Energy - HL&P	Demand Side Management	EIA-1605	U.S.
Rochester Institute of Technology	7B Dry-cooler Winter Chiller	EIA-1605	U.S.
	Building 17 Dry Cooler Installation	EIA-1605	U.S.
	Building 25 HVAC Conversion to VAV	EIA-1605	U.S.
	Building 60 Skylight Window Replacement	EIA-1605	U.S.
	Compact Fluorescent Lamps	EIA-1605	U.S.
	Gold Lamp Replacement	EIA-1605	U.S.
	HVAC CONVERSION TO VAV	EIA-1605	U.S.
	Install Variable Speed Drives in 8 Misc. Buildings	EIA-1605	U.S.
	LED Exit Signs	EIA-1605	U.S.
	Motor Replacement	EIA-1605	U.S.
	Occupancy Sensors	EIA-1605	U.S.
	T-8 Lamp Conversion	EIA-1605	U.S.
	VSD INSTALLATION	EIA-1605	U.S.
Rolls-Royce Corporation	Boiler Conversion from Coal to Landfill/Natural Gas	EIA-1605	U.S.
	Peak Saving Project	EIA-1605	U.S.
Sacramento Municipal Utility District	Energy Efficiency Programs	EIA-1605	U.S.
Salt River Project	AC Photovoltaic Residential System	EIA-1605EZ	U.S.
	Home with PV System for Demonstration (Chandler House)	EIA-1605EZ	U.S.
	Replace Gasoline Lawnmowers with Electric Lawnmowers	EIA-1605EZ	U.S.
	South Mountain CC Solar	EIA-1605EZ	U.S.
Santee Cooper	Demand Side Management Programs	EIA-1605	U.S.
Seattle City Light	Built Smart/Long-Term Super Good Cents Program (LTSGC)	EIA-1605	U.S.
	Energy $avings Plan (E$P)	EIA-1605	U.S.
	Energy Efficient Water Heater Rebate Program (EEWHRP)	EIA-1605	U.S.
	Energy Smart Design	EIA-1605	U.S.
	Home Water Savers Program	EIA-1605	U.S.
	Low-Income Electric Program	EIA-1605	U.S.
	Multifamily Common Area Lighting Program (MF-CAL)	EIA-1605	U.S.
	Multifamily Conservation Program: Low-Income	EIA-1605	U.S.
	Multifamily Conservation Program: Standard-Income	EIA-1605	U.S.
	Neighborhood Power Weatherization/Warm Home Program (WMHM)	EIA-1605	U.S.
	Smart Business Rebates	EIA-1605	U.S.

Table B6. Projects Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
Seminole Electric Cooperative, Inc.	Lighting Replacement	EIA-1605EZ	U.S.
Shenandoah Valley Electric Cooperative	Demand-Side Management Load Control Programs	EIA-1605	U.S.
Shrewsbury Electric Light Plant	Lighting Replacement	EIA-1605EZ	U.S.
South Carolina Electric & Gas Company	Demand Side Management Technologies	EIA-1605	U.S.
Southern California Edison Co.	Demand Side Management	EIA-1605	U.S.
	ENVEST SCE	EIA-1605	U.S.
	Internal Combustion Engine Replacement Program	EIA-1605	U.S.
Southern Company	Demand-Side Management	EIA-1605	U.S.
Steuben Rural Electric Co-op	1994 Water Heater Control Program	EIA-1605EZ	U.S.
	1995 Water Heater Control Program	EIA-1605EZ	U.S.
	1996 Farm Energy Efficiency	EIA-1605EZ	U.S.
	1996 Water Heater Control Program	EIA-1605EZ	U.S.
	1997 Farm Energy Efficiency	EIA-1605EZ	U.S.
	1997 Water Heater Control Program	EIA-1605EZ	U.S.
TXU	Demand-Side Management Program	EIA-1605	U.S.
Tacoma Public Utilities	Energy Conservation	EIA-1605EZ	U.S.
Tennessee Valley Authority	Comfort Plus Homes	EIA-1605	U.S.
	Outdoor Lighting Replacements By Memphis Light, Gas And Water	EIA-1605	U.S.
	Residential Marketing Program	EIA-1605	U.S.
UNICOM (Commonwealth Edison Company)	Energy Cooperative & Demand Side Management Activities	EIA-1605	U.S.
	UNICOM Thermal Cooling Plant	EIA-1605	U.S.
Utah Municipal Power Agency	In-House Conservation	EIA-1605EZ	U.S.
	Light Replacement	EIA-1605EZ	U.S.
	Residential Audit	EIA-1605EZ	U.S.
Vermont Public Power Supply Authority	Act 250 New Construction Program	EIA-1605	U.S.
	Equipment Replacement and Remodeling Program	EIA-1605	U.S.
	Farm Efficiency Program	EIA-1605	U.S.
	Large Commercial and Industrial Audit Program	EIA-1605	U.S.
	Residential Appliance Disposal Program	EIA-1605	U.S.
	Residential Low Income Weatherization Piggyback Program	EIA-1605	U.S.
	Residential Mail Order Lighting Program	EIA-1605	U.S.
	Residential Water Heating and Lighting Efficiency Program	EIA-1605	U.S.
	Small Commercial Retrofit Program	EIA-1605	U.S.
	Street and Area Lighting Efficiency Program	EIA-1605	U.S.
Waverly Light & Power Company	Energy End-Use Programs (Project 3.1)	EIA-1605	U.S.
	Energy Savings Due to Trees Forever (Project 3.3)	EIA-1605	U.S.
	High-Pressure Sodium Lights (Project 3.2)	EIA-1605	U.S.
Western Resources, Inc.	Electrotechnologies Marketing	EIA-1605	U.S.
	Residential Conservation Use Rate DSM Program	EIA-1605	U.S.
Wisconsin Electric Power Co.	Demand-side management energy efficiency programs	EIA-1605	U.S.
Wisconsin Public Power Inc.	Residential Appliances	EIA-1605EZ	U.S.
	Street Lighting	EIA-1605EZ	U.S.
Wisconsin Public Service Corporation	Demand Side Management Programs	EIA-1605	U.S.
Transportation			
AT&T	TELECOMMUTING	EIA-1605	U.S.
Allegheny Energy, Inc.	Carryall Vehicle Program	EIA-1605	U.S.
Ameren Corporation (formerly UE and CIPS)	Carpooling	EIA-1605	U.S.
	Purchase of Light Weight Rail Cars	EIA-1605	U.S.
Arizona Portland Cement Co.	100 Ton Haul Trucks	EIA-1605	U.S.
Arthur Rypinski & Jacquelyn Porth.	Mass Transit Commuting	EIA-1605	U.S.
Atlantic Energy, Inc. (AEI)	Employee Telecommuting	EIA-1605	U.S.
	Employee Van Pooling	EIA-1605	U.S.

Table B6. Projects Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
Avista Utilities	Commute Trip Reduction	EIA-1605	U.S.
Baltimore Gas & Electric Co.	Alternatively Fueled Vehicles	EIA-1605	U.S.
CLE Resources	Cycloid	EIA-1605	U.S.
	McHugh Software	EIA-1605	U.S.
Central Hudson Gas & Electric Corporation	Natural Gas Vehicles	EIA-1605	U.S.
City Utilities of Springfield	Natural Gas Fleet	EIA-1605	U.S.
City of Palo Alto	City employee carpooling	EIA-1605EZ	U.S.
	City employee mass transit	EIA-1605EZ	U.S.
	City fleet conversion to CNG	EIA-1605EZ	U.S.
	City fleet conversion to EV	EIA-1605EZ	U.S.
DTE Energy/ Detroit Edison	Electric Vehicle Demonstration Project	EIA-1605	U.S.
Delmarva Power	CNG Vehicles	EIA-1605	U.S.
Dynegy Midwest Generation Inc.	CNG Vehicle Conversions	EIA-1605	U.S.
Entergy Services, Inc.	Natural Gas Vehicle Program	EIA-1605	U.S.
Essential Foods, Inc.	Delivery Fleet	EIA-1605	U.S.
GPU, Inc.	Electric Vehicles and Employee Trip Reduction Program	EIA-1605	U.S.
	Video - Conferencing	EIA-1605	U.S.
Kansas City Power & Light Company	Aluminum Coal Cars	EIA-1605	U.S.
Los Angeles Department of Water and Power	DWP Rideshare Program	EIA-1605	U.S.
	Electric Vehicles	EIA-1605	U.S.
National Grid USA	Carpool	EIA-1605	U.S.
	Electric Vehicles	EIA-1605	U.S.
NiSource/NIPSCO	Electric Vehicles	EIA-1605	U.S.
	Employee Commute Options	EIA-1605	U.S.
	Natural Gas Vehicles	EIA-1605	U.S.
Niagara Mohawk Power Corporation	Alternative Fuel Vehicles	EIA-1605	U.S.
PG&E Corporation	Electric Vehicles	EIA-1605	U.S.
	Natural Gas Vehicles	EIA-1605	U.S.
PPL CORPORATION	Electric Vehicles	EIA-1605	U.S.
Platte River Power Authority & 4 owner cities	Fort Collins Transportation Demand Management	EIA-1605	U.S.
Portland General Electric Co.	Electric Fleet Vehicles	EIA-1605	U.S.
	Natural Gas Fleet Vehicles	EIA-1605	U.S.
Public Service Company of New Mexico	CNG Vehicles	EIA-1605	U.S.
Public Service Enterprise Group	Employee Trip Reduction	EIA-1605	U.S.
Public Utility District No. 1 of Snohomish County	Battery and Solar Powered Boat Races	EIA-1605	U.S.
	Bicycles for Meter Readers	EIA-1605	U.S.
	Commute Reduction Program	EIA-1605	U.S.
	Electric Car Race	EIA-1605	U.S.
Quad/Graphics, Inc.	12 hour work shift	EIA-1605	U.S.
	Duplainville return load project	EIA-1605	U.S.
	New mass transit routes	EIA-1605	U.S.
Sacramento Municipal Utility District	Employee Commute Program	EIA-1605	U.S.
	Meter Reading - Bicycles	EIA-1605	U.S.
	Ride Electric	EIA-1605	U.S.
Salt River Project	Alternate Work Week Schedule	EIA-1605EZ	U.S.
	Bike/Bus/Walk	EIA-1605EZ	U.S.
	Carpooling/Vanpooling	EIA-1605EZ	U.S.
	Electric Vehicles Demonstration and Business Use	EIA-1605EZ	U.S.
	Telecommuting	EIA-1605EZ	U.S.
Southern California Edison Co.	Electric Vehicle Program	EIA-1605	U.S.
Southern Company	Transportation Research	EIA-1605	U.S.

Table B6. Project Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
TXU	Alternative Fuel Vehicle Program	EIA-1605	U.S.
	Employee Bus Pass Program	EIA-1605	U.S.
	Employee Carpool Program	EIA-1605	U.S.
	Vehicle Use Reductions	EIA-1605	U.S.
Tacoma Public Utilities	Alternative Transportation	EIA-1605EZ	U.S.
Tennessee Valley Authority	Alternate Fuel Vehicles	EIA-1605	U.S.
	Transportation Fleet Fuel Efficiency Improvement	EIA-1605	U.S.
UNICOM (Commonwealth Edison Company)	Alternative Fuel Vehicles	EIA-1605	U.S.
	Aluminum Railroad Cars	EIA-1605	U.S.
Volvo Cars of North America, Inc.	CNG Bi-fuel Test Fleet	EIA-1605EZ	U.S.
Waverly Light & Power Company	Electric Vehicle (Project 4.1)	EIA-1605	U.S.
Western Resources, Inc.	Conversion of Company Fleet Vehicles to Alternative Fuels	EIA-1605	U.S.
	Purchase of Aluminum Rail Cars	EIA-1605	U.S.
Wisconsin Electric Power Co.	Vehicle conversion to dual fuel capability	EIA-1605	U.S.
Waste Treatment and Disposal (Methane)			
Alliant Energy	Cedar Rapids Landfill Methane IES	EIA-1605	U.S.
	Mallard Ridge Landfill Methane	EIA-1605	U.S.
	Verona Landfill Methane	EIA-1605	U.S.
Ameren Corporation (formerly UE and CIPS)	Milam Landfill Methane Recovery	EIA-1605	U.S.
Asheville Landfill Gas, LLC	Buncombe County, NC Landfill	EIA-1605	U.S.
Burlington County Board of Chosen Freeholders	Landfill Gas Flaring	EIA-1605	U.S.
Catawba Landfill Gas, LLC	Catawba Landfill Gas, LLC	EIA-1605	U.S.
Commonwealth Bethlehem Energy, LLC	North Country Landfill Gas Utilization Facility	EIA-1605	U.S.
DTE Energy/ Detroit Edison	LFG Recovery & Energy Gen - DTE Proj outside Service Area	EIA-1605	U.S.
	LFG Recovery & Energy Gen - DTE Projects in Service Area	EIA-1605	U.S.
	Landfill Energy Purchases, non-DTE Projects	EIA-1605	U.S.
	Landfill Gas Recovery Projects	EIA-1605	U.S.
Delaware Solid Waste Authority	Central Solid Waste Management Center (CSWMC)	EIA-1605	U.S.
	Cherry Island Landfill (CIL)	EIA-1605	U.S.
	Pigeon Point Landfill (PPLF)	EIA-1605	U.S.
	Southern Solid Waste Management Center (SSWMC)	EIA-1605	U.S.
Delmarva Power	Edge Moor Landfill Gas Use	EIA-1605	U.S.
Duke Energy Corporation	White Street Landfill Gas Recovery Project	EIA-1605	U.S.
Ecogas Corporation	Acme Landfill Gas Recovery Plant	EIA-1605	U.S.
	Bowerman Landfill Gas Recovery Plant	EIA-1605	U.S.
	Bridgeton Landfill Gas Recovery Project	EIA-1605	U.S.
	Covel Gardens Landfill Gas Recovery Project	EIA-1605	U.S.
	Dade Landfill Gas Recovery Plant	EIA-1605	U.S.
	Dallas Landfill Gas Recovery Plant	EIA-1605	U.S.
	Davis Street Landfill Gas Recovery Plant	EIA-1605	U.S.
	Fresh Kills Landfill Gas Recovery Project	EIA-1605	U.S.
	Kearny Landfill Gas Recovery Plant	EIA-1605	U.S.
	McCarty Road Landfill Gas Recovery Plant	EIA-1605	U.S.
	Monmouth Landfill Gas Recovery Plant	EIA-1605	U.S.
	Mountaingate Landfill Gas Recovery Plant	EIA-1605	U.S.
	Olinda Landfill Gas Recovery Plant	EIA-1605	U.S.
	Rosenberg Landfill Gas Recovery Plant	EIA-1605	U.S.
	Rumpke Landfield Gas Recovery Plant	EIA-1605	U.S.
	San Antonio Landfill Gas Recovery Plant	EIA-1605	U.S.
	Skyline Landfill Gas Recovery Project	EIA-1605	U.S.
	Westside Landfill Gas Recovery Project	EIA-1605	U.S.

Table B6. Project Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
FPL Group	Aroostook Valley Electric Company	EIA-1605	U.S.
	Montenay Power Plant	EIA-1605	U.S.
	Multitrade Power Plant	EIA-1605	U.S.
Fred Weber, Inc.	Landfill Gas Recovery	EIA-1605EZ	U.S.
GPU, Inc.	Corry	EIA-1605	U.S.
	FR & S Landfill NUG	EIA-1605	U.S.
	Hamm's Landfill NUG	EIA-1605	U.S.
	L & D Landfill NUG	EIA-1605	U.S.
	Lake View Landfill	EIA-1605	U.S.
	Lebanon Methane NUG	EIA-1605	U.S.
	Manchester Renewable	EIA-1605	U.S.
	Modern Landfill NUG	EIA-1605	U.S.
	Monmouth County Reclamation Center NUG	EIA-1605	U.S.
Gas Recovery Systems	GRS American Canyon Landfill	EIA-1605	U.S.
	GRS Coyote Canyon	EIA-1605	U.S.
	Guadalupe	EIA-1605	U.S.
	Kapaa	EIA-1605	U.S.
	LGP Orange County, New York	EIA-1605	U.S.
	Menlo Park	EIA-1605	U.S.
	Newby Island Landfill	EIA-1605	U.S.
	San Marcos	EIA-1605	U.S.
	Santa Cruz	EIA-1605	U.S.
	Sycamore	EIA-1605	U.S.
Granger Electric Company	Brent Run Landfill Generating Station	EIA-1605	U.S.
	Grand Blanc Landfill Generating Station	EIA-1605	U.S.
	Granger #1 Generating Station - Wood Road Landfill	EIA-1605	U.S.
	Granger #2 Generating Station - Grand River Avenue Landfill	EIA-1605	U.S.
	Granger MotorWheel Facility	EIA-1605	U.S.
	Indianapolis/South Side Landfill Gas Project	EIA-1605	U.S.
	Lake County Landfill Gas Project	EIA-1605	U.S.
	Ottawa County Farms Landfill Generating Station	EIA-1605	U.S.
	Seymour Road Landfill Generating Station	EIA-1605	U.S.
Integrated Waste Services Association	Waste-to-Energy - Waste Diversion	EIA-1605	U.S.
Iredell Landfill Gas, LLC	Iredell County Landfill, LLC	EIA-1605	U.S.
JEA.	Fuel Switching	EIA-1605EZ	U.S.
LFG Energy, Inc.	LFG Energy - Phases I & II	EIA-1605	U.S.
	LFG Energy Upgrade Facility	EIA-1605	U.S.
Los Angeles Department of Water and Power	Scattergood Digester Gas Displacement of Natural Gas as Fuel	EIA-1605	U.S.
Madison County Depart. of Solid Waste & Sanitation	Landfill Gas Recovery & Flaring	EIA-1605	U.S.
Minnesota Resource Recovery Association	MSW Incineration	EIA-1605EZ	U.S.
NC Muni Landfill Gas Partners, LP	Henderson County NC Landfill	EIA-1605	U.S.
NEO Corporation.	Acme Landfill Gas Utilization Project	EIA-1605	U.S.
	Albany Landfill Gas Utilization Project	EIA-1605	U.S.
	Balefill Landfill Gas Utilization Project	EIA-1605	U.S.
	Corona Landfill Gas Utilization Project	EIA-1605	U.S.
	Cuyahoga Landfill Gas Utilization Project	EIA-1605	U.S.
	Denver Landfill Gas Utilization Project	EIA-1605	U.S.
	Edgeboro Landfill Gas Utilization Project	EIA-1605	U.S.
	Fitchburg Landfill Gas Utilization Project	EIA-1605	U.S.
	Flying Cloud Landfill Gas Utilization Project	EIA-1605	U.S.
	Fort Smith Landfill Gas Utilization Project	EIA-1605	U.S.
	Hartford Landfill Gas Utilization Project	EIA-1605	U.S.
	Kingsland Landfill Gas Utilization Project	EIA-1605	U.S.

Table B6. Project Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
	Kraemer Landfill Gas Utilization Project	EIA-1605	U.S.
	Lopez Landfill Gas Utilization Project	EIA-1605	U.S.
	Lowell Landfill Gas Utilization Project	EIA-1605	U.S.
	Mazzaro Landfill Gas Utilization Project	EIA-1605	U.S.
	Phoenix Landfill Gas Utilization Project	EIA-1605	U.S.
	Prima Deshecha Landfill Gas Utilization Project	EIA-1605	U.S.
	Prince William Landfill Gas Utilization Project	EIA-1605	U.S.
	Riverside Landfill Gas Utilization Project	EIA-1605	U.S.
	SKB Landfill Gas Utilization Project	EIA-1605	U.S.
	San Bernadino Landfill Gas Utilization Project	EIA-1605	U.S.
	San Diego Landfill Gas Utilization Project	EIA-1605	U.S.
	Spokane Landfill Gas Utilization Project	EIA-1605	U.S.
	Tacoma Landfill Gas Utilization Project	EIA-1605	U.S.
	Tajiguas Landfill Gas Utilization Project	EIA-1605	U.S.
	Taunton Landfill Gas Utilization Project	EIA-1605	U.S.
	Visalia Landfill Gas Utilization Project	EIA-1605	U.S.
	Volusia Landfill Gas Utilization Project	EIA-1605	U.S.
	West Covina Landfill Gas Utilization Project	EIA-1605	U.S.
	Woodville Landfill Gas Utilization Project	EIA-1605	U.S.
	Yolo Landfill Gas Utilization Project	EIA-1605	U.S.
Natural Power, Inc..	Wilder's Grove Landfill Gas Project	EIA-1605	U.S.
Newton Landfill Gas, LLC	Newton Landfill, Catawba County, NC	EIA-1605	U.S.
NiSource/NIPSCO	Landfill Methane Recovery - Deercroft	EIA-1605	U.S.
	Landfill Methane Recovery - Wheeler	EIA-1605	U.S.
	Landfill Methane Recovery-Prairie View	EIA-1605	U.S.
North American Carbon, Inc..	KMS Peel Energy Recovery Project	EIA-1605	Foreign
Northern States Power Company	Refuse-derived fuel	EIA-1605	U.S.
PECO Energy Company	Fairless Hills LFG to Energy Operation	EIA-1605	U.S.
	Pennsbury LFG to Energy Operation	EIA-1605	U.S.
PG&E Corporation	Barre Landfill Gas to Electricity Project	EIA-1605	U.S.
	Johnston Landfill Gas to Electricity Project	EIA-1605	U.S.
	Nashua Landfill Gas To Electricity Project	EIA-1605	U.S.
	Turnkey Landfill Gas to Electricity Project	EIA-1605	U.S.
PPL CORPORATION	Harrisburg (AWWTP) - Methane Reductions	EIA-1605	U.S.
	Keystone Landfill - Methane Reductions	EIA-1605	U.S.
	Lycoming Landfill - Methane Reductions	EIA-1605	U.S.
	Taylor/Amity Landfill - Methane Reductions	EIA-1605	U.S.
Palmer Capital Corporation	Brookhaven Landfill Gas Limited Partnership	EIA-1605	U.S.
	Central Gas Limited Partnership	EIA-1605	U.S.
	Janesville Landfill Gas Corporation	EIA-1605	U.S.
	LKD Los Angeles L.P.	EIA-1605	U.S.
	Lancaster Landfill Gas Corporation	EIA-1605	U.S.
	Lebanon Landfill Gas Corporation	EIA-1605	U.S.
	Portland LFG Joint Venture	EIA-1605	U.S.
	Raleigh Landfill Gas Corporation	EIA-1605	U.S.
	Scholl Canyon LFG Limited Partnership	EIA-1605	U.S.
	Sun LFG Corporation	EIA-1605	U.S.
Pitt Landfill Gas, LLC	Pitt Landfill Gas, LLC	EIA-1605	U.S.
Platte River Power Authority & 4 owner cities	Fort Collins Wastewater Methane Flare	EIA-1605	U.S.
	Longmont Wastewater Plant Waste Gas Flare	EIA-1605	U.S.
	Loveland Digester Gas Production and Use	EIA-1605	U.S.
Public Service Enterprise Group	Electric Generation from Landfill Gas	EIA-1605	U.S.
	Municipal Solid Waste Generators	EIA-1605	U.S.
Rolls-Royce Corporation	Use of Landfill Gas	EIA-1605	U.S.

Table B6. Project Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
Salt River Project	Landfill Gas Flaring (CH4 Avoided)	EIA-1605EZ	U.S.
	Landfill Gas Flaring (CO2 Increase)	EIA-1605EZ	U.S.
Seneca Energy, Inc.	Seneca Energy - Stage I	EIA-1605	U.S.
	Seneca Energy - Stage II	EIA-1605	U.S.
TXU	Landfill Methane	EIA-1605	U.S.
Tennessee Valley Authority	Landfill Methane Recovery and Power Generation	EIA-1605	U.S.
The Bentech Group of Delaware, Inc.	Chautauqua County, Ellery Landfill	EIA-1605	U.S.
	Montgomery County, Oaks Landfill	EIA-1605	U.S.
	Pigeon Point Landfill	EIA-1605	U.S.
	Rolling Hills Landfill	EIA-1605	U.S.
Town of Colonie Solid Waste Management Facility	Flaring of Landfill Gas	EIA-1605	U.S.
UNICOM (Commonwealth Edison Company)	Methane Gas Landfill Recovery	EIA-1605	U.S.
Wisconsin Electric Power Co.	Beneficial use of landfill methane	EIA-1605	U.S.
Zahren Alternative Power Corporation	Barre	EIA-1605EZ	U.S.
	Brickyard	EIA-1605EZ	U.S.
	Burlington	EIA-1605EZ	U.S.
	Dolton	EIA-1605EZ	U.S.
	Onondaga	EIA-1605EZ	U.S.
	Oyster Bay	EIA-1605EZ	U.S.
	Romeoville	EIA-1605EZ	U.S.
	Streator Flare	EIA-1605EZ	U.S.
	122nd Street	EIA-1605EZ	U.S.
	122nd Street Flare	EIA-1605EZ	U.S.
	Amity	EIA-1605EZ	U.S.
	Barre Flare	EIA-1605EZ	U.S.
	Brickyard Flare	EIA-1605EZ	U.S.
	Burlington Flare	EIA-1605EZ	U.S.
	Cape May	EIA-1605EZ	U.S.
	Cape May Flare	EIA-1605EZ	U.S.
	Dixon	EIA-1605EZ	U.S.
	Dixon Flare	EIA-1605EZ	U.S.
	Dolton Flare	EIA-1605EZ	U.S.
	Garland	EIA-1605EZ	U.S.
	Hamm / Sussex	EIA-1605EZ	U.S.
	Manchester	EIA-1605EZ	U.S.
	Manchester Flare	EIA-1605EZ	U.S.
	Marina	EIA-1605EZ	U.S.
	Oceanside	EIA-1605EZ	U.S.
	Oyster Bay Flare	EIA-1605EZ	U.S.
	Romeoville Flare	EIA-1605EZ	U.S.
	Roxanna	EIA-1605EZ	U.S.
	Roxanna Flare	EIA-1605EZ	U.S.
	SPSA	EIA-1605EZ	U.S.
	SPSA Flare	EIA-1605EZ	U.S.
	Smithtown	EIA-1605EZ	U.S.
	Smithtown Flare	EIA-1605EZ	U.S.
	Springfield	EIA-1605EZ	U.S.
	Tucson	EIA-1605EZ	U.S.
	Tucson Flare	EIA-1605EZ	U.S.
	Upper Rock Flare	EIA-1605EZ	U.S.
Agriculture (Methane and Nitrous Oxide)			
GPU, Inc..	Mason Dixon Farms, Inc.	EIA-1605	U.S.
	Valley Pork	EIA-1605	U.S.
PPL CORPORATION	Keener Enterprises - Methane Reductions	EIA-1605	U.S.

Table B6. Project Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
Reliant Energy - HL&P	Rice Field Methane Reductions Study	EIA-1605	U.S.
Oil and Natural Gas Systems and Coal Mining (Methane)			
Baltimore Gas & Electric Co.	Gas Systems O & M (Natural Gas Star Partnership)	EIA-1605	U.S.
Black Warrior Methane Corp.	Gobwell Degasification Program	EIA-1605	U.S.
	Horizontal Degasification Program	EIA-1605	U.S.
	Standard Degasification Well Program	EIA-1605	U.S.
CDX Gas, LLC	Pinnacle Mine Coalbed Methane Recovery	EIA-1605	U.S.
CLE Resources	Revolve Technologies - Dry Gas Seals	EIA-1605	U.S.
CMS Energy	Natural Gas Star Program (Consumers)	EIA-1605	U.S.
CMV Joint Venture	Oak Grove Coalbed Methane Recovery Project	EIA-1605	U.S.
	White Oak Creek Coalbed Methane Recovery	EIA-1605	U.S.
Central Hudson Gas & Electric Corporation	EPA Natural Gas Star Program	EIA-1605	U.S.
El Paso Production Company	White Oak Creek Coalbed Methane Recovery	EIA-1605	U.S.
Entergy Services, Inc.	Natural Gas Pipeline Leak Repairs	EIA-1605	U.S.
GeoMet Inc.	Oak Grove Coalbed Methane Recovery Project	EIA-1605	U.S.
	White Oak Creek Coalbed Methane Recovery	EIA-1605	U.S.
LAHD Energy, Inc.	Coalbed Methane Recovery - Cambria #33	EIA-1605EZ	U.S.
	Coalbed Methane Recovery - Nelms #1	EIA-1605EZ	U.S.
	Coalbed Methane Recovery - Oak Park Project	EIA-1605EZ	U.S.
NiSource/NIPSCO	NG Star Baystate	EIA-1605	U.S.
	Natural Gas STAR	EIA-1605	U.S.
	North Trenton Pipeline Replacement	EIA-1605	U.S.
Niagara Mohawk Power Corporation	Identify & Rehabilitate Leaky Gas Distribution Pipe	EIA-1605	U.S.
Northwest Fuel Development, Inc.	Utilization of Coal Mine Gas	EIA-1605	U.S.
PacifiCorp	Northwest Fuels Methane Recovery From Coal Mines	EIA-1605	U.S.
Public Service Company of New Mexico	Natural Gas Leak Surveying and Replacement	EIA-1605	U.S.
Public Service Enterprise Group	Natural Gas STAR	EIA-1605	U.S.
Rosewood Resources, Inc.	Pinnacle Mine Coalbed Methane Recovery	EIA-1605	U.S.
U. S. Steel Mining Company, LLC	No. 50 Mine: Gas Recovery For Sale / Use	EIA-1605	U.S.
	Oak Grove Mine: Gas Recovery For Sale / Use	EIA-1605	U.S.
USX Corporation	White Oak Creek Methane Recovery	EIA-1605	U.S.
Western Resources, Inc.	Natural Gas Distribution System Replacement Program	EIA-1605	U.S.
	Natural Gas Transmission System Blowdown Reductions	EIA-1605	U.S.
Carbon Sequestration			
AES Hawaii, Inc.	Mbaracayu Conservation	EIA-1605	Foreign
AES Shady Point.	OXFAM America Amazon	EIA-1605	Foreign
AES Thames	CARE Agroforestry	EIA-1605	Foreign
Advanced Micro Devices, Inc.	Tree Planting	EIA-1605EZ	U.S.
Allegheny Energy, Inc.	Black Oak Property Tree Planting	EIA-1605	U.S.
	Mississippi River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration Project	EIA-1605	U.S.
	Reduced Impact Logging of Natural Forest in Malaysia	EIA-1605	Foreign
	Rio Bravo Carbon Sequestration Pilot Project	EIA-1605	Foreign
	Upper Ouachita River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.
Alliant Energy	Afforestation	EIA-1605	U.S.
	Conservation tillage	EIA-1605	U.S.
	Forest preservation	EIA-1605	U.S.
	Habitat Restoration	EIA-1605	U.S.
	Mississippi River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration Project	EIA-1605	U.S.
	Reduced Impact Logging of Natural Forest in Malaysia	EIA-1605	Foreign
	Rio Bravo Carbon Sequestration Pilot Project - Component A	EIA-1605	Foreign

Table B6. Project Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
	Upper Ouachita River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Urban Forestry IES	EIA-1605	U.S.
	Urban Forestry IPC	EIA-1605	U.S.
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.
Ameren Corporation (formerly UE and CIPS)	Green Leaf Project	EIA-1605	U.S.
	Mississippi River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration Project	EIA-1605	U.S.
	Reduced Impact Logging of Natural Forest in Malaysia	EIA-1605	Foreign
	Rio Bravo Carbon Sequestration Pilot Program	EIA-1605	Foreign
	Upper Ouachita River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Western Oregon Carbon Sequestration	EIA-1605	U.S.
American Electric Power, Inc.	AEP-AGSPOIL-1992	EIA-1605	U.S.
	AEP-AGSPOIL-1993	EIA-1605	U.S.
	AEP-AGSPOIL-1994	EIA-1605	U.S.
	AEP-AGSPOIL-1995	EIA-1605	U.S.
	AEP-AGSPOIL-1996	EIA-1605	U.S.
	AEP-AGSPOIL-1997	EIA-1605	U.S.
	AEP-AGSPOIL-1998	EIA-1605	U.S.
	AEP-AGSPOIL-1999	EIA-1605	U.S.
	AEP-FM-1991	EIA-1605	U.S.
	AEP-FM-1992	EIA-1605	U.S.
	AEP-FM-1993	EIA-1605	U.S.
	AEP-FM-1994	EIA-1605	U.S.
	AEP-FM-1995	EIA-1605	U.S.
	AEP-FM-1996	EIA-1605	U.S.
	AEP-FM-1997	EIA-1605	U.S.
	AEP-FM-1998	EIA-1605	U.S.
	AEP-FM-1999	EIA-1605	U.S.
	AEP-MARAG- 1992	EIA-1605	U.S.
	AEP-MARAG-1991	EIA-1605	U.S.
	AEP-MARAG-1993	EIA-1605	U.S.
	AEP-MARAG-1993-2	EIA-1605	U.S.
	AEP-MARAG-1994	EIA-1605	U.S.
	AEP-MARAG-1994-2	EIA-1605	U.S.
	AEP-MARAG-1995	EIA-1605	U.S.
	AEP-MARAG-1996	EIA-1605	U.S.
	AEP-MARAG-1997	EIA-1605	U.S.
	AEP-MARAG-1998	EIA-1605	U.S.
	AEP-MARAG-1999	EIA-1605	U.S.
	Mississippi River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Noel Kempff Mercado Climate Action Project	EIA-1605	Foreign
	Overflow Bottomland Hardwood Forest Restoration Project	EIA-1605	U.S.
	Reduced Impact Logging of Natural Forest in Malaysia	EIA-1605	Foreign
	Rio Bravo Carbon Sequestration Pilot Project	EIA-1605	Foreign
	Upper Ouachita River Valley Bottomland Hardwood Forest Resto	EIA-1605	U.S.
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.
American Forests	Global ReLeaf - Alazan Bayou WMA, TX	EIA-1605	U.S.
	Global ReLeaf - Green'n New Jersey, NJ	EIA-1605	U.S.
	Global ReLeaf - Hens Peak Fire, Fishlake NF, UT	EIA-1605	U.S.
	Global ReLeaf - Lake Sammamish Watershed, WA	EIA-1605	U.S.
	Global ReLeaf - Lake Superior Watershed, WI	EIA-1605	U.S.
	Global ReLeaf - Otsego Creek, NY	EIA-1605	U.S.

Table B6. Project Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
	Global ReLeaf - Re-Greening Logging Roads, WA	EIA-1605	U.S.
	Global ReLeaf - Skagit Wild & Scenic River System, WA	EIA-1605	U.S.
	Global ReLeaf - Wicker Park, North Carolina	EIA-1605	U.S.
	Global ReLeaf Forests - Bayou Cocodrie NWR	EIA-1605	U.S.
	Global ReLeaf Forests - Grassy Slough, Cache River, IL	EIA-1605	U.S.
	Global ReLeaf Forests - Gunpowder Falls, Maryland	EIA-1605	U.S.
	Global ReLeaf Forests - Hart Miller Island, MD	EIA-1605	U.S.
	Global ReLeaf Forests - Marais des Cygnes, Kansas	EIA-1605	U.S.
	Global ReLeaf Forests - Moraine Hills, IL	EIA-1605	U.S.
	Global ReLeaf Forests - P/P/P Riparian, Maryland	EIA-1605	U.S.
	Global ReLeaf Forests - 3 Sisters Eagle Roost, CA	EIA-1605	U.S.
	Global ReLeaf Forests - ASCM Preserve, Maryland	EIA-1605	U.S.
	Global ReLeaf Forests - Afton Canyon, CA	EIA-1605	U.S.
	Global ReLeaf Forests - Allegheny, Pennsylvania	EIA-1605	U.S.
	Global ReLeaf Forests - Apalacicola, Florida	EIA-1605	U.S.
	Global ReLeaf Forests - Applegate River, Oregon	EIA-1605	U.S.
	Global ReLeaf Forests - Appomattox, Virginia	EIA-1605	U.S.
	Global ReLeaf Forests - Aqua Fria, Arizona	EIA-1605	U.S.
	Global ReLeaf Forests - AuSable, Michigan	EIA-1605	U.S.
	Global ReLeaf Forests - Bass River, New Jersey	EIA-1605	U.S.
	Global ReLeaf Forests - Bayou Cocodrie NWR, LA	EIA-1605	U.S.
	Global ReLeaf Forests - Beaver Creek, Ohio	EIA-1605	U.S.
	Global ReLeaf Forests - Bell Farm, Kentucky	EIA-1605	U.S.
	Global ReLeaf Forests - Belleplain, New Jersey	EIA-1605	U.S.
	Global ReLeaf Forests - Beltrami, Minnesota	EIA-1605	U.S.
	Global ReLeaf Forests - Betsie River, Michigan	EIA-1605	U.S.
	Global ReLeaf Forests - Big Walnut Nature Preserve, Indiana	EIA-1605	U.S.
	Global ReLeaf Forests - Big Woods, Minnesota	EIA-1605	U.S.
	Global ReLeaf Forests - Black Ridge, Colorado	EIA-1605	U.S.
	Global ReLeaf Forests - Black River, Wisconsin	EIA-1605	U.S.
	Global ReLeaf Forests - Blackfoot-Clearwater, Montana	EIA-1605	U.S.
	Global ReLeaf Forests - Blackwater, Florida	EIA-1605	U.S.
	Global ReLeaf Forests - Boise, Idaho	EIA-1605	U.S.
	Global ReLeaf Forests - Brokenback Diversity, Wyoming	EIA-1605	U.S.
	Global ReLeaf Forests - Buffalo Creek, CO	EIA-1605	U.S.
	Global ReLeaf Forests - Cache River Bioreserve, Illinois	EIA-1605	U.S.
	Global ReLeaf Forests - Cache River, Arkansas	EIA-1605	U.S.
	Global ReLeaf Forests - Caddo Parish, Louisiana	EIA-1605	U.S.
	Global ReLeaf Forests - Carson, New Mexico	EIA-1605	U.S.
	Global ReLeaf Forests - Casper, Wyoming	EIA-1605	U.S.
	Global ReLeaf Forests - Chittenden, Michigan	EIA-1605	U.S.
	Global ReLeaf Forests - Choccolocco, Alabama	EIA-1605	U.S.
	Global ReLeaf Forests - Conecuh, Alabama	EIA-1605	U.S.
	Global ReLeaf Forests - Coshocton, Ohio	EIA-1605	U.S.
	Global ReLeaf Forests - Cossatot, Arkansas	EIA-1605	U.S.
	Global ReLeaf Forests - Croatan, North Carolina	EIA-1605	U.S.
	Global ReLeaf Forests - Cuba, New Mexico	EIA-1605	U.S.
	Global ReLeaf Forests - Darton College, Georgia	EIA-1605	U.S.
	Global ReLeaf Forests - Dawson Demo Forest, Georgia	EIA-1605	U.S.
	Global ReLeaf Forests - DeSoto, Mississippi	EIA-1605	U.S.
	Global ReLeaf Forests - Double Trouble, New Jersey	EIA-1605	U.S.
	Global ReLeaf Forests - Duck Creek, Ohio	EIA-1605	U.S.
	Global ReLeaf Forests - Eastern Neck NWR, Maryland	EIA-1605	U.S.
	Global ReLeaf Forests - Econofina, Florida	EIA-1605	U.S.

Table B6. Project Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
	Global ReLeaf Forests - Ellis, Texas	EIA-1605	U.S.
	Global ReLeaf Forests - Fairfax, Virginia	EIA-1605	U.S.
	Global ReLeaf Forests - Farragut, Idaho	EIA-1605	U.S.
	Global ReLeaf Forests - Francis Marion, South Carolina	EIA-1605	U.S.
	Global ReLeaf Forests - Glades Preserve, Maryland	EIA-1605	U.S.
	Global ReLeaf Forests - Grailville, Ohio	EIA-1605	U.S.
	Global ReLeaf Forests - Great Plains RC & D, Oklahoma	EIA-1605	U.S.
	Global ReLeaf Forests - Greater Grand Forks, North Dakota	EIA-1605	U.S.
	Global ReLeaf Forests - Greenwood WMA, New Jersey	EIA-1605	U.S.
	Global ReLeaf Forests - Hakalau, Hawaii	EIA-1605	U.S.
	Global ReLeaf Forests - Harrison, Ohio	EIA-1605	U.S.
	Global ReLeaf Forests - Holly Springs, Mississippi	EIA-1605	U.S.
	Global ReLeaf Forests - Homer, Alaska	EIA-1605	U.S.
	Global ReLeaf Forests - Indian Creek, California	EIA-1605	U.S.
	Global ReLeaf Forests - Indian Lake, Ohio	EIA-1605	U.S.
	Global ReLeaf Forests - Indian Mounds, Texas	EIA-1605	U.S.
	Global ReLeaf Forests - Janes Island State Park, Maryland	EIA-1605	U.S.
	Global ReLeaf Forests - Jordon River, Utah	EIA-1605	U.S.
	Global ReLeaf Forests - Kenosha Pass, Colorado	EIA-1605	U.S.
	Global ReLeaf Forests - Kettle Moraine, Wisconsin	EIA-1605	U.S.
	Global ReLeaf Forests - King Range, California	EIA-1605	U.S.
	Global ReLeaf Forests - Kisatchie, Louisiana	EIA-1605	U.S.
	Global ReLeaf Forests - Kula Forest Preserve, Hawaii	EIA-1605	U.S.
	Global ReLeaf Forests - Lake George, Florida	EIA-1605	U.S.
	Global ReLeaf Forests - Lake Monroe, FL	EIA-1605	U.S.
	Global ReLeaf Forests - Ledge View Co. Park, Wisconsin	EIA-1605	U.S.
	Global ReLeaf Forests - Lindsay, Oklahoma	EIA-1605	U.S.
	Global ReLeaf Forests - Little River, Arkansas	EIA-1605	U.S.
	Global ReLeaf Forests - Long Island, Illinois	EIA-1605	U.S.
	Global ReLeaf Forests - Lower MI Riparian Corridors, MI	EIA-1605	U.S.
	Global ReLeaf Forests - Marys River, Nevada	EIA-1605	U.S.
	Global ReLeaf Forests - Mattole River, California	EIA-1605	U.S.
	Global ReLeaf Forests - Mescalero Apache, New Mexico	EIA-1605	U.S.
	Global ReLeaf Forests - Michaux, Pennsylvania	EIA-1605	U.S.
	Global ReLeaf Forests - Milford Neck Preserve, DE	EIA-1605	U.S.
	Global ReLeaf Forests - Monocacy NRMA, Maryland	EIA-1605	U.S.
	Global ReLeaf Forests - Moxley Farm, Maryland	EIA-1605	U.S.
	Global ReLeaf Forests - Mt. Baldy Demo, CA	EIA-1605	U.S.
	Global ReLeaf Forests - Nanticoke WMA, Maryland	EIA-1605	U.S.
	Global ReLeaf Forests - Nooksack, Washington	EIA-1605	U.S.
	Global ReLeaf Forests - Oklawaha, Florida	EIA-1605	U.S.
	Global ReLeaf Forests - Oneida County, New York	EIA-1605	U.S.
	Global ReLeaf Forests - Oneida Nation, Wisconsin	EIA-1605	U.S.
	Global ReLeaf Forests - Patapsco River, Maryland	EIA-1605	U.S.
	Global ReLeaf Forests - Perry State Forest, Ohio	EIA-1605	U.S.
	Global ReLeaf Forests - Pike, Colorado	EIA-1605	U.S.
	Global ReLeaf Forests - Pillsbury, Minnesota	EIA-1605	U.S.
	Global ReLeaf Forests - Pine Barrens, New York	EIA-1605	U.S.
	Global ReLeaf Forests - Pine Creek, Idaho	EIA-1605	U.S.
	Global ReLeaf Forests - Point Remove NWR, AR	EIA-1605	U.S.
	Global ReLeaf Forests - Rio Grande NWR, Texas	EIA-1605	U.S.
	Global ReLeaf Forests - Rio Salada, New Mexico	EIA-1605	U.S.
	Global ReLeaf Forests - Rockland Forest, Florida	EIA-1605	U.S.

Table B6. Project Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
	Global ReLeaf Forests - SW OK Riparian Forest, Oklahoma	EIA-1605	U.S.
	Global ReLeaf Forests - Sam Houston, Texas	EIA-1605	U.S.
	Global ReLeaf Forests - San Pedro, Arizona	EIA-1605	U.S.
	Global ReLeaf Forests - Sanborn, South Dakota	EIA-1605	U.S.
	Global ReLeaf Forests - Sands Ponds, Missouri	EIA-1605	U.S.
	Global ReLeaf Forests - Savage River, Maryland	EIA-1605	U.S.
	Global ReLeaf Forests - Spokane, Washington	EIA-1605	U.S.
	Global ReLeaf Forests - St. Catherine, Mississippi	EIA-1605	U.S.
	Global ReLeaf Forests - Starr Hill, New York	EIA-1605	U.S.
	Global ReLeaf Forests - Stephens Forest, Iowa	EIA-1605	U.S.
	Global ReLeaf Forests - Tangipahoa, Louisiana	EIA-1605	U.S.
	Global ReLeaf Forests - Telfair, Georgia	EIA-1605	U.S.
	Global ReLeaf Forests - Temple, Michigan	EIA-1605	U.S.
	Global ReLeaf Forests - Three Mile Lake, Iowa	EIA-1605	U.S.
	Global ReLeaf Forests - Two Rocks, Pennsylvania	EIA-1605	U.S.
	Global ReLeaf Forests - Voyagers, Minnesota	EIA-1605	U.S.
	Global ReLeaf Forests - Island Park Caldera, ID	EIA-1605	U.S.
	Global ReLeaf Forests - San Luis NWR, CA	EIA-1605	U.S.
American Municipal Power - Ohio	Urban Forestry - Tree City USA	EIA-1605	U.S.
Anoka Municipal Utility	Urban Forestry	EIA-1605EZ	U.S.
Atlantic Energy, Inc. (AEI)	Urban Tree Planting	EIA-1605	U.S.
	Wetlands Reclamation Project	EIA-1605	U.S.
Baltimore Gas & Electric Co.	Mississippi River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration	EIA-1605	U.S.
	Reduced Impact Logging of Natural Forest in Malaysia	EIA-1605	Foreign
	Rio Bravo Carbon Sequestration Pilot Project	EIA-1605	Foreign
	Upper Ouachita River Bottomland Hardwood Restoration	EIA-1605	U.S.
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.
Bountiful City Light & Power	Tree planting	EIA-1605	U.S.
Cedar Falls Utilities	Cedar Falls Trees	EIA-1605	U.S.
Central and South West Corporation	Central and South West Land Management	EIA-1605	U.S.
	Mississippi River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration Project	EIA-1605	U.S.
	Reduced Impact Logging of Natural Forest in Malaysia	EIA-1605	Foreign
	Rio Bravo Carbon Sequestration Project	EIA-1605	Foreign
	Upper Ouachita River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.
City Utilities of Springfield	Urban Forestry	EIA-1605	U.S.
City of Edmond, Oklahoma, Electric Department	Tree/Shrub Planting	EIA-1605EZ	U.S.
Cleco Corporation	Mississippi River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration Project	EIA-1605	U.S.
	Reduced Impact Logging of Natural Forest in Malaysia	EIA-1605	Foreign
	Rio Bravo Carbon Sequestration Pilot Project	EIA-1605	Foreign
	Upper Ouachita River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.
DTE Energy/ Detroit Edison	Forest Land Management	EIA-1605	U.S.
	Miscellaneous Tree Plantings - 1999	EIA-1605	U.S.
	Miscellaneous Tree Plantings - 1995	EIA-1605	U.S.
	Miscellaneous Tree Plantings - 1996	EIA-1605	U.S.
	Miscellaneous Tree Plantings - 1997	EIA-1605	U.S.
	Miscellaneous Tree Plantings - 1998	EIA-1605	U.S.
	Mississippi River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.

Table B6. Project Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
	Overflow Bottomland Hardwood Forest Restoration Project	EIA-1605	U.S.
	Reduced Impact Logging of Natural Forest in Malaysia	EIA-1605	Foreign
	Rio Bravo Carbon Sequestration Pilot Program	EIA-1605	Foreign
	Southeast Michigan Afforestation - 1996	EIA-1605	U.S.
	Southeast Michigan Afforestation - 1997	EIA-1605	U.S.
	Southeastern Michigan Afforestation - 1995	EIA-1605	U.S.
	State Forest Land Afforestation - 1996	EIA-1605	U.S.
	State Forest Land Afforestation - 1997	EIA-1605	U.S.
	State Forest Land Afforestation - 1998	EIA-1605	U.S.
	State Forest Land Afforestation - 1999	EIA-1605	U.S.
	Upper Ouachita River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.
Delmarva Power	Mississippi River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration Project	EIA-1605	U.S.
	Reduced Impact Logging of Nat. Forest in Malaysia	EIA-1605	Foreign
	Rio Bravo Carbon Sequestration Pilot Project	EIA-1605	Foreign
	Upper Ouachita River Valley Bottomland	EIA-1605	U.S.
	Urban Tree Planting	EIA-1605	U.S.
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.
Duke Energy Corporation	Mississippi River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration Project	EIA-1605	U.S.
	Reduced Impact Logging of Natural Forest in Malaysia	EIA-1605	Foreign
	Rio Bravo Carbon Sequestration Project	EIA-1605	Foreign
	Upper Ouachita River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.
Dynegy Midwest Generation Inc.	IDNR Tree Planting Partnership	EIA-1605	U.S.
	MISSISSIPPI RIVER VALLEY BOTTOMLAND HARDWOOD RESTORATION	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration	EIA-1605	U.S.
	REDUCED IMPACT LOGGING OF NATURAL FOREST IN MALAYSIA	EIA-1605	Foreign
	Rio Bravo Carbon Sequestration Pilot Project - Component A	EIA-1605	Foreign
	Upper Ouachita River Valley	EIA-1605	U.S.
	WESTERN OREGON CARBON SEQUESTRATION PROJECT	EIA-1605	U.S.
Entergy Services, Inc.	Entergy Forestry Projects	EIA-1605	U.S.
	Mississippi River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration Project	EIA-1605	U.S.
	Reduced Impact Logging of Natural Forest in Malaysia	EIA-1605	Foreign
	Rio Bravo Carbon Sequestration Pilot Project	EIA-1605	Foreign
	Upper Ouachita River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.
	Wetlands and Carbon Sequestration - Southeast LA & TX	EIA-1605	U.S.
Environmental Synergy, Inc.	Reforestation	EIA-1605EZ	U.S.
FirstEnergy Corporation	Mississippi River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration Project	EIA-1605	U.S.
	Reduced Impact Logging of Natural Forest in Malaysia	EIA-1605	Foreign
	Rio Bravo Carbon Sequestration Pilot Project	EIA-1605	Foreign
	Tree Source	EIA-1605	U.S.
	Upper Ouachita River Valley Bottomland Restoration	EIA-1605	U.S.
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.

Table B6. Project Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
GPU, Inc..	Municipal Tree Replacement	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration Project	EIA-1605	U.S.
	Upper Ouachita River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Utilitree Malaysia	EIA-1605	Foreign
	Utilitree Mississippi River Valley	EIA-1605	U.S.
	Utilitree Western Oregon	EIA-1605	U.S.
	Utilitree Rio Bravo	EIA-1605	Foreign
Golden Valley Electric Association, Inc	Tree give-away	EIA-1605EZ	U.S.
Greater Caribbean Energy & Environment Foundation	Mangrove Planting (FL)	EIA-1605EZ	U.S.
	Marsh Planting (FL)	EIA-1605EZ	U.S.
	Seagrass Planting	EIA-1605EZ	U.S.
	Seagrass Planting (FL)	EIA-1605EZ	U.S.
	Seagrass Planting (FL)	EIA-1605EZ	U.S.
	Seagrass Planting (Laguna Madre, TX)	EIA-1605EZ	U.S.
	Seagrass Planting (TX)	EIA-1605EZ	U.S.
Hawaiian Electric Company, Inc.	Mississippi River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Reforestation Project.	EIA-1605	U.S.
	Reduced Impact Logging of Natural Forest in Malaysia	EIA-1605	Foreign
	Rio Bravo Carbon Sequestration Pilot Project	EIA-1605	Foreign
	Upper Ouachita River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.
J.M. Gilmer and Company, Inc.	Flatwoods Tract Afforestation Project	EIA-1605	U.S.
	Smith Place Short Rotation Woody Crop Project	EIA-1605	U.S.
	Smith Place Tract Afforestation Project	EIA-1605	U.S.
JEA.	Urban Forestry	EIA-1605EZ	U.S.
Kansas City Power & Light Company	Mississippi River Bottom Hardwood Restoration	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration Project	EIA-1605	U.S.
	Reduced Impact Logging of Natural Forest in Malaysia	EIA-1605	Foreign
	Upper Ouachita River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Utilitree - Rio Bravo Carbon Sequestration Pilot Project	EIA-1605	Foreign
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.
Los Angeles Department of Water and Power.	Cool Schools Urban Forestry Project	EIA-1605	U.S.
	Mountain Reforestation Project	EIA-1605	U.S.
Minnesota Power	Short Rotation Woody Crop Establishment	EIA-1605	U.S.
Missouri River Energy Services	1994 Tree Planting	EIA-1605EZ	U.S.
	1995 Tree Planting	EIA-1605EZ	U.S.
	1996 Tree Planting	EIA-1605EZ	U.S.
	1997 Tree Planting	EIA-1605EZ	U.S.
	1998 Tree Planting	EIA-1605EZ	U.S.
	1999 Tree Planting	EIA-1605EZ	U.S.
Moorhead Public Service	Urban Forestry (sequestration only)	EIA-1605EZ	U.S.
Nashville Electric Service	Urban Forestry/1999 Planting	EIA-1605EZ	U.S.
	Urban Forestry/1995 Planting	EIA-1605EZ	U.S.
	Urban Forestry/1996 Planting	EIA-1605EZ	U.S.
	Urban Forestry/1997 Planting	EIA-1605EZ	U.S.
	Urban Forestry/1998 Planting	EIA-1605EZ	U.S.
Nebraska Public Power District	Tree planting	EIA-1605EZ	U.S.
NiSource/NIPSCO	Mississippi River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration	EIA-1605	U.S.
	Reduced Impact Logging of Natural Forest in Malaysia	EIA-1605	Foreign
	Rural Tree Planting	EIA-1605	U.S.

Table B6. Project Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
	Upper Ouachita River Valley	EIA-1605	U.S.
	Urban Tree Planting	EIA-1605	U.S.
	UtiliTree- Rio Bravo Pilot	EIA-1605	Foreign
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.
Old Dominion Electric Cooperative	Clover Power Station - Visual Screening	EIA-1605	U.S.
Omaha Public Power District	Tree Planting	EIA-1605EZ	U.S.
Oregon State University (State of Oregon)	RUSAFOR-SAP	EIA-1605	Foreign
PG&E Corporation	Mississippi River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration Project	EIA-1605	U.S.
	Reduced Impact Logging Project (NEP Pilot Project)	EIA-1605	Foreign
	Reduced Impact Logging of Natural Forest in Malaysia	EIA-1605	Foreign
	Rio Bravo Carbon Sequestration Pilot Project	EIA-1605	Foreign
	Upper Ouachita River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.
PPL CORPORATION	Overflow Bottomland Hardwood Forest Restoration Project	EIA-1605	U.S.
	Pheasant Habitat Restoration Program (PHRP)	EIA-1605	U.S.
	Trees for the Future	EIA-1605	U.S.
	Upper Ouachita River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Utilitree Co. - Malaysia Project	EIA-1605	Foreign
	Utilitree Co. - Mississippi R. V. Project	EIA-1605	U.S.
	Utilitree Co. - Rio Bravo Project	EIA-1605	Foreign
	Utilitree Co. - W. Oregon Project	EIA-1605	U.S.
PacifiCorp	Mississippi River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Noel Kempff Mercado Climate Action Project	EIA-1605	Foreign
	Reduced Impact Logging of Natural Forest in Malaysia	EIA-1605	Foreign
	Reforestation in Eastern Washington	EIA-1605	U.S.
	Reforestation of Private Lands in Oregon - Site Class II	EIA-1605	U.S.
	Reforestation of Private Lands in Oregon - Site Class III	EIA-1605	U.S.
	Rio Bravo Carbon Sequestration Pilot Project	EIA-1605	Foreign
	Salt Lake City Urban Forestry Project	EIA-1605	U.S.
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.
Portland General Electric Co.	Friends of Trees	EIA-1605	U.S.
Public Service Enterprise Group	Upper Ouachita River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration	EIA-1605	U.S.
	UtiliTree-Miss R. Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	UtiliTree-Reduce Impact of Logging of Nat. Forest, Malaysia	EIA-1605	Foreign
	UtiliTree-Rio Bravo Carbon Seq. Pilot Project	EIA-1605	Foreign
	UtiliTree-Western Oregon Carbon Sequestration Project	EIA-1605	U.S.
Rappahannock Electric Cooperative	Tree Planting	EIA-1605	U.S.
Sacramento Municipal Utility District	Shade Tree Program	EIA-1605	U.S.
Santee Cooper	Forestation/Reforestation	EIA-1605	U.S.
Seattle City Light	Urban Tree Replacement Program	EIA-1605	U.S.
Shenandoah Valley Electric Cooperative	Visual Screening-Tree Planting	EIA-1605	U.S.
South Carolina Electric & Gas Company	Forest Management Plan	EIA-1605	U.S.
	Mississippi River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration Project	EIA-1605	U.S.
	Reduced Impact Logging of Natural Forest in Malaysia	EIA-1605	Foreign
	Rio Bravo Carbon Sequestration Pilot Project	EIA-1605	Foreign
	Upper Ouachita River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.

Table B6. Project Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
Southern Company	Carbon Sequestration on Company Lands	EIA-1605	U.S.
	Carbon Sequestration on Noncompany Lands	EIA-1605	U.S.
	Mississippi River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration Project	EIA-1605	U.S.
	Reduced Impact Logging of Natural Forest in Malaysia	EIA-1605	Foreign
	Rio Bravo Carbon Sequestration Pilot Project	EIA-1605	Foreign
	Upper Ouachita River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.
TXU	Increased Reforestation in Land Reclamation Program	EIA-1605	U.S.
	Mississippi River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Reduced Impact Logging of Natural Forest in Malaysia	EIA-1605	Foreign
	Texas Reforestation Foundation	EIA-1605	U.S.
	UtiliTree Carbon Company Rio Bravo Pilot Project	EIA-1605	Foreign
	Western Oregon Carbon Sequestion Project	EIA-1605	U.S.
Tacoma Public Utilities	Afforestation (Cowlitz and Nisqually)	EIA-1605EZ	U.S.
	Forest Preservation (Nisqually and Cowlitz)	EIA-1605EZ	U.S.
	Reforestation (Peterman)	EIA-1605EZ	U.S.
Tampa Electric Company	Malaysia Carbon Sequestration Project	EIA-1605	Foreign
	Mississippi River Valley	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration Project	EIA-1605	U.S.
	Rio Bravo Carbon Sequestration Pilot Project	EIA-1605	Foreign
	Upper Ouachita River Valley Bottomland Hardwood Forest R.P.	EIA-1605	U.S.
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.
Tennessee Valley Authority	Afforestation On TVA Lands	EIA-1605	U.S.
	Mississippi River Bottomland Hardwood Restoration	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration Project	EIA-1605	U.S.
	Reduced Impact Logging Of Natural Forest In Malaysia	EIA-1605	Foreign
	Rio Bravo Carbon Sequestration Project	EIA-1605	Foreign
	Upper Ouachita River valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.
The Pacific Forest Trust, Inc.	Modified Forest Management	EIA-1605EZ	U.S.
UNICOM (Commonwealth Edison Company)	Afforestation	EIA-1605	U.S.
	Illinois Prairie Grass Plantings	EIA-1605	U.S.
	Urban Tree Planting	EIA-1605	U.S.
	Utility Pole Reuse	EIA-1605	U.S.
Utah Municipal Power Agency	Tree Planting Program	EIA-1605EZ	U.S.
Waverly Light & Power Company	Trees Forever (Project 8.1)	EIA-1605	U.S.
Western Resources, Inc.	Mississippi River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration Project	EIA-1605	U.S.
	Reduced Impact Logging of Natural Forest in Malaysia	EIA-1605	Foreign
	Rio Bravo Carbon Sequestration Pilot Project	EIA-1605	Foreign
	Upper Ouachita River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.
Whatcom Land Trust	Canyon Lake Creek Community Forest	EIA-1605	U.S.
Wisconsin Electric Power Co.	Mississippi River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Overflow Bottomland Hardwood Forest Restoration Project.	EIA-1605	U.S.
	Reduced Impact Logging of Natural Forest in Malaysia	EIA-1605	Foreign
	Rio Bravo Carbon Sequestration Pilot Project	EIA-1605	Foreign
	Upper Ouachita River Valley Bottomland Hardwood Restoration	EIA-1605	U.S.
	Western Oregon Carbon Sequestration Project	EIA-1605	U.S.

Table B6. Project Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
Wisconsin Public Power Inc.	Tree Power 1991 Plantings (9 year olds)	EIA-1605EZ	U.S.
	Tree Power 1992 Plantings (8 year olds)	EIA-1605EZ	U.S.
	Tree Power 1993 Planting (7 year olds)	EIA-1605EZ	U.S.
	Tree Power 1994 Plantings (5 year olds)	EIA-1605EZ	U.S.
	Tree Power 1995 Plantings (5 year olds)	EIA-1605EZ	U.S.
	Tree Power 1996 Plantings (4 year olds)	EIA-1605EZ	U.S.
	Tree Power 1997 Planting (3 year olds)	EIA-1605EZ	U.S.
	Tree Power 1999 Plantings (one year olds)	EIA-1605EZ	U.S.
Wisconsin Public Service Corporation	Afforestation and Reforestation Efforts	EIA-1605	U.S.
World Parks Endowment	Bilsa Biological Reserve	EIA-1605	Foreign
	Bladen Sanctuary	EIA-1605	Foreign
	Sierra de las Minas Reserve	EIA-1605	Foreign
Zeeland Board of Public Works	Urban Forestry	EIA-1605EZ	U.S.
Halogenated Substances			
AT&T	REFRIGERANT RECOVERY/RECYCLING	EIA-1605	U.S.
Alcan Ingot, Sebree Aluminum Plant	PFC Emissions Reduction	EIA-1605	U.S.
Allegheny Energy, Inc.	SF6 Breaker Replacement	EIA-1605	U.S.
Allergan, Inc.	Elimination of CFCs at Farnborough, UK	EIA-1605	Foreign
	Elimination of CFCs at U.S. Plants	EIA-1605	U.S.
Baltimore Gas & Electric Co.	Refrigerant/Solvent Recycling and Reduction	EIA-1605	U.S.
	SF6 Handling Procedures in Electric Distribution	EIA-1605	U.S.
CLE Resources	Valdor	EIA-1605	U.S.
City Utilities of Springfield	SF6 Recovery	EIA-1605	U.S.
Entergy Services, Inc.	SF6 Reductions	EIA-1605	U.S.
FirstEnergy Corporation	Refrigerator Recycling	EIA-1605	U.S.
	Various CFC Replacements	EIA-1605	U.S.
GPU, Inc.	JCP&L Appliance Turn-In Service Program	EIA-1605	U.S.
	Transmission & Distribution Facility Maintenance - JCP&L	EIA-1605	U.S.
Madison County Depart. of Solid Waste & Sanitation	Refrigerant Recovery	EIA-1605	U.S.
Minnesota Power	Electricity Substation, SF6 Breaker Replacement	EIA-1605	U.S.
National Grid USA	Appliance Removal Program, Residential DSM Programs	EIA-1605	U.S.
NiSource/NIPSCO	Ozone Depleting Chemicals	EIA-1605	U.S.
	SF6 Reductions	EIA-1605	U.S.
Niagara Mohawk Power Corporation	Refrigerator Roundup	EIA-1605	U.S.
Noranda Aluminum Inc.	PFC Emission Reduction via Reductions in Anode Effects	EIA-1605	U.S.
Northern States Power Company	Appliance Recycling	EIA-1605	U.S.
	Low Income Refrigerator Replacement	EIA-1605	U.S.
PG&E Corporation	SF6 Emission Reduction Partnership	EIA-1605	U.S.
Public Service Enterprise Group	Leak Detection and Repair of Equipment Containing SF6	EIA-1605	U.S.
Sacramento Municipal Utility District	Sulfur Hexafluoride Inventory	EIA-1605	U.S.
Southern Company	Sulfur Hexafluoride (SF6) Emissions Reductions	EIA-1605	U.S.
TXU	SF6 Reductions	EIA-1605	U.S.
Tennessee Valley Authority	CFC Management	EIA-1605	U.S.
The Dow Chemical Company	CFC Refrigeration Systems Conversion	EIA-1605	U.S.
	Replace CFC's as blowing agents to manufacture foams.	EIA-1605	U.S.
	Replacing HCFCs & HFCs as Blowing Agents - U.S. Operations	EIA-1605	U.S.
	Replacing HCFCs & HFCs as blowing agents - Foreign Operation	EIA-1605	Foreign
UNICOM (Commonwealth Edison Company)	Unicom Thermal Cooling Plant	EIA-1605	U.S.
VANALCO, INC. - (Primary Aluminum Reduction Plant)	PFC Emission Reductions via Reductions in Anode Effects	EIA-1605	U.S.
Wisconsin Electric Power Co.	CFC-12 Recovery from Appliance Turn-In Program	EIA-1605	U.S.
Other Emission Reductions			
AT&T	AT&T RECYCLING & INDUSTRIAL ECOLOGY R&D INTERNAL PROGRAMS	EIA-1605	U.S.

Table B6. Project Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
Advanced Micro Devices, Inc.	Carbon Dioxide Reductions by Solid Waste Recycling	EIA-1605EZ	U.S.
	Exhaust Reductions	EIA-1605EZ	U.S.
	Gas Cabinet Exhaust Optimization	EIA-1605EZ	U.S.
	Methane Reductions by Solid Waste Recycling	EIA-1605EZ	U.S.
Allegheny Energy, Inc.	EnviroTech Fund - Domestic Activities	EIA-1605	U.S.
	EnviroTech Fund - Foreign Activities	EIA-1605	Foreign
	Fly Ash use as replacement for cement	EIA-1605	U.S.
Ameren Corporation (formerly UE and CIPS)	Flyash substitution for cement.	EIA-1605	U.S.
American Electric Power, Inc.	Enviro Tech Investment Fund I Limited Partnership - US	EIA-1605	U.S.
	Enviro Tech Investment Funds - Foreign	EIA-1605	Foreign
	Fly Ash Utilization Program (Cement Replacement)	EIA-1605	U.S.
American Municipal Power - Ohio	Main Office Recycling Program	EIA-1605	U.S.
Arizona Electric Power Cooperative, Inc.	Fly Ash Sales	EIA-1605EZ	U.S.
	Utility Photo Voltaic - Group Membership	EIA-1605EZ	U.S.
Austin Energy	Coal Combustion ByProduct Reutilization	EIA-1605EZ	U.S.
Avista Utilities	Investment Recovery Recycling	EIA-1605	U.S.
	Office Recycling	EIA-1605	U.S.
Baltimore Gas & Electric Co.	Coal Ash Substitution for Portland Cement	EIA-1605	U.S.
	Solid Waste Recycling and Source Reduction	EIA-1605	U.S.
Burlington County Board of Chosen Freeholders	Burlington County Regional Recycling Program	EIA-1605	U.S.
Central Hudson Gas & Electric Corporation	Coal Ash Utilization	EIA-1605	U.S.
Central and South West Corporation	Coal Combustion By-Product Use	EIA-1605	U.S.
Clairol	Recycled 60% of Generated Solid Waste	EIA-1605	U.S.
	Reduce Hairspray VOC Content	EIA-1605	U.S.
DTE Energy/ Detroit Edison	Coal Ash Reuse - Canada	EIA-1605	Foreign
	Coal Ash Reuse - U.S.	EIA-1605	U.S.
Delmarva Power	Ash Reuse	EIA-1605	U.S.
Duke Energy Corporation	Recycling Flyash	EIA-1605	U.S.
Dynegy Midwest Generation Inc.	3 Flyash Sales (Balwin, Havana, Hennepin, Vermilion, Wd Rvr)	EIA-1605	U.S.
Entergy Services, Inc.	Fly Ash use as replacement for cement	EIA-1605	U.S.
Essroc Cement Corp. - Bessemer, Pa Plant.	Project 6. BLX Blending	EIA-1605	U.S.
Essroc Cement Corp. - Frederick, MD Plant.	Project 5. Masonry Cement	EIA-1605	U.S.
FirstEnergy Corporation	Substitution of Fly Ash for Portland Cement in Concrete	EIA-1605	U.S.
GPU, Inc..	Recycling Program	EIA-1605	U.S.
JEA.	Commercial Construction Workshops	EIA-1605EZ	U.S.
	Energy Conservation Advertisements	EIA-1605EZ	U.S.
	Low Income Residential	EIA-1605EZ	U.S.
	New Home Construction Workshops	EIA-1605EZ	U.S.
	Non-residential energy audits	EIA-1605EZ	U.S.
	Residential Energy Audits	EIA-1605EZ	U.S.
Kansas City Power & Light Company	Coal Fly Ash Recycling	EIA-1605	U.S.
	ENVIROTECH Fund	EIA-1605	U.S.
Lower Colorado River Authority	Coal Combustion By-Product Recycling	EIA-1605	U.S.
Madison County Depart. of Solid Waste & Sanitation	Recycling	EIA-1605	U.S.
Minnesota Power	Waste Paper Recycling Development	EIA-1605	U.S.
Minnesota Resource Recovery Association	Book ReUse Center Carbon Dioxide Reductions	EIA-1605EZ	U.S.
	Book ReUse Center Methane Reduction	EIA-1605EZ	U.S.
	Paper Recycling Carbon Dioxide Reductions	EIA-1605EZ	U.S.
	Paper Recycling Methane Reductions	EIA-1605EZ	U.S.
Nebraska Public Power District	Coal Ash Reuse	EIA-1605EZ	U.S.
	Materials Recycling	EIA-1605EZ	U.S.
NiSource/NIPSCO	Coal Combustion Byproduct Utilization	EIA-1605	U.S.
	Employee Training	EIA-1605	U.S.
	Recycling program	EIA-1605	U.S.

Table B6. Project Reported by Project Type, Data Year 1999

Project Type and Reporter	Project	Form Type	Location
Niagara Mohawk Power Corporation	Coal Ash Utilization	EIA-1605	U.S.
	Investment Recovery Program (Recycling)	EIA-1605	U.S.
Northern States Power Company	Coal ash utilization	EIA-1605	U.S.
	Recycling program	EIA-1605	U.S.
Omaha Public Power District	Recycling Fly Ash	EIA-1605EZ	U.S.
	Recycling Programs	EIA-1605EZ	U.S.
PG&E Corporation	Coal Ash Recycling as Cement Replacement	EIA-1605	U.S.
	Natural Gas Star Program	EIA-1605	U.S.
PPL CORPORATION	Ash Use in Cement Making	EIA-1605	U.S.
PacifiCorp	Coal Ash Recycling	EIA-1605	U.S.
	Ethanol Production Carbon Offset Project	EIA-1605	U.S.
Platte River Power Authority & 4 owner cities	Estes Park Recycling Program	EIA-1605	U.S.
	Fort Collins Recycling Program	EIA-1605	U.S.
	Loveland Recycling Program	EIA-1605	U.S.
Portland General Electric Co.	PGE Corporate Recycling Program	EIA-1605	U.S.
Public Service Enterprise Group	Resource Recovery Coal Ash Management Program	EIA-1605	U.S.
	WasteWise	EIA-1605	U.S.
Public Utility District No. 1 of Snohomish County	Scrap Metals Recycling	EIA-1605	U.S.
	We-cycle Office Wastepaper (WOW) Program	EIA-1605	U.S.
Quad/Graphics, Inc.	Waste paper reduction program	EIA-1605	U.S.
	West Allis plant brownfield site	EIA-1605	U.S.
Rangely Weber Sand Unit	Rangely CO2 Injection Project	EIA-1605	U.S.
Reliant Energy - HL&P	Coal Fly Ash Sales	EIA-1605	U.S.
Salt River Project	Fly Ash Sales	EIA-1605EZ	U.S.
	Recycling (CH4 Reductions)	EIA-1605EZ	U.S.
	Recycling (CO2 Reduction)	EIA-1605EZ	U.S.
Santee Cooper	Fly Ash Used in Concrete Manufacture	EIA-1605	U.S.
Seminole Electric Cooperative, Inc.	Fly Ash & Bottom Ash Reuse	EIA-1605EZ	U.S.
Separation Technologies, Inc	STI fly ash porcess at U.S.Generating Brayton Point Station	EIA-1605EZ	U.S.
	STI fly ash process at Balt. Gas & Electric Brandon Shores	EIA-1605EZ	U.S.
	STI fly ash process at Carolina Power and Light Roxboro Sta.	EIA-1605EZ	U.S.
South Carolina Electric & Gas Company	Coal Ash Utilization Program	EIA-1605	U.S.
Southern California Edison Co.	Fly Ash Sales for Concrete Production	EIA-1605	U.S.
TXU	Coal Ash Byproduct Use	EIA-1605	U.S.
	Paper and Aluminum Recycling	EIA-1605	U.S.
	Ranger Exhaust Gas Project	EIA-1605	U.S.
Tampa Electric Company	Fly Ash Reuse	EIA-1605	U.S.
Tennessee Valley Authority	Flyash Sales To Concrete Industry	EIA-1605	U.S.
	Paper Recycling	EIA-1605	U.S.
UNICOM (Commonwealth Edison Company)	Coal Combustion By-product utilization	EIA-1605	U.S.
	Freon Recycling	EIA-1605	U.S.
	Investment Recovery/Life Cycle Management/Recycling	EIA-1605	U.S.
Western Resources, Inc.	Coal Fly Ash Recycling	EIA-1605	U.S.
Wisconsin Electric Power Co.	Fly ash substitution program	EIA-1605	U.S.
Wisconsin Public Power Inc.	98 Energy Education	EIA-1605EZ	U.S.
	99 Energy Education	EIA-1605EZ	U.S.
	Commercial Industrial Farm Program	EIA-1605EZ	U.S.

Note: This table excludes confidential reporters.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Table B7. Distribution of Projects Reported by Project Type and Reporting Form, Data Year 1999

Project Type	Form EIA-1605		Form EIA-1605EZ		Total	
	Number of Reporters	Number of Projects	Number of Reporters	Number of Projects	Number of Reporters	Number of Projects
Electricity Generation, Transmission, and Distribution	68	382	24	53	92	435
Cogeneration	10	17	1	1	11	18
Energy End Use	77	318	21	61	98	379
Transportation	39	62	4	11	43	73
Waste Treatment and Disposal (Methane)	42	151	5	42	47	193
Agriculture (Methane and Nitrous Oxide)	3	4	0	0	3	4
Oil and Natural Gas Systems and Coal Mining (Methane)	20	28	1	3	21	31
Carbon Sequestration	53	401	18	42	71	443
Halogenated Substances	27	36	0	0	27	36
Other Emission Reductions	46	71	12	32	58	103
Total (All Project Types)	**144**	**1,470**	**40**	**245**	**184**	**1,715**

Note: The total numbers of reporters is smaller than the sums of the numbers of reporters for each project type, because most reporters provided information on more than one project.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Table B8. Distribution of Emission Reductions Reported by Project Type, Data Year 1999
(Metric Tons Carbon Dioxide Equivalent)

Project Type	Form EIA-1605	Form EIA-1605EZ	Total
Electricity Generation, Transmission, and Distribution	110,222,138	8,118,564	118,340,702
Cogeneration	5,227,994	1	5,227,995
Energy End Use	22,834,644	334,167	23,168,811
Transportation	325,754	1,873	327,627
Waste Treatment and Disposal (Methane)	41,541,504	2,897,531	44,439,034
Agriculture (Methane and Nitrous Oxide)	3,754	0	3,754
Oil and Natural Gas Systems and Coal Mining (Methane)	12,617,948	47,362	12,665,310
Carbon Sequestration	9,627,005	71,048	9,698,053
Halogenated Substances	4,330,827	0	4,330,827
Other Emission Reductions	6,393,201	1,131,273	7,524,474
Total (All Project Types)	**213,124,770**	**12,601,817**	**225,726,587**

Note: This table excludes those gases, such as CFCs and HCFCs, with ambiguous global warming potentials (GWPs), as determined by the Intergovernmental Panel on Climate Change. For further discussion of GWPs, see the "Greenhouse Gases in Perspective" chapter in Energy Information Administration, *Emissions of Greenhouse Gases in the United States 1999*, DOE/EIA-0573(99) (Washington, DC, October 2000), http://www.eia.doe.gov/oiaf/1605/ggrpt/emission.html.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Table B9. Reporting Entities by Sector and SIC Code, Data Year 1999

Sector, SIC Code, and Reporter	Form Type	Number of Projects Reported (Schedule II)	Entity-Wide Report (Schedule III)	Commitments (Schedule IV)
Agriculture & Forestry				
08 (Forestry)				
American Forests	1605	131	No	No
The Pacific Forest Trust, Inc.	1605EZ	1	No	No
Whatcom Land Trust	1605	1	No	No
65 (Real Estate)				
J.M. Gilmer and Company, Inc.	1605	3	No	No
89 (Services, not elsewhere classified)				
Environmental Synergy, Inc.	1605EZ	1	No	No
Greater Caribbean Energy & Environment Foundation	1605EZ	7	No	No
World Parks Endowment	1605	3	Yes	No
Total Number of Projects Reported by Entities in Sector		**147**		
Total Number of Entities in Sector Reporting on Schedule		**7**	**1**	**0**
Alternative Energy Providers				
12 (Coal Mining)				
Black Warrior Methane Corp.	1605	3	Yes	No
U. S. Steel Mining Company, LLC	1605	2	No	No
14 (Nonmetallic Minerals, except fuels)				
Fred Weber, Inc.	1605EZ	1	No	No
29 (Petroleum Refining and Other Related Industries)				
CDX Gas, LLC	1605	1	No	No
CMV Joint Venture	1605	2	No	No
El Paso Production Company	1605	1	No	No
GeoMet Inc.	1605	2	No	No
LAHD Energy, Inc.	1605EZ	3	No	No
Rosewood Resources, Inc.	1605	1	No	No
USX Corporation	1605	1	No	No
49 (Electric, Gas, and Sanitary Services)				
Alabama Biomass Partners, Ltd	1605EZ	1	No	No
Asheville Landfill Gas, LLC	1605	1	No	No
Biomass Partners, LP	1605EZ	1	No	No
Catawba Landfill Gas, LLC	1605	1	No	No
Commonwealth Bethlehem Energy, LLC	1605	1	Yes	Yes
Delaware Solid Waste Authority	1605	4	No	No
Ecogas Corporation	1605	18	Yes	No
Energy Management Partners, LP	1605EZ	1	No	No
Gas Recovery Systems	1605	10	No	No
Granger Electric Company	1605	9	No	No
Integrated Waste Services Association	1605	1	Yes	No
Iredell Landfill Gas, LLC	1605	1	No	No
LFG Energy, Inc.	1605	2	No	No
Madison County Depart. of Solid Waste & Sanitation	1605	3	No	No
National Grid USA	1605	7	No	No
Natural Power, Inc.	1605	1	No	No
NC Muni Landfill Gas Partners, LP	1605	1	No	No
NEO Corporation	1605	32	No	No
Newton Landfill Gas, LLC	1605	1	No	No
North American Carbon, Inc.	1605	4	No	Yes
North Carolina Biomass Partners	1605EZ	1	No	No
Northwest Fuel Development, Inc.	1605	1	No	No
Oak Creek Energy Systems Inc.	1605	1	No	No
Palmer Capital Corporation	1605	10	No	No
PEI Power Corp	1605	1	Yes	No

Table B9. Reporting Entities by Sector and SIC Code, Data Year 1999

Sector, SIC Code, and Reporter	Form Type	Number of Projects Reported (Schedule II)	Entity-Wide Report (Schedule III)	Commitments (Schedule IV)
Pitt Landfill Gas, LLC	1605	1	No	No
Redstone Gas Partners LLC	1605	0	No	Yes
SeaWest Windpower, Inc.	1605	5	No	No
Seneca Energy, Inc.	1605	2	No	No
Southeastern Biomass Partners, LP	1605EZ	1	No	No
The Bentech Group of Delaware, Inc.	1605	4	No	No
Town of Colonie Solid Waste Management Facility	1605	1	Yes	Yes
Zahren Alternative Power Corporation	1605EZ	37	No	No
Total Number of Projects Reported by Entities in Sector		**182**		
Total Number of Entities in Sector Reporting on Schedule		**43**	**6**	**4**
Electric Power				
49 (Electric, Gas, and Sanitary Services)				
A&N Electric Cooperative	1605	2	No	Yes
AES Hawaii, Inc.	1605	1	Yes	No
AES Shady Point	1605	1	Yes	No
AES Thames	1605	1	Yes	Yes
Allegheny Energy, Inc.	1605	42	Yes	Yes
Alliant Energy	1605	34	Yes	Yes
Ameren Corporation (formerly UE and CIPS)	1605	25	No	Yes
American Electric Power, Inc.	1605	49	No	No
American Municipal Power - Ohio	1605	24	No	Yes
Anoka Municipal Utility	1605EZ	4	No	No
Arizona Electric Power Cooperative, Inc.	1605EZ	3	No	No
Arizona Public Service Company	1605	0	Yes	Yes
Atlantic Energy, Inc. (AEI)	1605	8	No	Yes
Austin Energy	1605EZ	7	No	No
Avista Utilities	1605	4	No	No
Baltimore Gas & Electric Co.	1605	22	Yes	Yes
BARC Electric Cooperative	1605	2	No	No
Bountiful City Light & Power	1605	7	Yes	Yes
Carolina Power & Light Company	1605	1	No	No
Cedar Falls Utilities	1605	15	No	No
Central and South West Corporation	1605	15	Yes	Yes
Central Hudson Gas & Electric Corporation	1605	8	Yes	Yes
Choptank Electric Cooperative	1605	1	No	No
City of Edmond, Oklahoma, Electric Department	1605EZ	3	No	No
City of Palo Alto	1605EZ	11	No	No
City Utilities of Springfield	1605	5	No	No
Cleco Corporation	1605	6	No	Yes
CMS Energy	1605	5	Yes	Yes
Community Electric Cooperative	1605	1	No	No
Delaware Electric Cooperative	1605	1	No	No
Delmarva Power	1605	16	No	No
Delta Electric Power Association	1605EZ	5	No	No
DTE Energy/ Detroit Edison	1605	33	Yes	No
Duke Energy Corporation	1605	11	Yes	Yes
Dynegy Midwest Generation Inc.	1605	29	Yes	Yes
Entergy Services, Inc.	1605	31	Yes	Yes
FirstEnergy Corporation	1605	29	Yes	Yes
Florida Power Corporation	1605	0	Yes	No
FPL Group	1605	3	Yes	Yes
Golden Valley Electric Association, Inc.	1605EZ	4	No	No
GPU, Inc.	1605	47	No	No

Table B9. Reporting Entities by Sector and SIC Code, Data Year 1999

Sector, SIC Code, and Reporter	Form Type	Number of Projects Reported (Schedule II)	Entity-Wide Report (Schedule III)	Commitments (Schedule IV)
Hawaiian Electric Company, Inc.	1605	12	Yes	Yes
JEA	1605EZ	11	No	No
Kansas City Power & Light Company	1605	15	Yes	Yes
KeySpan Energy Corporation	1605	0	Yes	No
Los Angeles Department of Water and Power	1605	16	Yes	Yes
Lower Colorado River Authority	1605	6	Yes	Yes
McNeil Generating Station	1605	0	Yes	No
Mecklenburg Electric Cooperative	1605	1	No	No
Minnesota Power	1605	8	No	Yes
Missouri River Energy Services	1605EZ	6	No	No
Moorhead Public Service	1605EZ	6	No	No
Nashville Electric Service	1605EZ	7	No	No
Nebraska Public Power District	1605EZ	10	No	No
Niagara Mohawk Power Corporation	1605	13	Yes	Yes
NiSource/NIPSCO	1605	30	Yes	Yes
North Carolina Electric Membership Corporation	1605EZ	1	No	No
Northeast Utilities	1605	0	Yes	Yes
Northern Neck Electric Cooperative	1605	2	No	Yes
Northern States Power Company	1605	20	No	Yes
Northern Virginia Electric Cooperative	1605	2	No	No
Old Dominion Electric Cooperative	1605	2	No	No
Omaha Public Power District	1605EZ	10	No	No
PacifiCorp	1605	36	Yes	Yes
PECO Energy Company	1605	13	Yes	Yes
PG&E Corporation	1605	23	Yes	No
Platte River Power Authority & 4 owner cities	1605	24	No	No
Portland General Electric Co.	1605	23	Yes	No
PPL CORPORATION	1605	27	Yes	Yes
Prince George Electric Cooperative	1605	1	No	Yes
Public Service Company of New Mexico	1605	4	No	Yes
Public Service Enterprise Group	1605	15	Yes	No
Public Utility District No. 1 of Snohomish County	1605	9	No	No
Rappahannock Electric Cooperative	1605	3	No	No
Reliant Energy - HL&P	1605	5	Yes	Yes
Sacramento Municipal Utility District	1605	7	Yes	No
Salt River Project	1605EZ	17	No	No
Santee Cooper	1605	9	Yes	Yes
Seattle City Light	1605	18	Yes	No
Seminole Electric Cooperative, Inc.	1605EZ	4	No	No
Shenandoah Valley Electric Cooperative	1605	3	No	Yes
Shrewsbury Electric Light Plant	1605EZ	2	No	No
South Carolina Electric & Gas Company	1605	13	No	Yes
Southern California Edison Co.	1605	9	No	No
Southern Company	1605	26	Yes	Yes
Southside Electric Cooperative	1605	1	No	No
Steuben Rural Electric Co-op	1605EZ	10	No	No
Tacoma Public Utilities	1605EZ	7	No	No
Tampa Electric Company	1605	7	Yes	Yes
Tennessee Valley Authority	1605	22	Yes	Yes
TXU	1605	20	No	Yes
UNICOM (Commonwealth Edison Company)	1605	18	No	Yes
Utah Municipal Power Agency	1605EZ	7	No	No
Vermont Public Power Supply Authority	1605	12	No	No

Table B9. Reporting Entities by Sector and SIC Code, Data Year 1999

Sector, SIC Code, and Reporter	Form Type	Number of Projects Reported (Schedule II)	Entity-Wide Report (Schedule III)	Commitments (Schedule IV)
Waverly Light & Power Company	1605	9	Yes	Yes
Western Resources, Inc.	1605	54	No	Yes
Wisconsin Electric Power Co.	1605	17	No	Yes
Wisconsin Public Power Inc.	1605EZ	16	No	No
Wisconsin Public Service Corporation	1605	3	Yes	Yes
Zeeland Board of Public Works.	1605EZ	3	No	No
Total Number of Projects Reported by Entities in Sector		**1,191**		
Total Number of Entities in Sector Reporting on Schedule		**100**	**42**	**47**
Industry				
20 (Food and Kindred Products)				
Essential Foods, Inc.	1605	1	No	No
27 (Printing and Publishing)				
Quad/Graphics, Inc.	1605	6	No	No
28 (Chemicals and Allied Products)				
Allergan, Inc.	1605	17	Yes	Yes
Clairol	1605	14	Yes	No
Johnson & Johnson.	1605	10	Yes	No
Pharmacia & Upjohn	1605EZ	2	No	No
The Dow Chemical Company	1605	4	Yes	Yes
29 (Petroleum Refining and Other Related Industries)				
Rangely Weber Sand Unit	1605	1	No	No
Sunoco, Inc.	1605	0	Yes	Yes
32 (Stone, Clay, Glass, and Concrete Products)				
Arizona Portland Cement Co.	1605	10	Yes	Yes
Calaveras Cement Company	1605	1	Yes	No
California Portland Cement Co. - Colton Plant	1605	8	Yes	Yes
California Portland Cement Co. - Mojave Plant	1605	5	Yes	Yes
Essroc Cement Corp. - Bessemer, PA Plant	1605	6	Yes	No
Essroc Cement Corp. - Essexville, MI Plant	1605	0	Yes	No
Essroc Cement Corp. - Frederick, MD Plant	1605	3	Yes	No
Essroc Cement Corp. - Logansport, IN Plant	1605	4	Yes	No
Essroc Cement Corp. - PA Operations	1605	3	Yes	No
Essroc Cement Corp. - San Juan, PR Plant	1605	2	Yes	No
Essroc Cement Corp. - Speed, IN Plant	1605	9	Yes	No
Lehigh Portland Cement Company	1605	6	Yes	No
Separation Technologies, Inc.	1605EZ	3	No	No
33 (Primary Metals Industries)				
Alcan Ingot, Sebree Aluminum Plant	1605	1	Yes	Yes
Bethlehem Steel Corporation	1605	0	Yes	No
Columbia Falls Aluminum Company LLC	1605	1	Yes	No
Noranda Aluminum Inc.	1605	1	No	Yes
VANALCO, INC. - (Primary Aluminum Reduction Plant)	1605	1	Yes	Yes
34 (Fabricated Metal Products except machinery and transportation equipment)				
The Gillette Company	1605	0	Yes	No
36 (Electronic and Other Electrical Equipment)				
Advanced Micro Devices, Inc.	1605EZ	15	No	No
IBM	1605	0	Yes	Yes
Lucent Technologies	1605	0	Yes	Yes
Motorola Austin	1605	0	Yes	Yes
37 (Transportation Equipment)				
General Motors Corporation	1605	3	Yes	No
International Truck and Engine Corporation	1605	0	Yes	Yes
Pratt & Whitney North Berwick	1605	2	No	No

Table B9. Reporting Entities by Sector and SIC Code, Data Year 1999

Sector, SIC Code, and Reporter	Form Type	Number of Projects Reported (Schedule II)	Entity-Wide Report (Schedule III)	Commitments (Schedule IV)
Rolls-Royce Corporation	1605	3	Yes	No
Volvo Cars of North America, Inc.	1605EZ	1	No	No
39 (Miscellaneous Manufacturing Industries)				
Estee Lauder Companies.	1605	2	No	No
Republic Metals Corporation	1605	0	Yes	No
48 (Communications)				
AT&T	1605	4	Yes	No
67 (Holding and Other Investment Offices)				
CLE Resources	1605	9	No	Yes
87 (Engineering and Management Services)				
Gilead Sciences	1605EZ	2	No	No
Total Number of Projects Reported by Entities in Sector		**168**		
Total Number of Entities in Sector Reporting on Schedule		**43**	**30**	**14**
Other				
57 (Furniture and Homefurnishings Stores)				
Abe Krasne Home Furnishings, Inc.	1605	2	No	No
88 (Private Households)				
Arthur Rypinski & Jacquelyn Porth	1605	0	Yes	No
49 (Electric, Gas, and Sanitary Services)				
Burlington County Board of Chosen Freeholders	1605EZ	5	No	No
86 (Membership Organizations)				
Minnesota Resource Recovery Association	1605	5	Yes	No
82 (Educational Services)				
Oregon State University (State of Oregon)	1605	1	No	No
Rochester Institute of Technology	1605	13	No	No
91 (Executive, Legislative, and General)				
U.S. Department of Energy - Energy Management	1605	0	Yes	No
U.S. Department of Energy- Office of Solar	1605	1	No	No
Total Number of Projects Reported by Entities in Sector		**27**		
Total Number of Entities in Sector Reporting on Schedule		**8**	**3**	**0**
Total Number of Projects Reported		**1,715**		
Total Number of Entities Reporting on Schedule		**184**	**82**	**65**

Note: This table excludes confidential reporters.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Table B10. Affiliation of Reported Emission Reduction and Carbon Sequestration Projects with Voluntary Programs by Project Type, Data Year 1999

Voluntary Program	Number of Reporters	Project Type					Total Number of Projects
		Electricity	End Use	Carbon Sequestration	Methane	Halogens and Other Project Types	
Climate Challenge	88	366	236	265	39	84	990
Climate Wise	25	2	115	1	1	11	130
Coalbed Methane Outreach	7	—	—	—	11	—	11
Compressed Air Challenge	1	—	1	—	—	—	1
Energy Star Building	6	—	24	—	—	—	24
Energy Star Computers	1	—	1	—	—	—	1
Energy Star Transformers	7	6	1	—	—	—	7
Other Energy Star Programs	2	—	2	—	—	1	3
Green Lights	18	—	23	—	—	—	23
Landfill Methane Outreach	23	7	—	—	115	—	122
Motor Challenge	5	—	7	—	—	—	7
Natural Gas STAR	7	—	—	—	7	1	8
Other Voluntary Programs	7	—	3	2	2	2	9
Rebuild America	1	—	1	—	—	1	2
Sulfur Hexafluoride Emissions Reduction Partnership for Electric Power Systems	1	—	—	—	—	1	1
United States Initiative on Joint Implementation	25	3	—	27	—	—	30
Voluntary Aluminum Industrial Partnership	3	—	—	—	—	3	3
Waste Wi$e	3	—	—	—	—	3	3

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Table B11. Reporting Entities and Sectors, Years Reported, and Form Type, Data Years 1994-1999

Reporter	Sector	1994	1995	1996	1997	1998	1999
A&N Electric Cooperative	Electric Power		1605	1605	1605	1605	1605
Abe Krasne Home Furnishings, Inc.	Other					1605	1605
Advanced Micro Devices, Inc.	Industry				1605EZ	1605EZ	1605EZ
ADVANE Heli-Welders	Industry					1605EZ	
AES Hawaii, Inc.	Electric Power			1605	1605	1605	1605
AES Shady Point	Electric Power			1605	1605	1605	1605
AES Thames	Electric Power			1605	1605	1605	1605
Air Exchange, Inc.	Other					1605	
Alabama Biomass Partners, Ltd.	Alternative Energy					1605EZ	1605EZ
Alcan Ingot, Sebree Aluminum Plant	Industry	1605	1605	1605	1605	1605	1605
Allegheny Energy, Inc.	Electric Power	1605	1605	1605	1605	1605	1605
Allergan, Inc.	Industry					1605	1605
Alliant Energy	Electric Power	1605	1605	1605	1605	1605	1605
Ameren Corporation (formerly UE and CIPS)	Electric Power					1605	1605
AmerenCIPS	Electric Power	1605	1605	1605	1605		
American Electric Power, Inc.	Electric Power	1605	1605	1605	1605	1605	1605
American Forests	Agriculture & Forestry		1605	1605	1605	1605	1605
American Municipal Power - Ohio	Electric Power			1605	1605	1605	1605
AMERICAN SOILS	Industry					1605EZ	
Anoka Municipal Utility	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Arizona Electric Power Cooperative, Inc.	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Arizona Portland Cement Co.	Industry				1605	1605	1605
Arizona Public Service Company	Electric Power	1605	1605	1605	1605	1605	1605
Arthur Rypinski & Jacquelyn Porth	Other	1605	1605	1605	1605	1605	1605
Asheville Landfill Gas, LLC	Alternative Energy				1605	1605	1605
AT&T	Industry						1605
Atlantic Energy, Inc. (AEI)	Electric Power		1605	1605	1605	1605	1605
Audros Corporation	Industry					1605EZ	
Austin Energy	Electric Power	1605	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Avista Utilities	Electric Power						1605
Baltimore Gas & Electric Co.	Electric Power	1605	1605	1605	1605	1605	1605
BARC Electric Cooperative	Electric Power		1605	1605	1605	1605	1605
BAYER Corporation	Industry					1605	
Berkeley Electric Cooperative	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ		
Bethlehem Steel Corporation	Industry					1605	1605
Biomass Partners, LP	Alternative Energy					1605EZ	1605EZ
Black Warrior Methane Corp.	Alternative Energy					1605	1605
Blue Earth Light & Water	Electric Power		1605				
Bountiful City Light & Power	Electric Power	1605EZ	1605	1605	1605	1605	1605
BP Amoco	Industry				1605	1605	
Brooklyn Union	Industry	1605EZ	1605EZ	1605EZ			
Buckeye Power Incorporated	Electric Power	1605	1605EZ		1605		
Burlington County Board of Chosen Freeholders	Other				1605	1605	1605
Calaveras Cement Company	Industry						1605
California Portland Cement Co. - Colton Plant	Industry				1605	1605	1605
California Portland Cement Co. - Mojave Plant	Industry				1605	1605	1605
Carolina Power & Light Company	Electric Power	1605	1605	1605	1605	1605	1605
Carter H. Lewis, III	Other	1605EZ					
Catawba Landfill Gas, LLC	Alternative Energy					1605	1605
CDX Gas, LLC	Alternative Energy					1605	1605
Cedar Falls Utilities	Electric Power	1605	1605	1605	1605	1605	1605
Centerior Energy Corporation	Electric Power	1605	1605	1605	1605		
Central and South West Corporation	Electric Power				1605	1605	1605
Central Hudson Gas & Electric Corporation	Electric Power	1605	1605	1605	1605	1605	1605

Table B11. Reporting Entities and Sectors, Years Reported, and Form Type, Data Years 1994-1999

Reporter	Sector	1994	1995	1996	1997	1998	1999
Central Illinois Light Company	Electric Power	1605	1605	1605	1605		
Cereza Energy, Inc.	Alternative Energy					1605	
Choptank Electric Cooperative	Electric Power		1605	1605	1605	1605	1605
Cinergy Corp.	Electric Power	1605	1605	1605	1605	1605	
City of Edmond, Oklahoma, Electric Department	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
City of Fairfield Wastewater Division	Other				1605EZ	1605EZ	
City of Palo Alto	Electric Power			1605EZ	1605EZ	1605EZ	1605EZ
City of Sherrill Power & Light	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ		
City of Wayne	Electric Power	1605EZ	1605EZ				
CITY UTILITIES OF SPRINGFIELD	Electric Power	1605	1605	1605	1605	1605	1605
Clairol	Industry						1605
CLE Resources	Industry			1605	1605	1605	1605
Cleco Corporation	Electric Power	1605	1605	1605	1605	1605	1605
CMS Energy	Electric Power						1605
CMV Joint Venture	Alternative Energy					1605	1605
Columbia Falls Aluminum Company LLC	Industry			1605	1605	1605	1605
COM/Electric	Electric Power		1605EZ	1605EZ	1605EZ	1605EZ	
Commonwealth Bethlehem Energy, LLC	Alternative Energy					1605	1605
Community Electric Cooperative	Electric Power		1605	1605	1605	1605	1605
CONSOL Coal Group	Industry		1605	1605		1605	
Cooperative Power Association	Electric Power	1605	1605	1605	1605	1605	
County Sanitation Districts of Los Angeles County	Alternative Energy					1605	
Dade Behring, Inc.	Industry					1605	
DeBourgh Manufacturing Company	Industry		1605	1605EZ	1605EZ		
Delaware Electric Cooperative	Electric Power		1605	1605	1605	1605	1605
Delaware Solid Waste Authority	Alternative Energy						1605
Delmarva Power	Electric Power	1605	1605	1605	1605	1605	1605
Delta Electric Power Association	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Dominion Energy, L.P.	Alternative Energy					1605	
Dragon Products Company, Inc.	Industry					1605	
DTE Energy/ Detroit Edison	Electric Power	1605	1605	1605	1605	1605	1605
Duke Energy Corporation	Electric Power					1605	1605
Duke Engineering and Services	Alternative Energy			1605EZ	1605EZ		
Duke Power Company	Electric Power	1605	1605	1605	1605		
DuPont Company	Industry		1605		1605	1605	
Duquesne Light Company	Electric Power		1605	1605	1605	1605	
Dynegy Midwest Generation Inc.	Electric Power	1605	1605	1605	1605	1605	1605
East River Electric Power Cooperative, Inc.	Electric Power	1605EZ	1605EZ	1605EZ			
Ecogas Corporation	Alternative Energy					1605	1605
El Paso Production Company	Alternative Energy						1605
Energy Management Partners, LP	Alternative Energy					1605EZ	1605EZ
Engelhard	Industry					1605	
Enron Renewable Energy Corporation	Alternative Energy			1605EZ			
Entergy Services, Inc.	Electric Power	1605	1605	1605	1605	1605	1605
EnviroGas Limited Partnership	Alternative Energy		1605				
Environmental Synergy, Inc.	Agriculture & Forestry						1605EZ
Environmentally Correct Concepts, Inc.	Agriculture & Forestry				1605		
Essential Foods, Inc.	Industry					1605	1605
Essroc Cement Corp. - Bessemer, PA Plant	Industry					1605	1605
Essroc Cement Corp. - Essexville, MI Plant	Industry					1605	1605
Essroc Cement Corp. - Frederick, MD Plant	Industry					1605	1605
Essroc Cement Corp. - Logansport, IN Plant	Industry					1605	1605
Essroc Cement Corp. - PA Operations	Industry					1605	1605
Essroc Cement Corp. - San Juan, PR Plant	Industry					1605	1605

Table B11. Reporting Entities and Sectors, Years Reported, and Form Type, Data Years 1994-1999

Reporter	Sector	1994	1995	1996	1997	1998	1999
Essroc Cement Corp. - Speed, IN Plant	Industry					1605	1605
Estee Lauder Companies	Industry					1605	1605
Fayetteville Gas Company, LLC	Alternative Energy			1605	1605		
FirstEnergy Corporation	Electric Power					1605	1605
Flint Electric Membership Corporation	Electric Power	1605EZ	1605EZ				
Florida Power Corporation	Electric Power		1605	1605	1605	1605	1605
FPL Group	Electric Power	1605	1605	1605	1605	1605	1605
Fred Weber, Inc.	Alternative Energy					1605EZ	1605EZ
Gas Recovery Systems	Alternative Energy						1605
General Motors Corporation	Industry	1605	1605	1605	1605	1605	1605
GeoMet Inc.	Alternative Energy					1605	1605
Gilead Sciences	Industry				1605EZ	1605EZ	1605EZ
Golden Valley Electric Association, Inc	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
GPU, Inc.	Electric Power	1605	1605	1605	1605	1605	1605
Granger Electric Company	Alternative Energy			1605	1605	1605	1605
Grayson Hill Farms	Agriculture & Forestry					1605EZ	
Greater Caribbean Energy & Environment Foundation	Agriculture & Forestry						1605EZ
GSF Energy, LLC	Alternative Energy			1605	1605	1605	
Hawaiian Electric Company, Inc.	Electric Power					1605	1605
Hopkinsville Electric System	Electric Power	1605EZ	1605EZ		1605EZ		
IBM	Industry	1605	1605	1605	1605	1605	1605
Imperial Plating	Industry					1605	
Industrial Equipment and Supplies	Industry					1605	
Integrated Waste Services Association	Alternative Energy		1605	1605	1605	1605	1605
International Truck and Engine Corporation	Industry					1605	1605
Iredell Landfill Gas, LLC	Alternative Energy				1605	1605	1605
J.M. Gilmer and Company, Inc.	Agriculture & Forestry		1605	1605	1605	1605	1605
JEA	Electric Power		1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Johnson & Johnson	Industry	1605	1605	1605	1605	1605	1605
Kansas City Power & Light Company	Electric Power	1605	1605	1605	1605	1605	1605
KeySpan Energy Corporation	Electric Power						1605
LAHD Energy, Inc.	Alternative Energy			1605EZ	1605EZ	1605EZ	1605EZ
Lehigh Portland Cement Company	Industry						1605
LFG Energy, Inc.	Alternative Energy		1605EZ	1605EZ		1605	1605
Lockheed Martin	Industry		1605				
Long Island Lighting Company	Electric Power	1605	1605	1605	1605		
Long Island Power Authority & KeySpan Energy	Electric Power					1605	
Los Angeles Department of Water and Power	Electric Power	1605	1605	1605	1605	1605	1605
Lower Colorado River Authority	Electric Power	1605	1605	1605	1605	1605	1605
Lucent Technologies	Industry			1605	1605	1605	1605
Madison County Depart. of Solid Waste & Sanitation	Alternative Energy						1605
Majestic Metals, Inc.	Industry		1605EZ				
McMinnville Electric System	Electric Power	1605EZ	1605EZ				
McNeil Generating Station	Electric Power					1605	1605
MCNIC Oil & Gas Co.	Alternative Energy			1605	1605	1605	
Mecklenburg Electric Cooperative	Electric Power		1605	1605	1605	1605	1605
Minnesota Power	Electric Power	1605	1605	1605	1605	1605	1605
Minnesota Resource Recovery Association	Other			1605EZ	1605EZ	1605EZ	1605EZ
Missouri River Energy Services	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Montana Power Company	Electric Power	1605	1605	1605	1605	1605	
Monteco Gas, LLC	Alternative Energy			1605EZ	1605EZ	1605	
Moorhead Public Service	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Mora Municipal Utilities	Electric Power	1605EZ	1605EZ				
Motorola Austin	Industry				1605	1605	1605

Table B11. Reporting Entities and Sectors, Years Reported, and Form Type, Data Years 1994-1999

Reporter	Sector	1994	1995	1996	1997	1998	1999
Municipal Electric Authority of Georgia	Electric Power	1605	1605	1605	1605	1605	
N.W. Electric Power Cooperative, Inc.	Electric Power		1605EZ				
Nashville Electric Service	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
National Grid USA	Electric Power						1605
Natural Power, Inc.	Alternative Energy						1605
NC Muni Landfill Gas Partners, LP	Alternative Energy			1605	1605	1605	1605
Nebraska Public Power District	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
NEO Corporation	Alternative Energy						1605
Nevada Power Company	Electric Power				1605EZ	1605EZ	
New England Electric System (NEES) Company	Electric Power	1605	1605	1605	1605		
New York Power Authority	Electric Power				1605	1605	
Newton Landfill Gas, LLC	Alternative Energy			1605	1605	1605	1605
Niagara Mohawk Power Corporation	Electric Power	1605	1605	1605	1605	1605	1605
NiSource/NIPSCO	Electric Power	1605	1605	1605	1605	1605	1605
Noranda Aluminum Inc.	Industry	1605	1605	1605	1605	1605	1605
North American Carbon, Inc.	Alternative Energy			1605	1605	1605	1605
North Carolina Biomass Partners	Alternative Energy					1605EZ	1605EZ
North Carolina Electric Membership Corporation	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Northeast Utilities	Electric Power	1605	1605	1605	1605	1605	1605
Northern Neck Electric Cooperative	Electric Power		1605	1605	1605	1605	1605
Northern States Power Company	Electric Power	1605	1605	1605	1605	1605	1605
Northern Virginia Electric Cooperative	Electric Power		1605	1605	1605	1605	1605
Northwest Fuel Development, Inc.	Alternative Energy	1605	1605	1605	1605	1605	1605
Oak Creek Energy Systems Inc.	Alternative Energy						1605
Ohio Edison Company	Electric Power	1605	1605	1605	1605		
Old Dominion Electric Cooperative	Electric Power		1605	1605	1605	1605	1605
Omaha Public Power District	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Oregon State University (State of Oregon)	Other	1605	1605	1605	1605		1605
Osage Municipal Utilities	Electric Power	1605	1605	1605			
Pacific Gas and Electric Company	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	
PacifiCorp	Electric Power	1605	1605	1605	1605	1605	1605
Palmer Capital Corporation	Alternative Energy						1605
Pan American Hospital	Other					1605	
Peabody Holding Company, Inc.	Industry	1605	1605	1605	1605	1605	
PECO Energy Company	Electric Power					1605EZ	1605
PEI Power Corp	Alternative Energy						1605
PG&E Corporation	Electric Power						1605
Pharmacia & Upjohn	Industry						1605EZ
Pintexs	Industry					1605	
Pitt Landfill Gas, LLC	Alternative Energy					1605	1605
Platte River Power Authority & 4 owner cities	Electric Power				1605	1605	1605
Portland General Electric Co.	Electric Power	1605	1605	1605	1605	1605	1605
Potomac Electric Power Company	Electric Power	1605	1605	1605	1605		
PPL CORPORATION	Electric Power	1605	1605	1605	1605	1605	1605
Pratt & Whitney North Berwick	Industry						1605
Prince George Electric Cooperative	Electric Power		1605	1605	1605	1605	1605
Public Service Company of New Mexico	Electric Power			1605	1605	1605	1605
Public Service Enterprise Group	Electric Power	1605	1605	1605	1605	1605	1605
Public Utility District No. 1 of Snohomish County	Electric Power	1605	1605	1605	1605	1605	1605
Puget Sound Energy, Inc.	Electric Power	1605	1605	1605EZ			
Quad/Graphics, Inc.	Industry		1605		1605		1605
Rangely Weber Sand Unit	Industry						1605
Rappahannock Electric Cooperative	Electric Power		1605	1605	1605	1605	1605
Redstone Gas Partners LLC	Alternative Energy						1605

Table B11. Reporting Entities and Sectors, Years Reported, and Form Type, Data Years 1994-1999

Reporter	Sector	1994	1995	1996	1997	1998	1999
Reliant Energy - HL&P	Electric Power	1605	1605	1605	1605	1605	1605
Republic Metals Corporation	Industry						1605
Rochester Institute of Technology	Other		1605	1605	1605		1605
Rolls-Royce Corporation	Industry						1605
Rosewood Resources, Inc.	Alternative Energy						1605
Sacramento Municipal Utility District	Electric Power			1605	1605	1605	1605
Salt River Project	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Santee Cooper	Electric Power	1605	1605	1605	1605	1605	1605
Science Applications International Corporation	Other			1605EZ			
Seattle City Light	Electric Power	1605	1605	1605	1605	1605	1605
SeaWest Windpower, Inc.	Alternative Energy					1605	1605
Seminole Electric Cooperative, Inc.	Electric Power	1605EZ	1605EZ		1605EZ	1605EZ	1605EZ
Seneca Energy, Inc.	Alternative Energy		1605EZ	1605EZ		1605	1605
Seneca Meadows, Inc.	Alternative Energy		1605EZ				
Separation Technologies, Inc	Industry			1605EZ	1605EZ	1605EZ	1605EZ
Shenandoah Valley Electric Cooperative	Electric Power		1605	1605	1605	1605	1605
Shrewsbury Electric Light Plant	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Sierra Pacific Power Company	Electric Power	1605	1605	1605			
SONAT Exploration Company	Alternative Energy					1605	
South Carolina Electric & Gas Company	Electric Power				1605	1605	1605
Southeastern Biomass Partners, LP	Alternative Energy					1605EZ	1605EZ
SOUTHERN CALIFORNIA EDISON CO.	Electric Power	1605	1605	1605	1605	1605	1605
Southern Company	Electric Power	1605	1605	1605	1605	1605	1605
Southside Electric Cooperative	Electric Power		1605	1605	1605	1605	1605
Steuben Rural Electric Co-op	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Sunoco, Inc.	Industry						1605
SWEENEY Furniture	Other					1605EZ	
Tacoma Public Utilities	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Tampa Electric Company	Electric Power		1605	1605	1605	1605	1605
Taunton Municipal Lighting Plant	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	
Tennessee Valley Authority	Electric Power	1605	1605	1605	1605	1605	1605
The Bentech Group of Delaware, Inc.	Alternative Energy						1605
The Dow Chemical Company	Industry		1605	1605	1605	1605	1605
The Gillette Company	Industry					1605	1605
The Pacific Forest Trust, Inc.	Agriculture & Forestry						1605EZ
Town of Colonie Solid Waste Management Facility	Alternative Energy						1605
Trees for the Future	Agriculture & Forestry	1605	1605				
Tucson Electric Power Company	Electric Power		1605		1605	1605	
TXU	Electric Power	1605	1605	1605	1605	1605	1605
U. S. Steel Mining Company, LLC	Alternative Energy					1605	1605
U.S. Department of Energy - Energy Management	Other						1605
U.S. Department of Energy- Office of Solar	Other					1605	1605
UNICOM (Commonwealth Edison Company)	Electric Power	1605	1605	1605	1605	1605	1605
Union Electric Company	Electric Power	1605	1605	1605	1605		
United Power Association	Electric Power	1605	1605	1605	1605	1605	
Urban Forestry Alliance	Agriculture & Forestry					1605EZ	
USGen New England, Inc.	Electric Power					1605	
USX Corporation	Alternative Energy					1605	1605
Utah Municipal Power Agency	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Utility Board of Key West, FL	Electric Power	1605EZ					
VANALCO, INC. - (Primary Aluminum Reduction Plant)	Industry			1605	1605	1605	1605
Vermont Public Power Supply Authority	Electric Power	1605	1605	1605	1605	1605	1605
Volvo Cars of North America, Inc.	Industry			1605EZ	1605EZ	1605EZ	1605EZ
Waverly Light & Power Company	Electric Power	1605	1605	1605	1605	1605	1605

Table B11. Reporting Entities and Sectors, Years Reported, and Form Type, Data Years 1994-1999

Reporter	Sector	1994	1995	1996	1997	1998	1999
Western Resources, Inc.	Electric Power	1605	1605	1605	1605	1605	1605
Whatcom Land Trust	Agriculture & Forestry					1605	1605
Wisconsin Electric Power Co.	Electric Power	1605	1605	1605	1605	1605	1605
Wisconsin Public Power Inc.	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Wisconsin Public Service Corporation	Electric Power	1605	1605	1605	1605	1605	1605
World Parks Endowment	Agriculture & Forestry					1605	1605
Zahren Alternative Power Corporation	Alternative Energy	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Zeeland Board of Public Works	Electric Power	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ

Note: This table excludes confidential reporters.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Table B12. Project-Level Reductions, by Entity Sector, Data Years 1994-1999
(Metric Tons Carbon Dioxide Equivalent)

Sector	1994	1995	1996	1997	1998	1999
Agriculture & Forestry	356,559	234,709	35,206	39,527	2,080,007	499,487
Alternative Energy	752,044	43,040,030	23,454,870	7,385,358	42,656,976	44,881,922
Electric Power	68,571,889	99,351,537	126,961,431	135,446,821	163,349,857	171,403,539
Industry	3,857,527	3,469,976	4,230,168	5,918,850	8,676,448	7,537,439
Other	481	2,076	4,697	528,055	2,370,438	1,404,200
Total	**73,538,501**	**146,098,329**	**154,686,370**	**149,318,610**	**219,133,726**	**225,726,587**

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Table B13. Project-Level Reductions by Location of Project, Data Years 1994-1999
(Metric Tons Carbon Dioxide Equivalent)

Geographic Scope	1994	1995	1996	1997	1998	1999
Foreign	380,158	808,056	8,488,565	9,883,433	11,413,389	9,330,787
U.S	73,158,343	145,290,273	146,197,806	139,435,178	207,720,337	216,406,740
Total	**73,538,501**	**146,098,329**	**154,686,370**	**149,318,610**	**219,133,726**	**225,737,527**

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Table B14. Reporting Entities by Type of Form and Organization, Data Years 1994-1999
(Number of Forms Received)

Reporting Entity	Reports Received						Percent of Total					
	1994	1995	1996	1997	1998(R)	1999	1994	1995	1996	1997	1998(R)	1999
Form EIA 1605												
Individual or Family	**1**	**1**	**1**	**1**	**1**	**1**	**1.4**	**1.0**	**0.9**	**0.8**	**0.6**	**0.6**
Partnership	**—**	**1**	**1**	**2**	**3**	**2**	**—**	**1.0**	**0.9**	**1.6**	**1.9**	**1.3**
Corporation	**56**	**67**	**74**	**83**	**112**	**110**	**76.7**	**66.3**	**67.9**	**68.0**	**72.7**	**71.4**
Non-profit	5	4	5	6	5	3	6.8	4.0	4.6	4.9	3.2	1.9
Privately Held	4	9	11	14	35	35	5.5	8.9	10.1	11.5	22.7	22.7
Publicly Traded	41	48	44	49	59	59	56.2	47.5	40.4	40.2	38.3	38.3
Subsidiary	6	6	14	14	21	21	8.2	5.9	12.8	11.5	13.6	13.6
Government	**12**	**13**	**11**	**12**	**13**	**17**	**16.4**	**12.9**	**10.1**	**9.8**	**8.4**	**11.0**
Federal	1	1	1	1	2	3	1.4	1.0	0.9	0.8	1.3	1.9
Local	7	8	8	7	8	10	9.6	7.9	7.3	5.7	5.2	6.5
Regional	1	1	0	1	1	1	1.4	1.0	0.0	0.8	0.6	0.6
State	3	3	2	3	2	3	4.1	3.0	1.8	2.5	1.3	1.9
Joint Venture	**—**	**—**	**—**	**1**	**1**	**2**	**—**	**—**	**—**	**0.8**	**0.6**	**1.3**
Trade Association	**—**	**1**	**1**	**1**	**1**	**1**	**—**	**1.0**	**0.9**	**0.8**	**0.6**	**0.6**
Limited Liability Company	**—**	**—**	**—**	**—**	**5**	**7**	**—**	**—**	**—**	**—**	**3.2**	**4.5**
Other	**4**	**18**	**21**	**22**	**23**	**21**	**5.5**	**17.8**	**19.3**	**18.0**	**14.9**	**13.6**
Total Form EIA-1605	**73**	**101**	**109**	**122**	**154**	**154**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Form EIA 1605-EZ												
Individual or Family	1	—	—	—	—	—	2.9	—	—	—	—	—
Company	7	14	17	15	26	18	20.0	34.1	41.5	37.5	54.2	45.0
Government	20	18	17	19	16	14	57.1	43.9	41.5	47.5	33.3	35.0
Nonprofit Organization	4	6	5	4	4	6	11.4	14.6	12.2	10.0	8.3	15.0
Other	3	3	2	2	2	2	8.6	7.3	4.9	5.0	4.2	5.0
Total Form EIA-1605EZ	**35**	**41**	**41**	**40**	**48**	**40**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(R) = Revised.

Notes: The total number of corporations for 1998 and 1999 is less than the sum of the subtypes, because one entity is listed both as publicly traded and as a subsidiary, and because each of the seven Essroc Cement Corp. plants is listed both as privately held and as a subsidiary. The 1998 data have been revised to include late 1998 data reporters.

Source: Energy Information Administration, Forms EIA-1605 and EIA 1605-EZ.

Table B15. Summary of Reports Received by Schedule, Data Years 1994-1999

Form and Year	Schedule			Total Reports Received
	Emission Reduction Projects (Schedule II)	Entity-Wide Emissions or Reductions (Schedule III)	Commitments To Reduce Future Emissions (Schedule IV)	
Form EIA-1605				
1994	64	40	45	**73**
1995	88	51	62	**101**
1996	99	56	64	**109**
1997	110	60	72	**122**
1998(R)	144	76	72	**159**
1999	144	82	65	**161**
Form EIA-1605EZ				
1994	35	—	—	**35**
1995	41	—	—	**41**
1996	41	—	—	**41**
1997	40	—	—	**40**
1998(R)	48	—	—	**48**
1999	40	—	—	**40**
Total				
1994	99	40	45	**108**
1995	129	51	62	**142**
1996	140	56	64	**150**
1997	150	60	72	**162**
1998(R)	192	76	72	**207**
1999	184	82	65	**201**

(R) = revised.
Note: The 1998 data have been revised to include late 1998 data reporters.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Table B16. Distribution of Projects Reported by Project Type, Data Years 1994-1999

Project Type	Number of Reporters						Number of Projects					
	1994	1995	1996	1997	1998(R)	1999	1994	1995	1996	1997	1998(R)	1999
Electricity Generation, Transmission, and Distribution	71	86	88	92	96	92	223	292	325	369	428	435
Cogeneration	5	8	10	14	14	11	7	11	13	20	20	18
Energy End Use	77	91	85	92	108	98	208	276	267	309	379	379
Transportation	26	34	37	39	45	43	33	50	58	64	72	73
Waste Treatment and Disposal (Methane)	12	20	29	31	44	47	27	39	65	81	129	193
Agriculture (Methane and Nitrous Oxide)	2	2	2	2	3	3	3	3	3	3	4	4
Oil and Natural Gas Systems and Coal Mining (Methane)	8	10	14	15	22	21	13	16	22	19	30	31
Carbon Sequestration	40	62	67	75	74	71	78	199	198	309	356	443
Halogenated Substances	13	18	18	21	23	27	15	22	23	30	35	36
Other Emission Reductions	33	45	47	54	62	58	38	59	66	84	104	103
All Categories	99	129	140	150	192	184	645	967	1,040	1,288	1,557	1,715
Did Not Report Projects	9	13	10	12	15	17	—	—	—	—	—	—
Total, All Reporters	**108**	**142**	**150**	**162**	**207**	**201**	**645**	**967**	**1,040**	**1,288**	**1557**	**1,715**

(R) = Revised.
Notes: The total numbers of reporters are smaller than the sums of the numbers of reporters for each project type, because reporters may provide information on projects of more than one type.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Table B17. Affiliation of Reporting Entities with Voluntary Programs, Data Years 1994-1999

Voluntary Program	Number of Reporters					
	1994	1995	1996	1997	1998	1999
AgSTAR	—	1	—	—	—	—
Climate Challenge	77	97	93	103	98	88
Climate Wise Recognition Program	—	5	3	11	31	25
Coalbed Methane Outreach Program	1	1	2	2	8	7
Compressed Air Challenge	—	—	—	—	—	1
Cool Communities Program	—	2	1	1	1	—
Energy Analysis and Diagnostic Centers	—	1	—	—	—	—
Energy Star Building Program	1	1	1	3	3	6
Energy Star Computers Program	2	1	1	1	1	1
Energy Star Transformers	1	5	6	6	7	7
Green Lights Program	12	18	20	19	19	18
Landfill Methane Outreach Program	4	6	12	13	23	23
Methane Recovery Systems Landfills	—	3	—	—	—	—
Motor Challenge Program	—	3	2	4	3	5
Natural Gas STAR	3	5	5	4	4	7
Other Energy Star Programs	—	—	2	2	—	2
Other Federal, State and Local programs	6	5	6	6	4	7
Rebuild America	—	—	—	—	—	1
Sulfur Hexafluoride Emissions Reduction Partnership	—	—	—	—	—	1
United States Initiative on Joint Implementation	2	17	23	29	29	25
Voluntary Aluminum Industrial Partnership	2	2	3	2	2	3
Waste Wi$e Program	1	3	2	2	2	3

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

Glossary

Afforestation: Planting of new forests on lands that have not been recently forested.

Anaerobic lagoon: A liquid-based manure management system, characterized by waste residing in water to a depth of at least 6 feet for a period ranging between 30 and 200 days.

Associated gas: Natural gas found mixed with crude oil in underground reservoirs, released as a byproduct of oil production.

Baseline period: The years 1987 through 1990 for which entity-level emissions may be reported.

Biofuels: Organic materials, such as wood, waste, and alcohol, burned to produce energy.

Biogas: A mixture of carbon dioxide and methane produced through bacterial action.

Biomass: Materials that are biological in origin, including organic material (both living and dead) from above and below ground, e.g., trees, crops, grasses, tree litter, roots, and animals and animal waste.

British thermal unit (Btu): A common unit used in measuring energy, equal to the amount of heat needed to raise the temperature of 1 pound of water by 1ºF.

Carbon sink: A reservoir that absorbs or takes up released carbon. Vegetation and soils are common carbon sinks.

Chlorofluorocarbons (CFCs): A family of inert, nontoxic, and easily liquefied chemicals used in refrigeration, air conditioning, packaging, and insulation, or as solvents or aerosol propellants. Because they are nonreactive, they drift into the upper atmosphere, where they are disassociated by solar radiation and where their components destroy ozone.

Cogeneration: The sequential use of energy to generate electricity and another form of useful thermal energy, such as heat or steam.

Commercial scale: Application of a demonstrated technology at a cost-effective scale.

Commitment: An expressed intention to undertake an action or actions that will reduce greenhouse gas emissions, increase carbon sequestration, or achieve a stated emissions goal.

Conversion factor: A unique value used to convert one unit (e.g., acres) to another appropriate unit (e.g., hectares).

Deforestation: The removal of forest stands.

Emission coefficient/factor: A unique value for scaling emissions to activity data in terms of a standard rate of emissions per unit of activity (e.g., pounds of carbon dioxide emissions per unit of fossil fuel consumed).

Emissions: Anthropogenic (human-caused) releases of greenhouse gases to the atmosphere (e.g., the release of carbon dioxide during fuel combustion).

Emissions, direct: Emissions from sources owned (wholly or in part) or leased by an entity.

Emissions, fugitive: Emissions that are released inadvertently or accidentally from a controlled or closed system, such as natural gas pipelines.

Emissions, indirect: Emissions from sources not owned or leased by an entity that occur, wholly or in part, as a result of its activities.

Emission reduction: A decrease in annual greenhouse gas emissions.

Energy conservation: Activities that reduce end-use demand for energy by reducing the service demanded.

Entity: For the purposes of the Voluntary Reporting Program, an individual or organization that is a legal U.S. person (e.g., a U.S. citizen, resident alien, company, organization, or group incorporated under or recognized by U.S. law; or a Federal, State, or local government agency).

Entity boundary: Conceptually, a line drawn to encompass the emissions sources and sinks to be evaluated in an entity-level report. An entity boundary should include all the emissions sources and sinks owned (wholly or in part) or leased by the entity and, to the extent possible, other emissions sources and sinks affected by the entity's activities.

Entity-level reporting: The reporting of greenhouse gas emissions, emission reductions, and carbon sequestration for an entire entity.

Estimation method: The techniques, including key assumptions and data sources, used by the reporter to derive the reported emissions, emission reductions, or sequestration.

Foreign activities: All actions outside the United States, its territories, and trusts.

Fossil fuel: A hydrocarbon fuel, such as petroleum, derived from living matter of a previous geologic time.

Fuel cycle: The entire set of sequential processes or stages involved in the use of fuel, including extraction, transformation, transportation, and combustion. Emissions generally occur at each stage of the fuel cycle.

Fuel switching: The substitution of one type of fuel for another. The fuel substitution may be either temporary (as in the case of a power plant that temporarily switches from coal to natural gas) or permanent (as in the case of a fleet operator who replaces gasoline-powered automobiles with electric cars).

Fugitive emissions: See Emissions, fugitive.

Global warming potential (GWP): A term that describes the concept of determining the impacts of various gases on global warming compared to that of carbon dioxide. For example, methane has a GWP 21 times that of the equivalent amount of carbon dioxide over a 100-year period.

Gob: A zone of rubble created when the roof of a coal mine collapses behind the mining operations.

Greenhouse effect: A term used to describe the roles of water vapor, carbon dioxide, and other trace gases in keeping the Earth's surface warmer than it would otherwise be. These radiatively active gases are relatively transparent to incoming shortwave radiation but are relatively opaque to outgoing long-wave radiation. The latter radiation, which would otherwise escape to space, is trapped by the gases within the lower levels of the atmosphere. The subsequent reradiation of some of the energy back to the Earth maintains surface temperatures higher than they would be if the gases were absent. There is concern that increasing concentrations of greenhouse gases, including carbon dioxide, methane, and certain man-made gases, may enhance the greenhouse effect and cause global climate change.

Greenhouse gases: Those gases, such as water vapor, carbon dioxide, tropospheric ozone, nitrous oxide, and methane, that are transparent to solar radiation but opaque to long-wave radiation, thus preventing long-wave radiation energy from leaving the atmosphere. The greenhouse gases covered by the Voluntary Reporting Program are (1) carbon dioxide (CO_2), (2) methane (CH_4), (3) nitrous oxide (N_2O), and (4) halogenated substances. Increasing levels of greenhouse gases in the atmosphere may contribute to an increase in average global temperatures, resulting in adverse climate changes.

Halogenated substance: A volatile compound containing halogens, such as chlorine, fluorine, or bromine.

Horizon year: The year in which a commitment to reduce greenhouse gas emissions or increase sequestration (reported on Schedule IV) is expected to be met.

Intergovernmental Panel on Climate Change (IPCC): A panel established jointly in 1988 by the World Meteorological Organization and the United Nations Environment Program to assess scientific information related to climate change and to formulate realistic response strategies.

Life cycle: The progression of a product through its service life. For most products, emissions and energy-consuming characteristics will be altered as they age.

Longwall mining: A technique of underground mining in which a cutting machine is pulled back and forth along a panel of coal 300 to 1,000 feet wide and as much as 2 miles long. As the panel is cut, the broken coal is removed by a conveyor, and movable roof supports advance, allowing the roof in mined-out areas to collapse.

Manure management: The method used to dispose of the solid waste produced by livestock and poultry.

Municipal solid waste: Residential solid waste and some nonhazardous commercial, institutional, and industrial wastes.

Ozone: A molecule made up of three atoms of oxygen. In the stratosphere, ozone occurs naturally and provides a protective layer shielding the Earth from harmful ultraviolet radiation. In the troposphere, it is a chemical oxidant and major component of photochemical smog.

Photosynthesis: The manufacture of carbohydrates by plants from carbon dioxide and water in the presence of chlorophyll, with sunlight as the energy source. In this process, carbon is sequestered and oxygen is released.

Pilot project: A small-scale trial designed to test or demonstrate the efficiency or efficacy of a project.

Project: An action undertaken to reduce greenhouse gas emissions or sequester carbon.

Project boundary: Conceptually, a line drawn to encompass the emissions sources and sinks affected by a project. A project boundary should include all the significant and quantifiable effects of the project.

Project ID code: A unique code assigned by the Energy Information Administration to a reported project for tracking purposes.

Project-level reporting: Reporting on emission reductions or carbon sequestration achieved as a result of a specific action or group of actions.

Reconductoring: Replacement of existing conductors with large-diameter conductors to reduce line losses. Conductors (including feeders and transmission lines) are a major source of transmission and distribution system losses. In general, the smaller the diameter of the conductor, the greater its resistance to the flow of electric current, and the greater the consequent line losses.

Reference case: The emissions level to which current actual emissions levels are compared when emission reductions are calculated.

Reference case, basic: A reference case using actual historical emissions or sequestration values.

Reference case, modified: A reference case using projected emissions or sequestration values, representing the emissions level that would have occurred in the absence of reduction or sequestration efforts.

Reforestation: Replanting of forests on lands that have recently been harvested.

Reporter: An entity (see definition above) completing either Form EIA-1605 or Form EIA-1605EZ and submitting it to the Energy Information Administration.

Room and pillar mining: The most common method of underground coal mining, in which the mine roof is supported by coal pillars left at regular intervals.

Sequestered carbon: Carbon that is removed from the atmosphere and retained in a carbon sink (such as a growing tree) or in soil.

Sequestration: The fixation of atmospheric carbon dioxide in a carbon sink through biological or physical processes, such as photosynthesis.

Sink: See carbon sink.

Third-party reporter: An authorized party that submits a report on behalf of two or more entities which have engaged in emissions-reducing or sequestration-increasing activities. Possible third-party reporters include trade associations reporting on behalf of members that have undertaken reduction projects.

Vhar metering: Phase shifters on watthour meters that measure reactive volt ampere hours or varhours.

Watt (W): A common metric unit used in measuring power (the rate at which work is done), defined as 1 Joule per second and equivalent to 3.412 Btu per hour.