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Voluntary Reporting of Greenhouse Gases 2003

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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:

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For reporting purposes, 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 2003, the tenth 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 Use Database, available on CD-ROM or by download from the Internet. 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. 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 John Conti, 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, Matthew Aberant, Keith Forbes, Kristin Franks, Laura Gehlin, Sarah Goldstein, William LaPerch, Michael Mondshine, Dick Richards, Charles L. Smith, and Peggy Wells.

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

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Introduction

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. For the 2003 reporting year, 234 U.S. companies and other organizations reported to the Energy Information Administration (EIA) that they had undertaken 2,188 projects to reduce or sequester greenhouse gases in 2003. The reported greenhouse gas emission reductions for the projects reported included 268 million metric tons carbon dioxide equivalent of direct reductions, 81 million metric tons of indirect reductions, 7 million metric tons of reductions from carbon sequestration, and 16 million metric tons of unspecified reductions (Table ES1). Total U.S. greenhouse gas emissions in 2003 are estimated at 6,936 million metric tons carbon dioxide equivalent.[1]

For definitional purposes, direct reductions are emission reductions from sources owned or leased by the reporting entity; indirect reductions are emission reductions from sources not owned or leased by the reporting entity but that occur as a result of the entity's activities; carbon sequestration reductions represent the removal of atmospheric carbon to a carbon sink; and unspecified reductions represent emission reductions reported on Form

Table ES1. Reporting Indicators for the Voluntary Reporting of Greenhouse Gases Program, Data Years 1994-2003

Indicator	1994	1995	1996	1997	1998	1999	2000	2001	2002(R)	2003
Number of Entities Reporting	108	142	150	162	207	207	236	232	234	234
Number of Projects Reported	634	960	1,040	1,288	1,549	1,722	2,089	1,897	2,055	2,188
Number of Entity-Level Reports Received	40	51	56	60	76	83	108	114	119	126
Project-Level Reductions Reported (Million Metric Tons Carbon Dioxide Equivalent)										
Direct[a]	63	88	90	95	148	155	211	247	265	268
Modified Reference Case[b]	59	76	75	88	127	126	176	209	257	261
Basic Reference Case[c]	4	13	15	7	21	29	35	38	8	7
Indirect[d]	5	52	53	38	43	57	62	72	80	81
Modified Reference Case[b]	5	52	51	36	38	51	57	61	78	75
Basic Reference Case[c]	0	1	3	2	5	6	5	11	2	6
Sequestration[e]	1	1	9	10	12	10	9	8	7	8
Unspecified[f]	4	6	6	9	19	13	12	15	17	16

[a]"Direct" emission reductions are reductions in releases of greenhouse gases "on site." For the purpose of completing Form EIA-1605, "on site" is defined as any source owned (wholly or in part) or leased by the reporting entity.

[b]In a "modified reference case," actual emissions (or sequestration) are compared to an estimate of what emissions (or sequestration) would have been in the absence of the project.

[c]In a "basic reference case," actual emissions (or sequestration) are compared with an estimate of historical emissions (or sequestration) in a particular base year or an average of up to 4 years.

[d]"Indirect" emission reductions are reductions in emissions from sources not owned or leased by the reporting entity but that occur, wholly or in part, as a result of the entity's activities (for example, an automobile manufacturer's investment in increased automotive fuel economy can result in decreased emissions from vehicles owned by individuals or managed fleets).

[e]"Sequestration" is the fixation of atmospheric carbon dioxide in a carbon sink through biological or physical processes, such as photosynthesis.

[f]"Unspecified" emission reductions represent quantities reported on the short form (Form EIA-1605EZ) for which the reporting entity did not specify whether the emission reduction or carbon sequestration was direct or indirect.

(R) = revised.

Notes: 2002 data have been revised to include reports that were submitted after the filing deadline. It is expected that the 2003 data will also be revised upward in next year's report with the inclusion of late 2003 reports. Totals for direct and indirect reductions may not equal sum of components due to independent rounding.

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

[1]Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2003*, DOE/EIA-0573(2003) (Washington, DC, December 2004), web site www.eia.doe.gov/oiaf/1605/ggrpt.

EIA-1605EZ, on which the reporting entity cannot specify whether the emission reduction was a direct or indirect reduction.

To calculate reported emission reductions, reporters are allowed to use a "basic" reference case or a "modified" reference case. A reference case is an emissions or sequestration level against which actual emissions are compared in order to estimate emission reductions. In a "basic" reference case, actual historical emissions (or sequestration) in a specific year, or an average of a range of years, are used. In a "modified" reference case, an estimate is made of what emissions or sequestration would have been in the absence of the project.

Generally, as illustrated in Table ES1, most reductions are reported relative to a modified reference case. For 2003, 261 million metric tons, or 97 percent, of the total 268 million metric tons carbon dioxide equivalent of reported direct reductions was based on modified reference cases. Similarly, for reported indirect reductions, 75 million metric tons, or 92 percent, of the total 81 million metric tons carbon dioxide equivalent of reported indirect reductions was based on modified reference cases.

The number of entities (234) reporting to the Voluntary Reporting Program for 2003 is the same as the number that reported for 2002; however, the number of reporters for 2002 has been revised upward to include 6 additional entities that filed late reports, after the 2002 database was closed. EIA also expects a similar upward revision of the number of 2003 reporters in next year's report, to reflect late reporters in the 2003 reporting cycle. As of February 7, 2005, EIA had received 6 additional 2003 reports and 1 additional 2002 report since the 2003 database was closed for preparation of this 2003 annual report.[2]

The number of entities reporting to the program has grown by 117 percent from its inception in 1994, when 108 entities reported. The number of projects reported has grown at a more rapid rate than the number of reporters, because the number of projects reported by repeat reporters has increased. The 2,188 projects reported for 2003 represent an increase of 245 percent over the 634 projects reported in 1994 and a 7-percent increase from the final tally of 2,055 projects reported for 2002.

Of the 234 organizations reporting for 2003, 126 provided entity-level reports, which include estimates of emissions and/or emission reductions for their entire organizations—7 more than the number (119) that submitted entity-level reports in 2002. In addition, 89 of the reporters for 2003 recorded commitments to take action to reduce emissions, mostly during the 2000 to 2005 time frame.

Of the 126 organizations reporting at the entity level, 120 calculated their 2003 entity-level greenhouse gas emissions. These entities reported direct greenhouse gas emissions of 889 million metric tons carbon dioxide equivalent, equal to about 14 percent of total U.S. greenhouse gas emissions in 2003.[3] Also reported by these organizations was 105 million metric tons carbon dioxide equivalent of indirect emissions, equal to 2 percent of total U.S. greenhouse gas emissions in 2003. Of the 126 entity-level reporters, 117 also reported emission reductions, including 214 million metric tons carbon dioxide equivalent of direct emission reductions, 42 million metric tons carbon dioxide equivalent of indirect emission reductions, and 7 million metric tons carbon dioxide equivalent of emission reductions resulting from carbon sequestration projects.

Reports for 2003 were received from participants in 27 different industries or services, as compared with the 29 different industries or services for 2002. The number of different industries represented continues to be higher than it was in the first year of the program (1994 data year), when the 108 reports received included participants in 9 different industries or services (Table ES2). In the early years of the program, reporting was dominated by the electric power sector. In the first reporting year, the 95 submissions from electric power producers represented 88 percent of the 108 reports received (Figure ES1). Since then, the program has seen an influx of new participants from outside the electric power sector, representing a diverse set of other industries. In addition, several mergers and acquisitions involving reporters to the Program have accompanied the ongoing restructuring of the electric power industry. Many of these merged entities have submitted single, consolidated reports, thus reducing the number of reports received from electricity producers. As a result, only 42 percent of the organizations reporting to the Program for 2003 (98 firms) were from the electric power sector.

Although the number of reporters from other individual industries remains relatively small, in many cases, reports were received from key companies in those other industries: for example, DaimlerChrysler Corporation, General Motors, the Ford Motor Company, and

[2]The deadline for submitting reports to EIA for inclusion in each annual edition of the Public Use Database is June 1. EIA typically grants reporters extensions to the deadline, usually until early July, before closing the database to new reports to allow analysis of the information for the annual report. EIA includes reports received after the database has been closed in the next annual edition of the Public Use Database and revises the data for that reporting year in the corresponding annual report, to reflect the addition of late reports.

[3]Based on total emissions from Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2003*, DOE/EIA-0573(2003) (Washington, DC, December 2004), web site www.eia.doe.gov/oiaf/1605/ggrpt.

Table ES2. Forms Filed by Standard Industrial Classification, Data Years 1994-2003 (Number of Reports)

SIC Code	Description	Data Year									
		1994	1995	1996	1997	1998	1999(R)	2000(R)	2001(R)	2002(R)	2003
01	Agricultural Production: Crops	—	—	—	—	1	—	—	1	—	—
08	Forestry	1	2	1	1	3	3	1	—	1	2
12	Coal Mining	1	2	2	1	4	3	4	6	7	4
13	Oil and Gas Extraction	—	—	—	—	—	1	1	1	1	1
14	Nonmetallic Minerals, Except Fuels	—	—	—	—	1	1	—	—	—	—
20	Food and Kindred Products	—	—	—	—	1	2	6	4	4	4
22	Textile Mill Products	—	—	—	—	—	1	5	11	12	14
23	Apparel and Other Textile Products	—	—	—	—	—	—	1	1	2	2
24	Lumber and Wood Products	—	—	—	—	—	—	1	—	—	—
25	Furniture and Fixtures	—	—	—	—	—	—	1	1	1	—
26	Paper and Allied Products	—	—	—	—	—	1	1	—	—	—
27	Printing and Publishing	—	1	—	1	—	1	1	—	—	—
28	Chemical and Allied Products	1	3	2	3	8	5	11	9	11	11
29	Petroleum Refining and Other Related Industries	—	—	2	3	8	8	7	6	6	5
30	Rubber and Miscellaneous Plastic Products	—	—	—	—	—	—	2	2	2	2
32	Stone, Clay, Glass, and Concrete Products	—	—	1	4	12	13	7	5	5	5
33	Primary Metals Industries	2	2	4	4	5	5	5	11	11	11
34	Fabricated Metal Products, Except Machinery and Transportation Equipment	—	2	1	1	3	1	1	1	1	1
35	Industrial and Commercial Equipment and Components	—	—	—	—	—	—	1	1	1	2
36	Electronic and Other Electrical Equipment	1	1	2	4	4	4	9	9	8	6
37	Transportation Equipment	1	1	1	2	3	5	6	7	9	10
38	Instruments and Related Products	—	—	—	—	2	—	1	1	1	1
39	Miscellaneous Manufacturing Industries	—	1	1	—	2	2	1	1	1	1
40	Railroad Transportation	—	—	—	—	—	—	—	—	—	1
48	Communications	—	—	—	—	—	1	—	—	1	1
49	Electric, Gas, and Sanitary Services	95	121	125	129	138	135	151	145	138	141
57	Furniture and Home Furnishings Stores	—	—	—	—	2	1	1	—	1	1
63	Insurance Carriers	—	—	—	—	—	—	—	—	—	1
65	Real Estate	—	1	1	1	1	1	1	1	1	—
67	Holding and Other Investment Offices	—	—	1	1	1	1	1	1	2	2
72	Personal Services	—	—	—	—	—	—	1	1	1	1
80	Health Services	—	—	—	—	1	—	—	—	—	—
82	Educational Services	1	2	2	2	—	2	—	—	—	—
86	Membership Organizations	—	—	—	1	1	1	1	—	1	—
87	Engineering and Management Services	—	—	2	2	2	1	—	1	—	—
88	Private Households	2	1	1	1	1	1	1	1	1	1
89	Services Not Elsewhere Classified	—	—	—	1	1	3	2	1	1	1
91	Executive, Legislative, and General	—	—	—	—	1	2	2	2	1	1
97	National Security and International Affairs	—	—	—	—	—	—	1	—	—	—
99	Nonclassifiable Establishments	—	—	—	—	—	—	—	—	1	—
Total Number of Reporters[a]		**108**	**142**	**150**	**162**	**207**	**207**	**236**	**232**	**234[b]**	**234**
Number of 2-Digit SIC Codes Represented		**9**	**13**	**16**	**18**	**24**	**27**	**31**	**27**	**29[b]**	**27**

[a]Totals may be greater than the sum of reporters in each SIC code, because confidential reporters are excluded from the latter.

[b]Includes 6 late reports for the 2002 data year. The 2003 total will also be revised upward in next year's report with the inclusion of late 2003 reports. As of February 22, 2005, EIA had received 6 late 2003 reports, which are not included in this report's 2003 database.

(R) = Revised.

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

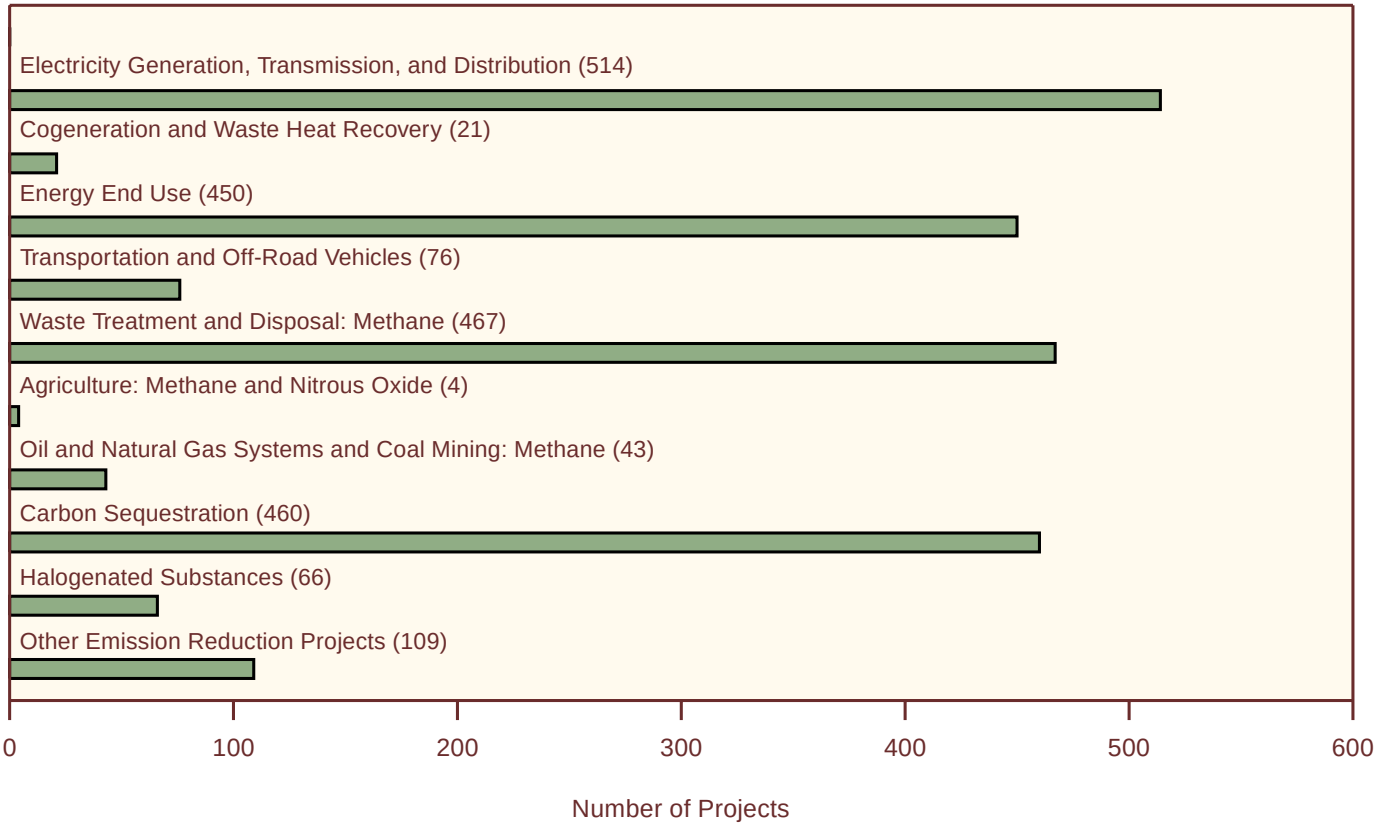
Toyota North America in the automotive products industry; Noranda and an operating division of Alcan's Primary Products in the metals industry; Sunoco, Inc., ChevronTexaco Corporation, and BP America in the petroleum industry; Johnson & Johnson and The Dow Chemical Company in the chemicals industry; Rolls Royce in the aerospace industry; Bristol-Myers Squibb Company and Pfizer Pharmaceuticals, LLC, in the pharmaceuticals industry; and Advanced Micro Devices, Inc., and IBM in the electronic equipment industry.[4]

Projects Reported

Electric power sector reporters (including independent power producers) accounted for 1,485 (68 percent) of the projects reported for 2003. Also reporting were alternative energy providers (446 projects), industrial concerns (245 projects), and agriculture and forestry organizations (3 projects). Organizations in other sectors (government, commercial, and residential) submitted reports on 9 projects.

Most of the projects reported for 2003 affected energy supply or use. The electric power sector reported 514 projects that were related to the generation, transmission, or distribution of electricity (Figure ES1). Another 450 were related to energy end use, 76 were transportation projects, and 21 were cogeneration projects. Other projects reduced emissions of methane from waste treatment and disposal facilities (467 projects), from oil and natural gas systems and coal mines (43 projects, many of which included the displacement of fossil fuels through the use of methane as a fuel), and from agricultural activities (4 projects). Other projects (109) included the reuse of fly ash in concrete and materials recycling, which reduce emissions 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 (460 projects); and recycling, reuse, or destruction of halogenated substances, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) (44 projects).

Figure ES1. Number of Projects Reported to the Voluntary Reporting of Greenhouse Gases Program by Project Type, Data Year 2003



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

[4]A complete listing of all 2003 reporters is provided in Appendix B, Table B1, pages 89-92. Table B8 in Appendix B, pages 114-118, lists reporters by sector and Standard Industrial Classification (SIC) code.

Reductions Reported

Electric Power

For 2003, 485 electric power and cogeneration projects were reported on Form EIA-1605.[5] Total emission reductions from electric power and cogeneration projects reported on Form EIA-1605 (the long form) included 158 million metric tons carbon dioxide equivalent from direct sources and 18 million metric tons from indirect sources. A total of 257 projects that reduced the carbon content of fuels used to generate electricity were reported, with emission reductions totaling 147 million metric tons carbon dioxide equivalent from direct sources and 13 million metric tons from indirect sources. Reported emission reductions for projects increasing energy efficiency in generation, transmission, and distribution included 16 million metric tons carbon dioxide equivalent from direct sources and 4 million metric tons from indirect sources. Another 50 electric power and cogeneration projects were reported on Form EIA-1605EZ for 2003, with reported emission reductions from unspecified sources that totaled 11 million metric tons carbon dioxide equivalent.[6]

Energy End Use and Transportation

For 2003, 375 energy end use and transportation projects were reported on Form EIA-1605, with total reported emission reductions of 25 million metric tons carbon dioxide equivalent from direct sources and 10 million metric tons from indirect sources. Nearly all (93 percent) of the energy end-use reductions were reported for stationary-source applications, such as building shell improvements, lighting and lighting control, appliance improvement or replacement, and heating, ventilation and air conditioning (HVAC) improvements. Much smaller reductions were reported for the 66 transportation projects reported on the long form, including 2.5 million metric tons carbon dioxide equivalent from direct sources and 0.1 million metric tons from indirect sources. Another 86 energy end-use and transportation projects were reported for 2003 on Form EIA-1605EZ, with total emission reductions of 0.4 million metric tons carbon dioxide equivalent.

Carbon Sequestration

There were 446 carbon sequestration[7] projects submitted on Form EIA-1605 for 2003, with total reported sequestration of 8 million metric tons carbon dioxide equivalent. Most of the reported reductions resulted from afforestation, reforestation, urban forestry, forest management, and forest preservation efforts. Another 14 carbon sequestration projects were reported on Form EIA-1605EZ, for which about 29,000 metric tons carbon dioxide equivalent of sequestered carbon was reported.

Methane and Nitrous Oxide Emissions

Emission reductions for the 470 methane and nitrous oxide abatement projects reported for 2003 on Form EIA-1605 included 69 million tons carbon dioxide equivalent from direct sources and 40 million metric tons from indirect sources. The three most frequently reported sources of methane reductions were municipal waste landfills (412 projects), natural gas systems (28 projects), and coal mines (13 projects). In addition to reducing methane emissions, projects that involved the recovery and use of methane for energy also reduced carbon dioxide emissions by displacing fossil fuels, such as oil and coal, that have higher carbon contents and thus produce more carbon dioxide when burned. Another 44 methane or nitrous oxide reduction projects were reported on Form EIA-1605EZ for 2003, with reported reductions of methane or nitrous oxide emissions that totaled 4 million metric tons carbon dioxide equivalent.

Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride

A total of 66 projects were submitted on Form EIA-1605 for 2003 that reported reductions in emissions of HFCs, PFCs, and SF_6. Reductions reported for these projects included 6.1 million metric tons carbon dioxide equivalent from direct sources and 2.4 million metric tons from indirect sources. The largest reported reductions were direct reductions of perfluoromethane (a type of PFC) (3.0 million metric tons carbon dioxide equivalent), SF_6 (2.6 million metric tons carbon dioxide equivalent), and perfluoroethane (a type of PFC) (0.6 million metric tons carbon dioxide equivalent). Reductions of PFCs and SF_6 totaling 29 thousand metric tons carbon dioxide equivalent were reported for one project on Form EIA-1605EZ.

[5]The Voluntary Reporting of Greenhouse Gases Program allows reporting on two forms: EIA-1605 and EIA-1605EZ. EIA-1605, the long form, allows reporters to create an in-depth, multi-year, public record of emission reduction efforts for an entire organization and/or for individual projects, including information on activities conducted outside the United States and commitments to reduce greenhouse gas emissions in the future. EIA-1605EZ, the short form, allows reporters only to provide brief summaries of greenhouse gas projects for the current reporting year; it does not allow reporting of activities outside the United States or of future emission reduction commitments.

[6]The emission reductions reported on Form EIA-1605EZ are unspecified, because the form does not ask the reporter to distinguish between direct and indirect reductions.

[7]Carbon sequestration is the fixation of atmospheric carbon dioxide in a carbon sink through biological or physical processes.

1. Voluntary Reporting 2003: 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] DOE's Office of Policy and International Affairs developed the Guidelines to the Voluntary Reporting of Greenhouse Gases Program[2] in consultation with the U.S. Environmental Protection Agency (EPA) and other Federal agencies, as well as through a public comment process. In addition to providing recognition for entities that reduce greenhouse gas emissions or sequester carbon voluntarily, the program serves to identify innovative and effective ways of reducing emissions.

This report presents information on the tenth reporting cycle of the Voluntary Reporting Program, including reported information on emissions, emission reductions, and carbon sequestration activities through 2003. The report is divided into eight 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. Activities 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. Chapter 8 summarizes information on emission reductions and carbon sequestration projects reported in brief on the short form (Form EIA-1605EZ). Appendixes A and B provide information on the development and structure of the data collection instrument, a discussion of issues in the interpretation of the data, and tabular summaries of the participating reporters and the information they reported.

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 web site at *www.eia.doe.gov/oiaf/1605/databases.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 societal 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 of annual emissions and reductions of emissions reported on a voluntary basis.

[2]See U.S. Department of Energy, *General Guidelines to the Voluntary Reporting of Greenhouse Gases Program*, and, *Sector-Specific Issues and Reporting Methodologies Supporting the General Guidelines for the Voluntary Reporting of Greenhouse Gases* (Washington, DC 1994), web site www.eia.doe.gov/oiaf/1605/guidelns.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 www.eia.doe.gov/neic/speeches/hrtest3-30-00/testimony3.htm.

- 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 2003 data year were received from 234 participants in 27 different industries or services (defined by the two-digit Standard Industrial Classification code), a decrease from the 29 different industries represented among 2002 reporters. In comparison, reports for the 1994 data year—the first year of the program—were received from 108 participants in 9 different industries or services (Table 1).

In the early years of the program, reporting was dominated by the electric power sector. In the first reporting year (data year 1994), the 95 submissions from electric power producers represented 88 percent of the 108 reports received (Figure 1). Since then, the program has seen an influx of new participants from outside the

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.

Table 1. Forms Filed by Standard Industrial Classification, Data Years 1994-2003
(Number of Reports)

SIC Code[a]	Description	Data Year									
		1994	1995	1996	1997	1998	1999	2000(R)	2001(R)	2002(R)	2003
01	Agricultural Production: Crops	0	0	0	0	1	0	0	1	0	0
08	Forestry	1	2	1	1	3	3	1	0	1	2
12	Coal Mining	1	2	2	1	4	4	4	6	7	4
13	Oil and Gas Extraction	0	0	0	0	0	1	1	1	1	1
14	Nonmetallic Minerals, Except Fuels	0	0	0	0	1	1	0	0	0	0
20	Food and Kindred Products	0	0	0	0	1	2	6	4	4	4
22	Textile Mill Products	0	0	0	0	0	1	5	11	12	14
23	Apparel and Other Textile Products	0	0	0	0	0	0	1	1	2	2
24	Lumber and Wood Products	0	0	0	0	0	0	1	1	0	0
25	Furniture and Fixtures	0	0	0	0	0	0	1	1	1	0
26	Paper and Allied Products	0	0	0	0	0	1	1	0	0	0
27	Printing and Publishing	0	1	0	1	0	1	1	0	0	0
28	Chemicals and Allied Products	1	3	2	3	8	5	11	9	11	11
29	Petroleum Refining and Other Related Industries	0	0	2	3	8	8	7	6	6	5
30	Rubber and Miscellaneous Plastic Products	0	0	0	0	0	0	2	2	2	2
32	Stone, Clay, Glass, and Concrete Products	0	0	2	4	12	13	7	5	5	5
33	Primary Metals Industries	2	2	4	4	5	5	5	11	11	11
34	Fabricated Metal Products, Except Machinery and Transportation Equipment	0	2	1	1	4	2	2	1	1	1
35	Industrial and Commercial Equipment and Components	0	0	0	0	0	0	1	1	1	2
36	Electronic and Other Electrical Equipment	1	1	2	4	4	4	9	9	8	6
37	Transportation Equipment	1	1	1	2	3	5	6	7	9	10
38	Instruments and Related Products	0	0	0	0	2	0	1	1	1	1
39	Miscellaneous Manufacturing Industries		1	1	0	2	2	1	1	1	1
40	Railroad Transportation	0	0	0	0	0	0	0	0	0	1
48	Communications	0	0	0	0	0	1	0	0	1	1
49	Electric, Gas, and Sanitary Services	98	123	125	129	138	135	151	145	138	141
57	Furniture and Home Furnishings Stores	0	0	0	0	2	1	1	0	1	1
63	Insurance Carriers	0	0	0	0	0	0	0	0	0	1
65	Real Estate	0	1	1	1	1	1	1	1	1	0
67	Holding and Other Investment Offices	0	0	1	1	1	1	1	1	2	2
72	Personal Services	0	0	0	0	0	0	1	1	1	1
80	Health Services	0	0	0	0	1	0	0	0	0	0
82	Educational Services	1	2	2	2	0	2	0	0	0	0
86	Membership Organizations	0	0	0	1	1	1	1	0	1	0
87	Engineering and Management Services	0	0	2	2	2	1	0	1	0	0
88	Private Households	2	1	1	1	1	1	1	1	1	1
89	Services Not Elsewhere Classified	0	0	0	1	1	3	2	1	1	1
91	Executive, Legislative, and General	0	0	0	0	1	2	2	2	1	1
97	National Security and International Affairs	0	0	0	0	0	0	1	0	0	0
99	Nonclassifiable Establishments	0	0	0	0	0	0	0	0	1	0
Total Number of Reporters[b]		**108**	**142**	**150**	**162**	**207**	**207**	**236**	**232**	**234[c]**	**234**
Number of 2-Digit SIC Codes Represented		**9**	**13**	**16**	**18**	**24**	**27**	**31**	**27**	**29[c]**	**27**

[a]The Voluntary Reporting of Greenhouse Gases database was designed in 1994-1995, when the Standard Industrial Classification (SIC) system was still in use.

[b]Totals may be greater than the sum of reporters in each SIC code, because confidential reporters are excluded from the latter.

[c]Includes 6 late reports for the 2002 data year. The 2003 total will also be revised upward in next year's report with the inclusion of late 2003 reports. As of February 22, 2005, EIA had received 6 late 2003 reports, which are not included in this report's 2003 database.

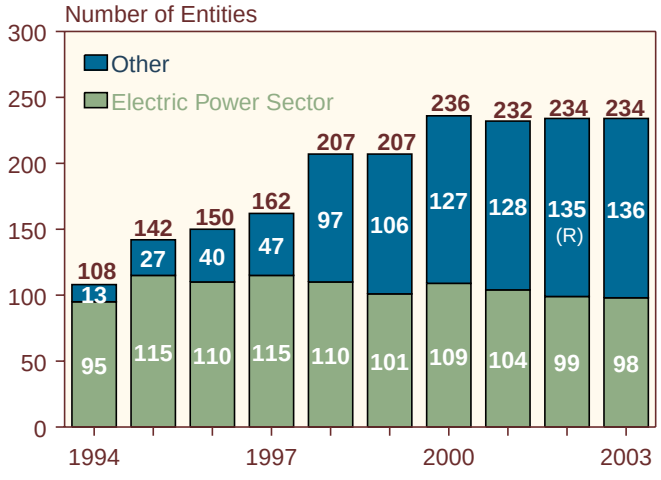
(R) = Revised.

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

electric power sector, representing a diverse set of industries. In addition, several mergers and acquisitions involving reporters to the program have reduced the number of reports received from electricity producers. As a result, only 42 percent of the organizations reporting to the program for data year 2003 were from the electric power sector.

Although the number of reporters from other individual industries remained relatively small, in many cases, reports were received from key companies in those other industries: for example, General Motors, Ford Motor Company, DaimlerChrysler Corporation, Nissan North America, Inc., and Toyota Motor North America, Inc., in the automotive products industry; Noranda and an operating division of Alcan in the metals industry; BP America, Sunoco, Inc., and ChevronTexaco Corporation in the petroleum industry; Johnson & Johnson and The Dow Chemical Company in the chemicals industry; Rolls Royce in the aerospace industry; Bristol-Myers Squibb Company and Pfizer Pharmaceuticals, LLC, in the pharmaceuticals industry; and Advanced Micro Devices, Inc., and IBM in the electronic equipment industry. A complete listing of all 2003 reporters is provided in Appendix B, Table B1.

Figure 1. Electric Power Sector and Other Entities Submitting Reports to the Voluntary Reporting of Greenhouse Gases Program, Data Years 1994-2003



(R) = revised.

Notes: Electric power sector includes electric utilities and independent power producers. 2002 data year includes 6 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.

Most reporters indicated that their projects were affiliated with one or more government-sponsored voluntary programs. Of the 2,188 projects reported for 2003, 1,066 were affiliated with the DOE's Climate Challenge Program, 381 with the EPA's Landfill Methane Outreach Program, 94 with the various DOE/EPA ENERGY STAR[4] programs (including ENERGY STAR Buildings, ENERGY STAR Computers, and ENERGY STAR Transformers), 50 with the EPA's Climate Wise Recognition Program, 39 with the U.S. Initiative on Joint Implementation, 23 with the EPA's Natural Gas STAR Program, 16 with the EPA's Green Lights Program, 11 with the EPA's Sulfur Hexafluoride Emissions Reduction Partnership, 9 with the EPA's WasteWise, 7 with DOE's Compressed Air Challenge, and 6 with the EPA's Coalbed Methane Outreach Program. Other voluntary programs cited included the EPA's Voluntary Aluminum Industrial Partnership and DOE's Motor Challenge, Rebuild America, and Cool Communities Program. 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:

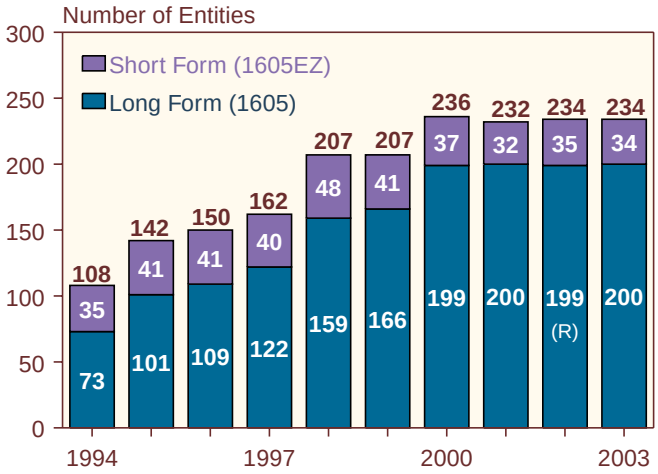
- Project-level reporting, defined as the reporting on the emission reductions or carbon sequestration achieved as a result of a specific action or group of actions
- Entity-level reporting, defined as the reporting on emissions, emission reductions, and carbon sequestration for of an entire organization, usually defined as a corporation
- Commitments to take action to reduce emissions in the future.

Of the 234 reports received for 2003, 200 (85 percent) were submitted on Form EIA-1605 (the long form) (Figure 2). The long form allows reporters to create an in-depth, multi-year, public record of emission reduction efforts for an entire organization and/or at the project level, including information on activities conducted outside the United States and commitments to reduce future greenhouse gas emissions. The remaining reports were submitted on Form EIA-1605EZ (the short form), which allows reporters only to provide brief summaries of greenhouse gas projects for the current reporting year and does not allow the reporting of activities outside the United States or of future emission reduction commitments. The proportion of reporters using the short form

[4]ENERGY STAR is a joint program of the U.S. Department of Energy and the U.S. Environmental Protection Agency. See web site www.energystar.gov.

has declined from 32 percent in the first year of the program (1994 data year) to 15 percent in the 2003 data reporting cycle. EIA believes that reporters are choosing the long form in order to document their emission reductions more thoroughly. Also, for the same reason, several voluntary programs (such as the Landfill Methane Outreach Program) encourage participants to use the long form.

Figure 2. Number of Reports Received by Form Type, Data Years 1994-2003



(R) = revised.

Notes: Electric power sector includes electric utilities and independent power producers. 2002 data year includes 6 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.

For the 2003 reporting year, 177 program participants (76 percent of the total) reported project-level reductions, and 126 reported entity-level emissions and/or reductions: 70 reported at both the entity and project levels, 107 submitted only project-level reports, and 57 reported only entity-level information. In addition, 89 reporters provided information on their commitments to reduce emissions or increase sequestration in the future, including one program participant that reported only commitments without reporting on past activities.

Sources of greenhouse gas emissions and emission reductions reported to the Voluntary Reporting Program are characterized as direct, indirect, sequestration, or unspecified. The unspecified category includes all reductions and sequestration reported on the short form because the short form does not allow a reporting entity to specify whether an emission reduction is direct or indirect. Because of concern about possible double counting of emissions and reductions, particularly between direct and indirect emissions, EIA does not aggregate reported emissions or emission reductions across these four categories.

Project Level

Reporters provided information on a total of 2,188 projects for 2003 (Table 2). Most (1,969 or 90 percent) were

Table 2. Distribution of Projects by Reduction Objective, Project Type, and Form Type, Data Year 2003

Reduction Objective and Project Type	Number of Projects			Number of Reporters		
	Long Form	Short Form	Total	Long Form	Short Form	Total
Reducing Carbon Dioxide Emissions	**925**	**136**	**1,061**	**93**	**29**	**122**
Electricity Generation, Transmission, and Distribution	464	50	514	68	23	91
Cogeneration and Waste Heat Recovery	21	0	21	13	0	13
Energy End Use	374	76	450	67	20	87
Transportation and Offroad Vehicles	66	10	76	35	6	41
Reducing Methane and Nitrous Oxide Emissions	**470**	**44**	**514**	**71**	**6**	**77**
Waste Treatment and Disposal (Methane)	425	42	467	54	5	59
Agriculture (Methane and Nitrous Oxide)	4	0	4	3	0	3
Oil and Natural Gas Systems and Coal Mining (Methane)	41	2	43	22	2	24
Carbon Sequestration	**446**	**14**	**460**	**51**	**12**	**63**
Halogenated Substances	**43**	**1**	**44**	**29**	**1**	**30**
Other Emission Reduction Projects	**85**	**24**	**109**	**46**	**10**	**56**
Entity-Level Reporting Only (No Projects)	**NA**	**NA**	**NA**	**57**	**NA**	**57**
Commitment Reporting Only (No Projects or Entity-Level Data)	**NA**	**NA**	**NA**	**0**	**NA**	**0**
Total	**1,969**	**219**	**2,188**	**200**	**34**	**234**

NA = not applicable.

Notes: The total number of reporters is smaller than the sum of the number of reporters for each project type, because most reporters provided information on more than one project. Table excludes projects submitted in confidential reports.

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

reported on the long form. The total number of projects reported increased by 133, or 6 percent, compared with the previous reporting cycle.[5] Most of the 2,188 projects reported for 2003 were also among the 2,055 projects reported for 2002, because they continued to yield emission reductions in 2003. Projects often yield emission reductions over an extended period; for example, an availability improvement project at a nuclear power plant typically involves the adoption of new maintenance and refueling programs that, once in place, are followed over a multi-year period. Likewise, 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.

The principal objective of the majority of projects (1,061 or 48 percent) reported for 2003 was to reduce carbon dioxide emissions (Table 2). Most 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. Other project objectives cited included reducing methane and nitrous oxide emissions (514 or 23 percent), increasing carbon sequestration (460 or 21 percent), and reducing emissions of halogenated substances (44 or 2 percent). Projects that also primarily reduced carbon dioxide emissions included the 109 "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.

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). Of the 94 foreign projects reported for 2003, 60 represented shares in two forestry programs in Belize and Malaysia sponsored by the electric power industry.

Total project-level emission reductions reported included 268.3 million metric tons carbon dioxide equivalent in direct reductions, 81.1 million metric tons carbon dioxide equivalent in indirect reductions, 7.7 million metric tons carbon dioxide equivalent in carbon sequestration, and 16.4 million metric tons carbon dioxide equivalent in unspecified reductions (Table 4). EIA uses global warming potentials (GWPs) from the Third Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) to calculate carbon dioxide equivalents (see box on page 7).

Projects whose reduction objective was to reduce carbon dioxide emissions reported direct reductions of 193.1 million metric tons carbon dioxide equivalent, indirect reductions of 39.0 million metric tons carbon dioxide equivalent, and unspecified reductions of 12.4 million metric tons carbon dioxide equivalent. The vast majority of the reported emission reductions were carbon dioxide reductions.

A variety of efforts to reduce emissions of gases with high GWPs were also reported, including 514 projects with the objective of reducing methane and nitrous oxide emissions. These projects focused on waste

Table 3. Geographic Scope of Reports Received and Location of Emission Reduction Projects, Data Years 1994-2003

	Reports Received					Projects Reported[b]			
	U.S. Only					U.S. Only			
Year	Long Form	Short Form	Foreign Only	Both U.S. and Foreign	Total[a]	Long Form	Short Form	Foreign Only	Total[a]
1994	65	34	2	4	**108**	500	125	9	**634**
1995	82	40	2	16	**142**	760	164	36	**960**
1996	83	41	1	24	**150**	828	179	33	**1,040**
1997	90	40	1	31	**162**	1,017	201	70	**1,288**
1998	118	47	1	40	**207**	1,212	252	85	**1,549**
1999	125	39	4	37	**207**	1,397	237	87	**1,721**
2000	153	36	1	45	**236**	1,761	229	99	**2,089**
2001	155	32	1	43	**232**	1,596	210	91	**1,897**
2002(R) . . .	156	35	3	39	**234**	1,708	253	94	**2,055**
2003	157	34	2	40	**234**	1,873	219	96	**2,188**

[a]Totals are greater than the sum of the components because the latter exclude information from confidential reports.
[b]Excludes projects submitted in confidential reports.
(R) = revised.
Notes: The number of reports received for 2002 was revised to reflect the receipt of 6 reports after the finalization of the Public Use Database for last year's annual report. The number of projects reported for 2002 has also been revised to reflect the projects included in those reports.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

[5]The total number of projects reported for 2002 has increased from 2,027 to 2,055 with the receipt of 6 additional reports after the database used to prepare the annual report and Public Use Database for 2002 was finalized. See note to Table 3.

management systems, animal husbandry operations, oil and gas systems, or coal mines. Reported net direct emission reductions from these projects totaled 68.6 million metric tons carbon dioxide equivalent, which represents 26 percent of the total direct reductions reported for 2003. The estimate of net reductions includes 76.6 million metric tons carbon dioxide equivalent in direct reductions of methane emissions along with 8.0 million metric tons carbon dioxide equivalent in carbon dioxide and nitrous oxide emissions increases. Indirect reductions reported for projects that reduced methane and nitrous oxide emissions totaled 39.8 million metric tons carbon dioxide equivalent. Unspecified reductions reported on the short form totaled 3.9 million metric tons carbon dioxide equivalent.

Almost all of the 460 carbon sequestration projects reported on either the long form or the short form increased the amount of carbon stored in sinks through various forestry measures, including afforestation, reforestation, urban forestry, forest preservation, and modified forest management techniques. These activities accounted for 21 percent of the projects reported for 2003; however, 284 of the reported carbon sequestration projects represented shares in 10 projects conducted by the UtiliTree Carbon Company, which were reported by 28 participating electric utilities. Carbon sequestration projects reported on the long form for 2003 totaled 7.7 million metric tons carbon dioxide equivalent in carbon sequestration achieved.

Projects with the objective of reducing emissions of halogenated substances—including perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and hydrofluorocarbons (HFCs)—reported direct reductions of 6.1 million metric tons carbon dioxide equivalent for 2003, which included 3.5 million metric tons carbon dioxide equivalent of PFC emissions and 2.6 million metric tons carbon dioxide equivalent of SF_6 emissions, as well as indirect reductions of 2.2 million metric tons carbon dioxide equivalent, the vast majority of which was SF_6.

Global Warming Potentials Used to Calculate Carbon Dioxide Equivalent Emissions

Global warming potentials (GWPs) are used to compare the abilities of different greenhouse gases to trap heat in the atmosphere. GWPs are based on the radiative efficiency (heat-absorbing ability) of each gas relative to that of carbon dioxide (CO_2), as well as the decay rate of each gas (the amount removed from the atmosphere over a given number of years) relative to that of CO_2. The GWP provides a construct for converting emissions of various gases into a common measure, which allows climate analysts to aggregate the radiative impacts of various greenhouse gases into a uniform measure denominated in carbon or carbon dioxide equivalents. The table at the right presents the GWPs published in the Third Assessment Report of the Intergovernmental Panel on Climate Change (IPCC).

In analyzing greenhouse gas emissions and emission reductions reported to the Voluntary Reporting of Greenhouse Gases Program, EIA attempts to employ the most current data sources. For that reason, and because the IPCC is generally considered the authoritative source for GWPs, EIA uses the IPCC's most recent GWP values, from the Third Assessment Report, to convert reported greenhouse gas emissions to the carbon dioxide equivalent units used in this report. It is important to point out, however, that countries reporting to the United Nations Framework Convention on Climate Change (UNFCCC), including the United States, have been compiling estimates based on the GWPs from the IPCC's Second Assessment Report. The UNFCCC Guidelines on Reporting and Review, adopted before the publication of the Third Assessment Report, require emission estimates to be based on the GWPs in the IPCC Second Assessment Report. This will probably continue in the short term, until the UNFCCC reporting rules are changed.

100-Year GWP Estimates from the IPCC's Third (2001) Assessment Reports

Gas	2001 IPCC GWP[a]
Methane	23
Nitrous Oxide	296
HFC-23	12,000
HFC-32	550
HFC-125	3,400
HFC-134a	1,300
HFC-143a	4,300
HFC-152a	120
HFC-227ea	3,500
HFC-236fa	9,400
Perfluoromethane (CF_4)	5,700
Perfluoroethane (C_2F_6)	11,900
Perfluoropropane (C_3F_8)	11,900
Sulfur Hexafluoride (SF_6)	22,200

[a]Intergovernmental Panel on Climate Change, *Climate Change 2001: The Scientific Basis. Summary for Policymakers* (Cambridge, UK: Cambridge University Press, 2001).

Table 4. Summary of Reported Project-Level Emission Reductions and Carbon Sequestration by Reduction Objective and Gas, Data Year 2003
(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	
Direct					
Carbon Dioxide	193,113,253	-7,975,336[a]	1,932	—	185,139,849
Methane	347,122	76,645,627	—	—	76,992,749
Nitrous Oxide	32,778	-23,899[a]	—	—	8,879
HFCs	—	—	—	—	0
PFCs	25,536	—	—	3,524,969	3,550,504
SF_6	—	—	—	2,611,910	2,611,910
Total Direct	**193,518,689**	**68,646,392**	**1,932**	**6,136,879**	**268,303,892**
Indirect					
Carbon Dioxide	38,461,582	16,977,303	—	—	55,438,884
Methane	264,381	22,737,072	—	—	23,001,453
Nitrous Oxide	56,049	121,374	—	—	177,423
HFCs	—	—	—	38,702	38,702
PFCs	236,823	—	—	567	237,390
SF_6	—	—	—	2,184,750	2,184,750
Total Indirect	**39,018,835**	**39,835,749**	**—**	**2,224,018**	**81,078,602**
Sequestration					
Carbon Dioxide	—	—	7,730,969	—	7,730,969
Methane	—	—	—	—	—
Nitrous Oxide	—	—	—	—	—
HFCs	—	—	—	—	—
PFCs	—	—	—	—	—
SF_6	—	—	—	—	—
Total Sequestration	**—**	**—**	**7,730,969**	**—**	**7,730,969**
Unspecified[b]					
Carbon Dioxide	12,427,175	39,057	28,576	—	12,494,809
Methane	21,456	3,813,915	—	—	3,835,371
Nitrous Oxide	—	—	—	—	—
HFCs	—	—	—	—	—
PFCs	1,910	—	—	—	1,910
SF_6	22,154	—	—	6,495	28,649
Total Unspecified	**12,472,694**	**3,852,972**	**28,576**	**6,495**	**16,360,738**

[a]Negative reductions represent increases in emissions.

[b]Unspecified emission reductions represent quantities reported on the short form (Form EIA-1605EZ), where reporters are not asked to specify whether the emission reduction or sequestration is direct or indirect.

Notes: 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). Direct, indirect, and unspecified emission reductions and sequestration have not been totaled to avoid double counting of reductions or sequestration that have been reported by more than one entity.

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

Total direct emission reductions reported for 2003 increased by 1 percent over the reductions reported for 2002, to 268.3 million metric tons carbon dioxide equivalent (Table 5), and have quadrupled since the first year of the program (data year 1994). Reported direct reductions of carbon dioxide emission increased by 6.7 million metric tons, while direct reductions of methane emissions decreased by 3.1 million metric tons.

Indirect emission reductions reported for 2003, at 81 million metric tons carbon dioxide equivalent, were 1.0 million metric tons carbon dioxide equivalent (1.2 percent) higher than those reported for 2002. Largely responsible for the increase was a new reporter, Xenon Specialty Gas, which reported indirect reductions of SF_6 emissions equal to 2.2 million metric tons carbon dioxide equivalent.

Reported sequestration, after peaking at 12.5 million metric tons carbon dioxide equivalent for 1998, has fallen below 10 million metric tons carbon dioxide for the past 5 years. This decline was caused by the decline in, or nonrecurrence of, sequestration reported for several large forest preservation projects. Also, American Forests, which reported sequestration for 164 reforestation projects for 2000, has not reported for subsequent years. Unspecified reductions reported for 2003, which include reductions and sequestration reported on the short form, totaled 16.4 million metric tons carbon dioxide equivalent, a decrease of 5.2 percent from 2002.

Project-Level Reference Cases

Beginning with the 2000 annual report, EIA began dividing project-level data according to the reference case employed in calculating reported project-specific emission reductions. A "reference case" is an emissions or sequestration level against which actual emissions are compared to estimate emission reductions. In a "basic" reference case, actual historical emissions (or sequestration) in a specific year, or an average of a range of years, are used as the reference case. In a "modified" reference case, an estimate is made of what emissions or sequestration would have been in the absence of the project, and that estimate serves as the reference case.

Of the projects reported for 2003 on Form EIA-1605, 95 percent used modified reference cases (Table 6). A modified reference case is generally preferred for project-level analysis, because this approach attempts to isolate the effect of the action taken by the reporter from other factors that may have affected the reporter's emissions since the action was taken. The use of basic reference cases for 2003 was greatest for projects that reported reducing emissions of halogenated substances (42 percent of those projects), because the techniques for evaluating reductions for the projects are particularly suited to the use of a basic reference case. Emissions are determined using inventory management data, with emissions of a particular substance being equal to the amount purchased during the year to replace quantities emitted. Annual reductions can be calculated by subtracting the emissions in the years after emission abatement measures have been instituted from the emissions in the year before the measures were instituted.

In terms of emission reductions and sequestration reported for 2003, 261 million metric tons carbon dioxide equivalent in direct reductions (97 percent of total direct reductions), 74.8 million metric tons carbon dioxide equivalent in indirect reductions (92 percent of total indirect reductions), and 7.8 million metric tons carbon dioxide equivalent in sequestration (94 percent of total sequestration) were reported as having been estimated using modified reference cases (Table 7). The halogenated substance category was the only project category for which a significant proportion (92 percent or 5.6 million metric tons carbon dioxide equivalent) of the reported direct reductions was estimated using a basic reference case.

Entity Level

Most of the 126 reporters providing entity-level information included data on emissions as well as emission reductions or sequestration. In addition, 9 reporters provided entity-level data on emissions only, and 6 reporters provided entity-level data on emission reductions or sequestration only.

Total entity-level direct emissions reported for 2003 were 888.8 million metric tons, representing a 0.1-percent decrease from the direct emissions reported for 2002 (Table 8). Total entity-level indirect emissions reported for 2003 were 6 percent lower than those reported for 2002, at 104.7 million metric tons carbon dioxide equivalent. Total direct emission reductions reported at the entity level for 2003 (214.2 million metric tons carbon dioxide equivalent) were 8 percent lower than those reported for 2002 (231.6 million metric tons carbon dioxide equivalent). For 2003, 182.4 million metric tons carbon dioxide equivalent (85 percent) of the reported direct reductions were estimated using modified reference cases, and 31.8 million metric tons carbon dioxide equivalent (15 percent) were estimated with basic reference cases.

Reported entity-level indirect emission reductions for 2003 totaled 42.6 million metric tons carbon dioxide equivalent, 19 percent higher than the total reported for 2002. Reported indirect reductions of 45.6 million metric tons carbon dioxide equivalent calculated with modified reference cases were offset by -3.2 million metric tons carbon dioxide equivalent of indirect reductions (i.e., a net increase in emissions) calculated with basic reference cases. Entity-level sequestration reported for 2003

Table 5. Summary of Reported Project-Level Emission Reductions and Carbon Sequestration by Gas, Data Years 1994-2003

(Metric Tons Carbon Dioxide Equivalent)

Year	Carbon Dioxide	Methane	Nitrous Oxide	HFCs	PFCs	Sulfur Hexafluoride	Total
Direct							
1994	58,413,709	576,808	339,485	-29	3,199,649	83,579	**62,613,201**
1995	85,419,479	194,350	-438,673	-43	2,962,416	186,382	**88,323,910**
1996	77,601,577	9,411,042	-423,599	15,193	3,345,811	-69,985	**89,880,039**
1997	82,269,887	8,705,355	86,294	-42	3,318,600	516,732	**94,896,824**
1998	112,038,605	31,720,732	109,560	-1,738	3,504,380	624,786	**147,996,326**
1999	115,366,719	35,994,030	62,111	-1,738	3,425,480	595,379	**155,441,981**
2000	144,096,233	61,945,794	114,198	—	3,233,612	1,407,347	**210,797,186**
2001	159,129,312	81,569,042	711,633	—	3,606,813	2,475,144	**247,491,944**
2002(R)	178,393,155	80,073,702	-4,713	—	3,562,893	3,043,682	**265,068,719**
2003	185,139,849	76,992,749	8,879	—	3,550,504	2,611,910	**268,303,892**
Indirect							
1994	2,994,405	2,360,734	2,243	—	—	—	**5,357,381**
1995	27,063,660	24,777,246	630,358	—	—	7,653	**52,478,917**
1996	26,207,709	26,612,114	616,075	—	—	—	**53,435,898**
1997	25,848,951	11,630,239	102,639	—	3,631	81	**37,585,541**
1998	27,968,865	15,152,664	105,598	—	6,068	81	**43,233,274**
1999	37,233,635	19,027,769	270,531	—	5,856	81	**56,537,872**
2000	41,276,444	20,641,700	115,689	—	35,459	81	**62,069,372**
2001	48,255,932	23,216,197	154,566	—	34,319	81	**71,661,094**
2002(R)	55,347,688	24,555,786	164,214	47	36,705	81	**80,104,520**
2003	55,438,884	23,001,453	177,423	38,702	237,390	2,184,750	**81,078,602**
Sequestration							
1994	746,545	—	—	—	—	—	**746,545**
1995	1,190,754	—	—	—	—	—	**1,190,754**
1996	8,676,591	—	—	—	—	—	**8,676,591**
1997	9,849,807	—	—	—	—	—	**9,849,807**
1998	12,490,927	—	—	—	—	—	**12,490,927**
1999	9,623,599	—	—	—	—	—	**9,623,599**
2000	9,011,117	—	—	—	—	—	**9,011,117**
2001	7,956,823	—	—	—	—	—	**7,956,823**
2002(R)	7,296,516	—	—	—	—	—	**7,296,516**
2003	7,730,969	—	—	—	—	—	**7,730,969**
Unspecified[a]							
1994	3,721,047	564,022	—	—	—	—	**4,285,069**
1995	4,959,366	1,162,752	—	—	—	—	**6,112,117**
1996	4,436,523	1,232,174	—	—	—	—	**5,668,697**
1997	6,688,175	1,825,383	—	—	123,049	—	**8,636,607**
1998	16,499,427	2,918,818	—	—	—	—	**19,418,245**
1999	9,607,428	3,273,878	—	—	—	4,783	**12,886,089**
2000	9,125,506	3,127,762	—	—	—	20,744	**12,274,012**
2001	10,855,046	3,960,348	—	—	4,046	20,261	**14,839,701**
2002(R)	12,820,322	4,295,112	—	—	130,930	10,201	**17,256,565**
2003	12,494,809	3,835,371	—	—	1910	28,649	**16,360,738**

(R) = revised.

[a]Unspecified emission reductions represent quantities reported on the short form (Form EIA-1605EZ), which does not distinguish between direct and indirect emission reductions or sequestration.

Notes: 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. Direct, indirect, and unspecified emission reductions and sequestration have not been totaled, in order to avoid double counting of reductions or sequestration that have may been reported by more than one entity. Negative reductions represent increases in emissions.

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

totaled 6.9 million metric tons carbon dioxide equivalent, 1 percent more than was reported for 2002.

Commitments

For 2003, formal commitments to reduce emissions, take specific action to reduce emissions, or provide financial support for activities related to greenhouse gas reductions were reported by 89 entities,[6] nearly one-third (30 percent) of which were electricity generators participating in DOE's Climate Challenge Program (Figure 3). Other voluntary programs represented among the commitments reported for 2003 included the EPA's Climate Wise, the EPA's Voluntary Aluminum Industrial Program, the U.S. Initiative on Joint Implementation, the EPA's Green Lights Program, the EPA's Landfill Methane Outreach Program, DOE's Motor Challenge, the EPA's Sulfur Hexafluoride Emissions Reduction Partnership for Electric Power Systems, DOE's Cool Communities Program, DOE/EPA ENERGY STAR Buildings, EPA's Natural Gas Star, and DOE's Renewable Energy Commercialization Program.[7]

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.

For 2003, 55 firms made 60 specific promises to reduce, avoid, or sequester future emissions at the entity level. Some of those entity-level 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 relative to a baseline emissions growth trend. In their reports for 2003, companies reported commitments to reduce entity-level emissions by a total of 86 million metric tons carbon dioxide equivalent, including 14 commitments, representing 68 million metric tons carbon dioxide equivalent or 79 percent of the emission reductions promised, that

Table 6. Number of Projects Reported on Form EIA-1605 by Reduction Objective, Project Type, and Reference Case Employed, Data Year 2003
(Number of Projects)

Reduction Objective and Project Type	Type of Reference Case				Total Number of Projects
	Modified		Basic		
	Number of Projects	Percent	Number of Projects	Percent	
Reducing Carbon Dioxide Emissions	**867**	**94**	**56**	**6**	**923**
Electricity Generation, Transmission, and Distribution	458	99	4	1	462
Cogeneration and Waste Heat Recovery	19	90	2	10	21
Energy End Use	328	88	46	12	374
Transportation and Offroad Vehicles	62	94	4	6	66
Reducing Methane and Nitrous Oxide Emissions	**463**	**99**	**7**	**1**	**470**
Waste Treatment and Disposal (Methane)	421	99	4	1	425
Agriculture (Methane and Nitrous Oxide)	4	100	0	0	4
Oil and Natural Gas Systems and Coal Mining (Methane)	38	93	3	7	41
Carbon Sequestration	**429**	**96**	**17**	**4**	**446**
Halogenated Substances	**25**	**58**	**18**	**42**	**43**
Other Emission Reduction Projects	**74**	**88**	**10**	**12**	**84**
Total	**1,858**	**95**	**108**	**5**	**1,966**

Notes: Excludes projects reported on the short form (Form EIA-1605EZ), which does not collect information on the reference case employed. Excludes two projects reported on the long form (Form EIA-1605) for which no reference case was specified because reductions were not estimated. Table excludes projects submitted in confidential reports.
Source: Energy Information Administration, Forms EIA-1605.

[6]Formal commitments in one or more of the entity-level, project-level, or financial categories accommodated by Form EIA-1605 were reported by 81 companies. Descriptions of future activities were provided by 8 companies in the Additional Information section of Schedule IV.

[7]In 2001, the Climate Wise and Green Lights voluntary programs were incorporated into ENERGY STAR, a joint program of the U.S. Department of Energy and the U.S. Environmental Protection Agency.

were to be fulfilled by 2003 or earlier. The 12 other entity-level commitments, which promised reductions totaling 18 million metric tons carbon dioxide equivalent, were to be fulfilled by 2004 or later.

Commitments to undertake 116 individual emission reduction projects were reported by 22 companies. Some of the commitments were linked to 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 or increase carbon sequestration by 73 million metric tons carbon dioxide equivalent. In addition, 20 firms made 40 financial commitments. The total amount of funds promised was $50 million, of which $4 million was spent in 2003.

Table 7. Reported Emission Reductions and Sequestration for Projects Reported on Form EIA-1605 by Reduction Objective, Project Type, Source, and Reference Case Employed, Data Year 2003
(Million Metric Tons Carbon Dioxide Equivalent)

Reduction Objective and Project Type	Direct Reductions		Indirect Reductions		Sequestration	
	Modified	Basic	Modified	Basic	Modified	Basic
Reducing Carbon Dioxide Emissions	**184.4**	**1.3**	**27.8**	**0.1**	**NA**	**NA**
Electricity Generation, Transmission, and Distribution	157.2	0.6	14.7	*	NA	NA
Cogeneration and Waste Heat Recovery	0.1	*	3.1	*	NA	NA
Energy End Use	24.7	0.6	9.9	0.1	NA	NA
Transportation and Offroad Vehicles	2.5	*	0.1	*	NA	NA
Reducing Methane and Nitrous Oxide Emissions	**68.2**	**0.4**	**38.6**	**1.2**	**NA**	**NA**
Waste Treatment and Disposal (Methane)	47.6	0.4	38.6	1.2	NA	NA
Agriculture (Methane and Nitrous Oxide)	*	NA	*	NA	NA	NA
Oil and Natural Gas Systems and Coal Mining (Methane)	20.6	*	*	NA	NA	NA
Carbon Sequestration	**0.0**	**NA**	**NA**	**NA**	**7.3**	**0.5**
Halogenated Substances	**0.5**	**5.6**	**2.2**	**NA**	**NA**	**NA**
Other Emission Reduction Projects	**7.8**	**NA**	**6.1**	**5.0**	**NA**	**NA**
Total	**261.0**	**7.3**	**74.8**	**6.3**	**7.3**	**0.1**

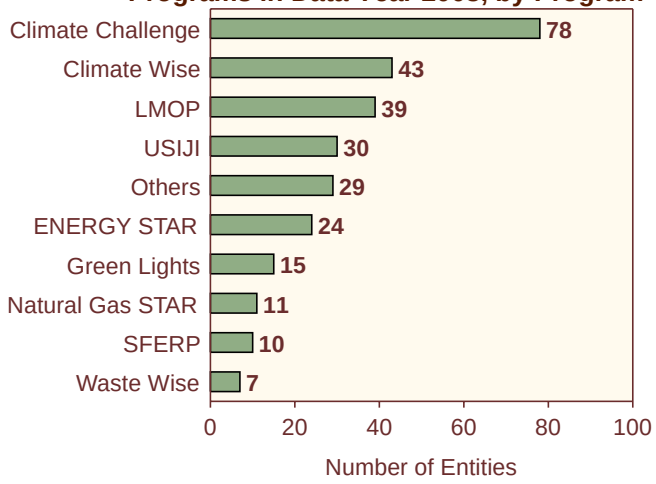
Note: Excludes reductions and sequestration for projects reported on the short form (Form EIA-1605EZ), which does not collect information on the reference case employed. Excludes projects submitted in confidential reports.
Source: Energy Information Administration, Form EIA-1605.

Table 8. Number of Entities Reporting at the Entity Level, Reported Emissions by Source, Emission Reductions by Source and Type of Reference Case Employed, and Sequestration, Data Years 1994-2003
(Million Metric Tons Carbon Dioxide Equivalent)

Year	Number of Entities Reporting	Emissions		Emission Reductions by Type of Reference Case						Sequestration
				Direct			Indirect			
		Direct	Indirect	Modified	Basic	Total	Modified	Basic	Total	
1994	39	752.7	494.9	38.2	22.6	60.8	1.6	1.2	2.8	0.5
1995	50	875.8	499.6	56.0	39.3	95.3	46.0	2.7	48.6	0.8
1996	55	1,183.1	461.5	65.4	44.6	110.0	42.9	5.7	48.6	7.9
1997	60	1,006.6	525.8	73.7	20.3	94.0	24.8	3.4	28.2	7.1
1998	76	1,110.7	473.5	105.8	22.6	128.4	28.3	13.2	41.6	11.2
1999	83	967.9	481.0	114.7	35.3	150.0	30.3	8.4	38.7	8.4
2000	109	1,068.2	111.7	123.6	83.0	206.7	34.8	-7.8	27.0	7.5
2001(R)	113	799.6	111.5	121.4	90.4	211.9	38.9	-6.7	32.2	7.5
2002(R)	119	889.3	111.2	148.4	83.3	231.6	44.2	-8.3	35.9	6.8
2003	126	888.8	104.7	182.4	31.8	214.2	45.6	-3.0	42.6	6.9

(R) = revised.
Notes: 2002 data year includes late reports that were not received in time to be included in last year's annual report and database. Negative reductions represent increases in emissions.
Source: Energy Information Administration, Form EIA-1605.

Figure 3. Number of Entities Reporting Commitments Associated with Voluntary Programs in Data Year 2003, by Program



Notes: LMOP = Landfill Methane Outreach Program, USIJI = United States Initiative on Joint Implementation, SFERP = Sulfur Hexafluoride Emissions Reduction Partnership. Others include Coalbed Methane Outreach Program, Cool Communities Program, Motor Challenge Program, and Voluntary Aluminum Industry Partnership. 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, Form EIA-1605.

Status of Policy Initiatives

In 2004, the Bush Administration continued to develop components of its Global Climate Change Initiative, which is expected to include enhancements to the Voluntary Reporting of Greenhouse Gases Program (see boxes on pages 14 and 15). In addition, some States and other organizations continued progress toward the development of greenhouse gas registry and trading programs; and the U.S. Congress considered, but did not pass, legislation relevant to greenhouse gas reporting. These developments, which occurred in 2003, would not have affected the reported emissions and emission reductions data for activities in 2003 discussed in this report, even if they had been formalized in laws or policies; however, they may affect the future of the Voluntary Reporting Program, future reporting of reductions or commitments, or both.

Enhanced 1605(b) Voluntary Emissions Reduction Registry

Pursuant to a key objective of the Global Climate Change Initiative, DOE is working to improve and expand the 1605(b) Voluntary Reporting of Greenhouse Gases Program. The primary goal of this effort is to create a credible and transparent program to report real reductions that support the national greenhouse gas intensity goal laid out in the Global Climate Change Initiative. In addition, a goal of the enhanced 1605(b) Program is to allow businesses and individuals to record their reductions and ensure that reporters are not penalized under a future climate policy. The objective of improving the registry is to help motivate firms to take cost-effective, voluntary actions to reduce greenhouse gas emissions, which would, in part, aid in the achievement of the Initiative's greenhouse gas intensity goal.

An interagency working group has undertaken several actions to improve the Voluntary Reporting Program, including outreach efforts, solicitation of public comments, and review of the existing program. On July 8, 2002, the Secretary of Energy, joined by the Secretary of Commerce, the Secretary of Agriculture, and the EPA Administrator, submitted recommendations to the White House to guide the process for improving and expanding the Voluntary Reporting Program.

In 2004, DOE continued to collaborate with the Department of Agriculture, the EPA, and other Federal agencies in developing revised Guidelines for the Voluntary Reporting of Greenhouse Gases Program. In November 2003, DOE released proposed revisions to the General Guidelines, which outline the principles that would govern the revised program, and also held a public workshop on the subject in Washington, DC, on January 12, 2004. The Technical Guidelines will specify the methods and factors to be used in measuring and estimating greenhouse gas emissions, emission reductions, and carbon sequestration under the revised Program.

Other U.S., State, and International Greenhouse Gas Initiatives and Registry Programs

In addition to activity on revisions to the Voluntary Reporting Program, a number of other efforts at the Federal, State, and international levels to reduce greenhouse gas emissions are being actively pursued. Some of those efforts are summarized below.

Climate VISION. Climate VISION—Voluntary Innovative Sector Initiatives: Opportunities Now—is a Presidential public-private partnership initiative launched by DOE on February 12, 2003, to contribute to the President's goal of reducing U.S. greenhouse gas emissions intensity—the ratio of emissions to economic output by American industry—by 18 percent over the next 10 years without sacrificing economic growth. Other agencies participating in Climate VISION include the EPA, Department of Transportation, Department of Agriculture, and Department of the Interior.

Business associations representing 12 industry sectors and the Business Roundtable have become program

partners with the Federal Government and have issued letters of intent to meet specific targets for reducing greenhouse gas emissions intensity. These Climate VISION partners, which include some of the largest companies in America, represent a broad range of industry sectors: oil and gas production, transportation, and refining; electricity generation; coal and mineral production and mining; manufacturing (automobiles, cement, iron and steel, magnesium, aluminum, chemicals, and semiconductors); railroads; and forest products. In December 2004, as part of its Climate VISION commitment, the electric power industry pledged to reduce collectively the power sector's greenhouse gas emissions intensity by the equivalent of 3 to 5 percent (measured as carbon emissions per unit of electricity produced) below 2000-2002 baseline levels, measured over the 2010-2012 period.

Climate Leaders. Climate Leaders is a voluntary industry-government partnership that encourages companies to establish and meet clear greenhouse gas emission reduction targets. EPA established Climate Leaders in February 2002 and has recruited 62 partners, 27 of which have established greenhouse gas reduction goals. By joining Climate Leaders, the partners commit themselves to documenting their emissions of the six major

The Global Climate Change Initiative

On February 14, 2002, President George W. Bush announced the Administration's Global Climate Change Initiative, which includes new emission intensity reduction goals, incentives for clean technology development, added support for scientific research, expanded collaboration with foreign governments on climate change, and the development of a framework for the enhancement of the Voluntary Reporting of Greenhouse Gases Program.

A primary goal of the Global Climate Change Initiative is to slow the growth rate of greenhouse gas emissions while sustaining economic growth, using market mechanisms and energy technology development. In the proposal, the President established a national goal of reducing the greenhouse gas intensity of the U.S. economy by 18 percent between 2002 and 2012. Emissions intensity is a measure of the ratio of greenhouse gas emissions to economic output (gross domestic product). To achieve the goal, the Initiative focuses on fossil fuel energy conservation, methane recovery, and carbon sequestration in the short term and development of advanced energy technologies in the longer term.

Key domestic and international elements of the Global Climate Change Initiative include:

- Domestic climate change initiatives:
  - Enhancement of the 1605(b) Voluntary Reporting of Greenhouse Gases Program
  - Significantly expanded funding for basic scientific research and advanced technology development
  - Tax incentives, such as credits for renewable energy, cogeneration, and new technology
  - Challenges for business to undertake voluntary initiatives and commit to greenhouse gas intensity goals, such as through recent agreements with the semiconductor and aluminum industries
  - Transportation programs, including technology research and development and fuel economy standards
  - Carbon sequestration programs, which include increased funding for U.S. Department of Agriculture conservation programs under the Farm Bill to enhance the natural storage of carbon, promote the development of targeted incentives for forestry and agriculture projects to increase carbon sequestration, and establish accounting rules and guidelines for crediting sequestration projects
- International climate change initiatives:
  - Investments in climate observation systems in developing countries
  - Funding for "debt-for-nature" forest conservation programs
  - Use of economic incentives to encourage developing countries to participate in climate change initiatives
  - Expanding technology transfer and capacity building in the developing world
  - Joint research with Japan, Italy, and Central America.

The Global Climate Change Initiative includes a future progress check: the U.S. Government, in 2012, will evaluate whether its greenhouse gas emissions reduction progress is sufficient and whether scientific understanding at that time will justify further action. If further action is deemed necessary, the Initiative proposes to accelerate technology development and deployment using additional market-based mechanisms, voluntary measures, and incentive programs.

greenhouse gases (carbon dioxide, methane, nitrous oxide, HFCs, PFCs, and SF_6) on a company-wide, facility-level basis (including, at a minimum, all their domestic facilities). Partners are required to develop an Inventory Management Plan (IMP) and report their annual corporate level emissions by emission source type to the EPA, using the EPA's Annual GHG Inventory Summary and Goal Tracking Form.[8]

In October 2004, the EPA issued updated guidance for corporate greenhouse gas inventories based on the existing protocol developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), described below. The EPA has finalized guidance covering design principles and cross-sector core guidance covering direct emissions from stationary combustion, indirect emissions from sales and purchases of electricity and steam, direct emissions from mobile sources, and direct emissions of HFCs and PFCs from refrigeration and air conditioning systems. The EPA has also completed draft sector-specific guidance for core emissions from the following industries: cement, manufacture of refrigeration and air conditioning equipment (HFC and PFC emissions), iron and steel, and municipal solid waste landfilling. The EPA is currently developing sector-specific guidance for aluminum production, pulp and paper production, semiconductor manufacturing, and SF_6 from electricity distribution.

California. The California Climate Action Registry (CCAR), established by the California Legislature in 2000, is a voluntary program for reporting and registering greenhouse gas emissions that occur inside or outside the State of California. CCAR issued reporting protocols and began enrolling members in October 2002 and, in December 2003, released an online reporting tool, the California Action Registry Reporting On-line Tool (CARROT), in order to simplify the inventorying and reporting of greenhouse gas emissions by program participants. CCAR requires third-party verification of reported emissions and has pledged to protect participants' reported reductions under possible future regulatory programs. As of November 2004, CCAR had enrolled 43 organizations and companies.[9] In October 2004, CCAR released a protocol for the accounting of carbon emissions and reductions associated with forest conservation, improved management practices, and reforestation and issued revised guidance for calculating greenhouse gas emissions from electric power generation.

Wisconsin. Wisconsin has developed a registry for recording reductions in emissions of greenhouse gases

Recommendations for Improving the Voluntary Reporting of Greenhouse Gases Program

The Secretaries of Energy, Commerce, and Agriculture and the EPA Administrator on July 8, 2002, submitted to the White House the following recommendations for improving and expanding the Voluntary Reporting of Greenhouse Gases Program:

- Develop fair, objective, and practical methods for reporting baselines, reporting boundaries, calculating real results, and awarding transferable credits for actions that lead to real reductions
- Standardize widely accepted, transparent accounting methods
- Support independent verification of registry reports
- Encourage reporters to report greenhouse gas intensity (emissions per unit of output) as well as emissions or emission reductions
- Encourage corporate or entity-wide reporting
- Provide credits for actions to remove carbon dioxide from the atmosphere (e.g., sequestration activities) as well as for actions to reduce emissions
- Develop a process for evaluating the extent to which past reductions may qualify for credits
- Ensure that the Voluntary Reporting Program will be an effective tool to assist in reaching the goal of an 18-percent reduction in greenhouse gas intensity
- Factor in international strategies as well as State-level efforts
- Minimize transactions costs for reporters and administrative costs for the Government, where possible, without compromising the recommendations above.

[8]U.S. Environmental Protection Agency, Climate Leaders Program, "Annual GHG Inventory Summary and Goal Tracking Form," web site www.epa.gov/climateleaders/summaryform.xls. For information on Climate Leaders Program reporting requirements, see web site www.epa.gov/climateleaders/reportreq.html.

[9]See web site www.climateregistry.org/members. Seven of the organizations have at one time or another submitted reports to the Voluntary Reporting Program, including the following reporters for 2003: BP America, Los Angeles Department of Water and Power, PG&E Corporation, Sacramento Municipal Utility District, and Southern California Edison.

and other pollutants. To date, 7 organizations have registered emission reductions, 3 of which include reductions of carbon dioxide totaling over 310,000 metric tons.

Northeastern States. The six New England States and the Eastern Canadian Provinces (New Brunswick, Newfoundland and Labrador, Nova Scotia, Prince Edward Island, and Quebec) are engaged in a joint effort to develop a regional greenhouse gas registry, as specified in the New England Governors and Eastern Canadian Premiers (NEG/ECP) Climate Change Action Plan, which was issued in 2001. In the United States, the Northeast States for Coordinated Air Use Management (NESCAUM), an interstate association of air quality control divisions from the New England States, New York, and New Jersey, has spearheaded this effort.[10]

In October 2003, as part of a New England States' NEG/ECP Climate Action Plan commitment, NESCAUM launched the Regional Greenhouse Gas Registry (RGGR), which has adopted the emissions accounting and reporting protocols developed by WRI/WBCSD and is collaborating with the California Climate Action Registry to ensure that the registries will be compatible.[11] In May 2004, the Connecticut legislature passed a bill that requires any entity that reports other air emissions to report direct greenhouse gas emissions to the RGGR beginning in July 2006. All entities whose direct and indirect emissions of greenhouse gases exceed 10,000 metric tons carbon dioxide equivalent will be required to report those emissions to the RGGR beginning in July 2008.[12] NESCAUM is also initiating Phase II of the Greenhouse Gas Emissions Trading Demonstration Project, which will include further examination of baseline scenarios and multi-pollutant caps and a comprehensive assessment of early actions to reduce greenhouse gas emissions reported to the Voluntary Reporting of Greenhouse Gases Program.[13]

West Coast States. In September 2003, the governors of Washington, Oregon, and California announced a joint initiative to address climate change by developing policy recommendations on a range of issues that require regional cooperation, including the development of protocols and standard accounting methods for greenhouse gas emissions reporting.[14] In November 2004, the governors approved a series of recommendations stemming from this initiative. The recommendations identified a market-based carbon allowance program as an area holding significant promise for achieving regional greenhouse gas reductions. The governors have directed their State agencies to continue the initiative in 2005.[15]

Georgia. In May 2004, the Georgia legislature enacted the Georgia Carbon Sequestration Registry Act, which establishes a voluntary registry for carbon sequestration projects that offset greenhouse gas emissions. The State Forestry Commission is responsible for developing the rules for the program, and the Georgia Superior Court Clerks' Cooperative Authority will administer the registry, which will include a State-wide uniform automated electronic information system.[16]

Other States. Other States, including Illinois, Iowa, Maine, and Texas, have taken initial steps toward the development of State-level registries of greenhouse gas emissions.

WRI/WBCSD Greenhouse Gas Protocol Initiative. The WRI/WBCSD Greenhouse Gas Protocol initiative is an international program for developing accounting and reporting standards for greenhouse gas emissions and reductions that can be adopted by other reporting programs and registries. WRI/WBCSD has developed a corporate protocol for entity-level reporting, which was revised in 2004, and several calculation tools to support the preparation of corporate greenhouse gas inventories.[17] WRI/WBCSD continued to develop a project module in 2004.[18]

World Economic Forum Global Greenhouse Gas Register. In December 2003, the World Economic Forum

[10]Conference of New England Governors and Eastern Canadian Premiers, *Report to the New England Governors and Eastern Canadian Premiers on Climate Change Projects* (August 2003), web site www.cap-cpma.ca/images/pdf/eng/2003ReportClimate.pdf.

[11]Regional Greenhouse Gas Registry, "About the Project," web site www.rggr.us.

[12]State of Connecticut, "An Act Concerning Climate Change," Public Act No. 04-252, web site www.cga.ct.gov/2004/act/Pa/2004PA-00252-R00SB-00595-PA.htm.

[13]Northeast States for Coordinated Air Use Management, "Overview of the NESCAUM Greenhouse Gas Emissions Trading Demonstration Project: Phase II," web site www.nescaum.org/Greenhouse.

[14]"Statement of the Governors of California, Oregon and Washington on Regional Action tTo Address Global Warming" (September 22, 2003), web site www.climatesolutions.org/pubs/pdfs/Governors Statement.pdf.

[15]West Coast Governors' Climate Change Initiative, "West Coast States Strengthen Joint Climate Protection Strategy," Joint News Release (November 18, 2004), web site www.energy.ca.gov/global_climate_change/westcoastgov/releases/2004-11-18_JOINT_RELEASE.PDF.

[16]Georgia General Assembly, SB 356, "Georgia Carbon Sequestration Registry Act," web site www.legis.state.ga.us/legis/2003_04/versions/sb356_LC_25_3622S_hss_7.htm.

[17]World Business Council for Sustainable Development and World Resources Institute, *Greenhouse Gas Protocol Initiative Newsletter*, No. 11 (April 2004), web site www.ghgprotocol.org/docs/GHG_Protocol_Newsletter_No_11.pdf.

[18]World Business Council for Sustainable Development and World Resources Institute, *Greenhouse Gas Protocol Initiative Newsletter*, No. 13 (November 2004), web site www.ghgprotocol.org/docs/GHG_Protocol_Newsletter_No_13.pdf.

announced the creation of a Global Greenhouse Gas Register to provide a transparent, internationally consistent framework for companies to report emissions inventories and reduction targets. In 2004, 5 more companies (Alcan, Alcoa, Holcim, Santos, and Vitro) committed to participation in the registry,[19] joining the 8 founding members (Anglo American, Cemex, Hewlett-Packard, Lafarge, RAO Unified UESR, RWE, ScottishPower, and Vattenfall).[20] The Global Greenhouse Gas Register intended to begin accepting reports in January 2004, using reporting software based on CCAR's CARROT software.[21] As of November 2004, two participants (Cemex and Hewlett-Packard) had submitted annual emissions summary reports.[22]

Federal Legislation on Voluntary Greenhouse Gas Reporting

The second session of the 108th Congress, which convened in January 2004, produced little new action on legislation addressing the reporting of greenhouse gas emissions, emission reductions, and carbon sequestration by individual entities. The major exception was the introduction of the Climate Stewardship Act of 2004 (H.R. 4067) in the House of Representatives by Rep. Wayne Gilchrest (R-MD) and 19 cosponsors. The bill is a slightly revised version of the McCain-Lieberman Climate Stewardship Act of 2003 (S. 139), which was rejected by the Senate in a 45-53 floor vote in October 2003.[23]

H.R. 4067 would require covered entities (those with annual greenhouse gas emissions of more than 10,000 metric tons carbon dioxide equivalent) to submit an inventory of their emissions for the preceding year, beginning in 2008. The bill would limit greenhouse gas emissions by establishing a system of tradable emissions allowances, similar to the cap-and-trade system that has been used to limit sulfur dioxide emissions from electric power plants. Beginning in 2010, covered entities would be required to submit to the EPA allowances for emissions of greenhouse gases from stationary sources. Producers and importers of HFCs, PFCs, and SF_6 and producers and importers of fossil fuels used for transportation would also be required to submit to the EPA allowances for the products they sell that result in emissions of greenhouse gases. The objective of the legislation is to reduce emissions by the covered entities to 2000 levels by 2010. The bill also includes provisions for voluntary reporting of greenhouse gas emission reductions achieved between 1990 and 2010. Allowance allocation credits would be awarded to the reporters of emission reductions.

[19]World Economic Forum, "Greenhouse Gas Register," web site www.weforum.org/site/homepublic.nsf/Content/Global+Greenhouse+Gas+Register%5CParticipants+%26+Partners.

[20]World Economic Forum, "Global Greenhouse Gas Register Launched" (Press Release, January 12, 2004), web site www.weforum.org/site/homepublic.nsf/Content/Global+Greenhouse+Gas+Register+Launched.

[21]California Climate Action Registry, "CA Registry's Online Tool To Serve as Foundation for Global Greenhouse Gas Register" (Press Release, December 9, 2003), web site www.climateregistry.org/docs/PRESS/GHGRegister120903.pdf.

[22]World Economic Forum, "Public Annual Emission Summary Report," web site www.ghgr.org/public/PublicAnnualSummaryReport.aspx.

[23]"Senate Defeats Climate Bill, But Proponents See Silver Lining," *New York Times* (October 31, 2003).

2. Reducing Emissions from Electric Power

Electric Power Industry

The electric power industry emitted approximately 2,279.3 million metric tons of carbon dioxide in 2003, 38.8 percent of total U.S. carbon dioxide emissions.[24] Carbon dioxide emissions result from the combustion of fossil fuels—coal, oil, and natural gas—during electricity generation. For example, coal, which accounted for 83.5 percent of electric power industry carbon dioxide emissions in 2003, is the primary energy source for U.S. electricity generation (providing 51 percent of total generation in 2003) and has the highest rate of carbon dioxide emissions per unit of energy used among fossil fuels.[25]

Since 1990, carbon dioxide emissions from the electric power industry have increased by 491.4 million metric tons or 27.5 percent, a trend that reflects U.S. economic growth (gross domestic product grew by about 46 percent between 1990 and 2003) and corresponding increases in fossil energy consumption in the electric power sector. From 2002 to 2003, carbon dioxide emissions from the electric power industry increased by 1.0 percent. Contributing to the increase in emissions in 2003 were a 0.6-percent increase in total electricity generation and a 1.8-percent increase in emissions from coal-fired generation.

Projects Reported

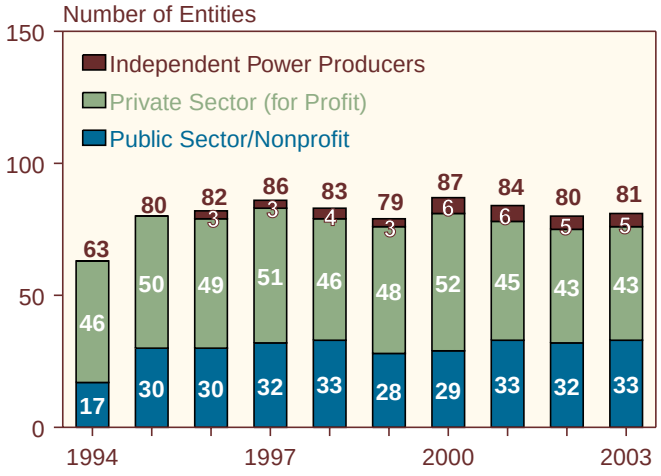
For the 2003 reporting year, 81 electric power providers reported to the Voluntary Reporting Program on Form EIA-1605 (Figure 4)—a decrease from the peak of 87 electric power providers reporting on the long form in 2000 but a 29-percent increase from the 63 reporters for the first reporting year, 1994. Since 1997, merger activity in the electric power industry has reduced the pool of electric utilities able to report to the Voluntary Reporting Program.[26]

Electric power providers made up 46 percent of the total 178 project-level reporters for data year 2003. Of the 81 electric power industry reporters, 48 were private-sector organizations, including 43 investor-owned utilities (IOUs) and 5 independent power producers (IPPs); and 33 were public-sector or nonprofit organizations, including electric cooperatives, municipal utilities, and other public-sector entities, such as the Tennessee Valley Authority (TVA).

The 485 electric power projects reported for 2003 (Figure 5) represent a 16-percent increase from the 2002 reporting year total of 417 and a 155-percent increase from the 190 projects reported for 1994. Electric power projects were the most numerous project type reported to the Voluntary Reporting Program, accounting for 25 percent of all projects reported on Form EIA-1605 for 2003.

Electric power projects are reported in two categories: (1) carbon content reduction; and (2) increasing energy efficiency in generation, transmission, and distribution. Carbon content reduction projects include availability improvements, fuel switching, and increases in lower emitting capacity. Increased efficiency through generation, transmission, and distribution projects includes

Figure 4. Number of Electric Power Providers Reporting on Form EIA-1605, by Entity Type, Data Years 1994-2003



Source: Energy Information Administration, Form EIA-1605.

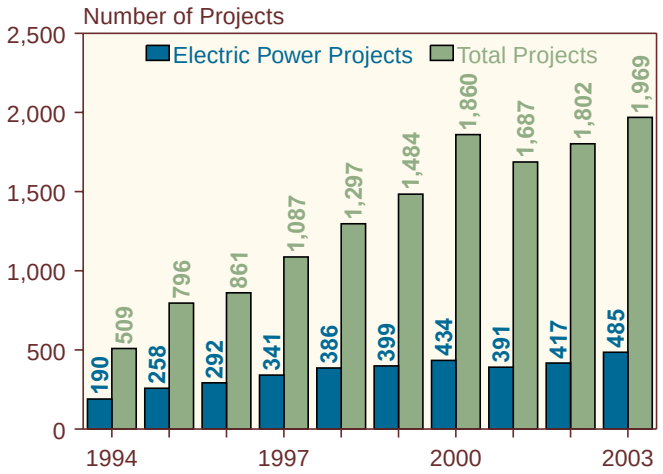
[24]Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2003*, DOE/EIA-0573(2003) (Washington, DC, December 2004), web site www.eia.doe.gov/oiaf/1605/ggrpt.

[25]Energy Information Administration, *Voluntary Reporting of Greenhouse Gases, Instructions for Form EIA-1605*, DOE/EIA-1605(2004) (Washington, DC, April 2004), Appendix B, web site ftp://ftp.eia.doe.gov/pub/oiaf/1605/cdrom/pdf/FormEIA-1605_2003_Instructions.pdf.

[26]There were 141 operating electric utilities in the United States in 2000, compared with 172 in 1992. See Energy Information Administration, *The Changing Structure of the Electric Power Industry 2000: An Update*, DOE/EIA-0562(00) (Washington, DC, October 2000), web site www.eia.doe.gov/cneaf/electricity/chg_stru_update/update2000.html.

such activities as heat rate improvements, cogeneration and waste heat recovery, high-efficiency transformers, and reductions in line losses associated with electricity transmission and distribution. In 2003, 257 carbon content reduction projects were reported, and 255 projects for increased energy efficiency in generation, transmission, and distribution were reported.[27]

Figure 5. Electric Power Projects and Total Projects Reported on Form EIA-1605, Data Years 1994-2003



Source: Energy Information Administration, Form EIA-1605.

Reductions Reported

Total reported emission reductions from the 485 electric power projects reported for data year 2003 (Table 9) included 158.0 million metric tons carbon dioxide equivalent from direct sources and 17.8 million metric tons from indirect sources. The 257 projects in the category "reducing carbon content" reported emission reductions of 146.9 million metric tons carbon dioxide equivalent from direct sources and 13.5 million metric tons from indirect sources. The 255 projects included in the category "increasing energy efficiency in generation, transmission, and distribution" reported emission reductions of 15.5 million metric tons carbon dioxide equivalent from direct sources and 4.1 million metric tons from indirect sources.

Many of the largest projects reported to the Voluntary Reporting Program are electric power projects. In 2003, 27 electric power projects reported direct reductions of 1 million metric tons carbon dioxide equivalent or more, representing 55 percent of all the projects that reported direct emission reductions exceeding 1 million metric tons carbon dioxide equivalent. About three-fourths of those reported electric power projects were related to nuclear power.

Table 9. Number of Electric Power Projects and Emission Reductions Reported on Form EIA-1605 by Project Type and Reduction Type, Data Year 2003

Reduction Objective and Project Type	Number of Projects Reported	Emission Reductions Reported (Metric Tons Carbon Dioxide Equivalent)	
		Direct	Indirect
Reducing Carbon Content	**257**	**146,857,049**	**13,482,222**
Availability Improvements	44	70,235,626	7,407,809
Fuel Switching	47	17,655,099	14,605
Increases in Lower Emitting Capacity	115	62,051,111	6,756,833
Other Carbon Reductions	65	29,134,810	1,016,534
Increasing Energy Efficiency	**255**	**15,532,986**	**4,099,254**
Generation	*191*	*11,383,129*	*3,817,029*
Efficiency Improvements	170	11,219,307	657,944
Cogeneration and Waste Heat Recovery	21	163,821	3,159,085
Transmission and Distribution	*65*	*4,160,221*	*282,225*
High-Efficiency Transformers	31	1,811,477	247,990
Reconductoring	27	1,847,515	240,686
Distribution Voltage Upgrades	28	2,645,519	189,695
Other Transmission and Distribution	15	1,740,398	72,550
Total Electric Power Projects	**485**	**158,007,281**	**17,825,248**

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

[27] More than one project type may be assigned to a single project; therefore, the sums of projects and reductions by project type category may exceed the total numbers of projects and the total reductions reported.

Reducing the Carbon Content of Energy Sources

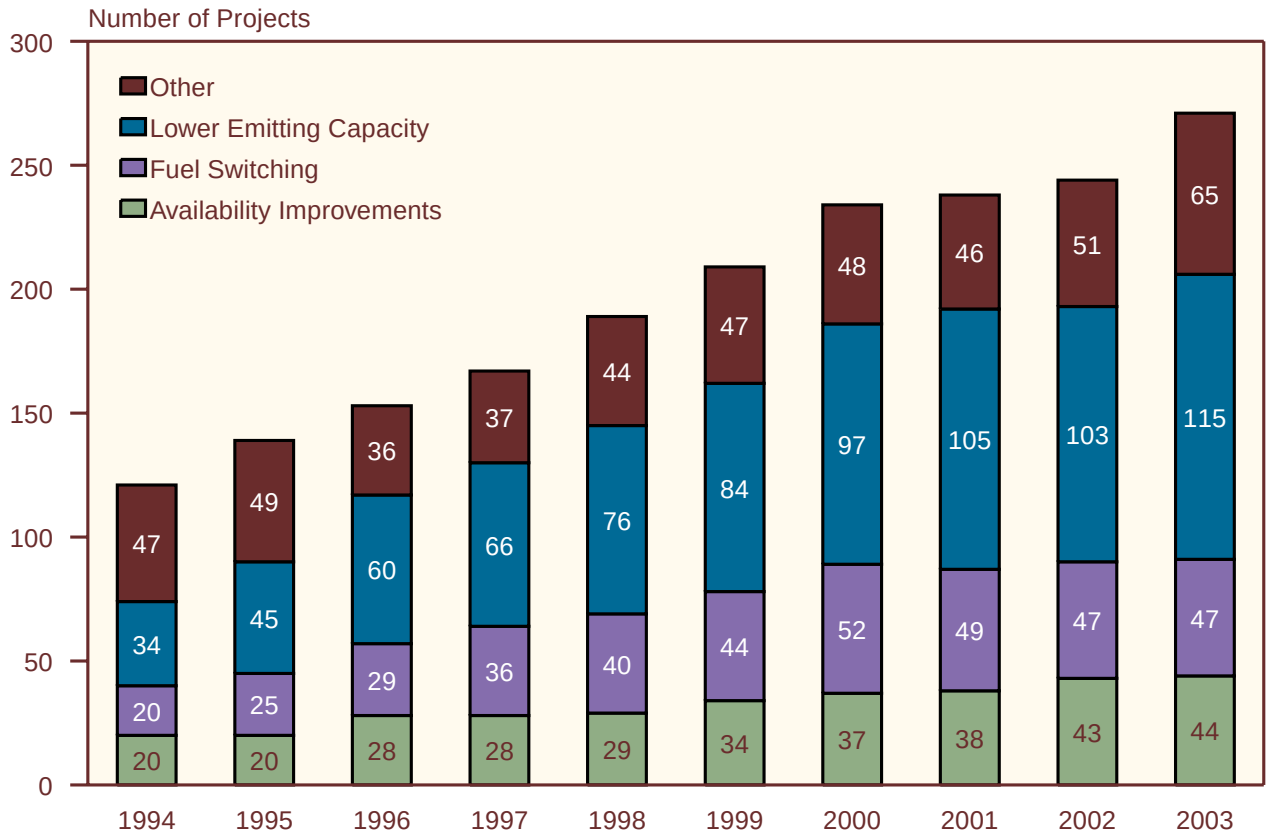
Projects involving fuel switching, power plant availability improvements for lower than average carbon-emitting plants, increases in low- or zero-emitting generation capacity, and other similar activities typically reduce the amount of carbon consumed to generate a unit of electricity. For 2003, 257 such projects were reported, 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 2003 totaled 146.9 million metric tons carbon dioxide equivalent from direct sources and 13.5 million metric tons from indirect sources. Some carbon content reduction projects are in fact "hybrids," combining efficiency improvements with measures such as availability improvements or increases in lower emitting capacity (see box on page 23).

Availability Improvements

There were 44 availability improvement projects reported for data year 2003—1 more than the 43 reported for 2002 and 24 more than the 20 reported for 1994. Availability improvement projects accounted for emission reductions of 70.2 million metric tons carbon dioxide equivalent from direct sources and 7.4 million metric tons from indirect sources in 2003. Of the 44 availability improvement projects reported, 33 involved nuclear power plants. As in previous reporting years, availability improvement projects, especially those undertaken at nuclear facilities, produced some of the largest reported reductions in carbon dioxide emissions. Mainly through significant advances in operating, maintenance, and refueling procedures, capacity factors at some nuclear plants have increased and, thus, have displaced some fossil-fuel-based power generation that would have been used in the absence of the availability improvements.

Because nuclear power plants are invariably large baseload facilities, even a fairly small improvement in plant availability can lead to a sizable reduction in carbon dioxide emissions through the displacement of fossil-fueled generation. For example, the Southern Company is committed to the continued enhancement of operational performance and efficiency improvements at Plant Vogtle. These improvements are targeted

Figure 6. Electric Power Projects Reported on Form EIA-1605 Reducing the Carbon Content of Energy Sources, by Project Type, Data Years 1994-2003



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, Form EIA-1605.

to safely reducing costs and increasing capacity factors by reducing outage lengths and forced outages. To achieve these improvements, a complex strategy consisting of many operational, maintenance, and outage-related activities continues to be implemented at the plants. Steam generator instrumentation upgrades at Southern Company's nuclear plants have minimized incidents in which a unit is automatically taken out of service. The results have been dramatic at the Vogtle plant, where megawatthours generated have increased and outage lengths have decreased since the 1990 baseline year of the project.

Several major performance records have been set in the nuclear industry in recent years, and major progress has been made in reducing the length of scheduled refueling outages. Factors that have contributed to the decrease in outage durations include: (1) online maintenance, with some activities that previously were performed during refueling outages now being performed while the unit is online, if it can be done safely; (2) optimum scheduling; and (3) use of robotic inspection equipment for steam generator and reactor inspection activities. Since 1991, total annual generation at the Vogtle plant has risen by approximately 20 percent. For 2003, Southern Company reported that 1,705,088 megawatthours of generation that would have come from fossil fuels was instead generated from nuclear power because of the project, reducing the company's emissions by 1,572,753 metric tons carbon dioxide equivalent. Southern Company has performed similar availability improvements at other nuclear power plants, with similar results.

Fuel Switching

A total of 47 fuel-switching projects were reported for 2003, the same number reported for 2002 and 27 more than the 20 reported for 1994. 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 2003 accounted for emission reductions totaling 17.7 million metric tons carbon dioxide equivalent from direct sources and 0.01 million metric tons from indirect sources.

National Energy & Gas Transmission (NEGT), reported a fuel-switching program that added the ability to use natural gas as a boiler fuel for startup and co-firing to three coal-fired units at its Brayton Point Station in Somerset Massachusetts.[28] The plant's Unit No. 1 first used natural gas in June 1994, Unit No. 2 in November 1994, and Unit No. 3 in April 1995. Natural gas is used as a startup fuel (ignition and warmup) and is co-fired with coal to help control emissions of nitrogen oxides from the units. In 2003, the project decreased the plant's coal use by more than 150,000 million British thermal units (Btu) and residual fuel oil use by more than 53,000 million Btu. The fuel switching resulted in a reported reduction in emissions of 7,394 metric tons carbon dioxide equivalent in 2003.

Increases in Lower Carbon 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. For 2003, 115 such projects were reported, up from 103 reported for 2002. Most of the projects reported for 2003 involved increases in nuclear (23 projects), hydropower (18 projects), photovoltaic (21 projects), natural gas (13 projects), and wind capacity (36 projects). Emission reductions reported for increases in lower emitting capacity projects in 2003 totaled 62.1 million metric tons carbon dioxide equivalent from direct sources and 6.8 million metric tons from indirect sources.

For 2003, Exelon Corporation reported on a new project that entails an increase in lower emitting capacity. ComEd (a subsidiary of Exelon), the City of Chicago, the Illinois Department of Commerce and Economic Opportunity, the International Brotherhood of Electrical Workers, Chicago Public Schools, and Spire Solar Chicago have pooled funding and expertise to create the Chicago Solar Partnership to develop solar resources and to help increase the development of solar generation in Chicago. The increase in zero emitting generation will help to offset grid electricity generated from higher emitting sources. The project had 5 major photovoltaic installations in 2001, 8 in 2002, and 8 in 2003, for a total capacity around the city of 524 kilowatts, which translates to 386,849 kilowatthours of generation annually. In 2003, Exelon reported on 41 percent of this project, which equated to reported emission reductions of 287 metric tons carbon dioxide equivalent.

[28]This project was originally sponsored by New England Power Company and reported by its parent, New England Electric System (NEES) Company. In August 1998, USGen New England, Inc. (USGenNE) completed the acquisition of 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 2000 through 2002, the activities previously reported by USGenNE were incorporated into the report submitted by its parent, PG&E Corporation. For 2003, this project was included in a separate report submitted by NEGT, formerly known as PG&E National Energy Group, a subsidiary of PG&E Corporation.

Other Carbon Reduction Projects

Sixty-five "other carbon reduction" projects were reported for 2003, 14 more than reported for 2002 and 18 more than reported for 1994. The category of "other" projects includes projects that decrease higher emitting capacity, make dispatching changes only, or increase power purchases from lower or zero emitting capacity. In 2003, 34 projects used low or zero emitting power purchases to reduce emissions. This category was added to the Voluntary Reporting Program for the 1999 data year 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. Another 4 projects reported for 2003 involved decreases in higher emitting capacity, and 2 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 2003, reported emission reductions from "other carbon reduction" projects totaled 29.1 million metric tons carbon dioxide equivalent from direct sources. An emission reduction of 1.0 million metric tons carbon dioxide equivalent was reported from indirect sources.

Xcel Energy reported a new project in 2003 to reduce emissions in the Denver metropolitan area through a decrease in high emitting capacity. Units 1 and 2 of the Arapahoe plant were voluntarily retired at the end of December 2002. Their retirement was part of the Xcel Energy commitment to the Denver Metropolitan Emission Reduction Program (MERP), a program established through the Colorado Department of Public Health and Environment. Between 1999 and 2002, the average net generation of Units 1 and 2 was 365,272 megawatthours. Xcel reported a reduction of 607,814 metric tons carbon dioxide equivalent with the removal of these two high emitting generation units.

There were only two projects reported in 2003 that fell into the "dispatching changes only" category. One is the "Merger Dispatch Savings" project reported by Cinergy. The other is the "Renewable Energy Purchases – Small Hydro" project reported by Southern California Edison Company. Southern California Edison's project changed the dispatch order to increase the use of hydroelectric power over natural-gas-fired generation, leading to a reported direct reduction of 1,270 metric tons carbon dioxide equivalent in 2003.

Emission reductions were achieved from Cinergy's project through the economic dispatch of Cinergy's generating facilities. Before the merger of the Cincinnati Gas & Electric Company and PSI Energy, the same generating facilities were dispatched according to the demands of each operating company. After the merger, the units from both operating companies were operated and dispatched in coordination with each other. This method of operation and economic dispatch is estimated to provide a 1-percent efficiency gain in the operation of

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 other effluents, including small quantities of methane and nitrous oxide. Carbon content reduction projects typically reduce greenhouse gas emissions by replacing fuels with relatively high carbon dioxide emissions (such as coal) with fuels that have lower carbon dioxide emissions (such as natural gas) or no net carbon dioxide emissions (such as nuclear power or renewables).

Availability Improvements. By reducing the frequency and length of planned and unplanned power plant outages, availability improvement projects can result in increased use of a power plant. Emissions reductions occur when increasing generation from a lower carbon emitting plant displaces generation from a higher carbon emitting plant. 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 for that year. Hence, there is a reduction in carbon dioxide emissions when there is an improvement in the capacity factor of a lower than average carbon emitting plant that results in a reduction in generation of a higher than average carbon emitting plant.

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, switching from a higher carbon content fuel (such as coal) to a lower carbon content fuel (such as natural gas), results in reduced carbon dioxide emissions.

Increases in Generating Capacity With Low or No Net Carbon Dioxide Emissions. By increasing the capacity of an existing generating unit that produces relatively low emissions or no net emissions (e.g., a hydroelectric plant), or by constructing a new unit with low or no net carbon dioxide emissions (e.g., a wind turbine), a power supplier can reduce or avoid reliance on higher emitting plants, thus reducing the combined greenhouse gas emissions from all plants.

the system. The efficiency gain is realized because the more recently built generating units, which are the most efficient units, are the first dispatched to meet customer demands for electricity. Therefore, the most efficient generating units are operating more than the older, less efficient units. In 2003, Cinergy reported a decrease in consumption of 279,165 short tons of bituminous coal and direct emission reductions of 601,736 metric tons carbon dioxide equivalent.

Alliant Energy reported three new "low or zero emitting power purchase" projects in 2003. Although all three of these projects began in 1998, Alliant began reporting them for data year 2003. In two of the projects, Alliant purchased hydroelectric energy and transmitted it to Iowa and Wisconsin. Total hydroelectric power purchased for these two projects was 90,691 megawatthours. In the third project, Alliant purchased power produced from biomass by BFC Gas & Electric in Cedar Rapids, Iowa, which converts industrial, agricultural, and construction waste into renewable energy. The facility recycles the biomass materials into a low-Btu biogas through gasification. Some of the materials recycled include sawmill waste; light paper mill rejects; construction demolition wood; energy crops, such as switchgrass, sweet sorghum, and poplar trees; crop residues such as corn stalks, corncobs, and seed cord; and unrecyclable low-grade paper. Total electricity purchased from this biomass source in 2003 was 22,576 megawatthours, and total direct reductions for the three "low or zero emitting power purchase" projects were 88,702 metric tons carbon dioxide equivalent.

Increasing Energy Efficiency in Electricity Production and Distribution

Projects involving improvements in the efficiency of electricity generation, transmission, and distribution reported for 2003 produced much smaller emission reductions on average than projects reducing carbon content. Efficiency improvement tends to be an ongoing effort by electricity suppliers, 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 or refurbishing old, worn-out equipment. Similarly, new energy-efficient transformers are often installed gradually over a period of years, as old transformers fail.

For 2003, 255 "increasing energy efficiency" projects were reported, 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 reduced losses in the delivery of electricity from the power plant to the end user (see box on page 25).

Generation Projects

Efficiency Improvements. Improvements in generating efficiency were the most numerous type of efficiency project reported for 2003. There were 170 such projects undertaken in 2003. 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 marginal. Emission reductions reported for generation efficiency improvement projects in 2003 totaled 11.2 million metric tons carbon dioxide equivalent from direct sources and 0.7 million metric tons from indirect sources.

For 2003, Entergy Services Inc. reported 30 new efficiency improvement projects. The projects included equipment replacement or control system improvements on 14 different units at 7 different facilities. The equipment replacements included air preheater and bypass seal replacements, condenser vacuum pump replacements, neural net installations, cold-end preheater basket replacements, installation of newly designed condenser tube plugs, drip pump and bypass line replacements, and more. Control systems affected by the improvements included burner management systems, temperature control systems, boiler feedwater control systems, RheoVac air in-leakage monitoring systems, and condensate filtration systems. Each improvement was reported as a separate project, for a total of 30 efficiency improvements in all. The projects produced a combined total reduction of 427,695 metric tons carbon dioxide equivalent in 2003.

Cogeneration and Waste Heat Recovery. A total of 21 cogeneration and waste heat recovery projects were reported for 2003, 2 more than the 19 reported in 2002. Emission reductions reported for cogeneration and waste heat recovery projects in 2003 were, on average, larger than those reported for the other types of efficiency improvement projects but less than the average for carbon content reduction projects. Reported end uses of the thermal energy included electricity generation, process heat applications, space heating and cooling, humidification, and cooking. The emission reductions reported for cogeneration and waste heat recovery projects in 2003 totaled 163,821 metric tons carbon dioxide equivalent from direct sources and 3.2 million metric tons from indirect sources.

The direct reductions reported for cogeneration projects are low, because the City of Klamath Falls, Oregon, reported a negative direct reduction (or increase) in emissions of more than 2.3 million metric tons carbon dioxide equivalwent. The increase was attributed to carbon dioxide released during the combustion of natural

Efficiency Projects: Definitions and Terminology

Generation Projects

It is neither theoretically nor practically possible to convert all the thermal or other energy produced in, or consumed by, a power plant into electrical energy or useful heat. 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 at electric 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 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 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 due to heating. Reconductoring involves the replacement of existing conductors with larger diameter conductors or reduced resistance materials (i.e., superconductive materials), which not only reduces line losses but also allows for an increase in transmission capacity.

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.

gas in the city's cogeneration plant. Emissions from higher carbon emitting generation sources usually offset these combustion-related emissions; however, according to the City of Klamath Falls, the electricity produced by the plant displaced other natural-gas-fired generation with an equivalent emissions rate. The project still resulted in a net reduction in emissions, because the cogeneration plant also produced steam that reduced indirect emissions by displacing fossil-fired steam production at the steam customer's facility. Without this project, direct reductions associated with the cogeneration projects reported for 2003 would be about 2.5 million metric tons carbon dioxide equivalent.

The Southern Company reported an example of a cogeneration project for a new cogeneration facility that its subsidiary, the Alabama Power Company, began operating in 2000 in Theodore, Alabama. The facility fires only natural gas to produce electricity, for INEOS Phenol, and process steam for Degussa, AG. The cogeneration facility consists of a 170-megawatt combustion turbine with a supplementally fired (duct burner) heat recovery steam generator, a 40-megawatt steam turbine, and two package boilers. The package boilers did not replace any existing boilers. Degussa produces its own steam and supplements it with steam from the Theodore cogeneration facility. The heat rate for the cogeneration facility improved from 7.083 million Btu per megawatthour in 2002 to 6.882 million Btu per megawatthour in 2003, leading to a total direct reduction of 669,857 metric tons carbon dioxide equivalent. In addition, a small indirect reduction probably was also achieved, because the steam supplied to Degussa was produced with newer and more efficient boilers than the older Degussa boiler; however, details about the Degussa boiler are not known.

Another example of a cogeneration project is a turbine-generator owned by Minnesota Power (MP) but located at the SAPPI Ltd paper mill in Cloquet, Minnesota. The MP unit, with 23 megawatts net capacity, was placed in a process steam line where steam previously had been throttled to lower pressure for process use. Consequently, electricity is produced with an overall process efficiency of 83 percent using steam produced from boilers fueled with 50 percent natural gas and 50 percent wood waste (biomass) from mill processes. MP estimates that the cogeneration application heat rate is 4,112 Btu per net kilowatthour of electricity generation. Through 2002, MP assumed that its generator displaced generation that would otherwise have been produced from conventional subbituminous coal. For 2003, MP assumed that the unit displaced generation that would have come from the Mid-Continent Area Power Pool (MAPP). Therefore, a MAPP number of 0.92 metric tons carbon dioxide per megawatthour was used to calculate carbon dioxide reductions. The 0.92 value was provided by the Minnesota Pollution Control Agency. This project was responsible for a direct emission reduction of 87,187 metric tons carbon dioxide equivalent.

Transmission and Distribution Projects

Transmission and distribution projects, although not as numerous as generation projects, were nonetheless reported in significant numbers. For 2003, 65 transmission and distribution projects were reported. 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 producers. Consequently, most of the transmission and distribution efficiency improvements reported for 2003 were reported as continuations of long-standing projects rather than as new projects.

The national average energy loss from transmission and distribution is about 7 percent of generation. In terms of average emission reductions, transmission and distribution projects typically are somewhat smaller than generation projects; however, reductions can still be significant. There are numerous opportunities for improving efficiencies in the delivery of electricity, but the efficiency gains generally are smaller than those from generation projects.

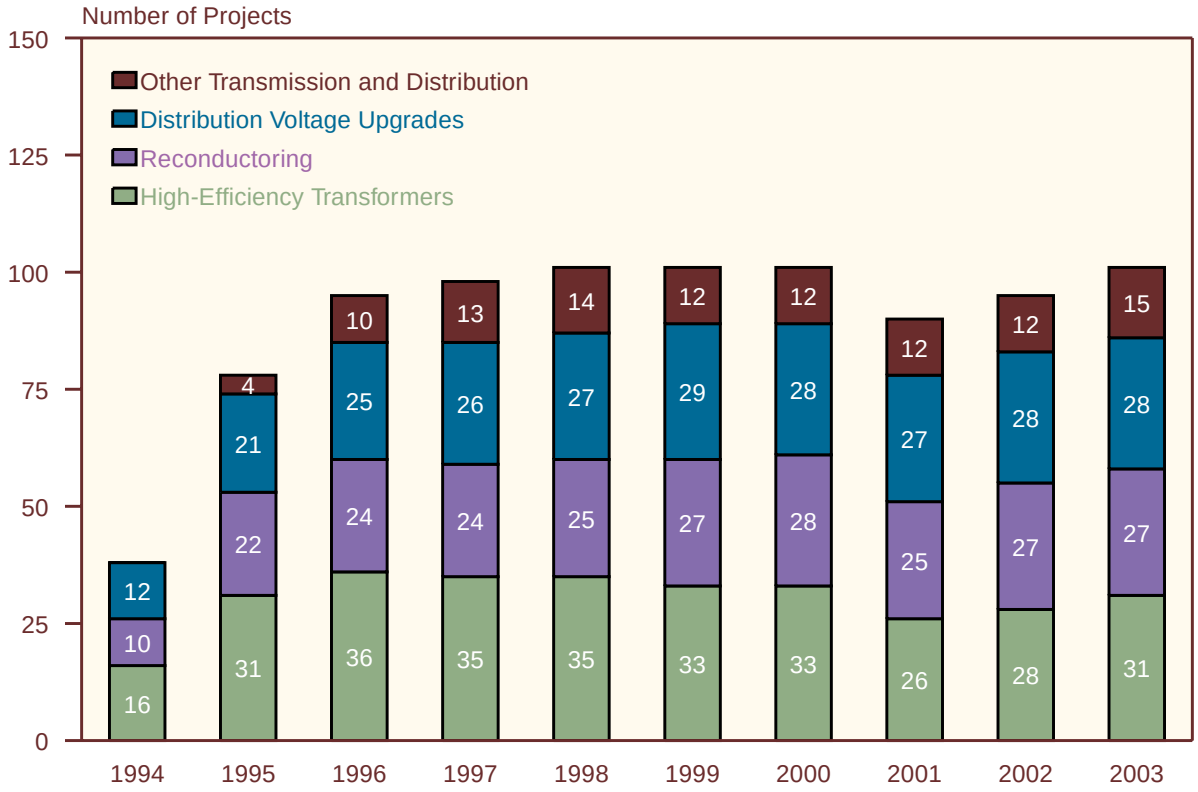
For 2003, the most frequently reported types of transmission and distribution projects (Figure 7) were high-efficiency transformers (including improved silicon steel and amorphous core transformers); reconductoring (replacing existing conductors with large-diameter conductors to reduce line losses); and distribution voltage upgrades (increasing the voltage at which the various segments of the system operate to reduce line losses). The other transmission and distribution project category includes projects that involve more than one type of activity, as well as such activities as transmission line improvements and capacitor installations. In 2003, 31 high-efficiency transformer projects were reported, 3 more than the 28 reported for 2002 and 15 more than the 16 reported for 1994. Many of the reported projects were "hybrids," combining high-efficiency transformer installation with one or more other transmission and distribution activities (e.g., reconductoring).

Another 27 projects involving reconductoring and 28 projects involving distribution voltage upgrades (again, often in combination with other activities) were reported for 2003—the same numbers that were reported in those categories for 2002. The reporters classified 15 projects as "general" or "other" transmission and distribution, 3 more than reported for 2002. Emission reductions reported for transmission and distribution projects in 2003 totaled 4.2 million metric tons carbon dioxide equivalent from direct sources and 0.3 million metric tons from indirect sources.

Xcel Energy reported a new high-efficiency transformer project in 2003. Effective November 1, 2003, Public Service Company of Colorado, a subsidiary of Xcel Energy, reduced transformer losses by 3.5 megawatts when a new transformer configuration was implemented at the Denver Zuni Terminal Substation. With the new configuration in full operation for 2 months of 2003, 5,124 megawatthours of energy was saved, leading to reductions in emissions of carbon dioxide, methane, and nitrous oxide that totaled 4,497 metric tons carbon dioxide equivalent.

American Electric Power, Inc. reported on a continuing project that fits into both the reconductoring and distribution voltage upgrade categories. Typical operation of the American Electric Power distribution system requires that improvements be made on a continuing basis for the purpose of rehabilitation and reinforcement to distribute power efficiently and reliably to customers. Improvements to the distribution system, which increase peak capacity and reduce line losses, include: voltage conversion of stations and circuits; circuit voltage conversions; primary line reconductoring; load transfers between phases to balance circuit loading; primary line additions and multiphasing; installation of more efficient distribution system devices; and installation of shunt capacitors on distribution circuits. For 2003, American Electric Power reported reduced electricity demand of 1,042,179 megawatthours and emission reductions of 835,020 metric tons carbon dioxide equivalent.

Figure 7. Reported Transmission and Distribution Projects Reported on Form EIA-1605 by Type, Data Years 1994-2003



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

Source: Energy Information Administration, Form EIA-1605.

3. Reducing Emissions from Energy End Use

Introduction

Greenhouse gas emissions from energy end use include emissions from both stationary and mobile sources.[29] In 2003, the industrial, commercial, and residential sectors combined to emit 3,907 million metric tons carbon dioxide (68 percent of total U.S. carbon dioxide emissions)—nearly all from stationary sources (Figure 8). Emissions from stationary sources are produced both directly by the combustion of fossil fuels (e.g., natural gas consumption for home heating) and indirectly from the consumption of electricity (e.g., for commercial lighting). In 2003, the transportation sector accounted for 1,875 million metric tons carbon dioxide, nearly all from mobile sources, and represented approximately 32 percent of U.S. carbon dioxide emissions.

Reducing Emissions from Stationary Sources

Emissions from stationary sources in 2003 included 2,276 million metric tons carbon dioxide from the generation of electricity that was ultimately consumed in the industrial, commercial, and residential sectors. Industry was responsible for the largest share of total stationary-source emissions at 43 percent, followed by the residential sector at 31 percent and the commercial sector at 26 percent.

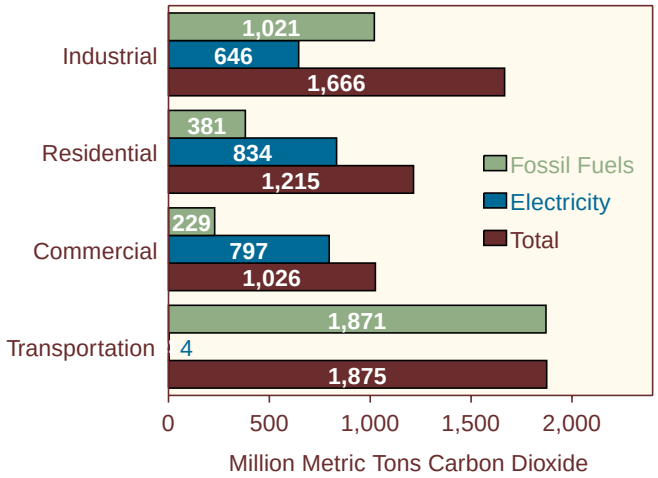
Between 1990 and 2003, carbon dioxide emissions associated with industrial, commercial, and residential energy use increased by 14.5 percent. Of the stationary sources, the commercial sector has the fastest-growing emissions, registering a 32.0-percent increase in emissions between 1990 and 2003. Emissions from the residential sector increased by 27.9 percent over the same period, and industrial sector emissions declined by 1.0 percent.[30]

Projects Reported

Reported emission reduction projects affecting stationary sources include fuel switching (e.g., from fuel oil to natural gas); light bulb replacement (e.g., substituting compact fluorescent bulbs for incandescents); heating, ventilation, and air conditioning (HVAC) system upgrades (e.g., maintenance or replacement with more efficient units); appliance replacement (e.g., retiring old appliances for ENERGY STAR[31] products); motor and motor drive upgrades; and industrial power system improvements. For 2003, 67 entities reported 374 energy end-use projects on Form EIA-1605 (Table 10). These 374 projects accounted for 19 percent of all the projects reported on the long form.

For the 2003 reporting year, the number of entities reporting energy end-use projects, the number of energy end-use projects reported, and the total reported direct and indirect emission reductions resulting from energy end-use projects all were higher than for the 2002 reporting year (Table 10). Energy end-use reporters increased from 65 in 2002 to 67 in 2003, the number of projects reported rose from 339 to 374, reported direct reductions increased from 24.7 million metric tons to 25.2 million

Figure 8. Sources of U.S. Carbon Dioxide Emissions by Sector, 2003



Note: The industrial sector includes agriculture; the residential and commercial sectors exclude transportation.

Source: Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2003*, DOE/EIA-0573(2003) (Washington, DC, December 2004).

[29]Stationary sources include emission sources at fixed locations, such as power plants, factories, refineries, mines, and heating plants or waste conversion facilities, among others. Mobile sources include transportation sector emissions from non-fixed locations, such as motor vehicles, aircraft, trains, and ships, among others.

[30]Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2003*, DOE/EIA-0573(2003) (Washington, DC, December 2004), web site www.eia.doe.gov/oiaf/1605/ggrpt.

[31]ENERGY STAR is a joint program of the U.S. Department of Energy and the U.S. Environmental Protection Agency helping businesses and individuals protect the environment through increased energy efficiency. See web site www.energystar.gov.

metric tons carbon dioxide equivalent, and reported indirect reductions increased from 9.1 million metric tons to 10.0 million metric tons carbon dioxide equivalent.

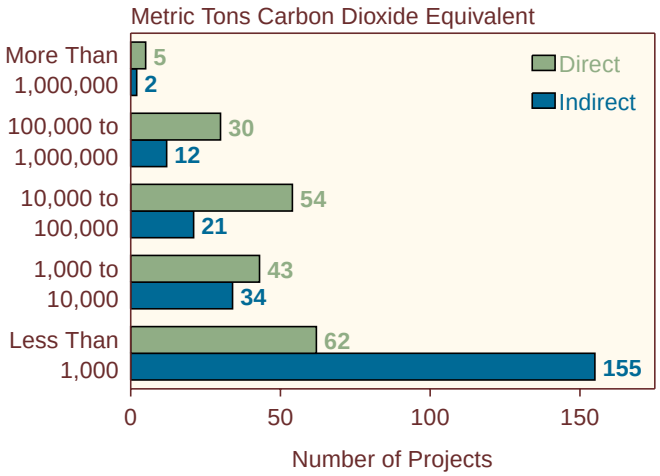
Among the 67 entities that reported energy end-use projects for 2003 on Form EIA-1605, 46 (69 percent) were electric utilities, of which 19 were publicly owned, 26 were privately owned, and 1 was an independent power producer. Companies in the industrial energy end-use sector, comprising 11 percent of all reporters for 2003, included 6 automobile and other transportation equipment manufacturers (9 percent), 5 cement companies (7 percent), 3 pharmaceutical and health care product companies, 2 electronic companies, 2 holding and other investment companies, 1 flood and kindred products company, 1 communications company and 1 oil company.

Emission reductions reported for individual energy end-use projects ranged from less than 1 metric ton to almost 4.2 million metric tons carbon dioxide equivalent, because some reporters included information on each individual end-use initiative separately, whereas others aggregated information on a range of activities into single projects. For example, an electric power distributor may report on a demand-side management (DSM) project that achieves direct emission reductions through multiple supplemental approaches, such as encouraging their residential, commercial, and industrial customers to change light bulbs, temporally shift electric loads, implement urban forestry projects, and upgrade appliances, building shells, and HVAC systems.

Among projects for which direct emission reductions were reported for 2003, 82 percent had reductions of less than 100,000 metric tons carbon dioxide equivalent (Figure 9). Similarly, among projects for which indirect emission reductions were reported, 94 percent had reductions of less than 100,000 metric tons carbon dioxide equivalent. Only seven energy end-use projects reported emission reductions greater than 1 million metric tons each for 2003, which was one less than for 2002.

In terms of emission reductions achieved in 2003, 5 of the 6 largest projects reported were aggregated electric company DSM programs. DSM projects may focus on one or

Figure 9. Energy End-Use Projects Reported on Form EIA-1605 by Size and Type of Emission Reduction, Data Year 2003



Source: Energy Information Administration, Form EIA-1605.

Table 10. Number of Energy End-Use Reporters, Projects, and Emission Reductions Reported on Form EIA-1605, Data Years 1994-2003

Data Year	Number of Reporters	Number of Projects Reported	Emission Reductions Reported (Metric Tons Carbon Dioxide Equivalent)	
			Direct	Indirect
1994	51	160	9,103,753	1,318,092
1995	63	221	12,450,879	1,591,590
1996	62	214	15,288,497	1,538,196
1997	67	249	16,685,010	3,798,030
1998	79	308	18,282,751	5,026,424
1999	80	330	16,047,912	6,786,832
2000	77	382	19,663,333	8,155,193
2001[R]	68	338	19,550,862	7,668,988
2002[R]	65	339	24,707,214	9,061,773
2003	67	374	25,232,544	9,955,603

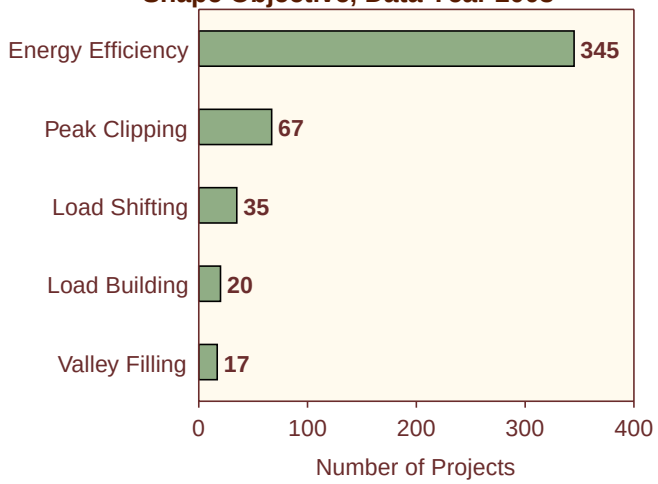
[R] Revised data.

Notes: 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. Table excludes data from confidential reports.

Source: Energy Information Administration, Form EIA-1605.

more load shape objectives (see box on page 32). Although the most common load shape objective of reported DSM projects for 2003 was increased energy efficiency (345 projects), electric utilities also attempted to balance their load profiles with various other load shape objectives, including peak clipping (67 projects), load shifting (35 projects), valley filling (17 projects), and load building (20 projects) (Figure 10).

Figure 10. Demand-Side Management Projects Reported on Form EIA-1605 by Load Shape Objective, Data Year 2003



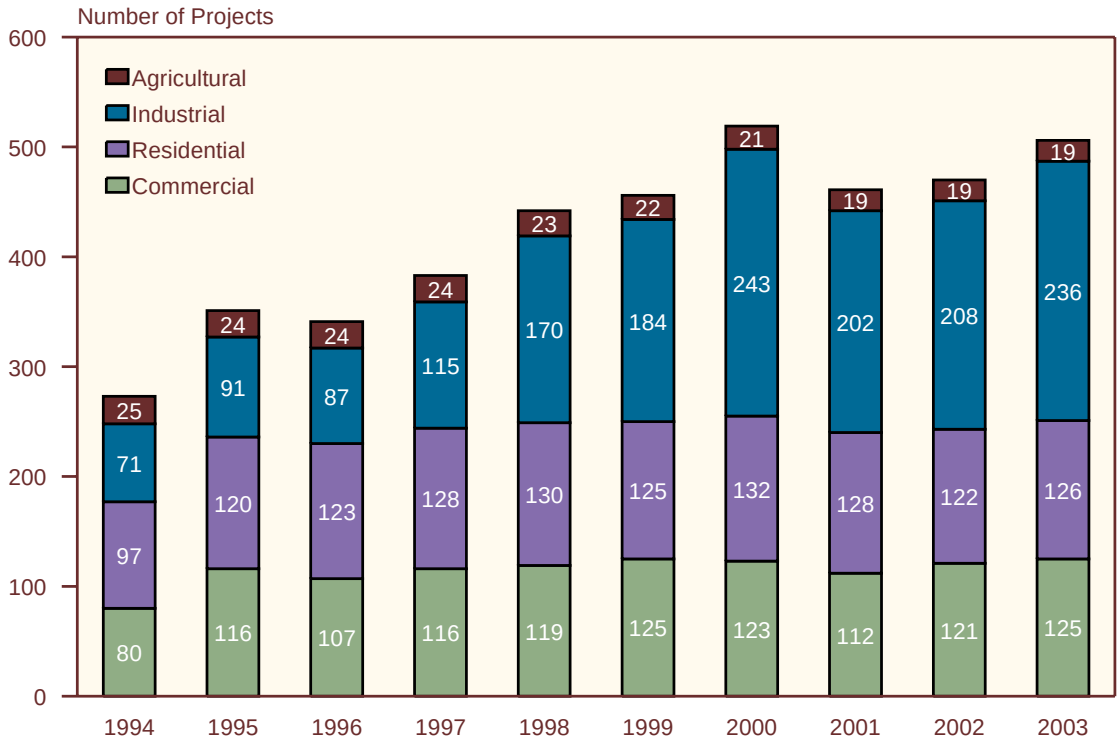
Notes: Some projects may be counted in more than one category. Figure excludes data from confidential reports.
Source: Energy Information Administration, Form EIA-1605.

Energy end-use projects can be carried out anywhere energy is consumed. Reporters indicate whether their energy end-use projects affect emissions in the industrial, commercial, residential, or agricultural sector. For 2003, 236 projects were reported to have reduced emissions in the industrial sector, 126 in the residential sector, 125 in the commercial sector, and 19 in the agricultural sector. More end-use projects were reported for each sector for 2003 than were reported for 2002, except for the agricultural sector. The total number of end-use projects reported was 10 percent above the total for 2002 (Figure 11). It should be noted that many projects—particularly electric company DSM programs—affect more than one end-use sector and are included in each applicable sector for the purposes of counting types of projects reported.

Project Types

None of the 16 new reporters to the 1605b program in 2003 reported energy end-use projects; however, many of the repeat reporters to the program did report new energy end-use projects along with their ongoing projects. Of the 374 energy end-use projects reported, 32 percent (120 projects) involved two or more project types. The most frequently reported type of energy

Figure 11. Energy End-Use Projects Reported on Form EIA-1605 by Sector, Data Years 1994-2003



Notes: Some projects target more than one sector and may be counted in multiple categories. Figure excludes data from confidential reports.
Source: Energy Information Administration, Form EIA-1605.

end-use project for 2003 was equipment and appliance replacement/improvements (157 projects), followed by lighting and lighting controls (153 projects) and HVAC (120 projects) (Table 11). Because of the varied levels of data aggregation in reports by different entities, it is not possible to calculate average emission reductions by project type or to draw conclusions about the most effective energy end-use project types in terms of total emission reductions achieved.

Equipment and Appliances

Replacements of equipment and appliances with more energy-efficient units (e.g., ENERGY STAR products) to reduce greenhouse gas emissions are frequently

Table 11. Number of Projects and Emission Reductions Reported on Form EIA-1605 for Energy End-Use Projects by Project Type, Data Year 2003

Project Type	Number of Projects Reported	Number of Projects Reporting Emission Reductions			Emission Reductions Reported (Million Metric Tons Carbon Dioxide Equivalent)	
		Direct	Indirect	Both Direct and Indirect	Direct	Indirect
Equipment/Appliances	157	85	94	22	16.9	8.1
Lighting/Lighting Controls	153	78	85	10	20.1	7.8
HVAC	120	69	62	12	19.7	6.1
Load Control	64	40	34	10	14.4	3.6
Building Shell	63	41	29	7	15.7	5.8
Motor/Motor Drive	58	36	31	9	14.4	4.7
Other[a]	31	20	17	6	2.0	0.5
Fuel Switching	26	17	13	4	6.7	1.6
Energy Effects of Urban Forestry	8	8	2	2	4.9	*
Industrial Power Systems	4	3	1	0	0.6	0.0
Total	**374**	**194**	**224**	**46**	**25.2**	**10.0**

[a]Includes all projects that cannot meaningfully be included in any of the specific project type categories.
*Less than 0.05 million metric tons.
Note: 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, Form EIA-1605.

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 company experiences peak demands) and allow the units to operate at night (during the company's off-peak period).

Peak Clipping. Projects that reduce energy demand at certain critical times, typically when the electric system experiences 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 an oil-fired furnace with an electric heat pump is an example of valley filling. Such projects can aim to fill daily or seasonal valleys.

reported energy end-use projects. For 2003, no new reporters to the Voluntary Reporting Program submitted reports on equipment and appliance projects; however, a number of repeat reporters submitted reports on new equipment and appliance projects. Exelon Corporation reported 2 new projects for 2003 that increased its efforts to reduce residential energy consumption. Exelon's Low Income Usage Reduction Program has provided $1.3 million to establish the installation of 150 solar water-heating systems for low-income residential customers with the potential for additional savings on their energy costs. The pilot was extended to allow for an additional 60 installations. The company also incorporated an education component to promote participation, as well as addressing any concern associated with the technology. This project, originally started in 1999, was reported for the first time in 2003. Annual savings for each household are projected to be 82.5 kilowatthours, for a total savings of 17.3 megawatthours of electricity consumption and total emission reductions of 4.4 metric tons carbon dioxide equivalent.

From April 15 through July 15, 2003, Exelon's Clothes Washer Rebate Program offered customer incentives, along with manufacturer's rebates, for a total of $100 off the purchase of an ENERGY STAR qualified clothes washer. The program, coordinated by the Midwest Energy Efficiency Alliance (MEEA), granted 1,100 rebates to ComEd customers at 110 participating retailers. A typical household does nearly 400 loads of laundry per year, using about 40 gallons of water per full load with a conventional washer. In contrast, a full-sized ENERGY STAR qualified clothes washer uses 18 to 25 gallons per load. ENERGY STAR clothes washers use up to 40 percent less energy and up to 50 percent less water than standard-efficiency washers. They are projected to save as much as 238 kilowatthours and 16 therms[32] of natural gas per year when used with an electric dryer and a gas water heater. Potential water savings are estimated at up to 7,000 gallons annually. The projected savings from these 1,100 energy- and water-efficient clothes washers over their expected 12-year lifespan are 371.9 megawatthours of electricity, 36,087 therms of natural gas, and 11.1 million gallons of water. Estimated emission reductions from this project in 2003 totaled 13 metric tons carbon dioxide equivalent.

Lighting and Lighting Controls

Lighting and lighting control projects, such as installing compact fluorescent bulbs and occupancy sensor lighting controls, have consistently been popular projects in the Voluntary Reporting Program. The U.S. Environmental Protection Agency (EPA) Green Lights Utility Ally Program promotes cooperation between utilities and the EPA in publicizing the environmental, economic, and quality benefits of energy-efficient lighting technologies. Allergan, Inc., has reported to the Voluntary Reporting of Greenhouse Gases Program on its participation in the Green Lights Utility Ally Program. In an ongoing project, existing fluorescent lighting has been upgraded at several Allergan facilities, including 40-watt tubes being replaced with energy-efficient 32-watt tubes, and conventional ballasts being replaced with energy-efficient and/or electronic ballasts. These upgrades are generally conducted in areas undergoing renovation or incorporated into new building designs. This project reportedly reduced the company's overall electricity consumption by 250 megawatthours in 2003, resulting in total emission reductions of 193 metric tons carbon dioxide equivalent.

For 2003, the Estee Lauder Company reported 4 new lighting projects and also, for the first time, reported 11 lighting and lighting control projects that commenced in 2002. Three of the four new projects reported for 2003 involved the installation of new Octron lighting fixtures, consisting of Octron fluorescent lamps, electronic ballasts, and specular reflectors, in place of T-12 fluorescent lamps. The final project was an upgrade from metal halide lights to pulse-start ion metal halide lights. The 4 new projects reportedly reduced the company's 2003 energy consumption by 1,654.9 megawatthours, leading to a reduction in indirect emissions from purchased power of 948 metric tons carbon dioxide equivalent.

Heating, Ventilation, and Air Conditioning (HVAC)

HVAC projects involve the reduced use or upgrade of HVAC systems in homes, businesses, offices, or industrial plants. Although there were no new reporters in the HVAC category, a number of new projects were reported for 2003. The majority of the new projects were not specifically HVAC projects but had HVAC components included in larger DSM efforts.

Both Allergan and the Estee Lauder Company reported new projects that were strictly HVAC. Allergan reported on 5 projects that included upgrades to HVAC system equipment, including a water pump, a cooling water pump, an air handler fan, hot water pumps, and a high-efficiency chiller. These improvements accounted for a total indirect emissions reduction of 667 metric tons carbon dioxide equivalent. The Estee Lauder Company reported on a project that incorporated solar panels into the HVAC system at its Aveda facility. A 1,270-square-foot solar wall system was installed on the high bay south wall, which extends above the lower roof of the office. Fresh air is drawn in through the cladding into a heat pump and distributed in the building though ducting. The preheated ventilation has lead to a better standard of indoor air quality and a reduction in energy

[32] A therm is equivalent to 100,000 British thermal units (Btu) of energy.

consumption. This project reportedly reduced natural gas consumption by 757.5 million Btu and electricity use by 14.1 megawatthours, leading to total indirect and direct emission reductions of 51 metric tons carbon dioxide equivalent.

Building Shell

Building shell projects improve the energy efficiency of buildings through upgrades to ceilings, walls, floors, windows, or doors (e.g., insulation, air sealing, or efficient materials). A large share of the projects reported in the building shell category for 2003 involved DSM programs by electric power providers. The Platte River Power Authority, a joint action public power utility owned by four Colorado cities (Estes Park, Fort Collins, Longmont, and Loveland) offered Fort Collins a design assistance program. Under this program, Platte River Power Authority paid for a portion of the additional design costs of a high-performance building, based on the recognition that constructing a highly energy-efficient building takes more up-front design time and cost. Daylighting and/or energy-efficiency consultants are often hired to assist in the design process. Customers receiving assistance are expected to achieve at least a 25-percent improvement in energy efficiency relative to a building that meets the current Fort Collins building code.

The methodology used to estimate energy and greenhouse gas savings from building shell projects uses computer models to compare different building designs. In the design phase, computer models are developed to establish a "base" building, which is compliant with the Fort Collins building code, and an "actual" building, which is representative of the high-performance building constructed. Model results were used to estimate the energy use and greenhouse gas emission savings of the new building design relative to the base building, based on actual electric company bills. In 2003, the program led to a reported reduction in electricity use of 508.6 megawatthours and a reduction in indirect emissions of 215 metric tons carbon dioxide equivalent.

Load Controls

Load controls are energy management techniques for minimizing—either overall or at specific times of the day—the load demands on electric power providers. Power companies themselves can use load management options and, through DSM programs, encourage their customers to apply load controls. Independently, power consumers can employ load controls to reduce their energy consumption, shift their demand to non-peak hours, reduce their consumption during peak hours, and reduce energy costs. Load control options include energy efficiency projects, load building, load shifting, peak clipping, and valley filling (see box on page 32).

For 2003, Cinergy Corporation reported a load control project, the Thermal Energy (Cool) Storage Project. Thermal Energy Storage (TES) is designed to reduce summer peak electric loads for space and process cooling applications by shifting those loads to off-peak periods, and to reduce energy use through off-peak system operations. Cooling energy is stored in cooled water, eutectic salts, or ice systems by the operation of electric chillers during off-peak periods and then used during on-peak periods, resulting in a reduction of on-peak electricity demand. Application of off-peak cooling systems can also reduce energy consumption by rejecting heat at lower ambient temperatures.

Cinergy's target market for its TES program includes schools, churches, and commercial or industrial office buildings, encompassing both new construction and retrofits of buildings that have relatively large cooling needs and operating hours that are conducive to ice-making during off-peak hours. Industrial process applications represent additional market potential for the TES system. The Cinergy program is designed to stimulate the market and help facility owners over the obstacles typically associated with new technologies: cost premiums over conventional HVAC systems; perception that the technology is new and/or complex; and reliability relative to existing systems. In 2003, this project reportedly reduced electricity consumption by 15.8 megawatthours, leading to a direct emissions reduction of 14,272 metric tons carbon dioxide equivalent.

Motor and Motor Drive

High- or ultra-high-efficiency motors and variable-speed or variable-frequency motor drives are more energy efficient than regular motors and motor drives. In addition, controls can be used to reduce electricity consumption by adjusting motor speeds or turning off motors when appropriate. Motor and motor drive projects are generally reported in the commercial and industrial categories, and often they are components of DSM programs, as is the case for all the new motor and motor drive projects reported for 2003.

Allegheny Energy, Inc., reported a motor and motor drive project in 2003 that has been an ongoing effort. Adjustable-speed drives (ASDs) on electric motors have the potential to save energy and demand where motor load is not constant. Allegheny, through its former operating company in Virginia, Potomac Edison, conducted a cooperative research project with an industrial customer and the Electric Power Research Institute (EPRI) to evaluate the use of ASDs on plastic injection molding machines. ASDs were installed on 18 motors for 7 different molding machines. Measured savings were 38 percent for total electrical motor load and 23 percent for total molding machine load. This project represents a good example of DSM activities aimed at industrial

customers. Electricity savings from the project were reported to be 689 megawatthours, resulting in a total emissions reduction of 705 metric tons carbon dioxide equivalent.

Fuel Switching

Switching from high-carbon to low-carbon fuels reduces carbon dioxide emissions generated during combustion. There were no new reporters in the fuel switching energy end-use category for 2003. Minnesota Power continued to report in 2003 on an ongoing project that expanded the use of renewable biomass as a fuel. Minnesota Power operates the M.L. Hibbard / Duluth Steam District No. 2 steam plant for the City of Duluth. The facility provides process steam to a paper mill and a recycled fiber plant. Acceptable fuels at the facility include coal, natural gas, and wood waste. The plant has sought to maximize use of renewable waste wood as a fuel since 1991 and will continue the effort to the extent that appropriate fuel is economically available. When natural gas is economically available, natural gas is also used to reduce consumption of subbituminous coal. Net carbon dioxide emissions from burning wood waste are significantly less than those from burning coal, because the wood waste would otherwise be placed in landfills or left to rot in the field. Hence, Minnesota Power assumes that net carbon dioxide emissions from burning waste wood in this application are zero. Indirect emissions are also significantly reduced, because waste wood can form methane gas under moist, anaerobic landfill conditions (however, avoided methane production from waste wood decay was not reported for 2003).

An additional benefit from the use of wood waste in the M.L. Hibbard / Duluth Steam District No. 2 boilers is that the ash formed during combustion of the wood waste is an agriculturally beneficial product. Potassium and alkalinity in the wood ash make it useful as a fertilizer on farmers' fields. In this manner, most of the Hibbard facility ash produced while burning wood waste is "disposed of" as a substitute for agricultural chemicals. (Again, avoided indirect emissions from this agricultural application of boiler ash were not reported for 2003.)

Minnesota Power also generates electricity at the M.L. Hibbard facility. The high proportion of wood waste burned at the facility results in lower carbon dioxide emissions from Hibbard generation compared to many coal-fired generation alternatives. Minnesota Power sells renewable biomass sourced electricity to Wisconsin Electric Power Company for use in its "Energy for Tomorrow" program. Wisconsin Electric is presuming a net zero carbon dioxide emissions base from its Hibbard renewable biomass energy purchases. In reporting its expanded use of renewable biomass, Minnesota Power increases the heat input from wood waste by the portion used to generate power for Wisconsin Electric. Minnesota Power , claims no benefit for this renewable generation, allowing Wisconsin Electric to claim the benefit based on avoided emissions from its other power supply resources. For 2003, this project was reported to have reduced coal usage by 812,072 million Btu and direct carbon dioxide emissions by 76,252 metric tons.

Energy Effects of Urban Forestry

Urban forestry is the planting and maintenance of individual trees within a city or community. Urban forestry projects can reduce both carbon dioxide emissions and energy expenditures for urban heating and cooling requirements. General examples of such projects include the planting of shade trees to reduce cooling requirements and windbreaks to reduce heating requirements. Urban forestry projects can also sequester carbon, as discussed in Chapter 4.

There were no new urban forestry projects reported in 2003, although all 8 of the urban forestry projects reported in 2002 continued to be reported, including Pacificorp's Salt Lake City Urban Forestry Project, which has been responsible for the planting of trees in residential areas that will provide shade to buildings and reduce energy use for cooling. Approximately 900 large trees and 400 small trees were planted throughout the project. At maturity, the trees will be between 45 and 75 feet tall. In total, 112 trees were planted around single-family homes with 2 trees per home, 962 trees were planted around single-family homes with 1 tree per home, and 170 trees were planted around multi-family dwellings and a school. The energy savings from this urban forestry program probably would not have occurred in the absence of the program. Although many homeowners plant trees on their own, it is unlikely that they would plant trees to optimize energy savings. For 2003, Pacificorp reported that the project produced direct emission reductions of 106 metric tons carbon dioxide equivalent.

Industrial Power Systems

Industrial power system projects are designed to reduce emissions from industrial power systems through efficiency improvements such as boiler system upgrades and replacements and turbine optimization. There were no new reporters or projects in the industrial power system category for 2003.

Other

There was one new project in the other project type category for the 2003 reporting year. The other project category captures the effects of energy end-use projects that cannot be meaningfully included in another category. Lehigh Cement Company (formerly Lehigh Portland Cement Company) reported a new project that involved the modernization and reconfiguration of its kilns. Two

long-dry kilns were converted to two one-stage preheater kilns, which produce more heat and are more energy efficient. This project was reported to have reduced coal use by 376,260 million Btu and direct emissions by 22,854 metric tons carbon dioxide equivalent.

Another project in the "other" category is an investment project reported by Ameren Corporation. The EnviroTech Investment Fund was created to support development and disbursement of energy-efficient technologies. Advent International Corporation manages EnviroTech in cooperation with the Edison Electric Institute. Advent International evaluates and underwrites the development of promising energy efficiency technologies. Union Electric (an Ameren Corporation company) has committed to invest up to $5 million in this program, which is currently 15.9 percent of the total investments in the EnviroTech Investment Fund. The remaining 84.1 percent of the Fund's capitalization comes from other participating investor-owned electric utilities. Ameren Corporation reports that it intends to make additional investments in the Fund over the next several years. Sufficient information is not available to describe each type of activity supported by EnviroTech that results in emission reductions.

Reducing Emissions from Transportation

The transportation sector is the largest contributing end-use sector to total U.S. energy-related carbon dioxide emissions, accounting for 32 percent of emissions in 2003. Direct use of petroleum fuels in mobile source applications accounts for 98 percent of transportation sector carbon dioxide emissions, and most of the remaining 2 percent results from the consumption of natural gas. Indirect emissions resulting from the use of purchased electricity account for about 0.2 percent of transportation sector emissions. Carbon dioxide emissions from the transportation sector increased by 19 percent between 1990 and 2003, from 1,570 million metric to 1,875 million metric tons carbon dioxide.[33] The increase was caused by increases in both the average number of miles driven per vehicle and the total number of vehicles on the road. The average number of miles driven by passenger cars increased by 13 percent between 1990 and 2001,[34] and the number of vehicles on the road increased by 22 percent between 1990 and 2001.[35] Emissions growth was moderated somewhat by an increase in average U.S. vehicle fleet fuel efficiency from 16.4 miles per gallon to 17.0 miles per gallon between 1990 and 2002.[36]

For 2003, 66 transportation projects were reported on Form EIA-1605 by 35 entities. All but 5 of the reporters were electric generation companies. One of the non-generators was CLE Resources, a subsidiary of an energy services company; the others were AT&T (telecommunications), The Burlington Northern and Santa Fe Railway Co. (transportation), Blue Source, LLC (emissions offset brokerage), and Arizona Portland Cement. Of the 66 transportation projects reported on Form EIA-1605 for 2003, 61 have been reported in previous years. Five new projects were reported for 2003:

- The Burlington Northern and Santa Fe Railway Co. reported on fuel efficiency improvements, including replacing old, inefficient locomotives, using newer roller bearing technology on rail cars, positioning trailers on intermodal trains to reduce drag, adjusting train speeds to optimize delivery schedules and fuel efficiency, and using friction reducers on the wheel-to-rail interface.
- Blue Source, LLC, an emissions offset broker, reported on the following three transportation actions for which it owns title to the associated greenhouse gas reductions:
  - An empty-mile reduction project conducted by J.B. Hunt Transport Services, Inc.[37]
  - An idling reduction program initiated by a major trucking company to reduce emissions from unnecessary fuel consumption.
  - An intermodal freight transport project that combines the most efficient aspects of truck and rail modes to carry cargo over long distances. The goal of the project is to expand the transportation of freight by trains, which are more than three times as efficient as trucks on a ton-mile basis.

[33]Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2003,* DOE/EIA-0573(2003) (Washington, DC, December 2004), web site www.eia.doe.gov/oiaf/1605/ggrpt.

[34]Energy Information Administration, *Annual Energy Review 2003*, DOE/EIA-0384(2002) (Washington, DC, September 2004), p. 57, web site www.eia.doe.gov/aer.

[35]U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics 2003* (Washington, DC, March 2004), Table 1-11, web site www.bts.gov/publications/national_transportation_statistics/2003/html/table_01_11.html.

[36]Energy Information Administration, *Annual Energy Review 2003,* DOE/EIA-0384(2003) (Washington, DC, September 2004), p. 57, web site www.eia.doe.gov/aer.

[37]Empty miles are the miles traveled by a vehicle without cargo between dropoff and pickup locations.

- Consolidated Edison reported on the use of B20, a mixture of 80 percent petroleum diesel fuel and 20 percent biodiesel,[38] by at least 122 fleet vehicles.

Of the 66 transportation projects reported for 2003, 35 (53 percent) were affiliated with the Department of Energy's Climate Challenge program.

Tables 12 and 13 show historical trends in the reporting of transportation projects to the Voluntary Reporting Program. The projects reported for 2003 fall into three broad categories:[39]

- Alternative fuel use, 31 projects (47 percent)
- Travel reduction, 26 projects (39 percent)
- Vehicle efficiency improvements, 9 projects (14 percent).

Table 12. Number of Projects and Emission Reductions Reported on Form EIA-1605 for Transportation Projects by Project and Reduction Type, Data Years 1994-2003

Year	Number of Projects				Emission Reductions (Metric Tons Carbon Dioxide Equivalent)	
	Vehicle Efficiency	Travel Reduction	Alternative Fuels	Total	Direct	Indirect
1994	3	6	18	**26**	4,203	6,346
1995	6	14	21	**40**	22,660	54,061
1996	7	15	26	**47**	28,813	54,043
1997	9	20	27	**55**	32,283	95,782
1998	9	23	28	**58**	25,085	89,174
1999	10	25	30	**62**	43,499	282,257
2000	9	25	32	**64**	22,611	134,519
2001	5	21	28	**53**	44,996	88,023
2002	5	26	30	**60**	41,966	161,156
2003	9	26	31	**66**	2,459,095	134,867

Notes: Project totals do not equal sum of components, because some projects are counted in more than one category. Table excludes data from confidential reports.
Source: Energy Information Administration, Form EIA-1605.

Table 13. Emission Reductions Reported on Form EIA-1605 for Transportation Projects by Project and Reduction Type, Data Years 1994-2003
(Metric Tons Carbon Dioxide Equivalent)

Year	Vehicle Efficiency		Travel Reduction		Alternative Fuels	
	Direct	Indirect	Direct	Indirect	Direct	Indirect
1994	1,244	5,651	1,170	—	1,956	695
1995	18,148	36,137	2,179	16,461	2,463	1,495
1996	18,647	38,602	5,427	13,903	4,847	1,546
1997	20,989	48,213	8,753	45,227	2,582	2,352
1998	18,436	70,527	3,110	15,923	3,632	2,746
1999	14,671	174,553	6,077	106,841	22,866	2,148
2000	53	66,324	8,549	67,404	14,021	2,306
2001	-1,109	51,905	13,059	34,050	33,053	2,068
2002	15	48,160	10,920	108,912	31,030	4,085
2003	2,387,335	49,543	38,951	83,156	32,810	2,168

Notes: Table excludes data from confidential reports.
Source: Energy Information Administration, Form EIA-1605.

[38]Biodiesel is any liquid biofuel suitable as a diesel fuel substitute or diesel fuel additive or extender. Biodiesel fuels are typically made from oils such as soybeans, rapeseed, or sunflowers, or from animal tallow. Biodiesel can also be made from hydrocarbons derived from agricultural products such as rice hulls.

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

The primary effect of the transportation projects reported was to reduce emissions of carbon dioxide. Reductions in emissions of nitrous oxide or methane were also reported for 7 projects. For 18 of the 66 projects reported, either reductions did not occur in 2003 or they were not estimated.[40]

Direct reductions totaling 2.5 million metric tons carbon dioxide equivalent were reported for 30 transportation projects in 2003 (Table 12). This represents a significant increase from the 41,916 metric tons carbon dioxide equivalent in direct reductions reported for 2003. The Burlington Northern and Santa Fe Railway Co. (1.0 million metric tons carbon dioxide) and Blue Source, LLC (1.4 million metric tons carbon dioxide equivalent) reported four new projects that were responsible for the increase.

Indirect emission reductions in 2003 totaling 134,867 metric tons carbon dioxide equivalent were also reported for 24 transportation projects. The sources of the reduced emissions included "fuel cycle" emissions associated with production, refining, transportation, and distribution of fossil fuels; conventional vehicles displaced by customer-owned natural gas vehicles refueled by natural gas distribution companies; employee vehicles affected by reporter-sponsored travel reduction programs, such as carpooling; and railroad-owned locomotives hauling coal in lightweight aluminum rail cars owned by electric utilities. Indirect reductions for 2003 were 16 percent lower than those reported for 2002, due primarily to fewer reductions reported for three projects: an AT&T telecommunication project, a Public Service Enterprise Group employee trip reduction effort, and a TXU carpool program.

Using Alternative Fuels

Of the transportation projects reported for 2003, 47 percent involved alternative-fuel vehicles (AFVs). These projects, however, accounted for only 1 percent of the direct reductions and 2 percent of the indirect reductions reported for transportation projects. In general, the reported reductions for AFV projects were small, with reductions in excess of 1,000 metric tons carbon dioxide equivalent being reported for only one project.

AFV projects involved a variety of fuels, including natural gas, electricity, propane, B20, E85 (a blend of 85 percent ethanol and 15 percent gasoline), and M85 (a blend of 85 percent methanol and 15 percent gasoline). Electricity was the alternative fuel included in 11 project reports. Southern California Edison's electric vehicles reportedly logged 1.8 million miles in 2003, more than 10 times the 174,000 miles reported for 1996. The Los Angeles Department of Water and Power (LADWP) reported operating 258 electric vehicles in 2003, up from 204 in 2001 and 18 in 1996. Southern Company reported operating a fleet of 190 electric vehicles in 2003, including cars, trucks, neighborhood electric vehicles, and buses; however, the current size of Southern Company's electric fleet is less than one-half the 484 vehicles it operated in 2000. Operation of compressed natural gas (CNG) vehicles was reported for 15 projects, and 3 utilities reported operating fleets of more than 100 CNG or dual-fuel CNG/gasoline vehicles[41] in 2003: PG&E Corporation (6,010 vehicles), We Energies (654 vehicles), and NiSource (458 vehicles).

Eight AFV projects reported for 2003 involved fuels other than natural gas and electricity. Activity in 2003 was reported for four of those projects.[42] Exelon Corporation reported continued use of E85, propane, and B20. Cinergy reported continued use of E85 and B20 in 2003, but it has stopped using propane in company vehicles. Conectiv Delmarva Generation reported using a B20 fuel that included soy-based biodiesel in its fleet vehicles in 2003.

Reducing Vehicle Travel

Travel reduction, which includes such activities as carpooling and vanpooling, mass transit, telecommuting, and service efficiency improvements, was reported for 26 projects for 2003—accounting for 2 percent of the direct reductions and 62 percent of the indirect reductions reported for transportation projects in 2003. The 38,951 metric tons carbon dioxide equivalent of direct reductions reported for 2003 was more than 3 times the 10,920 metric tons reported for 2002. This increase in direct emission reductions was largely attributable to the new project reported by Blue Source, LLC, involving reduction in empty miles traveled by a trucking company. In contrast, indirect emission reductions reported for travel reduction projects for 2003 were 24 percent (25,756 metric tons) lower than those reported for 2002, primarily due to lower reductions being reported for AT&T's telecommuting program.

Of the 26 projects reported in the travel reduction category, 12 involved carpooling or vanpooling, 9 increased mass transit ridership, 5 reduced employee

[40]In some cases, reductions for the project may have been reported for years before 2003. 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.

[41]CNG dual-fuel vehicles are capable of operating on natural gas or gasoline.

[42]Two other reporters continued to submit information on projects that involved consumption of propane and M85 in previous years; however, the projects were inactive in 2003.

vehicle use through telecommuting, 4 increased service efficiency for freight or service vehicles, and 9 involved other actions, such as work week compression, video-conferencing, use of bicycles for electric or gas meter reading, promotion of employee commuting by bicycle or walking, and automation of electric or gas meter reading in areas of low population density.[43]

AT&T reported the largest travel reduction project, a telecommuting program that reportedly reduced indirect emissions by 48,988 metric tons carbon dioxide equivalent. Reductions of more than 5,000 metric tons carbon dioxide equivalent in 2003 were also reported for the following travel reduction projects:

- The Blue Source, LLC, empty miles reduction program reduced direct emissions by a reported 26, 649 metric tons carbon dioxide equivalent.
- LADWP reported on its employee carpooling and vanpooling program (8,167 metric tons carbon dioxide equivalent indirect emission reductions).
- Southern Company reported on its carpooling and mass transit programs (6,040 metric tons carbon dioxide equivalent indirect emission reductions).
- TXU reported efforts to reduce fleet and employee vehicle use (6,556 metric tons carbon dioxide equivalent direct emission reductions and 8,658 metric tons carbon dioxide equivalent indirect emission reductions).
- AT&T reported on its fleet cost reduction program (5,715 metric tons carbon dioxide equivalent direct emission reductions).
- 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 (6,582 metric tons indirect carbon dioxide emission reductions from foreign and domestic sources).

Improving Vehicle Efficiency

Emission reductions were reported for 7 of the 9 vehicle efficiency projects reported for 2003. Indirect reductions were reported for 2 projects, both of which involved the use of light-weight aluminum railroad cars to transport coal. These projects, which were reported by electric utilities, resulted in indirect emission reductions because the locomotives using less fuel were owned by the railroads. Ameren Corporation reported reducing emissions by 21,576 metric tons carbon dioxide equivalent, and Kansas City Power & Light Company reported reducing emissions by 27,967 metric tons carbon dioxide equivalent.

CLE Resources, a subsidiary of Cleco Corporation, continued to report its investment (through the EnviroTech fund established by the Edison Electric Institute) in a company that developed and commercialized a device for monitoring and adjusting tire pressure on trucks to achieve optimal fuel efficiency. CLE Resources did not report emission reductions for this project, due to the unavailability of reliable data on the number of devices sold.

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

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.

Globally, a very large amount of carbon dioxide—on the order of 120 billion metric tons of carbon—is sequestered in biomass.[44] 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 5.1 billion metric tons carbon dioxide per year.[45]

Forests can play an important role in offsetting human-produced carbon dioxide emissions. On average, trees are approximately 50 percent carbon by weight (oven-dry basis, excluding water).[46] The amount of carbon a plant can sequester depends on a number of variables, including species, health of vegetation, 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 approximately 31 trees per operating automobile in the United States would offset all U.S. automobile-related carbon dioxide emissions.[47]

Carbon sequestration on a national scale is substantial. The U.S. Environmental Protection Agency, relying heavily on the work of the U.S. Department of Agriculture's U.S. Forest Service, estimates annual U.S. carbon sequestration (generally defined according to the guidelines of the Intergovernmental Panel on Climate Change) at 691 million metric tons carbon equivalent,[48] which offsets approximately 10 percent of annual U.S. anthropogenic emissions of greenhouse gases.[49]

Projects Reported

For the 2003 reporting year, 51 entities reported projects on Form EIA-1605 that involved forestry or natural resources that sequestered carbon or reduced emissions (Table 14). The reporters included 48 electric companies, a private service organization providing reforestation services to corporate clients, a petroleum company, and a cement company. A total of 446 carbon sequestration projects were reported for 2003, an increase of 8 percent from 2002. Carbon sequestration projects were the third most numerous type reported on the long form, representing 23 percent of the projects reported for 2003. Methane reduction (470) and electricity generation (464) projects outnumbered carbon sequestration projects. The reported carbon sequestration projects were dispersed over a wide geographic area, including 33 States and 8 foreign countries. A total of 377 domestic and 69 international forestry projects were reported; 33 of the foreign projects represent individual equity shares in a single forest preservation project, the Rio Bravo Carbon Sequestration Pilot Project, in Belize.

[44]Intergovernmental Panel on Climate Change, *Climate Change 2001: The Scientific Basis* (Cambridge, UK: Cambridge University Press, 2001), p. 188.

[45]Intergovernmental Panel on Climate Change, *Climate Change 2001: The Scientific Basis* (Cambridge, UK: Cambridge University Press, 2001), p. 39.

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

[47]Average mileage and fuel consumption for passenger cars from Energy Information Administration, *Annual Energy Review 2003*, DOE/EIA-0384(2003) (Washington, DC, September 2004), p. 57, web site www.eia.doe.gov/aer. 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.

[48]U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2002*, EPA-430-R-04-003 (Washington, DC, April 2004), p. 206, web site http://yosemite.epa.gov/oar/globalwarming.nsf/content/ResourceCenterPublicationsGHGEmissionsUSEmissionsInventory2004.html.

[49]U.S. anthropogenic greenhouse gases emissions were 6,936 million metric tons carbon dioxide equivalent in 2003. Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2003*, DOE/EIA-0573(2003) (Washington, DC, December 2004), p. ix, web site www.eia.doe.gov/oiaf/1605/ggrpt.

Carbon sequestration reported on Form EIA-1605 remained about the same in 2003 as it was in 2002, at 7.7 million metric tons carbon dioxide equivalent (Table 14). Of the 446 sequestration projects reported for 2003, most (354 or 79 percent) involved some kind of tree planting, which included afforestation, reforestation, urban forestry, and woody biomass production or agroforestry (Table 15).[50] These projects accounted for 15 percent of the sequestration (and related direct emission reductions) reported for 2003. Although only 39 forest preservation projects were reported, they accounted for 88 percent of the sequestration reported for 2003 (Table 16). Of the total sequestration for 2003, 89 percent was reported on behalf of foreign projects, including some very large forest preservation initiatives.

Urban forestry projects, involving the planting of trees in urban and suburban areas, accounted for 8 percent (34 projects) of the sequestration projects reported for 2003. Urban forestry projects are typically much smaller than forestry projects undertaken in rural or wilderness areas. The average carbon dioxide sequestration

Table 14. Number of Projects, Carbon Sequestered, and Net Reductions Reported on Form EIA-1605 for Sequestration Projects, Data Years 1994-2003

Data Year	Number of Reporters	Number of Projects	Sequestration (Metric Tons Carbon Dioxide Equivalent)	Net Emission Reductions (Metric Tons Carbon Dioxide Equivalent)	
				Direct	Indirect
1994	23	58	746,545	189	23,127
1995	44	175	1,190,754	378	48,730
1996	51	175	8,676,591	1,291	32,215
1997	56	279	9,849,807	6,160	—
1998	57	321	12,490,927	716	—
1999	53	401	9,623,599	3,406	—
2000	53	468	9,011,117	1,041	—
2001	51	369	7,956,823	1,114	—
2002 (R)	51	413	7,296,516	1,875	—
2003	51	446	7,730,969	1,860	—

(R) Revised data.
Source: Energy Information Administration, Form EIA-1605.

Table 15. Number of Sequestration Projects Reported on Form EIA-1605 by Project Type, Data Years 1994-2003

Data Year	1994	1995	1996	1997	1998	1999	2000	2001	2002(R)	2003
Tree Planting										
Afforestation and Reforestation	36	113	111	175	205	288	344	251	289	320
Urban Forestry	8	17	21	23	28	28	31	33	33	34
Woody Biomass Production and Other Agroforestry	8	14	2	3	3	3	3	3	3	2
Unspecified	—	2	1	—	1	—	—	—	—	—
Subtotal	44	131	133	199	235	318	376	285	323	354
Forest Preservation	2	22	29	38	43	38	42	37	38	39
Modified Forest Management	12	20	10	33	41	42	44	41	47	48
Conservation Tillage	1	1	1	2	2	2	2	2	1	1
Other Projects	3	4	5	10	4	5	5	5	5	5
Total	**58**	**175**	**175**	**279**	**321**	**401**	**468**	**369**	**413**	**446**

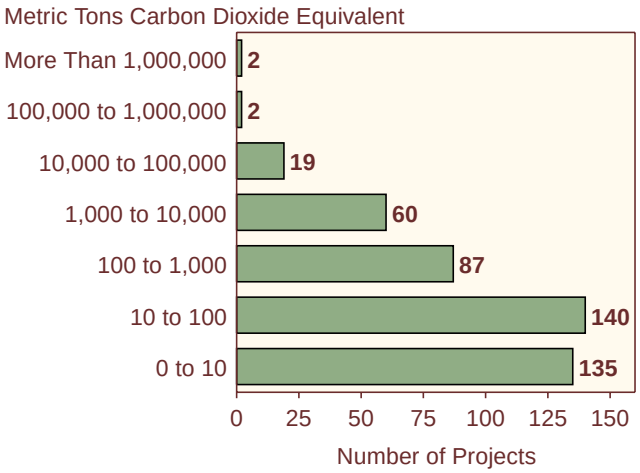
(R) Revised data.
Notes: Project totals do not equal sum of components, because some projects are counted in more than one category. In last year's report, "Unspecified" tree planting projects were included in the "Other Projects" category.
Source: Energy Information Administration, Form EIA-1605.

[50] Afforestation is the planting of new forests on lands that have not been recently forested. Reforestion is the replanting of forests on lands that have recently been harvested or otherwise cleared of trees. 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.

reported per urban forestry project for 2003 was just 517 metric tons. In contrast, tree planting projects in rural or wilderness areas generally are much larger, accounting for 16 of the 19 projects that sequestered more than 10,000 metric tons carbon dioxide each in 2003 (Figure 12). For the 445 projects for which data were reported, average sequestration in 2003 was 16,456 metric tons carbon dioxide per project.

Almost all (414 or 93 percent) of the reported sequestration projects were undertaken in part to fulfill commitments made under the U.S. Department of Energy's Climate Challenge program.[51] Twenty-eight (28) of the investors in the UtiliTree Carbon Company[52] each submitted reports on the 10 projects that were operational in 2003. All the investors reporting were also participants in Climate Challenge. In addition, 36 sequestration projects reported on Form EIA-1605 for 2003 were undertaken as part of the U.S. Initiative on Joint Implementation (USIJI). Established under the Climate Change Action Plan (CCAP),[53] the 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 USIJI program has been inactive since 2000. The projects reported represent individual partner shares in two USIJI-approved forestry projects: the Rio Bravo Carbon Sequestration Pilot Project (Belize) and the Noel Kempff Mercado Climate Change Action Project (Bolivia).

Figure 12. Carbon Sequestration Projects Reported on Form EIA-1605 by Amount of Carbon Sequestered, Data Year 2003



Source: Energy Information Administration, Form EIA-1605.

Table 16. Carbon Sequestration Reported on Form EIA-1605 by Project Type, Data Years 1994-2003
(Thousand Metric Tons Carbon Dioxide Equivalent)

Data Year	1994	1995	1996	1997	1998	1999	2000	2001	2002(R)	2003
Tree Planting										
Afforestation and Reforestation	726.8	620.4	237.3	322.4	449.0	590.6	628.0	637.9	676.1	711.7
Urban Forestry	0.2	1.1	1.3	1.9	5.3	5.8	10.5	11.2	14.4	17.6
Woody Biomass Production and Other Agroforestry	356.6	213.9	1,964.6	1,962.3	1,962.3	503.2	392.5	425.7	428.0	425.4
Unspecified	—	7.0	*	—	0.1	—	—	—	—	—
Subtotal	727.0	627.7	2,188.1	2,263.6	2,393.6	1,077.3	1,006.4	1,056.4	1,097.6	1,135.7
Forest Preservation	73.0	615.8	6,546.5	7,545.5	10,073.4	8,523.4	7,879.6	6,804.3	6,055.9	6,469.6
Modified Forest Management	363.9	366.2	93.6	148.3	167.9	164.6	74.0	51.9	98.9	81.5
Conservation Tillage	4.3	4.3	3.3	8.5	8.5	8.5	11.9	4.4	4.4	4.4
Other Projects	2.8	3.1	4.1	44.9	58.9	59.1	59.1	59.8	59.7	59.8
Total	**746.5**	**1,190.8**	**8,676.6**	**9,849.8**	**12,490.9**	**9,623.6**	**9,011.1**	**7,956.8**	**7,296.5**	**7,730.9**

(R) Revised data.
*Less than 50 metric tons.
Notes: Project totals do not equal sum of components, because some projects are counted in more than one category. In last year's report, "Unspecified" tree planting projects were included in the "Other Projects" category.
Source: Energy Information Administration, Form EIA-1605.

[51]The Climate Challenge program, established in 1994, focused on commitments by electricity generators to reduce, avoid, or sequester greenhouse gases by the year 2000. Because its focus was on the year 2000, the Climate Challenge program is no longer active. It has been replaced by Power Partners[SM], which is the electric power industry's vehicle for participating in President Bush's Climate VISION initiative.

[52]The UtiliTree Carbon Company, a consortium of 41 North American electric utility companies investing in forestry projects that sequester carbon, was established under the Climate Challenge Program. It is administered by the Edison Electric Institute's (EEI's) Forest Carbon Management Program, which has identified and sponsored 10 ongoing domestic and international forestry projects. EEI has established a new program, PowerTree, to coordinate electric power industry sponsorship of forestry projects through Power Partners[SM] for Climate VISION.

[53]President William J. Clinton and Vice President Albert Gore, Jr., *The Climate Change Action Plan* (Washington, DC, October 1993), Appendix II, web site www.gcrio.org/USCCAP/toc.html.

Afforestation and Reforestation

Of the sequestration projects reported for 2003, 320 (72 percent) involved either afforestation or reforestation. The carbon sequestration and emission reductions reported for these projects totaled 0.7 million metric tons carbon dioxide, representing 10 percent of the total sequestration reported for 2003. All the afforestation and reforestation projects reported for 2003 were domestic.

American Electric Power, Inc. (AEP), a large investor-owned utility, accounted for the largest number of afforestation and reforestation projects, submitting 60 (19 percent) of the projects in this category for 2003. The AEP projects, all of which were afforestation projects, sequestered a reported 102,810 metric tons carbon dioxide in 2003. AEP reported 4 new domestic afforestation projects initiated in 2003, which sequestered a reported 2,121 metric tons carbon dioxide during the year.

Members of UtiliTree Carbon Company, a nonprofit consortium of 41 North American electric utilities, reported on 8 afforestation projects, including the Western Oregon Carbon Sequestration Project and 7 bottomland hardwood restoration initiatives in Louisiana, Arkansas, and Mississippi that are intended to convert marginal agricultural land to forest: the Mississippi River Valley Bottomland Hardwood Restoration, Upper Ouachita River Valley Bottomland Hardwood Restoration, Overflow Bottomland Hardwood Forest Restoration Project, St. Catherine-NFWF, Bayou Cocodrie Bottomland Hardwood Forest Restoration, St. Catherine-ESI, and St. Francis River Carbon Offset. The following afforestation and reforestation projects were reported for the first time for 2003.

The St. Francis River Carbon Offset Project, shares of which were reported by 28 UtiliTree Carbon Company partners, involves the restoration of 405 acres of bottomland hardwood forest using native tree species. The project site is on privately owned, marginal agricultural farmland in Lee County, Arkansas. Sequestration totaling 279 metric tons carbon dioxide equivalent was reported for 2003.

American Electric Power, Inc., reported on projects AEP-AGSPOIL-2003 and AEP-Private Lands-2003. AEP-AGSPOIL-2003 is an afforestation project on 1,089 acres of reclaimed mined grassland. AEP planted a total of 885,360 seedlings in 2003, including green ash; white ash; sycamore; pitlolly pine; loblolly pine; white oak; red oak; bur oak; sawtooth oak; black locust; and black alder. AEP-Private Lands-2003 involves financial assistance provided by AEP to private landowners who want to plant trees on their property in return for any associated greenhouse gas reduction benefits. These agreements are in 45- or 70-year durations, depending on the species planted and the nature of the site. The 2003 plantings involved afforestation of marginal agriculture cropland previously used for grain, hay, or cattle production. The species planted include white pine, white ash, green ash, sycamore, bur oak, white oak, and red oak. Together, these projects sequestered a reported 2,088 metric tons carbon dioxide equivalent in 2003.

ESI Florida Longleaf Pine Restoration, reported by Environmental Synergy, Inc., is located in the Withlacoochee State Forest managed by the Florida Division of Forestry. Native longleaf pine trees were planted in this 70-year project, which, beyond sequestering carbon, was designed to help create large forested blocks, rejoin fragmented forests, and create wildlife corridors for the benefit of neotropical migratory birds, waterfowl, and other animals such as deer and turkey. Carbon sequestration values were not estimated for this project.

DTE Energy/Detroit Edison reported on projects called "Six Lakes–2002" and "Miscellaneous Tree Plantings–2003." For Six Lakes–2002, DTE Energy/Detroit Edison planted trees on the site of the Six Lakes-Taggert Compressor Station, which is owned by Michigan Consolidated Gas Company (a subsidiary of DTE Energy). The planting in 2002 consisted of 80,000 red pine seedlings planted on 90 acres and 20,000 white spruce seedlings planted on 30 acres. These plantings reportedly sequestered 489 metric tons carbon dioxide equivalent in 2003.

Entergy Services, Inc., reported on projects called "Little Gypsy Plant Reforestation" and "Willow Glen Plant–Reforestation," which involved tree plantings at Entergy power plant sites. The former involved the planting of 20,000 nuttall oak, cypress, willow oak, green ash and pecan saplings and seedlings on 44 acres. The latter included the planting of 70,577 bottomland hardwoods on 234 acres, including the following species: water oak, nuttall oak, cottonwood, cherrybark oak, pecan, sweetgum, shumard oak, cow oak, sugarberry, green ash, and sycamore. These efforts sequestered a reported 462 metric tons carbon dioxide equivalent in 2003.

Urban Forestry

A total of 24 reporters, all of which were electric utilities, reported 34 urban forestry projects for 2003. For the 34 projects, total sequestration of 17,565 metric tons carbon dioxide was reported for 2003 (Table 16). 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 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, no energy-related emission reductions were submitted for 2003.

One new urban forestry project was reported for 2003. DTE Energy/Detroit Edison reported the planting of 3,082 trees, which were mostly white spruce, fir, pine, beech, oak, maple and birch. This project sequestered 5 metric tons carbon dioxide equivalent in 2003.

Forest Preservation

Forest preservation projects sequester carbon by avoiding the harvesting of timber or clearing of land and, thus, preventing the release of stored carbon. For 2003, 39 forest preservation projects were reported by 31 reporters; however, the vast majority (33) of these projects were reported separately by participating electricity generators as shares in the Rio Bravo Carbon Sequestration Pilot Project in Belize, held independently or through the UtiliTree Carbon Company. Also, 3 reporters provided information on their shares in the Noel Kempff Mercado Climate Action Project in Bolivia. No new forest preservation projects were reported for 2003.

The two largest forest preservation projects were reported by AES Hawaii and AES Shady Point, subsidiaries of the AES Corporation. AES Hawaii reported on the Mbaracayu Conservation project in Paraguay, and AES Shady Point reported on the OXFAM America Amazon project in Bolivia. Together, the two projects sequestered a reported 6.15 million metric tons carbon dioxide in 2003, representing 95 percent of the total sequestration reported for forest preservation projects (6.5 million metric tons carbon dioxide equivalent).

The Mbaracayu Conservation project is designed to offset carbon dioxide emissions from the AES Hawaii plant, a 180-megawatt circulating fluidized-bed coal-fired cogeneration plant on the island of Oahu. Sequestration of carbon is accomplished through the planting of fruit trees and cash-producing indigenous trees in the 143,000-acre Mbaracayu forest tract, which, according to AES, would have been sold to a timber company in the absence of the project.

AES Shady Point describes the OXFAM America Amazon Project as an innovative project to protect the tropical forest in the Amazon regions of Peru, Ecuador, and Bolivia. The project, which is being conducted in cooperation with national indigenous groups, OXFAM America, and the World Resources Institute (WRI), is intended to offset carbon dioxide emissions from the AES Shady Point plant in Oklahoma. The project will support efforts by indigenous groups to gain control over their lands and to develop sustainable resource extraction plans for the forest, thus avoiding tropical deforestation. WRI estimates that over 10 years the project would prevent the deforestation of 1.2 million hectares and avoid emissions of at least 233 million metric tons carbon dioxide equivalent.

American Electric Power, BP America, and PacifiCorp reported on the Noel Kempff 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 Kempff 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.[54] The sequestration reported for this project for 2003 totaled 243,660 metric tons carbon dioxide.

The Rio Bravo Carbon Sequestration Pilot Project, a forest preservation project in Belize, was reported by 28 utilities. Begun in 1995, the project is being undertaken through a partnership between Wisconsin Electric, Detroit Edison, Cinergy, PacifiCorp, and UtiliTree Carbon Company (which provided financial support), as well as The Nature Conservancy and a Belizean nongovernmental organization, Programme for Belize. A 14,400-acre parcel of forest threatened by agricultural conversion was secured, linking two forested Rio Bravo properties. The project implemented a sustainable forestry management program on the entire Rio Bravo Conservation and Management Area that aims to increase carbon sequestration through improved forest and timber management.

The entire Rio Bravo Carbon Sequestration Pilot Project sequestered an estimated 20,412 metric tons carbon dioxide in 2003, of which 19,890 metric tons (97 percent) was reported to the Voluntary Reporting Program.[55] The reported carbon sequestration for this project was estimated by defining a reference case that assumes a profile of carbon releases that would have occurred if the project had not been undertaken and the forest had been converted to agriculture over a 5-year period (1995-1999). The estimated carbon sequestration equals the projected avoided carbon releases. To date, it has been reported that the entire project has sequestered an estimated 4.4 million metric tons carbon dioxide. The UtiliTree Carbon Company estimates that most (91 percent) of that carbon dioxide was sequestered during the 5-year preservation phase of the project. The smaller annual sequestration totals reported for years after 2000 represent the accumulation of carbon in the forest that has occurred since the 1995 to 1999 preservation phase.

[54] "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.

[55] Ten UtiliTree participants did not submit reports to the Voluntary Reporting Program for data year 2003, including one Canadian utility that is ineligible to report.

We Energies reported its independent sponsorship of an expansion to the Rio Bravo Conservation and Management Area, which added 20,630 acres to the preserve. We Energies reported that this preservation initiative sequestered an estimated 54,431 metric tons carbon dioxide equivalent in 2003.

Only one domestic forest preservation project was reported for 2003, by Alliant Energy, which reported sequestering 1,597 metric tons carbon dioxide by maintaining forested buffer lands around its power plants in the Wisconsin River Valley. This project involves the management of more than 10,000 acres along the Wisconsin River valley. Included in the land management plan are access restrictions for the preservation of osprey and eagle habitats in the forest.

Modified Forest Management

Modified forest management involves the modification of the management regimes of existing forests to increase their carbon capture rates. Of the 48 modified forest management projects reported for 2003, 29 were associated with two related reduced-impact logging initiatives in Malaysia. The first initiative was a pilot project reported by NEGT Corporation.[56] 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. On the second initiative, 28 utilities reported their shares of 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. The reported sequestration for the second initiative was 9,405 metric tons carbon dioxide equivalent in 2003.

American Electric Power reported the only new modified forest management project for 2003. This project was conducted in predominantly upland central hardwood stands ranging from 30 to 50 years in age. The stands were selectively harvested, removing overmature, mature, cull, and diseased trees, as well as other stems as necessary to improve growing relationships and maximize growth rates. The project is a continuation of annual forest management efforts reported separately since 1991. Including the 378 metric tons carbon dioxide equivalent for the 2003 project, these efforts together sequestered a reported 15,128 metric tons carbon dioxide equivalent in 2003.

Sequestration exceeding 10,000 metric tons carbon dioxide equivalent in 2003 was reported for the following three previously reported modified forest management projects:

- Southern California Edison Co. reported sequestration of 23,587 metric tons carbon dioxide equivalent by its Net Growth of Timber at Shaver Lake project.
- Alliant Energy's afforestation project also had a modified forest management component. The entire project sequestered a reported 19,958 metric tons carbon dioxide equivalent in 2003; however, Alliant Energy did not report the sequestration quantity attributable to modified forest management alone.
- American Electric Power's Guaraquecaba Climate Action Project, located in Brazil, sequestered a reported 11, 272 metric tons carbon dioxide equivalent in 2003.

On a smaller scale, DTE Energy/Detroit Edison conducted selective harvesting operations in previously unmanaged wood lots in southeastern Michigan and reported increasing sequestration by 1,398 metric tons carbon dioxide equivalent in 2003.

Forest Plantations

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

One of the two woody biomass production projects reported for 2003 was Minnesota Power's Short Rotation Woody Crop Establishment project. Contracts to plant hybrid poplars were established with landowners enrolled in the Conservation Reserve Program. Following pre-planting site preparation, first commenced in 1994, the planting of 2,800 acres was phased in over 1995, 1996, and 1997. The project area was reduced to 2,550 acres in 2003 after consideration of adverse conditions such as seasonal flooding of low spots, insect damage, and poor growth rates. The project sequestered a reported total of 15,430 metric tons carbon dioxide equivalent in 2003.

The other plantation project reported was an AES Thames agroforestry project in Guatemala, which

[56]This project was originally sponsored by the 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 2000 through 2002, the activities previously reported by USGenNE were incorporated into the report submitted by its parent, PG&E Corporation. For 2003, this project was included in a separate report submitted by NEGT (National Energy and Gas Transmission), formerly known as PG&E National Energy Group, a subsidiary of PG&E Corporation.

involves establishing a plantation of fruit, pulp, and fuelwood trees. For 2003, AES Thames reported sequestering 410,000 metric tons carbon dioxide equivalent for this project.

Conservation Tillage and Other Sequestration Projects

Not all the carbon sequestration projects reported for 2003 involved conventional forestry. Other projects reported involved conservation tillage,[57] reuse of utility poles, and restoration of terrestrial, wetland, and marine habitats. Six such projects were reported for 2003.

Exelon (formerly Commonwealth Edison and PECO) reported on its Illinois Prairie Grass Plantings project, in which native prairie grasses are planted on various properties in the utility's State system. In contrast to conventional turf grass, the deep root systems of native Illinois prairie grasses afford environmental benefits that include reducing soil erosion and downstream flooding and eliminating the need for irrigation, fertilizers, pesticides, and herbicides. In addition, the deeper root systems sequester more carbon dioxide. For this project, Exelon claimed responsibility for the sequestration of 718 metric tons carbon dioxide in 2003. In another project, Exelon reused wood utility poles that are structurally sound in order to avoid the harvesting of trees to manufacture new utility poles. The utility pole reuse project was reported to have sequestered 649 metric tons carbon dioxide in 2003.

Alliant Energy reported on a conservation tillage project in south central Wisconsin that involved the conversion of 956 acres of former corn and soybean row cropland to a variety of other uses, including tall grass prairie, wetlands, conservation tillage, and oak savanna. This project reportedly sequestered 4,390 metric tons carbon dioxide in 2003. Alliant Energy also reported on a habitat restoration project in Wisconsin, which sequestered 3,493 metric tons carbon dioxide in 2003.

Other carbon sequestration projects include the reclamation of 5,500 acres of wetlands in Texas and Louisiana by Entergy Services, Inc., and the reclamation of 6 acres of wetlands by Conectiv Atlantic Generation. The two projects sequestered a reported 54,885 and 12 metric tons carbon dioxide in 2003, respectively.

[57] Conservation tillage includes practices (such as reduced till or no till) that, compared to conventional tillage methods, increase carbon storage on cropland.

5. Reducing Methane Emissions

Introduction

U.S. methane emissions totaled an estimated 26.2 million metric tons (601.9 million metric tons carbon dioxide equivalent) in 2003, representing 8.7 percent of total U.S. greenhouse gas emissions. Methane emissions in 2003 were approximately equal to 2002 levels and 4.6 million metric tons lower than 1990 levels.[58]

Methane emissions have been decreasing since 1990. Emissions from waste management and energy sources have been reduced, while emissions from the other primary methane source, agriculture, have remained nearly constant. In the waste management area, estimated emissions from landfills—the second largest source of methane after natural gas systems—have dropped from 10.5 million metric tons in 1990 to 6.3 million metric tons in 2003 as a result of a rapid increase in methane recovery at landfills. Overall, methane recovery at landfills, due to tax credits, regulation, and high natural gas prices have grown from about 1.3 million metric tons in 1990 to 6.3 million metric tons in 2003. Emissions from energy sources have also fallen, as a result of reductions in methane emissions from coal mining. Methane emissions from coal mines are estimated to have declined from 4.2 million metric tons in 1990 to 2.9 million metric tons in 2003. To some extent, the decline is attributable to an increase in methane recovery at coal mines, from 0.3 million metric tons in 1990 to about 0.8 million metric tons in 2003.[59]

The Voluntary Reporting Program has seen a rapid increase in reported methane emission reductions since 1994. The number of waste management projects reported (primarily landfill gas projects) has increased from 17 in 1994 to 425 in 2003. For the 2003 data year, reduction activities were reported on Form EIA-1605 for at least 341 separate landfills, up from 321 in 2002.[60] Projects reporting methane recovery from energy production (natural gas systems and coal mine methane recovery) have increased from 8 in 1994 to 41 in 2003. Agricultural projects remain a small category, fluctuating from 3 to 5 a year since 1994.

Overview of Projects Reported

For 2003, 71 organizations reported a total of 470 projects to reduce methane emissions, a 5.4-percent increase in projects from 2002 and nearly a 17-fold increase from the first (1994) reporting cycle (Table 17). Of the projects that were reported for 2003, 36 were reported for the first time, either because they began achieving reductions in 2003 or because they were reported by one of the 5 new reporters in the methane emission reduction categories. Some projects reported for previous years were not reported for 2003.

Direct reductions of methane emissions reported on Form EIA-1605 for all project types in 2003 totaled 3.3 million metric tons methane, down from 3.5 million metric tons reported for 2002 (Table 18). Waste treatment projects accounted for 72.8 percent of reported methane reductions. These reductions were derived from 425 waste treatment projects reported, averaging 5,736 metric tons of direct methane emission reductions per project (Figure 13). The 218 projects reported by Waste Management, Inc., resulted in a reported reduction of 1.4 million metric tons methane (33.0 million metric tons carbon dioxide equivalent), or 42.8 percent of total reported direct reductions of methane emissions.

Projects to reduce methane emissions from coal mines and natural gas systems generally yielded much larger direct reductions per project (Figure 13), averaging 22,964 metric tons methane. Total direct emission reductions of 0.4 million metric tons methane were reported for coal mining projects in 2003, accounting for 12.1 percent of the direct methane emission reductions reported for 2003. The 28 natural gas system projects reported for 2003 reduced direct methane emission by a total of 0.5 million metric tons methane, or about 15.9 percent of all reported direct methane emission reductions.

Indirect methane emission reductions from all projects types totaled 1.0 million metric tons for 2003 (Table 18), down slightly from the 1.1 million metric tons reported for 2002. The vast majority (99 percent) of indirect

[58]Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2003*, DOE/EIA-0573(2003) (Washington, DC, December 2004), web site www.eia.doe.gov/oiaf/1605/ggrpt.

[59]Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2003*, DOE/EIA-0573(2003) (Washington, DC, December 2004), web site www.eia.doe.gov/oiaf/1605/ggrpt.

[60]The counts of landfills represent minimum levels, because not all reporters explicitly identified the landfills on which they were reporting. The counts exclude reports received after the close of the reporting cycles, in order to maintain comparability.

methane emission reductions were reported for waste treatment and disposal projects. The waste treatment and disposal category included two very large projects reported by DTE Energy and the Integrated Waste Services Association (IWSA). DTE Energy reported 0.2 million metric tons of indirect reductions from multiple landfill gas-to-energy systems reported as one large project, and IWSA reported indirect reductions of 0.4 million metric tons from the waste-to-energy facilities of its members.

Reducing Methane Emissions from Waste Treatment and Disposal

Reducing emissions from waste treatment and disposal sites was the most frequently reported method for lowering methane emissions in 2003. These projects made up 90 percent of all the methane emission reduction projects reported, with 21 more projects reported for 2003 than for 2002. The principal reported method for reducing methane emissions from waste treatment and disposal was landfill gas recovery (the capture of methane generated during the anaerobic decomposition of wastes in a landfill). The recovered methane may be flared, piped to an end-use customer to be used as a fuel, or used to generate electricity, which can reduce 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 425 waste treatment and disposal projects reported for 2003 accounted for 2.4 million metric tons of direct methane emission reductions and 1.0 million metric tons of indirect reductions (Table 19). Of the 425 projects reported, 412 achieved methane emission reductions at landfills by capturing methane from landfill gas generated at waste disposal sites, 5 lowered emissions through diversion of wastes that would have emitted methane during decomposition, and 8 captured methane from wastewater treatment facilities.

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

Table 17. Projects Reported on Form EIA-1605 with Methane Reductions as the Principal Outcome by Project Type, Data Years 1994-2003
(Number of Projects)

Project Type	1994	1995	1996	1997	1998	1999	2000	2001	2002(R)	2003
Waste Management and Disposal	**17**	**23**	**44**	**53**	**90**	**153**	**350**	**391**	**404**	**425**
Landfill Gas Recovery	14	19	40	48	80	139	337	381	391	412
Wastewater Treatment	2	2	2	3	5	6	8	4	7	8
Waste Combustion	1	2	2	2	5	8	5	6	6	5
Agriculture	**3**	**3**	**3**	**3**	**4**	**4**	**5**	**3**	**3**	**4**
Energy Production and Consumption	**8**	**11**	**13**	**15**	**28**	**28**	**28**	**35**	**39**	**41**
Coal Mining	2	3	4	5	17	15	14	16	18	13
Natural Gas Production, Transmission, and Distribution	6	8	9	10	11	13	14	19	21	28
Total	**28**	**37**	**60**	**71**	**122**	**185**	**383**	**429**	**446**	**470**

(R) = revised.
Note: Project totals do not equal sum of components, because some projects are counted in more than one category.
Source: Energy Information Administration, Form EIA-1605.

Table 18. Total Methane Emission Reductions Reported on Form EIA-1605, All Project Types, Data Years 1994-2003
(Metric Tons Methane)

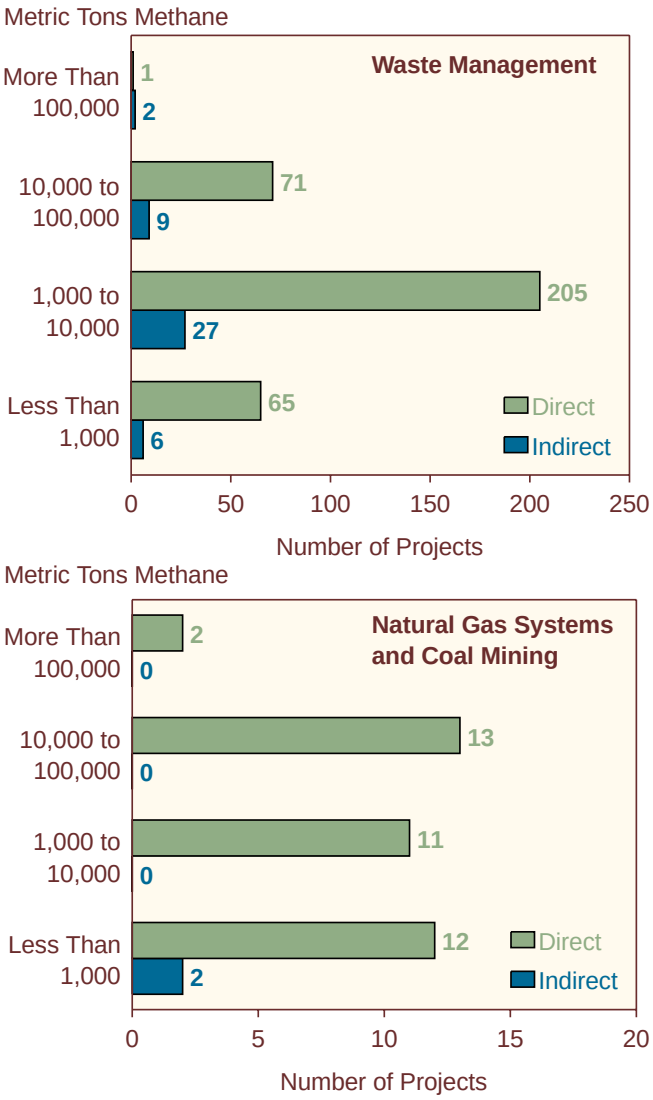
Type of Reduction	1994	1995	1996	1997	1998	1999	2000	2001	2002(R)	2003
Direct	25,079	8,450	409,176	378,494	1,379,162	1,564,958	2,693,295	3,546,480	3,481,465	3,347,511
Indirect	102,641	1,077,272	1,157,048	505,663	658,811	827,294	897,465	1,009,400	1,067,643	1,000,063

(R) = revised.
Source: Energy Information Administration, Form EIA-1605.

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 then used on site or 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, higher natural gas prices have resulted in an increasing number of projects that involve piping landfill gas for direct use in medium-Btu boilers, which also displaces fossil fuels.

For the 412 landfill gas recovery projects reported for 2003, reported direct methane emission reductions totaled 2.4 million metric tons and indirect reductions totaled 0.6 million metric tons. Of the projects reported, 170 recovered landfill methane for energy, 183 simply flared the gas, 49 included both recovery for energy and flaring, and 10 reported other activities.

Figure 13. Methane Emission Reduction Projects Reported on Form EIA-1605 by Type and Size of Reduction, Data Year 2003



Source: Energy Information Administration, Form EIA-1605.

Waste Combustion

When waste is diverted from a landfill through waste combustion, methane emissions that would have resulted when the waste decomposed at a landfill are avoided. Five waste combustion projects were reported for 2003. The preponderance of the methane emission reductions reported for waste combustion are indirect, because they typically occur at a landfill where diverted waste would have decomposed to produce methane, rather than at the site of the waste diversion activities. Total indirect reductions for the five projects were 0.4 million metric tons methane (Table 19). The majority of the reductions were reported by IWSA, which reported reductions associated with the combustion of waste at facilities owned by its members across the United States. IWSA's total reported reduction of methane emissions in 2003 was 0.4 million metric tons. Other methods of reducing methane emissions from waste include recycling and source reduction (see box on page 52).

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. Eight projects to capture methane generated from wastewater treatment were reported for 2003, with total reported direct reductions of 60.1 thousand metric tons methane and indirect reductions of 10.7 thousand metric tons methane. Direct reductions of 43.2 thousand metric tons methane were reported for a Los Angeles County Sanitation District project, and Blue Source reported direct reductions of 16.9 thousand metric tons methane. Indirect reductions were reported for two projects sponsored by FirstEnergy.

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

Materials Management Projects

"Materials management" is a crosscutting category that can encompass a variety of greenhouse gas and emission sources, and may include any of the following activities:

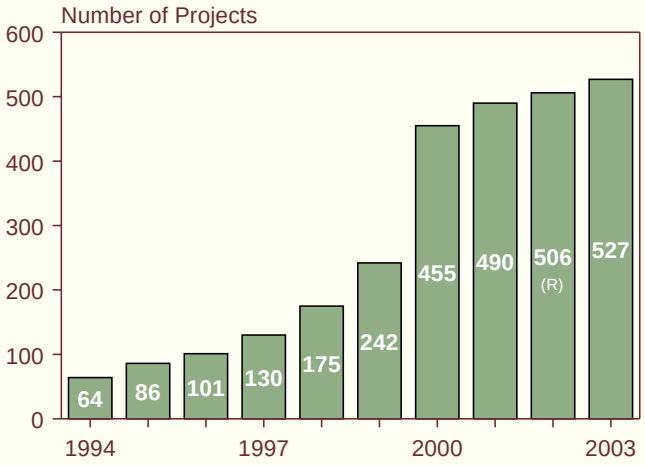
- Use of biomass fuels, such as wood waste, which reduces carbon dioxide emissions by displacing fossil fuels
- Avoidance of methane emissions from the decay of waste materials in landfills, wastewater treatment plants, and other waste management systems through activities such as recovery of methane from landfills or from anaerobic digesters treating municipal sewage, agricultural wastes, or animal manure, and diversion of municipal solid waste from landfills to waste-to-energy systems
- Recycling of halogenated substances, such as sulfur hexafluoride, hydrofluorocarbons, chlorofluorocarbons, and hydrochlorofluorocarbons
- Recycling and source reduction of solid waste, which reduce methane emissions from municipal landfills and reduce emissions of carbon dioxide and other gases associated with the production of virgin materials displaced by the materials recycled
- Reuse of coal ash as a substitute for Portland cement in concrete, which reduces carbon dioxide emissions from the manufacture of the cement.

Reporting of materials management activities on Form EIA-1605 increased more than eightfold from 1994 to 2003. A total of 526 projects were reported for 2003, 4 percent more than were reported for 2002 (see figure).

Landfill gas recovery accounted for most (78 percent) of the 526 materials management projects reported for 2003. In addition to 13 other methane emission avoidance projects reported, other materials management projects included coal ash reuse (33), recycling and source reduction of solid waste (34), recycling of halogenated substances (18), and biomass burning (16).

The emission reductions reported for materials management projects are shown in the table below. For 2003, reported net reductions in direct emissions were 50.4 million metric tons carbon dioxide equivalent, representing 19 percent of the total direct reductions reported. Reported indirect reductions were 52.0 million metric tons carbon dioxide equivalent, representing 64 percent of the total indirect reductions reported. Most of the reductions (99 percent of the direct and 89 percent of the indirect reductions) were associated with methane avoidance activities discussed in this chapter.

Materials Management Projects Reported on Form EIA-1605, Data Years 1994-2003



Source: Energy Information Administration, Form EIA-1605. (R) = revised.

Reported Emission Reductions from Materials Management Projects by Project Type and Type of Reduction, Data Year 2003

(Metric Tons Carbon Dioxide Equivalent)

Project Type	Number of Projects	Direct Reductions	Indirect Reductions
Biomass Burning	16	468,399	91,828
Methane Emission Avoidance			
Landfill Gas Recovery	412	54,659,548	14,923,688
Municipal Waste Combustion	1	-7,933,287	23,750,820
Wastewater Treatment	8	1,360,164	260,765
Agricultural Waste	4	1,616	2,204
Total	*425*	*48,088,042*	*38,937,478*
Halogenated Substances	18	1,633,398	2,224,018
Recycling and Source Reduction of Solid Waste	34	217,709	5,540,865
Coal Ash Reuse	33	0	5,233,686
Total	**526**	**50,407,548**	**52,027,875**

Source: Energy Information Administration, Form EIA-1605.

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. Some very gassy mines must also employ degasification wells to remove methane before or after mining so that it does not enter the mine. Because methane is a valuable energy source, most of the mines with degasification systems now inject the methane into gas pipelines or use it to generate electricity or heat.

For 2003, 13 projects to reduce methane emissions from coal mines were reported, with total direct emission reductions of 0.4 million metric tons and indirect reductions of 96 metric tons methane (Table 20). Jim Walters Resources reported direct reductions of 0.2 million metric tons methane from three degasification projects, and CDX reported direct methane reductions of 0.1 million metric tons methane from its two projects.

Reducing Emissions from Natural Gas Production, Transmission, and Distribution

Methane is the principal constituent of natural gas (about 95 percent of the mixture). Methane emissions from natural gas production, processing, transmission, and distribution are generally process related, with normal operations, routine maintenance, and system upsets being the primary contributors. Emissions vary greatly from facility to facility and are largely a function of operation and maintenance procedures and equipment conditions. Thus, methane emissions can be reduced by replacing leaky system components, improving operations and maintenance, and limiting routine venting procedures. For 2003, 28 such projects were reported, with total direct emission reductions of 0.5 million metric tons methane. No indirect reductions were reported. NIPSCO reported 9 projects, associated with the Natural Gas STAR Program, that yielded 0.2 million metric tons of methane emission reductions. Other major reporters included NEGT, which reported one Natural Gas STAR

Table 19. Methane Emission Reductions from Waste Treatment and Disposal Projects Reported on Form EIA-1605, Data Years 1994-2003
(Thousand Metric Tons Methane)

Reduction and Project Type	1994	1995	1996	1997	1998	1999	2000	2001	2002(R)	2003
Direct Reductions	*	0.6	128.4	135.6	484.7	966.8	2,171.5	2,117.2	2,514.7	2,437.7
Landfill Gas Recovery	*	0.6	128.4	135.3	451.4	921.7	2,134.0	2,079.6	2,476.5	2,377.6
Wastewater Treatment	—	—	—	0.3	33.3	40.8	37.5	37.6	38.5	60.8
Waste Combustion	—	—	—	—	*	4.4	*	*	-0.8	-0.7
Indirect Reductions	99.4	1,061.7	1,142.9	449.6	644.7	815.3	884.5	1,003.3	1,003.3	988.4
Landfill Gas Recovery	99.4	111.3	250.5	298.3	470.9	575.5	612.9	701.9	623.8	569.1
Wastewater Treatment	—	*	*	—	4.7	19.6	12.7	13.1	13.1	10.7
Waste Combustion	*	950.4	892.4	151.3	169.1	220.2	259.0	288.3	366.5	408.6

*Less than 500 metric tons.
(R) = revised.
Source: Energy Information Administration, Form EIA-1605.

Table 20. Methane Emission Reductions from Natural Gas Systems and Coal Mining Reported on Form EIA-1605, Data Years 1994-2003
(Metric Tons Methane)

Reduction and Project Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Direct Reductions	19,687	7,714	279,766	242,040	893,927	595,311	518,590	657,894	797,154	941,512
Coal Mining	13,767	4,191	271,549	232,131	885,807	581,307	505,941	538,285	567,088	406,782
Natural Gas Systems	5,920	3,522	8,217	9,909	8,121	14,004	12,648	119,609	230,066	534,731
Indirect Reductions	—	3,543	4,039	5,439	7,603	6,565	6,785	96	96	96
Coal Mining	—	278	893	2,285	1,568	528	747	96	96	96
Natural Gas Systems	—	3,265	3,146	3,154	6,035	6,036	6,038	0	0	0

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

project with methane emission reductions of 0.2 million metric tons, and BP America, which reported 3 projects with aggregate reductions of 0.1 million metric tons methane.

Reducing Emissions from Agriculture

Four projects reported for 2003 focused on reducing emissions from agricultural activities, but only three of them reported methane emission reductions. FirstEnergy reported indirect methane emission reductions of 109 metric tons as the result of purchases of electricity generated from an anaerobic digester of animal waste at Mason Dixon Farms—an increase from the 73 metric tons reported for 2002. Alliant Energy reported two projects, at Deer Ridge Dairy and Double S Dairy, which reduced carbon dioxide emissions by 1,237 metric tons. The fourth agriculture project, reported by AES, was to improve feed supplements for cattle in India and reduce emissions from enteric fermentation. AES did not report an emission reduction quantity for 2003.

Federal Voluntary Programs To Reduce Methane Emissions

The U.S. Government sponsors a number of voluntary programs specifically targeted to reduce methane emissions. Most frequently cited by reporters to the Voluntary Reporting Program are the U.S. Environmental Protection Agency's Landfill Methane Outreach Program (LMOP), Coalbed Methane Outreach Program (CMOP), and Natural Gas STAR Program. In addition, reducing methane has been an effective method for meeting the reduction targets adopted by utilities under the U.S. Department of Energy's Climate Challenge voluntary program. The number of reported methane reduction projects associated with Federal voluntary programs has increased 14-fold since 1994, with a particularly large increase in the number of projects associated with the LMOP. Of the 425 waste treatment and disposal projects reported to the Voluntary Reporting Program for 2003, 365 (86 percent) were associated with the LMOP (Table 21).

Table 21. Number of Reported Methane Reduction Projects Associated with Other Federal Voluntary Programs, Data Years 1994-2003

Voluntary Program	1994	1995	1996	1997	1998	1999	2000	2001	2002(R)	2003
Climate Challenge	22	27	32	36	34	39	42	34	34	36
Landfill Methane Outreach Program	6	8	29	32	90	116	309	359	354	365
Coalbed Methane Outreach Program	1	1	2	2	10	11	6	9	9	6
Natural Gas STAR	7	9	11	6	5	7	7	14	17	23
Other	0	6	2	2	1	3	4	5	5	5
Total	**30**	**42**	**64**	**65**	**132**	**164**	**354**	**407**	**405**	**420**

(R) = revised.
Note: Totals may not equal sum of components, because some projects are associated with more than one voluntary program.
Source: Energy Information Administration, Form EIA-1605.

6. HFCs, PFCs, and Sulfur Hexafluoride

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

In addition to the three principal greenhouse gases (carbon dioxide, methane, and nitrous oxide), three types of engineered gases—hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—are also considered greenhouse gases under the United Nations Framework Convention on Climate Change (UNFCCC). HFCs are used as refrigerants, solvents, and propellants and in many other applications. PFCs are emitted as a byproduct of aluminum smelting and are used in semiconductor manufacture. The primary uses of SF_6 are in electrical transmission and distribution equipment and in magnesium production.

U.S. emissions of HFCs, PFCs, and SF_6 in 2003 were estimated to be 143.4 million metric tons carbon dioxide equivalent, down slightly from 143.7 million metric tons in 2002. Collectively, they accounted for 2.1 percent of total U.S. greenhouse gas emissions in 2003.[61] Annual emissions of these gases have increased by 62 percent since 1990, primarily due to increases in emissions of HFCs, which are used as replacements for chlorofluorocarbons (CFCs) in automobile air conditioners (Figure 14). CFCs are being phased out under the Montreal Protocol,[62] because they damage the Earth's stratospheric ozone layer, which absorbs harmful ultraviolet radiation from the sun. Emissions of both PFCs and SF_6 have fallen since 1990.

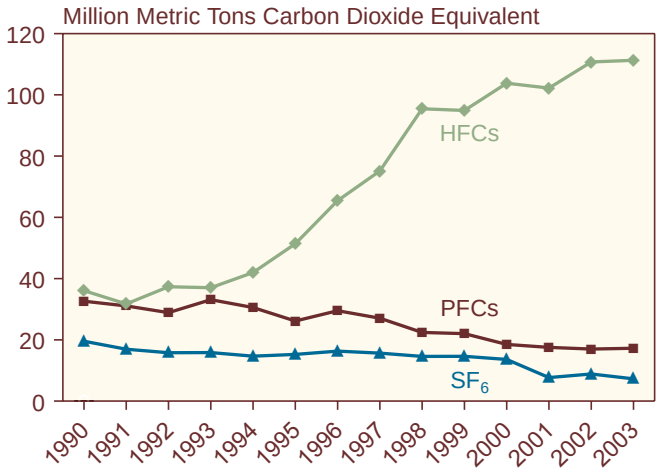
Projects Reported

For 2003, 38 entities reported on 66 projects that reduced emissions of HFCs, PFCs, and SF_6—1 more reporter and 2 more projects than were reported for 2002 (Table 22). Emissions avoidance and recycling of halogenated substances were two of the most frequently reported project types (24 and 18 projects reported, respectively), followed by substitution of other chemicals (7 projects reported) and the destruction of halogenated substances (1 project reported). Reductions in PFC emissions were also reported for 23 post-consumer waste-recycling projects in which aluminum was one of the materials collected and recycled.

The 38 entities reporting projects to reduce emissions of HFCs, PFCs, and SF_6 for 2003 included: 30 electric utilities; 2 aluminum smelters (Alcan Primary Products Corporation's Sebree Works and Noranda Aluminum, Inc.); a chemical company (Allergan); 1 transportation equipment company (General Motors); a company from the electronic equipment industry (Lucent Technologies, Inc.); a refrigerant reclamation company (Polar Refrigerant Technology); a holding and investment company (CLE Resources); an SF_6 recycling company (Xenon Specialty Gas); and a government organization (Burlington County Board of Chosen Freeholders).

Of the 38 entities that reported projects in this category, 16 were past participants in the U.S. Department of Energy's Climate Challenge Program and Rebuild America. Other voluntary programs with which the projects reported in this category were affiliated include the U.S. Environmental Protection Agency's (EPA's) Voluntary Aluminum Industrial Partnership, EPA's

Figure 14. Estimated U.S. Emissions of HFCs, PFCs, and Sulfur Hexafluoride, 1990-2003



Source: Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2003*, DOE/EIA-0573(2003) (Washington, DC, December 2004).

[61] Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2003*, DOE/EIA-0573(2003) (Washington, DC, December 2004), web site www.eia.doe.gov/oiaf/1605/ggrpt.

[62] The Montreal Protocol on Substances that Deplete the Ozone Layer is an international agreement, signed by most of the industrialized nations, to substantially reduce the use of CFCs. Signed in January 1989, the original document called for a 50-percent reduction in CFC use by 1992 relative to 1986 levels. The subsequent London Agreement called for a complete elimination of CFC use by 2000. The Copenhagen Agreement later accelerated that schedule, calling for a complete phaseout by January 1, 1996.

Waste Wise Program, and EPA's Sulfur Hexafluoride Emissions Reduction Partnership for Electric Power Systems.

Emission Reductions by Gas

Direct reductions of PFC and SF_6 emissions totaling 6.2 million metric tons carbon dioxide equivalent were reported by 21 entities for 24 projects carried out in 2003 (Table 23). The direct reductions included emissions of PFCs (3.6 million metric tons carbon dioxide equivalent) and SF_6 (2.6 million metric tons carbon dioxide equivalent). Indirect emission reductions totaled 2.5 million metric tons carbon dioxide equivalent, consisting primarily of SF_6 (2.2 million metric tons carbon dioxide equivalent) and smaller amounts of PFC and HFC emissions.

Hydrofluorocarbons

HFCs are used primarily as replacements for ozone-depleting substances such as CFCs and hydrochlorofluorocarbons (HCFCs). U.S. emissions of HFCs were estimated at 111 million metric tons carbon dioxide equivalent in 2003, a 209-percent increase over 1990 levels.[63] 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

Table 22. Number of Projects Reported on Form EIA-1605 for Hydrofluorocarbon, Perfluorocarbon, and Sulfur Hexafluoride Emissions, Data Years 1994-2003

Project Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
General	0	1	0	1	0	0	0	0	0	0
Reclamation: Recycling	7	10	10	14	15	15	18	16	18	18
Reclamation: Destruction	0	0	1	1	0	1	1	1	1	1
Substitution	1	5	7	7	8	9	9	6	6	7
Emissions Avoidance	3	6	8	13	17	16	23	23	24	24
Use of Improved Appliances	0	1	1	1	1	1	1	0	0	0
Other Projects/Activities	1	1	0	0	0	0	0	0	0	0
PFC Reductions from Materials Recycling	0	0	0	4	7	10	20	19	21	23
Total Number of Projects	**13**	**21**	**22**	**33**	**42**	**46**	**63**	**58**	**63**	**66**

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

Table 23. Reductions of Hydrofluorocarbon, Perfluorocarbon, and Sulfur Hexafluoride Emissions Reported on Form EIA-1605, Data Years 1994-2003
(Thousand Metric Tons Carbon Dioxide Equivalent)

Gas and Reduction Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
HFCs										
Direct	*	*	15.2	*	-1.7	-1.7	—	—	—	—
Indirect	—	—	—	—	—	—	—	—	**	38.7
PFCs										
Direct	3,199.6	2,962.4	3,345.8	3,318.6	3,504.4	3,425.5	3,233.6	3,606.8	3,562.9	3,550.5
Indirect	—	—	—	3.6	6.1	5.9	35.5	34.3	36.7	237.4
SF_6										
Direct	83.6	186.4	-70.0	516.7	624.8	595.4	1,407.3	2,475.1	3,043.7	2,611.9
Indirect	—	7.7	—	**	**	**	**	**	0.1	2,184.7
Total										
Direct	**3,283.2**	**3,148.8**	**3,291.0**	**3,835.3**	**4,127.4**	**4,019.1**	**4,641.0**	**6,082.0**	**6,606.6**	**6,162.4**
Indirect	**—**	**7.7**	**—**	**3.6**	**6.1**	**5.9**	**35.5**	**34.3**	**36.8**	**2,460.8**

*Less than 0 but greater than -50 metric tons.
**Greater than 0 but less than 50 metric tons.
(R) = revised. — = none reported.
Source: Energy Information Administration, Form EIA-1605.

[63]Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2003*, DOE/EIA-0573(2003) (Washington, DC, December 2004), web site www.eia.doe.gov/oiaf/1605/ggrpt.

byproduct of HCFC-22 manufacturing. The Tennessee Valley Authority reported on a project that included direct reductions of HFC-134a, but for which no reduction data have been available since 1998.

Perfluorocarbons

U.S. emissions of PFCs in 2003 totaled 7.3 million metric tons carbon dioxide equivalent.[64] 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 2003, five companies (Alcan Primary Products Corporation, Burlington County Board of Chosen Freeholders, City Public Service, Los Angeles Department of Water and Light, and Noranda Aluminum, Inc.) reported reductions in direct emissions of PFCs totaling 3.6 million metric tons carbon dioxide equivalent, which accounted for 58 percent of total reported project-level direct reductions in emissions of PFCs, HFCs, and SF_6 in 2003. Alcan and Noranda together accounted for 98 percent of total reported direct reductions of PFC emissions (3.5 million metric tons carbon dioxide equivalent) and 56 percent of total reported direct reductions of HFC, PFC, and SF_6 emissions.

During 2003, efforts by 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. According to Noranda's report, perfluoromethane emissions were reduced by 2.6 million metric tons carbon dioxide equivalent and perfluoroethane emissions by 0.6 million metric tons carbon dioxide equivalent. Alcan reported direct reductions of perfluoromethane emissions totaling 0.3 million metric tons carbon dioxide equivalent. Additionally, City Public Service and Los Angeles Department of Water and Power reported materials recycling projects (see box in Chapter 5, page 52) that included direct reductions of PFC emissions totaling 22,516 and 1,630 metric tons carbon dioxide equivalent, respectively, during 2003.

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 2003, both Alcan and Noranda reported participation in the program.

Sulfur Hexafluoride

U.S. emissions of SF_6 in 2003 totaled 17.3 million metric tons carbon dioxide equivalent.[65] SF_6 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—22,200 times the warming effect of carbon dioxide per ton emitted.[66]

For 2003, 17 companies—including Allegheny Energy, Inc., American Electric Power, Inc., Cinergy Corp., City Public Service, City Utilities of Springfield, Consolidated Edison of New York, Inc., Constellation Energy Group, Inc., Duke Energy Corporation, Entergy Services, Inc., FirstEnergy Corporation, FPL Group, Minnesota Power, National Grid USA, NiSource/NIPSCO, Southern California Edison Co., Southern Company, Tucson Electric Power Company, and TXU—claimed direct reductions of SF_6 emissions that totaled 2.6 million metric tons carbon dioxide equivalent, accounting for 42 percent of the total reported project-level direct reductions in emissions of PFCs, HFCs, and SF_6 (Table 23).

For those companies reporting direct reductions of SF_6 emissions for 2003, Consolidated Edison of New York, Inc., reported the largest single reduction (1.5 million metric tons carbon dioxide equivalent), followed by the Southern Company (0.6 million metric tons), TXU (0.3 million metric tons), and Southern California Edison Company (0.1 million metric tons). These four project-level claims of emission reductions combined to account for 99 percent (2.6 million metric tons carbon dioxide equivalent) of total reported project-level direct reductions of SF_6 emissions for 2003 and 42 percent of total project-level direct emission reductions claimed for HFCs, PFCs, and SF_6 combined (Table 24).

[64]Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2003*, DOE/EIA-0573(2003) (Washington, DC, December 2004), web site www.eia.doe.gov/oiaf/1605/ggrpt.

[65]Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2003*, DOE/EIA-0573(2003) (Washington, DC, December 2004), web site www.eia.doe.gov/oiaf/1605/ggrpt.

[66]Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2003*, DOE/EIA-0573(2003) (Washington, DC, December 2004), web site www.eia.doe.gov/oiaf/1605/ggrpt.

Table 24. Largest Project-Level Direct Reductions of Sulfur Hexafluoride Emissions Reported on Form EIA-1605 by Reporter, Data Year 2003

Reporter	Direct SF_6 Emission Reductions Reported		Percent of Total Reported Direct Reductions of HFC, PFC, and SF_6 Emissions[a]
	Metric Tons of Gas	Metric Tons Carbon Dioxide Equivalent	
Consolidated Edison Company of New York, Inc.	69.5	1,542,047	25.0
Southern Company	25.0	555,000	9.0
TXU	15.6	347,060	5.6
Southern California Edison Co.	6.1	134,363	2.2
National Grid USA	2.6	57,388	0.9
Cinergy Corp.	2.4	52,948	0.9
NiSource/NIPSCO	2.0	44,710	0.7
Duke Energy Corporation	1.9	42,180	0.7
Tucson Electric Power Company	1.6	35,561	0.6
National Grid USA	1.3	28,085	0.5
American Electric Power, Inc.	0.4	9,476	0.2
City Public Service	0.4	8,660	0.1
Entergy Services, Inc.	0.2	3,524	0.1
FPL Group	0.2	3,524	0.1
Reported Total	**129.0**	**2,864,526**	**46.5**

[a]Based on metric tons carbon dioxide equivalent.

Note: Totals may not equal sum of components due to independent rounding.

Sources: Energy Information Administration, Form EIA-1605. Global warming potentials from Intergovernmental Panel on Climate Change, *Climate Change 2001: The Scientific Basis* (Cambridge, UK: Cambridge University Press, 2001), Table 6.7, pp. 388-389.

7. Entity-Level Reporting and Future Commitments

Overview

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

- Entity-level emissions and emission 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 project or action
- Commitments to take action to reduce emissions in the future.

Chapters 2 through 6 of this report cover project-level emissions and reductions. 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. Most (177, or 76 percent) of the 233 non-confidential participants in the Program for 2003 reported project-level information on emissions and/or reductions, and 126 (54 percent) reported entity-level information. Of all the participants in the Program, 70 (30 percent) reported both entity-level information and project-level information. In addition, 89 entities (38 percent of all participants in the Program) reported formal commitments to reduce greenhouse gas emissions in the future or to provide financial support for activities related to greenhouse gas reductions.

Entity-Level Reporting

Who Reported

Electric power producers accounted for 45 of the 126 entity-level reporters. They included Allegheny Energy, Alliant Energy, Cinergy Corp., Constellation Energy, DTE Energy/Detroit Edison, Entergy Services, Inc., FirstEnergy Corporation, FPL Group, PG&E, PacifiCorp, Seattle City Light, the Southern Company, the Tennessee Valley Authority (TVA), and most of the largest electric power companies in the United States. In addition, 4 subsidiaries of the AES Corporation (an independent power producer) reported on domestic power plants with emissions offset by international forestry projects.

The remaining 81 entity-level reporters included an aluminum smelter (Alcan Primary Products Corporation, Sebree Works), 8 plants of CommScope (a designer and manufacturer of cables for telecommunications applications), a semiconductor manufacturer (Lucent Technologies, Inc.), and several large manufacturers (Daimler Chrysler, Toyota Motor North America, Inc., Ford, General Electric, General Motors, IBM, Johnson & Johnson, and Rolls-Royce Corporation). Also reporting at the entity level were the Lehigh Cement Company, 2 oil companies (Sunoco, Inc., and BP America), a chemical company (the Dow Chemical Company), an aircraft manufacturer (Sikorsky Aircraft Corporation), textile manufacturers (including 2 plants of Hanes Dye & Finishing, 4 plants of M.J. SOFFE Company, 6 plants of National Spinning, Inc., and the Valdese Manufacturing Company), a trade association (Integrated Waste Services Association), and the Miller Brewing Company.

Reported Emissions

Total 2003 entity-level direct emissions of greenhouse gases reported to the Voluntary Reporting Program were 889 million metric tons carbon dioxide equivalent, or 13 percent of total estimated U.S. emissions of greenhouse gases[67] (Table 25). Entity-level indirect emissions reported to the Program were 105 million metric tons carbon dioxide equivalent, or 2 percent of total U.S. greenhouse gas emissions. Carbon dioxide was the most widely reported greenhouse gas in terms of tonnage. Reported entity-level direct carbon dioxide emissions were 861 million metric tons, representing 97 percent of entity-level reported direct emissions (Table 25). Carbon dioxide also accounted for 95 percent (100 million metric tons) of all reported indirect emissions (Table 25), of which 99 million metric tons resulted from purchased power transactions (i.e., the indirect emissions associated with generation of the electricity purchased) (Table 26).

The single largest category of direct carbon dioxide emissions reported was the 836 million metric tons carbon dioxide emitted by stationary combustion sources (mostly electricity generators), which represented 97 percent of the total direct carbon dioxide emissions

[67] Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2003*, DOE/EIA-0573(2003) (Washington, DC, December 2004), web site www.eia.doe.gov/oiaf/1605/ggrpt.

reported for 2003 (Table 26). The 5 largest reporters of direct carbon dioxide emissions were TVA (85 million metric tons), Cinergy Corporation (60 million metric tons), Duke Energy Corporation (56 million metric tons), FPL Group (55 million metric tons), and PacifiCorp (46 million metric tons) (Table 27). Companies reporting at least 20 million metric tons of direct carbon dioxide emissions included FirstEnergy Corporation, Allegheny Energy, Inc., DTE Energy/Detroit Edison, BP America, Entergy Services, Inc., The Dow Chemical Company, Florida Power Corporation, NEGT, Dynegy, Inc., and Constellation Energy.

Direct emissions of greenhouse gases other than carbon dioxide included methane (24 million metric tons carbon dioxide equivalent), hydrofluorocarbons (3 million metric tons carbon dioxide equivalent), sulfur hexafluoride (1 million metric tons carbon dioxide equivalent), and perfluorocarbons (less than 1 million metric tons carbon dioxide equivalent). Reported direct emissions of nitrous oxide were less than 0.1 million metric tons carbon dioxide equivalent (Table 25).

Entity-level direct emissions of methane were reported by 13 companies for 2003, including 4 companies that

Table 25. Total Reported Entity-Level Emissions of Greenhouse Gases Other Than Carbon Dioxide by Type of Emissions, Data Year 2003
(Million Metric Tons Carbon Dioxide Equivalent)

Gas and Type of Emissions	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Carbon Dioxide														
Direct	737.3	575.7	676.6	712.5	762.2	791.2	798.0	842.9	937.4	946.3	964.5	853.3	861.1	861.3
Indirect	434.4	420.9	423.0	429.7	432.5	432.4	438.9	457.8	428.5	428.3	98.1	91.7	107.7	99.9
Methane														
Direct	59.1	18.1	18.5	14.2	32.4	33.3	30.0	31.9	36.9	31.4	30.0	29.9	27.0	23.8
Indirect	2.1	2.1	2.1	2.1	2.0	1.9	1.9	1.8	1.7	1.6	0.4	0.4	0.3	0.3
Nitrous Oxide														
Direct	*	*	*	*	*	*	*	*	*	*	0.1	*	0.1	*
Indirect	17.3	18.1	19.0	19.8	20.5	20.4	19.9	19.3	18.6	17.9	*	*	*	*
Hydrofluorocarbons														
Direct	*	*	*	*	*	*	*	*	0.1	0.2	0.4	0.8	2.4	2.6
Indirect	*	*	0.1	2.2	4.9	5.4	5.0	5.2	5.2	5.2	5.2	3.9	5.6	4.5
Perfluorocarbons														
Direct	0.6	0.6	0.6	0.6	0.3	0.3	0.3	0.3	0.2	0.1	0.2	0.2	0.2	0.3
Sulfur Hexafluoride														
Direct	0.2	0.4	0.4	0.4	1.4	1.4	1.5	1.2	1.0	0.5	1.1	1.2	1.2	0.9
Total														
Direct	**797.2**	**594.8**	**696.1**	**727.7**	**796.4**	**826.2**	**829.8**	**876.4**	**975.5**	**978.5**	**996.3**	**885.4**	**892.0**	**888.8**
Indirect	**453.9**	**441.1**	**444.2**	**453.8**	**459.8**	**460.1**	**465.7**	**484.1**	**454.0**	**453.1**	**103.6**	**96.0**	**113.6**	**104.7**

*Less than 0.05 million metric tons.
Source: Energy Information Administration, Form EIA-1605.

Table 26. Total Reported Entity-Level Carbon Dioxide Emissions by Type and Source, Data Year 2003
(Million Metric Tons Carbon Dioxide)

Type of Emission Source	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Direct Emissions														
Stationary Combustion	731.8	570.6	667.8	703.2	752.1	770.5	777.1	822.3	915.3	924.1	942.7	830.9	838.1	835.8
Transportation	1.3	0.2	0.2	0.2	0.8	11.8	11.7	12.0	13.3	13.5	13.3	13.2	13.1	13.8
Other Direct Sources	4.2	4.9	8.6	9.0	9.3	8.9	9.2	8.6	8.4	8.6	8.4	9.2	9.9	11.7
Total Direct	**737.3**	**575.7**	**676.6**	**712.5**	**762.2**	**791.2**	**798.0**	**842.9**	**937.4**	**946.3**	**964.5**	**853.3**	**861.1**	**861.3**
Indirect Emissions														
Purchased Power	60.2	55.6	53.6	59.3	60.5	65.8	79.0	105.3	83.3	87.6	97.9	91.5	107.1	99.3
Other Indirect Sources	374.2	365.3	369.4	370.5	372.0	366.6	360.0	352.5	345.3	340.8	0.2	0.2	0.6	0.6
Total Indirect	**434.4**	**420.9**	**423.0**	**429.7**	**432.5**	**432.4**	**438.9**	**457.8**	**428.5**	**428.3**	**98.1**	**91.7**	**107.7**	**99.9**

Source: Energy Information Administration, Form EIA-1605.

reported direct methane emissions in excess of 1 million metric tons carbon dioxide equivalent: Consol Coal Group (11 million metric tons), Jim Walter Resources, Inc. (4 million tons), Peabody Holding Company, Inc. (4 million metric tons), and BP America (3 million metric tons) (Table 28). These 4 entities together accounted for 81 percent of all reported direct emissions of other greenhouse gases for 2003. Direct emissions of HFCs

Table 27. Largest Reported Entity-Level Direct Carbon Dioxide Emissions by Reporter and Source, Data Year 2003

Reporter	Emissions Source	Reported Direct Carbon Dioxide Emissions (Million Metric Tons)	Percentage of Total Reported Direct Emissions of All Greenhouse Gases
Tennessee Valley Authority	Stationary Combustion	85.4	9.6
Cinergy Corp.	Stationary Combustion	60.4	6.8
Duke Energy Corporation	Stationary Combustion	56.3	6.3
FPL Group	Stationary Combustion	55.1	6.2
PacifiCorp	Stationary Combustion	46.4	5.2
FirstEnergy Corporation	Stationary Combustion	42.3	4.8
Allegheny Energy, Inc.	Stationary Combustion	41.7	4.7
DTE Energy/Detroit Edison	Stationary Combustion	38.3	4.3
BP America	Stationary Combustion	33.7	3.8
Entergy Services, Inc.	Stationary Combustion	33.4	3.8
The Dow Chemical Company	Stationary Combustion	27.1	3.1
Florida Power Corporation	Stationary Combustion	22.5	2.5
NEGT	Stationary Combustion	21.3	2.4
Dynegy, Inc.	Stationary Combustion	20.4	2.3
Constellation Energy	Stationary Combustion	19.7	2.2
Total		**604.1**	**68.0**

Source: Energy Information Administration, Form EIA-1605.

Table 28. Largest Reported Entity-Level Direct Emissions of Greenhouse Gases Other Than Carbon Dioxide by Reporter and Emissions Source, Data Year 2003

Reporter	Gas	Emissions Source	Reported Direct Emissions (Thousand Metric Tons Carbon Dioxide Equivalent)	Percentage of Total Reported Direct Emissions of Other Greenhouse Gases
Consol Coal Group	Methane	Other Direct	11,129.8	40.4
Jim Walter Resources, Inc.	Methane	Other Direct	4,438.7	16.1
Peabody Energy	Methane	Other Direct	3,572.1	13.0
BP America	Methane	Other Direct	3,275.8	11.9
General Electric Company	HFC-134a	Other Direct	1,141.8	4.1
Dow Chemical Company	HFC-134a	Other Direct	1,128.5	4.1
Public Service Enterprise Group	Methane	Other Direct	723.1	2.6
Cinergy Corp.	Methane	Other Direct	459.7	1.7
Duke Energy Corporation	Sulfur Hexafluoride	Other Direct	297.5	1.1
Public Service Enterprise Group	Sulfur Hexafluoride	Other Direct	284.0	1.0
Alcan Primary Metals Group Sebree Works	Perfluoromethane	Other Direct	210.2	0.8
Mitsubishi Motors North America, Inc.	HFC-143a	Other Direct	137.6	0.5
Cinergy Corp.	Sulfur Hexafluoride	Other Direct	116.2	0.4
The Dow Chemical Company	Methane	Other Direct	115.8	0.4
Mitsubishi Motors North America, Inc.	HFC-125	Other Direct	108.8	0.4
Total			**27,139.6**	**98.5**

Source: Energy Information Administration, Form EIA-1605.

were reported by 6 companies, including 2 companies (General Electric and Dow Chemical) with emissions in excess of 1 million metric tons carbon dioxide equivalent. Direct emissions of sulfur hexafluoride were reported by 8 companies, including 2 companies (Duke Energy and Public Service Enterprise Group) with emissions in excess of 0.2 million metric tons carbon dioxide equivalent. Direct emissions of perfluorocarbons were reported by 3 companies, including Alcan Primary Metals Group–Sebree Works, which reported emissions of 0.2 million metric tons carbon dioxide equivalent.

Reported Reductions

Entity-level direct reductions of greenhouse gas emissions reported for 2003 totaled 214 million metric tons carbon dioxide equivalent, and reported indirect reductions totaled 43 million metric tons carbon dioxide equivalent. Carbon sequestration reductions reported at the entity level were 7 million metric tons carbon dioxide equivalent (Table 29).

Reported entity-level direct reductions of carbon dioxide emissions totaled 140 million metric tons (Table 30), of which 131 million metric tons was reported as reductions in emissions from stationary source combustion. Reported indirect reductions of carbon dioxide emissions totaled 31 million metric tons, including 30 million metric tons from sources other than stationary source combustion, such as load control improvements, building shell improvements, improvement or replacement of equipment and appliances, lighting and lighting control improvements, coal ash reuse, materials recycling and reuse, heating, ventilation, and air conditioning (HVAC), and improvements in motors and motor drives.

Reported direct reductions in emissions of greenhouse gases other than carbon dioxide for 2003 totaled 74 million metric tons carbon dioxide equivalent, and indirect reductions totaled 11 million metric tons (Table 29). Virtually all were reductions in emissions of methane.

The largest direct reductions for 2003 were reported by Waste Management, Inc. (33 million metric tons carbon dioxide equivalent of methane), TVA (25 million metric tons carbon dioxide), FPL Group (22 million metric tons carbon dioxide), Consol Coal Group (20 million metric tons carbon dioxide equivalent of methane), Southern Company (15 million metric tons carbon dioxide), and Duke Energy Corporation (11 million metric tons carbon dioxide). These 6 reported entity-level direct reductions

Table 29. Total Reported Entity-Level Reductions in Emissions of Greenhouse Gases by Gas and Source, Data Year 2003
(Million Metric Tons Carbon Dioxide Equivalent)

Gas and Type of Reduction	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Carbon Dioxide													
Direct	25.7	43.5	46.4	62.9	85.3	93.5	94.4	108.5	114.3	136.4	141.7	142.5	139.8
Indirect	12.7	10.9	9.1	5.4	10.1	13.4	13.4	17.3	18.8	19.4	20.9	26.1	31.1
Methane													
Direct	5.9	8.1	15.8	21.5	30.9	36.6	41.2	45.4	51.6	58.1	63.9	71.9	74.7
Indirect	1.7	2.7	3.2	3.6	4.0	4.6	5.6	6.2	6.8	8.0	9.0	10.7	11.3
Nitrous Oxide													
Direct	*	*	*	*	*	*	*	*	*	-0.1	*	*	*
Indirect	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Hydrofluorocarbons													
Direct	—	—	—	*	*	*	*	*	-0.2	-0.3	-0.7	-1.2	-1.1
Indirect	—	—	—	—	—	—	—	—	—	—	—	—	—
Perfluorocarbons													
Direct	*	*	*	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.4
Indirect	*	*	*	*	*	*	*	*	*	*	*	*	*
Sulfur Hexafluoride													
Direct	*	*	*	*	0.1	*	0.4	0.6	0.6	0.6	0.7	0.9	0.5
Indirect	—	—	—	—	—	—	*	*	*	*	*	*	*
Total													
Direct	**31.6**	**51.5**	**62.3**	**84.5**	**116.4**	**130.3**	**136.1**	**154.7**	**166.5**	**195.0**	**206.1**	**214.5**	**214.2**
Indirect	**14.5**	**13.7**	**12.3**	**9.1**	**14.2**	**18.2**	**19.1**	**23.6**	**25.7**	**27.5**	**29.9**	**36.9**	**42.6**

*Less than 0.05 million metric tons.
— = none reported.
Note: Negative numbers indicate increases in emissions.
Source: Energy Information Administration, Form EIA-1605.

accounted for 59 percent (125 million metric tons) of total reported entity-level direct reductions (Table 31).

The largest reporter of indirect emission reductions was the Integrated Waste Services Association (IWSA), which reported indirect emission reductions on behalf of its members. IWSA reported indirect emission reductions of 15 million metric tons of carbon dioxide and 9 million metric tons carbon dioxide equivalent of methane, resulting from the combustion of municipal solid waste. Southern Company and FPL Group reported indirect reductions of carbon dioxide emissions at 4 million and 3 million metric tons, respectively (Table 32). These 4 reductions together accounted for 30 million metric tons carbon dioxide equivalent or 62 percent of total reported positive indirect emission reductions.[68]

Most of the larger reported reductions (direct and indirect) 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 (Tables 31 and 32). TVA, for example, used a generation planning model to calculate what its emissions from 1990 through 2003 would have been if it had used the set of generating units operational in 1990 at the 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 2003 were 11 million metric tons above 1990 levels but 25 million metric tons below what they would have been if the 1990 generation mix and heat rates had been used.

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

A total of 31 companies reported emission reductions or sequestration at the entity level using a "basic" reference case. In a basic reference case, reductions are calculated as the difference between actual emissions in the reporting year and emissions in a baseline year. Of these 31 companies, 15 were electric power producers: AES Thames, LLC, Arizona Public Service Company, Consolidated Edison of New York, Inc., DTE Energy/ Detroit Edison, Duke Energy Corporation, Florida Power Corporation, Hawaiian Electric Company, KeySpan Energy Corporation, Los Angeles Department of Water and Power, National Grid USA, PG&E Corporation, Sacramento Municipal Utility District, TVA, Tucson Electric Power Company, and Waverly Light & Power Company. The 16 other reporters using a "basic" reference case included BMW US Holding Corp., Consol Coal Group, The Dow Chemical Company, General Motors Corporation, International Truck and Engine Corporation, Lucent Technologies, Inc., Peabody Energy, Republic Metals Group, Rolls-Royce Corporation, Sunoco, Inc., and Toyota Motor North America, Inc.

Table 30. Total Reported Entity-Level Carbon Dioxide Emission Reductions by Type and Source, Data Year 2003
(Million Metric Tons Carbon Dioxide)

Type of Reduction Source	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Direct Reductions													
Stationary Combustion . .	25.5	44.6	47.7	64.1	86.1	94.1	94.0	107.7	112.9	128.3	133.0	134.4	130.9
Transportation	*	*	*	*	*	0.1	0.2	0.5	0.5	0.7	0.8	0.8	0.7
Other Direct Sources. . . .	0.2	-1.2	-1.3	-1.2	-0.9	-0.6	0.1	0.3	0.8	7.4	7.9	7.4	8.1
Total Direct.	**25.7**	**43.5**	**46.4**	**62.9**	**85.3**	**93.5**	**94.4**	**108.5**	**114.3**	**136.4**	**141.7**	**142.5**	**139.8**
Indirect Reductions													
Purchased Power	*	-2.6	-4.1	-9.7	-8.4	-6.7	-6.8	-3.4	-5.1	-5.1	-4.4	-3.6	1.4
Other Indirect Sources . .	12.7	13.5	13.2	15.1	18.6	20.2	20.2	20.7	24.0	24.5	25.3	29.6	29.7
Total Indirect	**12.7**	**10.9**	**9.1**	**5.4**	**10.1**	**13.4**	**13.4**	**17.3**	**18.8**	**19.4**	**20.9**	**26.1**	**31.1**
Carbon Sequestered	**0.6**	**1.6**	**6.0**	**6.1**	**6.9**	**6.9**	**7.8**	**8.0**	**8.1**	**7.4**	**7.6**	**6.9**	**6.9**

*Less than 0.05 million metric tons.
Note: Negative numbers indicate increases in emissions.
Source: Energy Information Administration, Form EIA-1605.

[68]Negative indirect reductions in entity-level emissions (i.e., emission increases) were reported for 2003 by 25 participants in the Voluntary Reporting Program.

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. There are three types of future commitments in the 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; and 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.

Table 31. Largest Individual Reported Entity-Level Direct Emission Reductions by Gas, Source, and Type of Reference Case Employed, Data Year 2003

Reporter	Gas	Source	Reference Case	Reported Direct Emission Reduction (Million Metric Tons Carbon Dioxide Equivalent)	Percent of Total Reported Direct Reductions
Waste Management, Inc.	CH_4	Other Direct	Modified	32.9	15.4
Tennessee Valley Authority	CO_2	Stationary Combustion	Modified	25.2	11.8
FPL Group	CO_2	Stationary Combustion	Modified	21.6	10.1
Consol Coal Group	CH_4	Other Direct	Basic	20.2	9.4
Southern Company	CO_2	Stationary Combustion	Modified	14.5	6.7
Duke Energy Corporation	CO_2	Stationary Combustion	Modified	11.0	5.1
FirstEnergy Corporation	CO_2	Stationary Combustion	Modified	8.0	3.7
Blue Source, LLC	CO_2	Other Direct	Modified	6.8	3.2
Entergy Services, Inc.	CO_2	Stationary Combustion	Modified	6.7	3.1
Constellation Energy	CO_2	Stationary Combustion	Modified	6.2	2.9
Jim Walter Resources, Inc.	CH_4	Other Direct	Modified	5.1	2.4
NiSource/NIPSCO	CH_4	Other Direct	Modified	4.8	2.2
Florida Power Corporation	CO_2	Stationary Combustion	Modified	4.8	2.2
NEGT	CH_4	Other Direct	Modified	3.9	1.8
The Dow Chemical Company	CO_2	Stationary Combustion	Basic	3.8	1.8
PG&E Corporation	CO_2	Stationary Combustion	Modified	2.9	1.4
Municipal Electric Auth of Georgia (MEAG Power)	CO_2	Stationary Combustion	Modified	2.9	1.3
Palmer Capital Corporation	CH_4	Other Direct	Modified	2.8	1.3
Alliant Energy	CO_2	Stationary Combustion	Modified	2.6	1.2
KeySpan Energy Corporation	CO_2	Stationary Combustion	Basic	2.4	1.1
BP America	CO_2	Stationary Combustion	Modified	2.0	0.9
BP America	CH_4	Other Direct	Modified	2.0	0.9
DTE Energy/Detroit Edison	CO_2	Stationary Combustion	Basic	1.8	0.8
General Motors Corporation	CO_2	Stationary Combustion	Basic	1.7	0.8
Allegheny Energy, Inc.	CO_2	Stationary Combustion	Modified	1.5	0.7
Cinergy Corp.	CO_2	Stationary Combustion	Modified	1.5	0.7
Sunoco, Inc.	CO_2	Stationary Combustion	Basic	1.4	0.7
Hawaiian Electric Company, Inc.	CO_2	Stationary Combustion	Basic	1.3	0.6
PacifiCorp	CO_2	Stationary Combustion	Modified	1.2	0.6
Santee Cooper	CO_2	Stationary Combustion	Modified	1.2	0.6
NiSource/NIPSCO	CO_2	Stationary Combustion	Modified	1.1	0.5
The Burlington Northern and Santa Fe Railway Co.	CO_2	Transportation	Modified	1.0	0.5
Total				**207.0**	**96.6**

Note: For 2003, negative direct entity-level emission reductions were reported by 27 participants in the Voluntary Reporting of Greenhouse Gases Program.

Source: Energy Information Administration, Form EIA-1605.

Entity-Level Commitments

Entity-level commitments to reduce greenhouse gas emissions were reported by 56 participants in the Voluntary Reporting Program. These firms made 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 in comparison with a baseline emissions growth trend. Participants reporting entity-level commitments to reduce greenhouse gas emissions in the future included Allegheny Energy, Inc., Alliant Energy, City of Klamath Falls, Entergy Services, Inc., FirstEnergy Corporation, FPL Group, Middlesex Generating Company, National Grid USA, Noranda Aluminum, Inc., and TVA.

The reporters of the largest individual entity-level commitments pledged to reduce emissions in the future by 84 million metric tons carbon dioxide (Table 33). TVA (23 million metric tons carbon dioxide), National Grid USA (15 million metric tons carbon dioxide), FPL Group (10 million metric tons carbon dioxide), City of Klamath Falls (6 million metric tons carbon dioxide), and Entergy Services and Middlesex Generating Company (5 million metric tons carbon dioxide, each) reported the 6 largest entity-level reduction commitments. These 6 commitments combined accounted for 74 percent (64 million metric tons carbon dioxide) of the total reported entity-level commitments to reduce greenhouse gases. National Grid USA, City of Klamath Falls, and Entergy Services, Inc., measured their reduction commitments using basic reference cases. The 3 other reporters used modified reference cases.

Project-Level Commitments

A total of 27 companies reported on commitments to undertake 191 individual emission reduction 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. Data on the quantities of reductions expected were provided by 22 reporters for 116 projects.

Reporters indicated that projects were expected to reduce future emissions by 73 million metric tons carbon

Table 32. Largest Individual Reported Entity-Level Indirect Emission Reductions by Gas, Source, and Type of Reference Case Employed, Data Year 2003

Reporter	Gas	Source	Reference Case	Reported Indirect Emission Reduction (Million Metric Tons Carbon Dioxide Equivalent)	Percent of Total Reported Indirect Reductions
Integrated Waste Services Association	CO_2	Other Indirect	Modified	15.0	35.3
Integrated Waste Services Association	CH_4	Other Indirect	Modified	8.6	20.3
Southern Company	CO_2	Other Indirect	Modified	3.7	8.6
FPL Group	CO_2	Other Indirect	Modified	3.0	7.0
Sacramento Municipal Utility District	CO_2	Purchased Power	Basic	2.4	5.8
Mystic Development, LLC	CO_2	Other Indirect	Modified	2.0	4.6
Public Service Enterprise Group	CO_2	Other Indirect	Modified	1.6	3.8
Portland General Electric Co.	CO_2	Purchased Power	Modified	1.3	3.2
General Motors Corporation	CO_2	Purchased Power	Basic	0.9	2.1
PG&E Corporation	CO_2	Other Indirect	Modified	0.8	1.9
NEGT	CH_4	Other Indirect	Modified	0.8	1.9
Alliant Energy	CO_2	Other Indirect	Modified	0.8	1.9
FirstEnergy Corporation	CH_4	Other Indirect	Modified	0.7	1.7
Berkshire Power LLC	CO_2	Other Indirect	Modified	0.7	1.7
Waste Management, Inc.	CO_2	Purchased Power	Modified	0.6	1.4
Peabody Holding Company, Inc.	CO_2	Purchased Power	Modified	0.5	1.1
Total				**43.5**	**102.4**

Note: Twenty-eight participants in the Voluntary Reporting of Greenhouse Gases Program reported negative indirect entity-level emission reductions for 2002.

Source: Energy Information Administration, Form EIA-1605.

dioxide equivalent. Of that amount, 61 million metric tons would be carbon dioxide, 7 million metric tons carbon dioxide equivalent would be methane, and 3 million metric tons carbon dioxide equivalent would be perfluorocarbons. Nitrous oxide and sulfur hexafluoride together would constitute about 1 million metric tons carbon dioxide equivalent.

The largest individual project-level commitment, made by TVA, was described as "an increase in low-emitting capacity" as a result of TVA's nuclear power program. It would reduce carbon dioxide emissions by 18 million metric tons. The second and third largest individual project-level commitments were made by Middlesex Generating Company, LLC (5 million metric tons carbon dioxide equivalent) and FirstEnergy Corporation (4 million metric tons carbon dioxide equivalent). These 3 project-level commitments accounted for 44 percent of total reported project-level commitments, or 27 million metric tons carbon dioxide equivalent (Table 34).

Financial Commitments

A total of 40 financial commitments to reduce greenhouse gas emissions in the future were made by 21 companies, 18 of which were electric utilities. The total amount of funds promised was $50.3 million. The single largest reported financial commitment to reduce greenhouse gas emissions was that of Entergy Services, Inc., which committed to spend $25.0 million on a "carbon burnout plant" to make fly ash suitable for sale to cement companies, followed by Noranda Aluminum, Inc. ($5.5 million) and Ameren Corporation ($5.0 million). Minnesota Power, FirstEnergy Corporation, CLE Resources, and Kansas City Power & Light Company each committed to spend $2.0 million, and the City of Klamath Falls reported two individual financial commitments that totaled $2.5 million. These 8 entities reported financial commitments that together accounted for 92 percent of the total financial commitments reported for 2003 (Table 35).

The largest expenditures reported for 2003 were by Entergy Services, Inc. ($2.0 million), Ameren Corporation and Noranda Aluminum, Inc. ($0.5 million each), Dynegy Midwest Generation, Inc. ($0.4 million), and Bountiful City Light & Power, PacifiCorp, and NiSource/NIPSCO ($0.2 million each). These 7 companies combined reported $4.0 million in expenditures to reduce greenhouse gas emissions in 2003, or 98 percent of total reported expenditures (Table 36).

Table 33. Largest Reported Individual Entity-Level Commitments To Reduce Greenhouse Gases by Gas and Type of Reference Case, Data Year 2003

Reporter	Gas	Reference Case	Reported Entity-Level Commitment (Million Metric Tons Carbon Dioxide Equivalent)	Percent of Total Reported Entity-Level Reduction Commitments
Tennessee Valley Authority	CO_2	Modified	22.6	26.3
National Grid USA	CO_2	Basic	15.1	17.6
FPL Group	CO_2	Modified	10.0	11.6
City of Klamath Falls	CO_2	Basic	6.3	7.3
Entergy Services, Inc.	CO_2	Basic	5.0	5.8
Middlesex Generating Company, LLC	CH_4	Modified	4.8	5.6
FirstEnergy Corporation	CO_2	Modified	2.9	3.3
Noranda Aluminum, Inc.	CF_4	Basic	2.8	3.2
Alliant Energy	CO_2	Modified	2.4	2.8
Greater New Bedford Regional Refuse Mgt District	CH_4	Modified	2.1	2.5
The Burlington Northern and Santa Fe Railway Co.	CO_2	Modified	2.1	2.4
Allegheny Energy, Inc.	CO_2	Basic	1.8	2.1
South Carolina Electric & Gas Company	CO_2	Basic	1.8	2.1
Alliant Energy	CO_2	Modified	1.8	2.0
Public Service Company of New Mexico	CO_2	Basic	1.5	1.7
Alliant Energy	CO_2	Modified	1.0	1.1
Total			**83.8**	**97.6**

CO_2 = carbon dioxide. CH_4 = methane. CF_4 = perfluoromethane.
Note: Reporters are not asked to indicate whether future reductions will be direct, indirect, or sequestration.
Source: Energy Information Administration, Form EIA-1605.

Table 34. Largest Reported Individual Project-Level Commitments To Reduce Greenhouse Gas Emissions, Data Year 2003

Reporter	Project Description	Reported Commitment (Million Metric Tons Carbon Dioxide Equivalent)	Percent of Total Reported Project-Level Commitments
Tennessee Valley Authority	Increase in low-emitting capacity	17.6	24.3
Middlesex Generating Company, LLC	Landfill gas control and energy recovery to produce electric power	4.8	6.6
FirstEnergy Corporation	Undertake supply side efficiency improvements	4.4	6.0
City of Klamath Falls-Cogen	As part of KCP's carbon offset proposal to EFSC, $1.5 million in funding was committed to the FRT program to support reforestation of underproducing lands in western Oregon	3.0	4.2
Noranda Aluminum, Inc.	Reduction of PFC emissions through anode effect reduction program in keeping with USEPA goal of 30-60%; 90% reduction in PFC emissions from Lines 1 & 2 and 69% reduction from Line 3; all reductions from 1990 baseline emissions	2.8	3.8
FirstEnergy Corporation	Nuclear generation operation improvement	2.5	3.5
City of Klamath Falls-Cogen	Under the Oregon State Energy Facility Siting Council Site Certificate, the Klamath Cogeneration Project committed to invest $1 million (in 1998 dollars) to extract useful energy (methane) for electricity production from two largely untapped sources	2.5	3.4
Municipal Electric Auth of Georgia (MEAG Power)	Increase nuclear unit availability	2.5	3.4
Alliant Energy	Modified forest management	2.4	3.3
New York Power Authority	NYPA customer energy services programs	2.3	3.1
Tennessee Valley Authority	Fuel switching	2.2	3.0
Greater New Bedford Regional Refuse Mgt District	Landfill gas control and future utilization	2.1	2.9
City of Klamath Falls-Cogen	Cogeneration of steam to displace fossil-fired boilers used at an off-site industrial facility	2.0	2.8
Alliant Energy	Other energy end-use projects/activities (electric)	1.7	2.3
PacifiCorp	Other energy end-use projects/activities	1.3	1.8
Santee Cooper	Cross Unit 2 retrofit	1.1	1.6
Municipal Electric Auth of Georgia (MEAG Power)	Increase nuclear unit capacity	1.0	1.3
Santee Cooper	Upgrade Summer Nuclear Station	0.9	1.3
Allegheny Energy, Inc.	Utilitree: Rio Bravo Carbon Sequestration Project, Belize: 134,400 acres	0.9	1.3
City of Klamath Falls-Cogen	Sales and installation of solar photovoltaic systems in off-grid rural households in India and Sri Lanka	0.8	1.2
Tennessee Valley Authority	Heat rate improvement	0.8	1.1
Tennessee Valley Authority	Other energy end-use projects/activities	0.8	1.1
Total		**60.4**	**83.3**

Source: Energy Information Administration, Form EIA-1605.

Table 35. Largest Reported Individual Entity-Level Financial Commitments To Reduce Greenhouse Gas Emissions, Data Year 2003

Reporter	Industry	Financial Commitment (Dollars)	Voluntary Program Affiliation	Percent of Total Reported Financial Commitments
Entergy Services, Inc.	Electric, Gas, and Sanitary Services	25,000,000	None	49.7
Noranda Aluminum, Inc.	Primary Metals Industries	5,500,000	Voluntary Aluminum Industrial Partnership	10.9
Ameren Corporation (formerly UE and CIPS)	Electric, Gas, and Sanitary Services	5,000,000	Climate Challenge	9.9
Minnesota Power	Electric, Gas, and Sanitary Services	2,000,000	Climate Challenge	4.0
FirstEnergy Corporation	Electric, Gas, and Sanitary Services	2,000,000	Climate Challenge	4.0
Kansas City Power & Light Company	Electric, Gas, and Sanitary Services	2,000,000	Climate Challenge	4.0
CLE Resources	Holding and Other Investment Offices	2,000,000	None	4.0
City of Klamath Falls-Cogen	Services, not elsewhere classified	1,500,000	None	3.0
City of Klamath Falls-Cogen	Services, not elsewhere classified	1,000,000	None	2.0
PacifiCorp	Electric, Gas, and Sanitary Services	610,000	Climate Challenge	1.2
City of Klamath Falls-Cogen	Services, not elsewhere classified	500,000	None	1.0
Dynegy, Inc.	Electric, Gas, and Sanitary Services	450,000	Climate Challenge	0.9
FirstEnergy Corporation	Electric, Gas, and Sanitary Services	400,000	Climate Challenge	0.8
Bountiful City Light & Power	Electric, Gas, and Sanitary Services	298,924	Climate Challenge	0.6
Kansas City Power & Light Company	Electric, Gas, and Sanitary Services	264,000	Climate Challenge	0.5
McMinnville Electric System	Electric, Gas, and Sanitary Services	249,600	Renewable Energy Commercialization	0.5
Conectiv Atlantic Generation (CAG)	Electric, Gas, and Sanitary Services	200,000	Climate Challenge	0.4
NiSource/NIPSCO	Electric, Gas, and Sanitary Services	200,000	Climate Challenge	0.4
FirstEnergy Corporation	Electric, Gas, and Sanitary Services	200,000	Climate Challenge	0.4
TXU	Electric, Gas, and Sanitary Services	105,000	Climate Challenge	0.2
Dynegy, Inc.	Electric, Gas, and Sanitary Services	105,000	Climate Challenge	0.2
TXU	Electric, Gas, and Sanitary Services	105,000	Climate Challenge	0.2
Constellation Energy	Electric, Gas, and Sanitary Services	100,000	Climate Challenge	0.2
City of Klamath Falls-Cogen	Services, not elsewhere classified	100,000	None	0.2
Total		**49,887,524**		**99.2**

Source: Energy Information Administration, Form EIA-1605.

Table 36. Reported Entity-Level Financial Expenditures To Reduce Greenhouse Gas Emissions, Data Year 2003

Reporter	Industry	2002 Financial Expenditure (Dollars)	Voluntary Program Affiliation	Percent of Total Reported Financial Expenditures
Entergy Services, Inc.	Electric, Gas, and Sanitary Services	2,000,000	None	49.1
Ameren Corporation (formerly UE and CIPS)	Electric, Gas, and Sanitary Services	500,000	Climate Change	12.3
Noranda Aluminum, Inc.	Primary Metals Industries	464,665	Voluntary Aluminum Industrial Partnership	11.4
Dynegy, Inc.	Electric, Gas, and Sanitary Services	400,000	Climate Change	9.8
Bountiful City Light & Power	Electric, Gas, and Sanitary Services	230,495	Climate Change	5.7
PacifiCorp	Electric, Gas, and Sanitary Services	218,067	Climate Change	5.4
NiSource/NIPSCO	Electric, Gas, and Sanitary Services	200,000	Climate Change	4.9
TXU	Electric, Gas, and Sanitary Services	20,000	Climate Change	0.5
TXU	Electric, Gas, and Sanitary Services	20,000	Climate Change	0.5
Kansas City Power & Light Company	Electric, Gas, and Sanitary Services	10,000	Climate Change	0.2
Xcel Energy	Electric, Gas, and Sanitary Services	5,000	Climate Change	0.1
NiSource/NIPSCO	Electric, Gas, and Sanitary Services	5,000	Climate Change	0.1
Cleco Corporation	Electric, Gas, and Sanitary Services	1,600	None	*
Total		**4,074,827**		**100.0**

*Less than 0.05 percent.
Source: Energy Information Administration, Form EIA-1605.

8. Project-Level Reporting on Form EIA-1605EZ

The Energy Information Administration (EIA) provides Form EIA-1605EZ to participants in the Voluntary Reporting of Greenhouse Gases Program as a less comprehensive and less detailed alternative to Form EIA-1605. Form EIA-1605EZ (the "short form") allows reporters to provide a brief summary of their emission reduction projects for a single year. The short form is used exclusively for reporting projects undertaken within the geographic boundaries of the United States, its territories and trusts. Because reports submitted on Form EIA-1605EZ do not make a distinction between owning or controlling an emissions source and simply initiating or participating in an emission reduction activity, there is no systematic way to distinguish between direct and indirect emissions reported on this form. Also, because the data reported in support of the emission reduction estimates are limited, it is difficult to perform anything but the most rudimentary arithmetic checks for accuracy.

Who Reported on Form EIA-1605EZ

A total of 34 entities submitted reports on Form EIA-1605EZ for 2003. Of those, 17 were electric power providers, typically, relatively small electric power cooperatives; 8 were alternative energy providers, including one coal mine methane developer, 2 landfill gas-to-energy developers, and 5 firms that combusted biomass to reduce greenhouse gas emissions; and 6 were manufacturing firms—one each from the textile, refining, fabricated metals, and microprocessor industries, and 2 from the chemical industry. One industry association, one individual household, and one forestry firm also filed Form EIA-1605EZ for 2003.

What Was Reported on Form EIA-1605EZ

A total of 219 projects were reported on Form EIA-1605EZ for 2003 (Table 37), down from 253 projects reported on the short form for 2002. The decrease was caused by the absence of reports for 2003 from 3 entities representing 14 projects that were reported for 2002, and by the reporting of fewer projects for 2003 than were reported for 2002 by 4 other entities. (For example, Wisconsin Public Power, Inc., reported 61 projects for 2002 but only 30 for 2003.) Another 10 entities reported more projects for 2003 than they reported in 2002. Of the 219 projects reported for 2003, 76 focused on improvements in energy efficiency, 50 emphasized reductions in emissions from electricity generation, transmission, and distribution, and another 44 involved the capture and combustion of methane. Although reporting on methane capture and combustion has grown steadily since 1994, 7 fewer such projects were reported for 2003 than were reported for 2002. For example, U.S. Energy Biogas Corp reported fewer methane capture and combustion projects for 2003 than it did for 2002.

Together, the 219 projects reported on the short form for 2003 reduced greenhouse gas emissions by 16.4 million metric tons carbon dioxide equivalent (Table 38). Of that total, 11.0 million metric tons resulted from efforts in the electricity generation, transmission, and distribution sector. Another 3.5 million metric tons was attributed to waste treatment and disposal, nearly all of which resulted from the capture and combustion of methane at municipal solid waste landfills (Table 39).

Federal voluntary programs played an important role in those projects reported on Form EIA-1605EZ. Of the projects reported, 120 (55 percent) were associated with some Federal voluntary initiative: 57 were associated with the U.S. Department of Energy's Climate Challenge program, and 41 of the 42 waste treatment and disposal projects reported referenced the U.S. Environmental Protection Agency's Landfill Methane Outreach Program (Table 40).

Table 37. Number of Projects Reported on Form EIA-1605EZ by Reduction Objective and Project Type, Data Years 1994-2003

Reduction Objective and Project Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Reducing Carbon Dioxide Emissions	**88**	**118**	**125**	**138**	**177**	**151**	**148**	**146**	**186**	**160**
Electricity Generation, Transmission, and Distribution	35	44	44	46	59	53	55	50	58	50
Cogeneration and Waste Heat Recovery	0	1	2	2	2	0	0	0	1	0
Energy End Use	44	50	53	60	66	56	61	64	97	76
Transportation and Offroad Vehicles	5	8	11	9	14	11	12	13	9	10
Other Projects	4	15	15	21	36	31	20	19	21	24
Reducing Methane and Nitrous Oxide Emissions	**15**	**21**	**30**	**32**	**41**	**45**	**44**	**47**	**51**	**44**
Waste Treatment and Disposal (Methane)	10	16	21	28	39	42	43	45	49	42
Agriculture (Methane and Nitrous Oxide)	0	0	0	0	0	0	0	0	0	0
Oil and Natural Gas Systems and Coal Mining (Methane)	5	5	9	4	2	3	1	2	2	2
Carbon Sequestration	**20**	**24**	**23**	**30**	**34**	**41**	**35**	**14**	**14**	**14**
Halogenated Substances	**2**	**1**	**1**	**1**	**0**	**0**	**2**	**3**	**2**	**1**
Total	**125**	**164**	**179**	**201**	**252**	**237**	**229**	**210**	**253**	**219**

Note: Table excludes projects submitted in confidential reports.
Source: Energy Information Administration, Form EIA-1605EZ.

Table 38. Emission Reductions Reported on Form EIA-1605EZ by Reduction Objective and Project Type, Data Years 1994-2003
(Million Metric Tons Carbon Dioxide Equivalent)

Reduction Objective and Project Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Reducing Carbon Dioxide Emissions	**3.7**	**5.0**	**4.4**	**6.7**	**16.4**	**9.6**	**9.2**	**10.9**	**12.8**	**12.5**
Electricity Generation, Transmission, and Distribution	2.3	2.9	2.1	3.8	13.0	8.1	7.8	9.7	11.6	11.0
Cogeneration and Waste Heat Recovery	—	*	*	*	*	—	—	—	*	—
Energy End Use	1.4	1.6	1.9	2.4	2.4	0.3	0.4	0.3	0.4	0.4
Transportation and Offroad Vehicles	*	*	*	*	*	*	*	*	*	*
Other Projects	0.1	0.5	0.4	0.5	0.8	1.1	1.0	0.9	0.9	1.0
Reducing Methane and Nitrous Oxide Emissions	**0.6**	**1.2**	**1.3**	**1.8**	**3.0**	**3.2**	**3.1**	**4.0**	**4.3**	**3.9**
Waste Treatment and Disposal (Methane)	0.6	1.1	1.2	1.8	3.0	3.2	3.1	3.8	4.0	3.5
Agriculture (Methane and Nitrous Oxide)	—	—	—	—	—	—	—	—	—	—
Oil and Natural Gas Systems and Coal Mining (Methane)	*	*	*	*	0.1	0.1	*	0.2	0.3	0.3
Carbon Sequestration	*****	*****	*****	*****	*****	**0.1**	*****	*****	*****	*****
Halogenated Substances	**—**	**—**	**—**	**0.1**	**—**	**—**	*****	*****	**0.1**	*****
Total	**4.3**	**6.1**	**5.7**	**8.6**	**19.4**	**12.9**	**12.3**	**14.8**	**17.3**	**16.4**

*Less than 0.05 million metric tons.
— = none reported.
Note: Table excludes data submitted in confidential reports.
Source: Energy Information Administration, Form EIA-1605EZ.

Table 39. Carbon Dioxide and Methane Emission Reductions Reported on Form EIA-1605EZ by Reduction Objective and Project Type, Data Year 2003
(Million Metric Tons Carbon Dioxide Equivalent)

Reduction Objective and Project Type	Carbon Dioxide	Methane
Reducing Carbon Dioxide Emissions	**12.4**	*****
Electricity Generation, Transmission, and Distribution	11.0	—
Cogeneration and Waste Heat Recovery	—	—
Energy End Use	0.4	—
Transportation and Offroad Vehicles	*	—
Other Projects	1.0	*
Reducing Methane and Nitrous Oxide Emissions	*****	**3.8**
Waste Treatment and Disposal (Methane)	*	3.5
Agriculture (Methane and Nitrous Oxide)	—	—
Oil and Natural Gas Systems and Coal Mining (Methane)	*	0.3
Carbon Sequestration	*****	**—**
Halogenated Substances	**—**	**—**
Total	**12.5**	**3.8**

*Less than 0.05 million metric tons.
— = none reported.
Notes: No reductions of nitrous oxide emissions were reported on Form EIA-1605EZ for 2003. Table excludes data submitted in confidential reports.
Source: Energy Information Administration, Form EIA-1605EZ.

Table 40. Number of Projects Reported on Form EIA-1605EZ Associated with Other Federal Voluntary Programs, Data Years 1994-2003

Voluntary Program	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Climate Challenge	106	127	117	124	129	114	111	97	75	57
Landfill Methane Outreach Program	—	—	2	2	34	40	42	44	48	41
Climate Wise Recognition Program	—	3	5	12	25	25	12	1	1	2
ENERGY STAR Programs	5	6	10	5	2	1	2	8	28	11
Energy Efficiency and Renewable Energy Information and Training Programs	—	—	—	—	—	—	—	—	27	—
Green Lights Program	1	3	6	4	6	2	1	1	1	—
Coalbed Methane Outreach Program	—	—	1	1	2	3	—	—	—	—
WasteWise Program	—	—	—	—	—	—	—	2	4	3
Other	4	11	3	9	7	1	3	11	7	6
Total	**116**	**150**	**144**	**157**	**205**	**186**	**171**	**164**	**191**	**120**

— = none reported.
Note: Table excludes data submitted in confidential reports.
Source: Energy Information Administration, Form 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 natural gas: See associated-dissolved natural gas.

Associated-dissolved natural gas: Natural gas that occurs in crude oil reservoirs either as free gas (associated) or as gas in solution with crude oil (dissolved gas).

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

Biofuels: Liquid fuels and blending components produced from biomass (plant) feedstocks, used primarily for transportation.

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

Biomass: Organic nonfossil material of biological origin constituting a renewable energy source.

British thermal unit: The quantity of heat required to raise the temperature of 1 pound of liquid water by 1 degree Fahrenheit at the temperature at which water has its greatest density (approximately 39 degrees Fahrenheit).

Carbon sink: A reservoir that absorbs or takes up released carbon from another part of the carbon cycle. The four sinks, which are regions of the Earth within which carbon behaves in a systematic manner, are the atmosphere, terrestrial biosphere (usually including freshwater systems), oceans, and sediments (including fossil fuels).

Carbon sequestration: The fixation of atmospheric carbon dioxide in a carbon sink through biological or physical processes.

Chlorofluorocarbon (CFC): Any of various compounds consisting of carbon, hydrogen, chlorine, and flourine used as refrigerants. CFCs are now thought to be harmful to the earth's atmosphere.

Cogeneration: The production of electrical energy and another form of useful energy (such as heat or steam) through the sequential use of energy.

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 number that translates units of one measurement system into corresponding values of another measurement system. *Note:* For specific conversion factors, see EIA data products.

Deforestation: The net removal of trees from forested land.

Emissions coefficient: 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 releases of gases to the atmosphere. In the context of global climate change, they consist of radiatively important greenhouse gases (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: Unintended leaks of gas from the processing, transmission, and/or transportation of fossil fuels.

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. See also Project-level reporting.

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.

Forest preservation: Protecting existing forests from harvest and, in some cases, conversion to another land use as a means of mitigating increases in atmospheric carbon.

Fossil fuel: An energy source formed in the Earth's crust from decayed organic material. The common fossil fuels are petroleum, coal, and natural gas.

Fuel cycle: The entire set of sequential processes or stages involved in the utilization 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): An index used to compare the relative radiative forcing of different gases without directly calculating changes in their atmospheric concentrations. GWPs are calculated as the ratio of the radiative forcing that would result from the emission of one kilogram of a greenhouse gas to that from the emission of one kilogram of carbon dioxide over a fixed period of time, such as 100 years.

Gob: A zone of rubble created when the roof of a coal mine collapses behind the mining operations.

Greenhouse effect: The result of water vapor, carbon dioxide, and other atmospheric gases trapping radiant (infrared) energy, thereby keeping the Earth's surface warmer than it would otherwise be. Greenhouse gases within the lower levels of the atmosphere trap infrared radiation that would otherwise escape into space, and subsequent re-radiation of some of the energy back to the Earth maintains higher surface temperatures than would occur if the gases were absent. See Greenhouse gases.

Greenhouse gases: Those gases, such as water vapor, carbon dioxide, nitrous oxide, methane, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride, that are transparent to solar (short-wave) radiation but opaque to long-wave (infrared) radiation, thus preventing long-wave radiant energy from leaving Earth's atmosphere. The net effect is a trapping of absorbed radiation and a tendency to warm the planet's surface.

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: An automated form of underground coal mining characterized by high recovery and extraction rates, feasible only in relatively flat-lying, thick, and uniform coalbeds. A high-powered cutting machine is passed across the exposed face of coal, shearing away broken coal, which is continuously hauled away by a floor-level conveyor system. Longwall mining extracts all machine-minable coal between the floor and ceiling within a contiguous block of coal, known as a panel, leaving no support pillars within the panel area. Panel dimensions vary over time and with mining conditions but currently average about 900 feet wide (coal face width) and more than 8,000 feet long (the minable extent of the panel, measured in direction of mining). Longwall mining is done under movable roof supports that are advanced as the bed is cut. The roof in the mined-out area is allowed to fall as the mining advances.

Manure management: The method used to dispose of the solid waste produced by livestock and poultry.

Modified forest management: The modification of the management regimes of existing forests to increase their carbon capture rates.

Municipal solid waste: Residential solid waste and some nonhazardous commercial, institutional, and industrial wastes.

Ozone: A molecule made up of three atoms of oxygen. Occurs naturally in the stratosphere and provides a protective layer shielding the Earth from harmful ultraviolet radiation. In the troposphere, it is a chemical oxidant, a greenhouse gas, and major component of photochemical smog.

Photosynthesis: The manufacture of carbohydrates and oxygen from carbon dioxide and water in the presence of chlorophyll, with sunlight as the energy source. Carbon is sequestered and oxygen and water are released in the process.

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 or otherwise cleared of trees.

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 mining in which the mine roof is supported mainly by coal pillars left at regular intervals. Rooms are places where the coal is mined; pillars are areas of coal left between the rooms. Room-and-pillar mining is done either by conventional or continuous mining.

Sequestered carbon: Carbon that is removed from the atmosphere and retained in a carbon sink (such as a growing tree) or in soil.

Sequestration: See Carbon sequestration.

Sink: See Carbon sink.

Third-party reporter: An authorized party that submits a report on behalf of two or more entities that 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.

Urban forestry: The planting of trees individually or in small groups in urban or suburban settings.

Vhar metering: Phase shifters on watt-hour meters that measure reactive volt ampere hours or varhours.

Watt (W): The unit of electrical power equal to one ampere under a pressure of one volt. A watt is equal to 1/746 horsepower.

Appendix A

The Voluntary Reporting Program: A Developmental Overview

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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 H.W. 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."[70]

As the Framework Convention was being negotiated, 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 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
- 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 1605(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 emissions and emission reductions of greenhouse gases. EIA was then required to develop a reporting

[70]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), web site www.unfcc.de.

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.[71] 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

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, 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, 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, EIA released the forms to the public in July 1995.

[71] 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), web site 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.[72] 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, *U.S. Climate Action Report 2002*, was released in May 2002.[73]

As President Clinton'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.[74]

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 specific actions (projects) 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 EIA to develop a mechanism for collecting participants' commitments to reduce future emissions.

EIA developed two alternative reporting instruments: the long form (Form EIA-1605), which comprises four schedules (described in the box on page 82), 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 82 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 tenth reporting cycle of the Voluntary Reporting Program (2003 data year), 126 reporters provided entity-level reports, and 178 reporters provided project-level reports. Sixty-nine reporters filed both entity-level and project-level reports, while 57 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

[72]President William J. Clinton and Vice President Albert Gore, Jr., *The Climate Change Action Plan* (Washington, DC, October 1993), web site www.gcrio.org/USCCAP/toc.html.

[73]U.S. Department of State, *U.S. Climate Action Report 2002* (Washington DC, May 2002), web site http://unfccc.int/resource/docs/natc/usnc3.pdf.

[74]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 EIA to receive reports of "achieved reductions," meaning the results of actions already taken. Further, some voluntary program participants may have experienced difficulty in gathering together the necessary information to file their reports.

questions that are applicable to all ten sections, as well as other questions specific to the particular type of project, to help reporters and 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 some 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. For more discussion, see the text box on page 84.

Schedule IV was added to assist participants in DOE- and EPA-sponsored voluntary programs in recording their commitments to reduce future emissions. Eighty-nine firms reported on Schedule IV during the 2003 data reporting cycle. Twenty-seven (30 percent) of the 2003 Schedule IV reporters were electric utilities participating in DOE's Climate Challenge program.

Fifty-one (57 percent) of the reporting entities that filed Schedule IV information for the 2003 reporting cycle were classified under Standard Industrial Classification (SIC) codes other than SIC 49 (Electric, Gas, and Sanitary Services). They included: the Oil Seeds Division of Cargill, Inc. and Miller Brewing Company's Eden, NC, Facility (SIC 20, Food and Kindred Products); Highland Industries, Inc., Valdese Manufacturing Company, two plants of Hanes Dye and Finishing, four subsidiaries of M.J. Soffe Company, and six subsidiaries of National Spinning, Inc. (SIC 22, Textile Mill Products or SIC 23, Apparel and Other Textile Products); Ajinomoto Aminoscience, LLC, Allergan, Inc., Baxter Healthcare,

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.

Inc., the Dow Chemical Company, and Mallinckrodt, Inc. (SIC 28, Chemicals and Allied Products); BP America and Sunoco, Inc. (SIC 29, Petroleum Refining and Other Related Industries); Azdel, Inc and Pak-Lite, Inc. - Mebane Plant (SIC 30, Rubber and Miscellaneous Plastic Products); Arizona Portland Cement Co. and California Portland Cement Co.'s Colton and Mojave Plants (SIC 32, Stone, Clay, Glass, and Concrete Products); Alcan Primary Metals Group, eight COMMSCOPE plants, Connectivity Solutions Manufacturing Inc, and Noranda Aluminum, Inc. (SIC 33, Primary Metals Industries); the Vehicle Controls Business Unit of Eaton Corporation, IBM, Lucent Technologies, and Penn Compression Moulding, Inc. (SIC 36, Electronic and Other Electrical Equipment); International Truck and Engine Corporation, Sikorsky Aircraft Corporation, and Toyota Motor North America, Inc. (SIC 37, Transportation Equipment); Danaher Controls (SIC 38, Instruments and Related Products); and The Burlington Northern and Santa Fe Railway Co (SIC 40, Railroad Transportation).

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.[75] 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 current 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.

These features make the 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?

[75]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 www.eia.doe.gov/neic/speeches/hrtest3-30-00/testimony3.htm.

Double Reporting of Emission Reductions

Double reporting of emission reductions to the Voluntary Reporting of Greenhouse Gases Program can occur, because the ownership rights for such reductions may be claimed by more than one party. For example, both the manufacturers and owners of more efficient automobiles can claim emission reductions resulting from the operation of those vehicles (see page 85, "Who Owns the Reduction?"). Because the purpose of the Voluntary Reporting Program is to encourage reporting, EIA does not prohibit double reporting; however, EIA does endeavor to identify instances where double reporting may occur.

Reporters are required to distinguish between direct and indirect emissions and emission reductions on Form EIA-1605. Direct emissions are releases of greenhouse gases from sources owned (wholly or in part) or leased by the reporting entity. Indirect emissions are emissions from sources not owned or leased by the reporter that occur as a result of the reporter's activities. The most important indirect emissions are those associated with the consumption of electricity purchased from an electricity generator. Because the distinction between direct and indirect is unambiguous, direct emission reductions reported to the Program should include no double reporting.

The reporting forms do not currently allow the reporter to indicate whether carbon sequestered through forestry projects is direct (occurring on land owned by the reporter) or indirect (occurring on land owned by others). Also, Form EIA-1605EZ does not distinguish between direct and indirect reductions. EIA intends to address these issues in future modifications of its reporting forms. To put this issue in perspective, of total project-level emission reductions for 2003, 72 percent (268 million metric tons carbon dioxide equivalent) are reported as direct emission reductions, 22 percent (81 million metric tons carbon dioxide equivalent) are reported as indirect emission reductions, and 6 percent (24 million metric tons carbon dioxide equivalent) are unspecified, reported as sequestration on the long form or as reductions or sequestration on the short form.

A second mechanism to identify possible double reporting is to require reporters using the long form to identify any other entity or entities that participate in a project reported to the Program. This captures situations where more than one entity is responsible for creating the emission reduction, such as landfill gas projects where the landfill owner, the owner of the power plant that uses the landfill gas, and the purchaser of the resulting power all can, and often do, report all the effects of the project. In the case of the landfill operator, for example, the methane captured at the landfill would be reported as a direct emission reduction, and the possible reduction in central-station fossil fuel power generation would be reported as an indirect emission. In contrast, the operator of the power plant could claim the emission reduction at the power plant as a direct reduction and the reduction in methane emissions at the landfill as an indirect reduction. In general, EIA believes that instances of double reporting of direct emissions are very rare if not nonexistent; however, double counting can be an issue for indirect reductions, because their ownership is not as unambiguous.

Because of the concern that double reporting could result in double counting of emission reductions, EIA has discontinued reporting the direct, indirect, and unspecified reductions reported to the Program, in order to avoid giving the impression that the totals represent the cumulative effects of U.S.-sponsored projects on worldwide emissions of greenhouse gases. Emissions, emission reductions, and sequestration are disaggregated into the following categories: direct, indirect, and unspecified reductions and sequestration. Unspecified reductions and sequestration include sequestration reported on Form EIA-1605 and reductions and sequestration reported on Form EIA-1605EZ. As in the past, EIA does not combine reductions reported at the project level with those reported at the entity level, because the reported reductions represent the results of different approaches to estimating changes in greenhouse gas emissions.

EIA does not verify greenhouse gas emission reductions reported by participants, nor does it grant a property right associated with the claimed reductions. EIA does, however, conduct a four-step desk review to see that the data submissions are comprehensive, arithmetically accurate, internally consistent, plausible, and consistent with Program guidelines. The four steps of the desk review are (1) an analyst's review, (2) electronic edit checks incorporated into the reporting software to screen for errors, (3) manual checks of the methodologies employed, and (4) follow up with reporters as needed to clarify any other issues. The Program requires the participants themselves to certify that the information reported is accurate to the best of their knowledge and belief; thus, the reporters are ultimately responsible for the accuracy of the reports submitted to the Voluntary Reporting Program.

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 for the entire entity.
- **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 would have happened 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 using Form EIA-1605 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 dictate what information should be included in 1605(b) reports and how estimates of greenhouse gas emissions and reductions and carbon sequestration should be calculated. 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.

Appendix B

Summary of Reports Received

Table B1. Reporting Enitities, Data Year 2003

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 Providers	1605	2	No	No
Abe Krasne Home Furnishings, Inc.	Services and Retail	1605	0	Yes	No
Advanced Micro Devices, Inc.	Industrial	1605EZ	7	No	No
AES Hawaii, Inc.	Electric Providers	1605	1	Yes	No
AES Shady Point, LLC	Electric Providers	1605	1	Yes	No
AES Thames, LLC	Electric Providers	1605	1	Yes	Yes
AES Warrior Run, LLC	Electric Providers	1605	2	Yes	No
Ajinomoto Aminoscience LLC	Industrial	1605	0	Yes	Yes
Alabama Biomass Partners, Ltd	Alternative Energy	1605EZ	1	No	No
Alcan Primary Products Corporation, Sebree Works	Industrial	1605	1	Yes	Yes
Allegheny Energy, Inc.	Electric Providers	1605	49	Yes	Yes
Allergan, Inc.	Industrial	1605	46	Yes	Yes
Alliant Energy	Electric Providers	1605	45	Yes	Yes
Ameren Corporation (formerly UE, CIPS, and CILCO)	Electric Providers	1605	34	No	Yes
American Electric Power, Inc.	Electric Providers	1605	100	No	No
Anoka Municipal Utility	Electric Providers	1605EZ	4	No	No
Arizona Electric Power Cooperative, Inc.	Electric Providers	1605EZ	6	No	No
Arizona Portland Cement Co.	Industrial	1605	13	Yes	Yes
Arizona Public Service Company	Electric Providers	1605	0	Yes	Yes
Asheville Landfill Gas, LLC	Alternative Energy	1605	1	No	No
AT&T	Industrial	1605	4	No	No
Azdel, Inc	Industrial	1605	0	Yes	Yes
BARC Electric Cooperative	Electric Providers	1605	2	No	No
Baxter Healthcare Inc.	Industrial	1605	0	Yes	Yes
Berkshire Power LLC	Electric Providers	1605	1	Yes	No
Biomass Partners, LP	Alternative Energy	1605EZ	1	No	No
Blue Source, LLC	Industrial	1605	9	Yes	No
BMW US Holding Corp.	Industrial	1605	1	Yes	No
Bountiful City Light & Power	Electric Providers	1605	7	Yes	Yes
BP America	Industrial	1605	12	Yes	Yes
Branson Ultrasonics Corporation	Industrial	1605	1	No	No
Bristol-Myers Squibb Company	Industrial	1605	0	Yes	No
Burlington County Board of Chosen Freeholders	Services and Retail	1605	3	No	No
California Portland Cement Co. - Colton Plant	Industrial	1605	8	Yes	Yes
California Portland Cement Co. - Mojave Plant	Industrial	1605	6	Yes	Yes
Cargill, Inc. - Oil Seeds Division	Industrial	1605	0	Yes	Yes
Carolina Power & Light Company	Electric Providers	1605	1	No	No
Catawba Landfill Gas, LLC	Alternative Energy	1605	1	No	No
CDX Gas, LLC	Alternative Energy	1605	2	No	No
ChevronTexaco Corporation	Industrial	1605EZ	1	No	No
Choptank Electric Cooperative	Electric Providers	1605	1	No	No
Cinergy Corp.	Electric Providers	1605	47	Yes	No
City of Austin Electric Utility (Austin Energy)	Electric Providers	1605EZ	9	No	No
City of Edmond, Oklahoma, Electric Department	Electric Providers	1605EZ	5	No	No
City of Klamath Falls- Cogen	Electric Providers	1605	4	No	Yes
City of Palo Alto Utilities	Electric Providers	1605EZ	4	No	No
City of Springfield	Services and Retail	1605	1	No	No
City Public Service	Electric Providers	1605	9	No	No
City Utilities of Springfield	Electric Providers	1605	6	No	No
CLE Resources	Industrial	1605	10	No	Yes
Cleco Corporation	Electric Providers	1605	12	No	Yes
CMV Joint Venture	Alternative Energy	1605	2	No	No
Common Purpose Institute	Agricultural	1605EZ	1	No	No
CommonWealth Bethlehem Energy, LLC	Alternative Energy	1605	1	Yes	No
COMMSCOPE CATAWBA PLANT	Industrial	1605	0	Yes	Yes
COMMSCOPE CLAREMONT PLANT	Industrial	1605	0	Yes	Yes
COMMSCOPE CONOVER REEL RECYCLING	Industrial	1605	0	Yes	Yes
COMMSCOPE Headquarters- Hickory	Industrial	1605	0	Yes	Yes
COMMSCOPE NEWTON PLANT	Industrial	1605	0	Yes	Yes
COMMSCOPE SCOTTSBORO PLANT	Industrial	1605	0	Yes	Yes
COMMSCOPE SPARKS PLANT	Industrial	1605	0	Yes	Yes
COMMSCOPE STATESVILLE PLANT	Industrial	1605	0	Yes	Yes

Table B1. Reporting Enitities, Data Year 2003 (Continued)

Reporter Name	Sector	Type of Form	Number of Projects Reported (Schedule II)	Entity-Wide Report (Schedule III)	Commitments (Schedule IV)
Community Electric Cooperative	Electric Providers	1605	1	No	No
Conectiv Atlantic Generation (CAG)	Electric Providers	1605	8	No	Yes
Conectiv Delmarva Generation	Electric Providers	1605	22	No	No
CONNECTIVITY SOLUTONS MANUFACTURING Inc.	Industrial	1605	0	Yes	Yes
Consol Coal Group	Industrial	1605	0	Yes	No
Consolidated Edison Company of New York, Inc.	Electric Providers	1605	5	Yes	Yes
Constellation Energy	Electric Providers	1605	28	Yes	Yes
County Sanitation Districts of Los Angeles County	Alternative Energy	1605	2	No	No
DADS Landfill	Alternative Energy	1605	1	No	No
DaimlerChrysler Corporation	Industrial	1605	2	Yes	No
Dakota Gasification Company	Industrial	1605	W	W	W
Danaher Controls	Industrial	1605	0	Yes	Yes
DeBourgh Manufacturing Company	Industrial	1605EZ	4	No	No
Delaware Electric Cooperative	Electric Providers	1605	1	No	No
Delaware Solid Waste Authority	Alternative Energy	1605	4	No	No
Dominion Generation	Electric Providers	1605	2	No	No
DTE Energy/ Detroit Edison	Electric Providers	1605	47	Yes	No
Duke Energy Corporation	Electric Providers	1605	28	Yes	No
Dynegy, Inc.	Electric Providers	1605	36	Yes	Yes
Eaton Corporation - Vehicle Controls Business Unit	Industrial	1605	0	Yes	Yes
El Paso Production Company	Alternative Energy	1605	1	No	No
Energy Developments, Inc.	Alternative Energy	1605	8	Yes	No
Energy Management Partners, LP	Alternative Energy	1605EZ	1	No	No
Entergy Services, Inc.	Electric Providers	1605	82	Yes	Yes
Environmental Synergy, Inc.	Agricultural	1605	2	No	No
Exelon Corporation	Electric Providers	1605	42	No	No
FirstEnergy Corporation	Electric Providers	1605	56	Yes	Yes
Fisher Scientific Company L.L.C	Industrial	1605	0	Yes	No
Florida Power Corporation	Electric Providers	1605	0	Yes	No
Ford Motor Company	Industrial	1605	3	Yes	No
FPL Group	Electric Providers	1605	32	Yes	Yes
Gas Recovery Systems	Alternative Energy	1605	29	Yes	No
General Electric Company	Industrial	1605	0	Yes	No
General Motors Corporation	Industrial	1605	4	Yes	No
Golden Valley Electric Association, Inc	Electric Providers	1605EZ	3	No	No
Granger Electric Company	Alternative Energy	1605	7	No	No
Granger Energy, LLC	Alternative Energy	1605	2	No	No
Greater New Bedford Regional Refuse Mgt District	Alternative Energy	1605	1	Yes	Yes
Green Mountain Energy Company	Electric Providers	1605	3	Yes	No
Greene Energy, LLC	Alternative Energy	1605EZ	1	No	No
Hanes Dye and Finishing, Butner Plant	Industrial	1605	0	Yes	Yes
Hanes Dye and Finishing, Winston-Salem Plant	Industrial	1605	0	Yes	No
Hawaiian Electric Company, Inc.	Electric Providers	1605	16	Yes	No
Highland Industries, Inc.Kernersville Finishing Pt	Industrial	1605	0	Yes	Yes
Hollomon Family	Other (Households)	1605EZ	1	No	No
IBM	Industrial	1605	0	Yes	Yes
Integrated Waste Services Association	Alternative Energy	1605	1	Yes	No
International Truck and Engine Corporation	Industrial	1605	0	Yes	Yes
Iredell Landfill Gas, LLC	Alternative Energy	1605	1	No	No
JEA	Electric Providers	1605EZ	6	No	No
Jim Walter Resources, Inc.	Alternative Energy	1605	4	Yes	No
Johnson & Johnson	Industrial	1605	14	Yes	No
Kansas City Power & Light Company	Electric Providers	1605	19	Yes	Yes
KeySpan Energy Corporation	Electric Providers	1605	0	Yes	No
Klickitat County Public Utility District No. 1	Electric Providers	1605	1	No	No
Landfill Energy Systems	Alternative Energy	1605	14	No	No
Lehigh Cement Co. (fmrly Lehigh Portland Cement Co	Industrial	1605	9	Yes	No
Lehigh Cement Co. (formerly Calaveras Cement Co.)	Industrial	1605	2	Yes	No
LFG Energy, Inc.	Alternative Energy	1605	2	No	No
Los Angeles Department of Water and Power	Electric Providers	1605	27	Yes	No
Lower Colorado River Authority	Electric Providers	1605	6	Yes	Yes
Lucent Technologies Inc.	Industrial	1605	26	Yes	Yes
Lynchburg Gas Producers, LLC	Alternative Energy	1605	1	No	No
M. J. SOFFE COMPANY - Maxton	Industrial	1605	0	Yes	Yes
M. J. SOFFE COMPANY - Bladenboro	Industrial	1605	0	Yes	Yes
M. J. SOFFE COMPANY Fayettville	Industrial	1605	0	Yes	Yes
M. J. SOFFE COMPANY Rowland	Industrial	1605	0	Yes	Yes

Table B1. Reporting Enitities, Data Year 2003 (Continued)

Reporter Name	Sector	Type of Form	Number of Projects Reported (Schedule II)	Entity-Wide Report (Schedule III)	Commitments (Schedule IV)
Mallinckrodt, Inc.	Industrial	1605	0	Yes	Yes
Maple Springs Laundry	Services and Retail	1605	0	Yes	No
McMinnville Electric System	Electric Providers	1605	1	Yes	Yes
McNeil Generating Station	Electric Providers	1605	0	Yes	No
Mead Johnson Nutls./Bristol-Myers Squibb	Industrial	1605	2	No	No
Mecklenburg Electric Cooperative	Electric Providers	1605	1	No	No
Michigan CAT	Industrial	1605	2	No	No
Middlesex Generating Company, LLC	Alternative Energy	1605	3	Yes	Yes
Miller Brewing Company	Industrial	1605	0	Yes	Yes
Minnesota Power	Electric Providers	1605	10	No	Yes
Minnesota Resource Recovery Association (MRRA)	Other (Households)	1605EZ	3	No	No
Mitsubishi Motors North America, Inc.	Industrial	1605	0	Yes	No
Model City Energy, LLC	Alternative Energy	1605	1	No	No
Montauk Energy Capital	Alternative Energy	1605	27	No	No
Municipal Electric Auth of Georgia (MEAG Power)	Electric Providers	1605	1	Yes	Yes
Mystic Development, LLC	Alternative Energy	1605	1	Yes	No
Nashville Electric Service	Electric Providers	1605EZ	3	No	No
National By-Products Inc	Industrial	1605	1	No	No
National Grid USA	Electric Providers	1605	23	Yes	Yes
National Spinning Co. Alamance Yarn Plant	Industrial	1605	0	Yes	Yes
National Spinning Co. Alamance Dye Plant	Industrial	1605	0	Yes	Yes
National Spinning Co., Inc. Washington	Industrial	1605	0	Yes	Yes
National Spinning Inc. Beulaville	Industrial	1605	0	Yes	Yes
National Spinning Inc. Warsaw	Industrial	1605	0	Yes	Yes
National Spinning Inc. Whiteville	Industrial	1605	0	Yes	Yes
Natural Power, Inc.	Alternative Energy	1605	1	No	No
NC Muni Landfill Gas Partners, LLC	Alternative Energy	1605	1	No	No
Nebraska Public Power District	Electric Providers	1605EZ	13	No	No
NEGT	Electric Providers	1605	24	Yes	No
NEO Corporation	Alternative Energy	1605	34	No	No
New Jersey Meadowlands Commission	Alternative Energy	1605	5	Yes	No
New York Power Authority	Electric Providers	1605	0	Yes	Yes
Newton Landfill Gas, LLC	Alternative Energy	1605	1	No	No
NiSource/NIPSCO	Electric Providers	1605	41	Yes	Yes
Nissan North America, Inc.	Industrial	1605	0	Yes	No
Noranda Aluminum Inc.	Industrial	1605	1	No	Yes
North Carolina Biomass Partners	Alternative Energy	1605EZ	1	No	No
North Carolina Electric Membership Corporation	Electric Providers	1605EZ	1	No	No
Northern Neck Electric Cooperative	Electric Providers	1605	2	No	No
Northern Virginia Electric Cooperative	Electric Providers	1605	2	No	No
Ocean County Landfill Corporation	Alternative Energy	1605	2	No	No
Old Dominion Electric Cooperative	Electric Providers	1605	2	No	No
Omaha Public Power District	Electric Providers	1605EZ	10	No	No
Orlando Utilities Commission (OUC)	Alternative Energy	1605EZ	1	No	No
PacifiCorp	Electric Providers	1605	44	Yes	Yes
Pak-Lite, Inc. - Mebane Plant	Industrial	1605	0	Yes	Yes
Palmer Capital Corporation	Alternative Energy	1605	10	Yes	No
Peabody Energy	Industrial	1605	2	Yes	No
PEI Power Corp	Alternative Energy	1605	1	Yes	No
Penn Compression Moulding, Inc.	Industrial	1605	0	Yes	Yes
Pfizer Pharmaceuticals LLC - Arecibo Site	Industrial	1605EZ	9	No	No
PG&E Corporation	Electric Providers	1605	7	Yes	No
Pitt Landfill Gas, LLC	Alternative Energy	1605	1	No	No
Platte River Power Authority & 4 Owner Cities	Electric Providers	1605	28	No	No
Polar Refrigerant Technology, LLC	Industrial	1605	1	No	No
Portland General Electric Co.	Electric Providers	1605	31	Yes	No
Prince George Electric Cooperative	Electric Providers	1605	1	No	No
Public Service Company of New Mexico	Electric Providers	1605	5	No	Yes
Public Service Enterprise Group	Electric Providers	1605	17	Yes	Yes
Public Utility District No. 1 of Snohomish County	Electric Providers	1605	9	No	No
Rappahannock Electric Cooperative	Electric Providers	1605	3	No	No
Republic Metals Corporation	Industrial	1605	0	Yes	No
Rochester Gas and Electric Corporation	Electric Providers	1605	0	Yes	No
Rolls-Royce Corporation	Industrial	1605	4	Yes	No
Sacramento Municipal Utility District	Electric Providers	1605	7	Yes	No
Salt River Project	Electric Providers	1605EZ	22	No	No
Santee Cooper	Electric Providers	1605	12	Yes	Yes

Table B1. Reporting Enitities, Data Year 2003 (Continued)

Reporter Name	Sector	Type of Form	Number of Projects Reported (Schedule II)	Entity-Wide Report (Schedule III)	Commitments (Schedule IV)
Seattle City Light	Electric Providers	1605	20	Yes	No
SeaWest WindPower, Inc.	Alternative Energy	1605	10	No	No
Seminole Electric Cooperative, Inc.	Electric Providers	1605EZ	5	No	No
Seneca Energy II, LLC	Alternative Energy	1605	2	No	No
Shenandoah Valley Electric Cooperative	Electric Providers	1605	3	No	No
Sikorsky Aircraft Corporation	Industrial	1605	5	Yes	No
South Carolina Electric & Gas Company	Electric Providers	1605	19	No	Yes
Southeastern Biomass Partners, LP	Alternative Energy	1605EZ	1	No	No
Southern California Edison Co.	Electric Providers	1605	19	No	No
Southern Company	Electric Providers	1605	35	Yes	No
Southside Electric Cooperative	Electric Providers	1605	1	No	No
Springs Industries, Inc.	Industrial	1605EZ	6	No	No
State Farm Mutual Automobile Insurance Co.	Services and Retail	1605	0	Yes	No
Steuben Rural Electric Co-op	Electric Providers	1605EZ	12	No	No
Sunoco, Inc.	Industrial	1605	0	Yes	Yes
Tacoma Power	Electric Providers	1605EZ	6	No	No
Tampa Electric Company	Electric Providers	1605	11	Yes	Yes
Tennessee Valley Authority	Electric Providers	1605	27	Yes	Yes
The Burlington Northern and Santa Fe Railway Co	Services and Retail	1605	1	Yes	Yes
The Dow Chemical Company	Industrial	1605	0	Yes	No
The Empire District Electric Co.	Electric Providers	1605	10	No	No
The Estee Lauder Companies	Industrial	1605	26	No	No
Toyota Motor North America, Inc.	Industrial	1605	0	Yes	No
TS Designs, Inc.	Industrial	1605	0	Yes	No
Tucson Electric Power Company	Electric Providers	1605	21	Yes	Yes
TXU	Electric Providers	1605	26	No	Yes
U.S. Department of Energy - Energy Management	Services and Retail	1605	0	Yes	No
US Energy Biogas Corp.	Alternative Energy	1605EZ	36	No	No
Valdese Manufacturing Company	Industrial	1605	0	Yes	Yes
Vermont Public Power Supply Authority	Electric Providers	1605	13	No	No
Waste Management, Inc.	Alternative Energy	1605	218	Yes	No
Waverly Light & Power Company	Electric Providers	1605	9	Yes	Yes
We Energies	Electric Providers	1605	25	No	No
Wisconsin Public Power Inc.	Electric Providers	1605EZ	30	No	No
Wyeth Vaccines	Industrial	1605EZ	2	No	No
Xcel Energy	Electric Providers	1605	46	No	Yes
Xenon Specialty Gas	Industrial	1605	1	No	No
Zeeland Board of Public Works	Electric Providers	1605EZ	3	No	No

Notes: W indicates that a report is confidential and its data is withheld from publication.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ

Table B2. Project-Level Reductions and Sequestration Reported, Data Year 2003

(Metric Tons Carbon Dioxide Equivalent)

Reporter and Reduction Type	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
A&N Electric Cooperative													
Indirect		1	85	621	699	3,129	3,411	4,120	3,850	5,988	4,211	6,193	4,890
Advanced Micro Devices, Inc.													
Unspecified (EZ)													1,145
AES Hawaii, Inc.													
Sequestration		1,540,000	1,540,000	1,540,000	1,540,000	1,540,000	1,540,000	1,540,000	1,540,000	1,540,000	1,540,000	1,540,000	2,000,000
AES Shady Point, LLC													
Sequestration			4,150,000	4,150,000	4,150,000	4,150,000	4,150,000	4,150,000	4,150,000	4,150,000	4,150,000	4,150,000	4,150,000
AES Thames, LLC													
Sequestration	550,000	70,000	290,000	370,000	480,000	440,000	440,000	590,000	530,000	370,000	410,000	410,000	410,000
AES Warrior Run, LLC													
Direct									1,091	38,702	44,227	41,841	41,899
AES Warrior Run, LLC													
Indirect						0	23,000	23,000	23,000	23,000	23,000	23,000	
Alabama Biomass Partners, Ltd													
Unspecified (EZ)													71,785
Alcan Primary Products Corporation, Sebree Works													
Direct	-259	37,648	37,889	105,635	126,282	148,239	95,478	222,271	300,462	277,736	441,219	454,643	384,569
Allegheny Energy, Inc.													
Direct	158,688	240,497	330,730	526,288	812,086	963,417	906,110	1,142,380	1,207,142	1,360,860	1,359,361	1,457,386	1,549,538
Indirect	11,209	29,542	37,098	39,192	70,262	68,309	98,365	162,706	261,557	244,824	226,899	201,959	181,286
Sequestration					4,212	4,212	5,000	5,007	5,358	1,395	1,726	1,431	739
Allergan, Inc.													
Direct	0	0	0	0	0	0	0	552	552	552	552	875	927
Indirect	0	0	0	0	116	116	501	2,922	3,665	5,152	8,264	12,377	13,529
Alliant Energy													
Direct	49,745	82,568	142,274	232,179	317,865	454,535	554,406	794,241	1,112,820	1,662,105	1,761,645	2,105,972	2,596,442
Indirect	17,835	27,971	41,300	59,367	73,045	371,566	379,493	393,118	386,945	458,602	789,409	794,352	808,999
Sequestration	17	28,203	28,257	28,327	29,617	29,715	30,227	30,150	30,785	30,491	30,691	30,855	30,990
Ameren Corporation (formerly UE, CIPS, and CILCO)													
Direct	1,932,744	117,298	433,327	2,042,924	363,408	1,029,094	1,111,638	530,338	784,760	2,161,108	605,808	626,931	1,990,104
Indirect	921	1,166	2,643	5,651	15,949	34,833	67,604	85,680	118,287	119,794	317,409	338,340	261,020
Sequestration					1,203	1,203	1,130	1,760	1,638	343	390	300	155
American Electric Power, Inc.													
Direct	4,161,586	-3,217,946	5,599,899	27,672	4,845,064	7,336,944	2,226,657	-7,509,722	-7,530,933	-2,655,604	7,137,574	7,126,504	6,287,996
Indirect	223,425	295,977	346,900	612,498	586,185	558,641	664,270	663,011	735,762	710,040	684,600	647,846	623,652
Sequestration	3,616	4,948	6,858	10,201	27,301	50,226	137,732	184,670	192,835	209,023	221,893	242,330	214,191
Anoka Municipal Utility													
Unspecified (EZ)													98
Arizona Electric Power Cooperative, Inc.													
Unspecified (EZ)													110,067
Arizona Portland Cement Co.													
Direct		21,474	34,332	28,673	50,013	33,034	54,636	61,389	70,151	42,575	47,307	48,081	54,048
Indirect		2,483	3,681	4,507	5,901	8,014	8,403	7,057	11,644	-365	-5,507	-3,436	-6,805
Sequestration											1	2	3
Asheville Landfill Gas, LLC													
Direct							29,013	88,540	89,103	91,129	104,728	80,407	57,001
Indirect							0	81	58	124	128	63	83
AT&T													
Direct												5,534	5,715
Indirect							52,617	47,174	36,287	44,452	63,503	127,094	317,821
BARC Electric Cooperative													
Indirect	392	668	1,536	898	1,392	1,178	2,430	3,386	1,798	2,445	3,216	1,768	3,231
Berkshire Power LLC													
Direct										-276,914	-247,835	-533,682	-476,501
Indirect										381,370	418,510	930,870	730,680
Biomass Partners, LP													
Unspecified (EZ)													94,086
Blue Source, LLC													
Direct										6,692,363	7,602,808	7,528,124	8,650,952
Indirect										2,465	47,350	152,024	254,948
BMW US Holding Corp.													
Direct													38,501
Bountiful City Light & Power													
Direct	28	1,338	10,310	6,426	11,851	14,618	16,786	19,226	15,556	11,627	9,577	6,423	6,274
Sequestration					0	0	1	1	1	2	2	3	16
BP America													
Direct	0	353,408	567,061	771,054	1,060,764	1,355,010	1,748,993	1,986,805	2,728,387	3,062,630	3,021,586	3,588,823	3,993,665
Indirect										304	608	1,216	1,216
Sequestration							102,980	102,980	102,980	102,980	102,980	102,980	102,980
Branson Ultrasonics Corporation													
Indirect						130	196	391	65	40	163	241	42
Burlington County Board of Chosen Freeholders													
Direct	9,723	11,360	11,957	12,264	12,141	18,480	85,271	288,856	204,276	198,292	201,066	202,987	357,589
Indirect	25,447	32,674	36,922	40,930	43,693	49,424	55,394	62,757	68,095	44,933	53,357	61,574	66,020
California Portland Cement Co. - Colton Plant													
Direct	26,183	6,801	63,738	-11,818	-4,053	53,589	40,322	42,328	18,868	65,492	96,685	80,832	74,717
Indirect	938	1,296	3,571	2,773	3,457	4,959	5,405	3,823	4,040	4,450	9,301	12,217	14,036
California Portland Cement Co. - Mojave Plant													
Direct	11,929	79,005	44,691	97,384	51,690	32,403	47,533	66,489	37,557	36,184	38,671	33,375	122,808
Indirect	1,341	7,422	7,333	10,620	8,724	8,559	7,209	8,429	7,383	6,801	11,645	12,129	16,982
Carolina Power & Light Company													
Direct				3,493,951	4,906,992	5,182,056	5,595,117	6,974,302	7,403,076	8,163,018	6,242,285	8,435,784	9,446,801
Catawba Landfill Gas, LLC													
Direct								35,273	85,349	93,539	107,206	85,673	101,217
Indirect										4,365	5,003	3,998	4,724

Table B2. Project-Level Reductions and Sequestration Reported, Data Year 2003 (Continued)

(Metric Tons Carbon Dioxide Equivalent)

Reporter and Reduction Type	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
CDX Gas, LLC													
Direct								459,701	377,469	814,859	1,547,494	2,202,911	2,076,092
ChevronTexaco Corporation													
Unspecified (EZ)													2,449
Choptank Electric Cooperative													
Indirect	9,752	14,820	2,233	29,061	25,420	23,886	29,005	19,750	19,734	10,667	29,823	16,538	24,158
Cinergy Corp.													
Direct	120	95,407	194,297	399,925	1,126,676	1,273,545	1,348,461	1,379,486	1,423,220	1,476,482	1,391,400	1,474,700	1,593,384
Indirect	63,888	519,314	467,617	481,776	579,316	767,325	763,477	801,712	295,775	300,050	294,732	348,907	388,433
Sequestration	2	24	284	511	169,479	169,794	170,722	170,879	173,862	30,628	42,167	35,498	19,645
City of Austin Electric Utility (Austin Energy)													
Unspecified (EZ)													954,440
City of Edmond, Oklahoma, Electric Department													
Unspecified (EZ)													4,085
City of Klamath Falls- Cogen													
Direct											-726,746	-2,104,283	-2,328,328
Indirect										282	745,049	2,155,805	2,385,835
Sequestration										128	275	1,030	1,373
City of Palo Alto Utilities													
Unspecified (EZ)													5,314
City of Springfield													
Direct													48,266
City Public Service													
Direct	2,701,813	3,378,803	209,559	2,583,896	3,798,320	3,650,658	3,760,563	3,883,746	3,700,037	3,430,618	3,750,841	3,972,432	3,498,118
Indirect		80,395	112,008	123,315	130,294	162,441	146,159	147,408	156,211	157,893	161,842	150,535	164,302
Sequestration			0	0	0	1	1	2	4	6	9	11	13
City Utilities of Springfield													
Direct	12,501	37,703	40,315	27,696	-1,001	-38,954	49,285	56,672	37,045	35,382	45,358	40,080	44,036
Sequestration	5	21	30	55	65	75	85	95	105	116	125	136	145
CLE Resources													
Indirect						340	811	1,396	8,833	12,701	15,759	6,659	6,820
Cleco Corporation													
Sequestration					1,805	1,805	2,218	2,267	2,459	719	1,189	2,596	3,887
CMV Joint Venture													
Direct				65,494	249,365	410,054	479,404	475,475	500,390	501,325	767,464	650,349	512,617
Common Purpose Institute													
Unspecified (EZ)													3,760
CommonWealth Bethlehem Energy, LLC													
Direct								38,339	73,702	112,684			53,181
Community Electric Cooperative													
Indirect	331	729	1,291	1,450	2,495	2,977	2,648	3,093	2,296	3,228	4,379	1,075	5,872
Conectiv Atlantic Generation (CAG)													
Direct		67,800	83,000	90,700	119,420	73,500	70,120	76,602	88,652	64,302	31,228	1,128	152
Indirect				20,800	18,700	19,400	20,700	11,285	15,061	15,285	16,472	17,390	17,262
Sequestration								0	6	8	11	15	26
Conectiv Delmarva Generation													
Direct	131,032	143,266	469,362	888,556	1,433,211	1,379,890	812,518	599,805	1,052,401	473,624	815,794	875,876	803,174
Indirect	1,068	16,832	3,901	6,504	10,132	18,884	26,287	27,392	28,092	22,795	24,500	23,451	32,011
Sequestration	14	30	50	73	1,301	1,331	1,289	1,142	1,112	452	482	479	444
Consolidated Edison Company of New York, Inc.													
Direct	695,442	1,113,627	1,575,781	1,595,630	1,440,320	1,577,966	926,606	1,860,104	956,635	1,257,363	1,158,614	1,523,278	1,617,238
Constellation Energy													
Direct	1,495	1,033,402	2,097,259	1,703,077	2,857,556	2,438,320	3,155,633	3,343,966	3,680,371	4,031,804	3,750,446	5,106,030	6,232,418
Indirect			87,762	133,723	133,001	113,587	116,694	113,698	154,050	245,867	141,975	265,095	291,993
Sequestration					1,203	1,203	1,130	948	882	253	287	221	114
County Sanitation Districts of Los Angeles County													
Direct								4,399,535	4,248,470	4,170,710	4,139,789	4,141,591	3,819,717
Indirect								187,706	192,282	212,214	195,744	218,562	229,906
DADS Landfill													
Direct											24,932	59,202	77,993
DaimlerChrysler Corporation													
Direct				13,024	68,856	88,338	112,115	115,370	156,956	244,613	259,122	267,932	181,219
Indirect					38,108	70,903	117,620	135,866	141,505	137,360	159,593	187,357	172,770
DeBourgh Manufacturing Company													
Unspecified (EZ)													70
Delaware Electric Cooperative													
Indirect	12,890	14,524	25,241	12,397	23,990	25,485	18,172	23,712	26,407	40,177	31,769	35,731	34,709
Delaware Solid Waste Authority													
Direct					110,022	318,594	400,897	431,578	431,196	396,500	333,974	388,630	520,536
Dominion Generation													
Direct	4,924,666	4,410,697	3,809,520	6,361,163	6,087,394	7,159,639	7,902,529	8,042,549	9,035,444	9,054,485	7,720,851	9,276,652	6,863,315
DTE Energy/ Detroit Edison													
Direct	-645,223	526,734	1,495,067	-6,427,801	-1,557,140	-1,823,155	-792,710	1,107,553	3,140,348	1,952,135	2,178,158	2,909,743	1,673,089
Indirect	-1,199	157,603	379,470	557,598	815,348	1,411,923	2,248,375	3,667,596	4,548,356	5,716,772	5,873,698	6,497,462	6,298,030
Sequestration					167,973	168,930	192,002	205,260	226,576	84,321	112,796	117,466	104,544
Duke Energy Corporation													
Direct	7,898,659	6,883,847	7,117,085	9,558,516	12,766,380	5,685,010	4,119,150	12,147,503	13,359,220	15,017,819	14,544,847	13,326,026	11,476,525
Indirect	-33,173	-15,919	29,057	72,973	166,484	126,998	233,028	303,751	154,306	134,201	113,169	83,323	75,191
Sequestration		1			1,203	1,203	2,176	2,638	3,154	797	905	697	360
Dynegy, Inc.													
Direct	1,934	39,385	64,818	173,310	296,271	259,458	278,559	349,214	119,006	128,828	142,751	283,606	364,169
Indirect		7,038	4,582	3,807	4,260	7,714	2,087	3,682	10,847	70,239	25,407	43,547	97,966
Sequestration					4,814	11,073	23,164	34,650	47,789	90,704	131,344	151,347	168,337
El Paso Production Company													
Direct						1,024,755	2,335,385	3,372,951	3,727,681	3,227,040	1,838,020	1,263,287	1,074,936
Energy Developments, Inc.													
Indirect											22,019	143,015	169,117

Table B2. Project-Level Reductions and Sequestration Reported, Data Year 2003 (Continued)

(Metric Tons Carbon Dioxide Equivalent)

Reporter and Reduction Type	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Energy Management Partners, LP													
Unspecified (EZ)													4,547,039
Entergy Services, Inc.													
Direct	447,503	427,207	804,472	737,733	2,514,074	2,863,446	5,601,165	6,428,576	3,744,250	5,941,430	6,744,003	8,299,423	6,678,451
Indirect	70,418	83,249	94,393	120,298	227,757	230,687	267,217	298,035	333,864	289,077	276,078	193,373	14,478
Sequestration					2,407	22,365	46,377	66,972	68,004	63,290	63,790	64,490	66,032
Environmental Synergy, Inc.													
Sequestration									1,604	1,693	2,237	2,525	3,032
Exelon Corporation													
Direct	96,602	92,575	131,213	155,295	147,523	192,986	812,339	684,698	462,062	120,588	123,019	113,528	114,014
Indirect	498,539	476,622	675,685	861,969	1,660,318	2,305,304	2,731,849	2,826,435	4,127,852	6,891,317	9,846,583	7,509,502	9,061,749
Sequestration					349	483	613	732	2,600	4,438	6,058	6,916	7,750
FirstEnergy Corporation													
Direct	3,439,807	4,367,999	1,325,941	2,267,218	5,677,120	4,205,737	5,411,952	11,055,182	10,977,710	14,802,683	14,211,306	10,705,905	7,744,307
Indirect	121,013	128,833	138,607	127,673	109,541	113,958	384,249	673,676	893,440	910,152	949,735	922,415	883,059
Sequestration		12	27	42	18,108	18,123	29,586	25,664	24,597	5,401	6,129	4,765	2,550
Ford Motor Company													
Direct								39,468	38,170	92,990	108,101	207,465	178,220
Indirect								57,290	67,546	116,710	133,873	158,668	111,719
FPL Group													
Direct	111,211	339,137	2,364,464	9,138,864	10,478,542	11,160,131	11,207,786	13,181,219	13,174,503	13,441,205	13,756,698	19,390,772	21,631,867
Indirect								67,541	671,881	1,810,193	2,013,464	3,777,419	3,290,694
Sequestration					3,008	3,008	2,824	2,369	2,204	462	525	404	208
Gas Recovery Systems													
Indirect					62,305	66,036	73,062	73,085	64,596	405,745	430,724	426,600	459,147
General Motors Corporation													
Direct	46,600	168,759	243,665	289,451	210,320	481,951	633,297	899,308	852,949	827,230	656,672	907,260	810,893
Indirect	66,191	249,429	351,451	420,055	280,802	419,009	536,531	863,907	759,264	683,144	414,311	783,622	5,041,757
Golden Valley Electric Association, Inc													
Unspecified (EZ)													66,398
Granger Electric Company													
Direct	-6,623	-8,051	-14,880	-35,940	-50,901	-60,821	-68,561	-72,399	-74,170	-75,307	-76,767	-73,822	-76,801
Indirect	111,200	123,415	172,189	370,595	513,555	587,040	649,156	686,850	702,338	707,789	728,797	700,107	726,674
Granger Energy, LLC													
Indirect									244,353	404,389	440,551	453,571	468,594
Greater New Bedford Regional Refuse Mgt District													
Direct										65,563	72,638	115,660	115,255
Green Mountain Energy Company													
Indirect												537,392	546,432
Greene Energy, LLC													
Unspecified (EZ)													348,245
Hawaiian Electric Company, Inc.													
Direct						16,738	50,271	45,220	45,892	38,486	46,178	40,889	40,713
Sequestration					1,203	1,203	1,130	948	882	185	210	162	83
Hollomon Family													
Unspecified (EZ)													0
Integrated Waste Services Association													
Direct	-7,260,856	-7,714,656	-7,714,656	-7,714,656	-7,806,113	-7,897,008	-7,806,148	-7,806,177	-8,532,238	-9,438,949	-9,438,949	-9,476,461	-7,933,287
Indirect	13,725,220	14,880,113	15,213,582	15,547,050	18,530,980	19,603,404	19,393,158	19,822,052	21,719,492	20,804,366	21,623,118	23,314,961	23,750,820
Iredell Landfill Gas, LLC													
Direct							26,351	60,008	89,370	88,984	89,425	49,653	71,796
JEA													
Unspecified (EZ)													273,018
Jim Walter Resources, Inc.													
Direct	5,090,683	4,774,846	5,319,950	4,257,033	4,615,539	4,330,416	4,425,353	5,023,622	5,594,787	5,242,457	5,061,284	5,493,862	5,121,626
Johnson & Johnson													
Direct	0	16,442	24,855	28,049	32,431	36,278	42,986	49,352	61,678	65,301	65,994	68,445	76,040
Indirect	3,501	16,326	46,349	64,845	78,449	118,249	139,662	154,994	176,340	184,784	192,577	206,218	302,476
Kansas City Power & Light Company													
Direct	306,499	163,897	220,095	487,720	452,250	462,395	561,187	643,824	357,943	733,582	635,118	1,022,872	956,672
Indirect	69,712	79,435	99,539	133,644	121,722	155,099	137,869	150,898	168,452	158,238	187,481	125,327	141,840
Sequestration					2,407	2,407	3,306	3,586	4,036	982	1,258	1,070	552
Klickitat County Public Utility District No. 1													
Direct									174,363	275,586	264,477	265,075	300,909
Landfill Energy Systems													
Direct	112,818	301,649	391,474	426,548	459,974	464,127	730,325	840,390	937,142	1,079,464	901,908	1,252,645	1,402,750
Indirect	15,608	129,825	277,008	344,770	296,464	318,629	417,702	475,019	560,648	614,436	721,793	563,006	899,628
Lehigh Cement Co. (fmrly Lehigh Portland Cement Co													
Direct		-11,079	587	315,697	395,704	433,355	435,738	459,061	463,112	447,548	487,263	698,528	824,178
Indirect			1,922	27,882	49,359	38,266	50,614	41,430	43,023	39,806	60,725	38,963	41,171
Lehigh Cement Co. (formerly Calaveras Cement Co.)													
Direct	39,044	108,155	299,847	234,394	219,803	178,995	233,589	201,072	189,238	183,804	139,923	181,896	144,728
Indirect	-1,013	-2,536	6	2,498	1,375	2,532	4,366	5,073	1,690	231	-903	2,662	-744
LFG Energy, Inc.													
Direct							164,617	144,759	167,142	156,695	113,527	84,292	35,156
Indirect							39,014	34,289	31,873	37,081	26,864	19,945	8,320
Los Angeles Department of Water and Power													
Direct					354,289	264,004	302,946	368,235	561,697	617,667	615,013	637,296	796,996
Indirect	8,508	8,508	8,508	8,508	8,475	8,475	8,475	8,475	8,475	7,086	7,086	8,167	8,167
Sequestration		1,669	2,003	2,003	2,003	2,003	2,003	2,126	2,434	2,532	2,623	4,013	5,295
Lower Colorado River Authority													
Direct	14,152	23,678	35,199	48,262	98,430	226,343	266,259	285,672	280,139	310,620	415,672	511,380	513,920
Indirect	47,536	50,802	68,130	91,172	112,037	121,018	126,643	116,936	151,409	123,286	139,525	141,158	147,871
Lucent Technologies Inc.													
Direct			7,947	15,508	13,996	15,790	13,371	10,333	12,053	13,150	11,329	7,237	6,450
Indirect						20,881	17,096	79,793	9,166	21,402	32,013	18,845	24,818

Table B2. Project-Level Reductions and Sequestration Reported, Data Year 2003 (Continued)

(Metric Tons Carbon Dioxide Equivalent)

Reporter and Reduction Type	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Lynchburg Gas Producers, LLC													
Direct										12,596	20,567	48,105	75,666
Indirect												1,159	3,193
Mead Johnson Nutls./Bristol-Myers Squibb													
Direct									23,757	40,555	41,085	38,203	39,818
Indirect					1,442	1,945	1,945	1,945	1,945	1,945	1,896	1,896	1,896
Mecklenburg Electric Cooperative													
Indirect	1,754	3,058	5,903	2,633	11,659	11,395	10,023	11,646	10,738	13,785	13,966	14,656	13,123
Michigan CAT													
Direct							300,752	284,164	316,401	303,026	319,489	367,708	356,107
Indirect										7,756	7,756	7,612	7,409
Middlesex Generating Company, LLC													
Direct							8,947	306,511	452,006	452,519	480,664	497,823	592,411
Minnesota Power													
Direct	31,798	83,880	162,890	244,875	348,788	448,938	569,407	656,146	756,943	717,252	850,232	987,935	959,642
Indirect			7,256	47,855	70,738	70,738	70,738	70,738	70,738	70,738	70,738	70,738	70,738
Sequestration					3,006	13,921	15,430	15,430	15,430	15,430	15,430	15,430	15,430
Minnesota Resource Recovery Association (MRRA)													
Unspecified (EZ)													1,439,272
Model City Energy, LLC													
Direct											118,810	196,780	185,814
Indirect											28,118	47,029	43,967
Montauk Energy Capital													
Direct	6,600,722	2,191,686	2,518,853	2,390,323	2,593,133	2,679,515	3,228,272	4,762,013	6,023,471	6,446,736	7,408,579	6,274,961	5,618,449
Municipal Electric Auth of Georgia (MEAG Power)													
Direct	863,000	1,144,000	1,353,000	1,590,000	2,234,000	2,125,000	2,415,000	2,543,000	2,460,000	2,782,000	2,870,000	2,482,000	2,851,000
Mystic Development, LLC													
Direct													-250,641
Indirect													1,959,023
Nashville Electric Service													
Unspecified (EZ)													5,708
National By-Products Inc													
Direct								437	5,826	4,841	4,849	4,111	4,895
National Grid USA													
Direct	2,490,763	1,646,778	3,267,287	4,218,391	3,700,152	4,307,314	2,950,224	3,844,762	2,477,916	2,141,485	82,934	93,453	98,800
Indirect	97,751	237,179	374,956	534,355	740,967	840,042	990,718	1,109,812	1,165,345	1,221,326	2,829,828	1,459,847	1,565,876
Natural Power, Inc.													
Direct	89,206	81,401	88,179	108,179	113,380	140,815	133,003	222,834	387,526	355,201	207,238	264,805	200,201
Indirect	10,746	10,258	10,243	10,522	10,160	11,792	12,004	16,321	14,593	16,891	15,906	15,516	17,077
NC Muni Landfill Gas Partners, LLC													
Direct					18,271	28,608	54,959	78,872	79,922	64,894	72,018	64,869	61,093
Indirect								393	382	359	468	415	397
Nebraska Public Power District													
Unspecified (EZ)													796,187
NEGT													
Direct	220,966	960,896	1,460,976	2,367,097	3,222,634	4,484,131	5,023,102	5,479,688	5,174,023	5,349,026	5,810,025	4,011,369	3,991,033
Indirect	232,639	-81,173	65,337	-135,386	-233,678	1,897	192,420	-98,574	-247,652	-257,376	-127,167	866,514	770,626
Sequestration			8,682	24,930	57,790	44,249	42,312	40,619	36,643	21,415	18,986	15,735	1,538
NEO Corporation													
Direct					289,104	402,047	2,945,115	6,006,154	6,946,334	7,121,322	6,939,858	6,616,207	3,519,611
New Jersey Meadowlands Commission													
Direct	324,941	368,274	394,915	378,381	370,838	397,577	413,896	871,905	813,857	735,112	679,351	506,379	375,249
Newton Landfill Gas, LLC													
Direct							12,561	46,053	29,014	26,567	21,209	19,354	19,739
Indirect										449			
NiSource/NIPSCO													
Direct	7,034	10,280	500,150	514,933	626,471	1,130,251	1,582,926	2,067,811	2,566,342	3,137,375	3,562,521	6,636,879	5,957,783
Indirect	19,414	-1	20,886	29,561	99,318	116,020	121,525	114,054	111,372	98,726	120,347	129,843	82,181
Sequestration			4	58	1,265	1,348	1,278	1,099	1,043	350	399	354	280
Noranda Aluminum Inc.													
Direct	2,595,400	2,784,500	2,853,400	2,939,400	2,922,300	3,272,500	3,255,400	3,404,600	3,347,100	3,255,400	3,163,700	3,180,800	3,140,400
North Carolina Biomass Partners													
Unspecified (EZ)													15,381
North Carolina Electric Membership Corporation													
Unspecified (EZ)													351,046
Northern Neck Electric Cooperative													
Indirect	931	891	2,121	1,432	2,426	2,826	2,055	3,331	1,560	3,087	3,521	1,125	4,356
Northern Virginia Electric Cooperative													
Indirect	37	15,275	27,979	9,958	32,283	32,437	30,892	33,140	43,336	22,383	27,220	61,166	50,107
Ocean County Landfill Corporation													
Direct			258,743	262,790	278,505	274,292	254,508	335,323	447,370	516,803	471,766	504,824	539,246
Indirect							-9,407	-11,085	-10,562	-10,478	-10,686	-11,901	-10,607
Old Dominion Electric Cooperative													
Indirect					60	61	61	61	61	61	70	70	70
Sequestration					0	1	1	2	2	2	3	4	5
Omaha Public Power District													
Unspecified (EZ)													2,569,946
Orlando Utilities Commission (OUC)													
Unspecified (EZ)													34,617
PacifiCorp													
Direct			98,683	247,727	452,701	514,083	388,808	584,209	765,646	887,935	989,378	1,021,780	1,198,011
Indirect	36,603	108,214	107,523	120,175	128,452	240,580	189,899	312,896	717,984	513,846	318,328	434,748	294,193
Sequestration			361	2,394	169,907	169,911	904,613	903,707	903,011	759,223	767,720	81,106	63,780
Palmer Capital Corporation													
Direct	489,421	885,021	1,080,949	1,068,935	1,276,334	2,069,062	4,534,869	5,245,307	5,628,924	5,988,577	5,562,563	5,206,941	2,818,673
Indirect	-618	-43,423	-60,970	-42,679	-32,206	-48,600	-68,432	-89,323	-153,699	-162,020	-136,702	-127,687	-49,127

Table B2. Project-Level Reductions and Sequestration Reported, Data Year 2003 (Continued)

(Metric Tons Carbon Dioxide Equivalent)

Reporter and Reduction Type	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Peabody Energy													
Direct	15,106	35,930	59,529	52,643	81,625	106,434	81,166	93,539	90,347	132,411	75,031	289,172	570,706
PEI Power Corp													
Direct								131	299	326	628		47,391
Indirect								7,449	16,321	18,391	36,169		44,149
Pfizer Pharmaceuticals LLC - Arecibo Site													
Unspecified (EZ)													3,873
PG&E Corporation													
Direct	59,366	380,075	770,904	1,204,180	1,685,998	1,994,946	2,399,379	2,416,834	2,310,901	2,320,632	2,719,334	2,607,638	3,000,694
Indirect	59,366	214,881	329,205	390,851	447,959	494,836	504,387	519,391	1,232,200	1,175,630	1,004,606	872,084	817,833
Pitt Landfill Gas, LLC													
Direct								67,786	72,167	67,613	69,440	64,475	58,166
Indirect								711	927	841	967	911	772
Platte River Power Authority & 4 Owner Cities													
Direct	7,251	3,022	15,306	4,609	4,415	9,509	10,012	9,788	9,624	8,129	5,855	11,917	11,790
Indirect	35,438	37,248	48,002	45,883	47,258	59,734	82,655	60,186	78,471	81,987	107,010	110,284	82,734
Polar Refrigerant Technology, LLC													
Indirect				0	71	71	212	17,618	7,192	150,560	10,093	31,317	39,227
Portland General Electric Co.													
Direct			3	8	8	12	23	39	52	59	59	64	56
Indirect	103,210	175,267	283,691	475,667	676,840	756,860	799,999	854,304	938,071	1,024,636	1,159,057	1,311,234	1,348,644
Sequestration						1	135	473	900	1,422	2,146	2,658	3,171
Prince George Electric Cooperative													
Indirect	15	30	45	60	60	1,383	2,259	5,135	5,113	6,216	1,814	3,774	4,264
Public Service Company of New Mexico													
Direct	501,925	568,855	183,984	322,415	763,258	1,333,793	1,554,079	1,496,336	1,945,937	1,671,397	1,498,851	1,691,854	1,246,976
Indirect													11,835
Public Service Enterprise Group													
Direct					-443	-418	-406	-381	-357	-332	-431	-394	0
Indirect	68,133	105,519	157,707	221,479	362,751	729,347	906,479	1,143,728	1,275,448	1,968,818	1,713,761	3,405,741	1,695,399
Sequestration					1,203	1,203	2,176	2,638	3,154	797	905	697	360
Public Utility District No. 1 of Snohomish County													
Direct	0	1	2	3	3	3	3	3	3	3	2	3	2
Indirect	1,292	22,895	44,396	65,056	89,979	113,426	120,001	119,978	125,875	131,575	158,363	181,956	205,790
Rappahannock Electric Cooperative													
Indirect	2,016	1,592	12,757	5,367	-10,595	32,813	27,408	35,049	34,585	35,638	44,151	35,367	53,336
Sequestration	0	0	1	1	1	2	3	3	4	5	6	4	5
Rolls-Royce Corporation													
Direct							32,413	29,252	30,809	38,955	31,248	31,267	34,268
Indirect									40,135	259,808	265,236	250,171	202,216
Sacramento Municipal Utility District													
Direct				12	24	8	19	15	18	19	23	28	24
Indirect				517	923	460,052	489,296	497,239	513,459	523,369	545,598	609,033	279,363
Sequestration	69	184	367	619	890	1,158	1,440	1,764	1,945	2,278	2,651	3,026	3,422
Salt River Project													
Unspecified (EZ)													2,136,900
Santee Cooper													
Direct	12,789	17,696	185,506	169,824	217,230	453,130	426,433	880,179	1,093,337	1,193,598	1,151,567	1,168,826	1,187,636
Indirect	20,218	27,473	22,377	16,759	88,532	106,693	149,115	173,320	141,465	109,248	166,106	204,759	470,496
Sequestration	155	397	875	921	940	980	1,247	2,173	2,195	2,269	3,621	7,665	8,732
Seattle City Light													
Indirect	7,238	32,306	55,281	82,994	123,608	170,008	187,134	209,931	238,825	246,922	280,687	324,696	332,853
Sequestration					2	9	15	21	30	41	52	62	74
SeaWest WindPower, Inc.													
Indirect	16,191	14,656	17,745	17,748	17,859	19,897	18,925	21,070	85,711	118,115	156,534	236,368	215,033
Seminole Electric Cooperative, Inc.													
Unspecified (EZ)													270,598
Seneca Energy II, LLC													
Direct							188,079	284,811	411,588	426,569	439,276	402,616	399,111
Indirect							16,672	25,245	36,481	37,811	38,935	35,689	35,377
Shenandoah Valley Electric Cooperative													
Indirect		229	897	920	1,104	15,210	10,084	14,227	14,916	13,872	18,095	24,401	20,781
Sequestration			0	0	0	0	1	1	1	1	1	1	1
Sikorsky Aircraft Corporation													
Direct	0	0	0	0	0	0	0	0	0	170	254	254	254
Indirect	0	16	422	2,004	2,462	3,094	3,854	4,401	4,608	5,078	4,526	4,833	4,927
South Carolina Electric & Gas Company													
Direct				96,172	323,954	316,216	1,794,998	1,802,798	1,807,282	1,767,498	1,773,664	2,064,453	1,986,207
Indirect	44,522	53,097	70,861	81,333	90,622	104,581	109,590	57,968	109,765	123,712	146,584	221,385	289,121
Sequestration			486	883	3,237	3,699	4,055	4,050	4,133	3,995	4,088	4,223	4,251
Southeastern Biomass Partners, LP													
Unspecified (EZ)													87,563
Southern California Edison Co.													
Direct	789,251	1,464,196	1,860,636	4,024,635	3,104,840	4,689,374	4,148,051	5,571,863	5,590,147	6,752,578	5,625,361	7,323,749	7,982,985
Indirect	57,969	57,969	59,783	64,773	72,393	82,191	85,910	108,046	111,493	120,202	116,120	113,942	113,035
Sequestration	24,017	24,120	23,942	24,072	24,350	24,188	24,256	24,185	24,190	24,194	24,214	24,313	24,324
Southern Company													
Direct	770,340	2,255,635	2,441,647	2,863,002	3,376,687	3,483,795	3,741,520	2,666,235	4,926,296	6,356,527	12,030,927	15,790,987	15,013,796
Indirect		1,461	4,577	181,584	341,136	418,911	768,313	961,012	1,618,507	2,081,239	2,502,254	3,088,714	3,665,871
Sequestration	1,993	3,398	4,477	5,630	20,761	42,432	82,419	107,586	157,903	163,935	176,526	194,226	207,220
Southside Electric Cooperative													
Indirect	-1,001	-21,789	-17,971	-3,031	-15,548	-8,475	9,407	13,051	5,158	21,019	16,683	14,084	12,199
Springs Industries, Inc.													
Unspecified (EZ)													31,837
Steuben Rural Electric Co-op													
Unspecified (EZ)													1,921

Table B2. Project-Level Reductions and Sequestration Reported, Data Year 2003 (Continued)

(Metric Tons Carbon Dioxide Equivalent)

Reporter and Reduction Type	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Tacoma Power													
Unspecified (EZ)													5,917
Tampa Electric Company													
Indirect	240,404	237,682	234,054	240,585	265,406	267,583	266,857	271,909	268,024	321,131	323,092	294,353	243,517
Sequestration					1,203	1,203	1,130	948	882	185	210	162	83
Tennessee Valley Authority													
Direct	2,860,047	8,560,179	6,971,811	7,764,758	10,285,021	22,314,014	23,905,216	25,646,860	25,758,777	27,231,070	27,032,531	26,308,680	25,196,625
Indirect		74,102	74,652	84,671	119,617	157,217	221,937	376,685	246,132	219,627	230,956	268,933	298,990
Sequestration	1,064	1,710	2,701	3,087	30,549	31,603	31,749	28,665	28,576	13,581	16,352	17,828	18,142
The Burlington Northern and Santa Fe Railway Co													
Direct						95,254	387,368	735,727	714,862	926,236	1,156,661	1,126,724	1,028,748
The Empire District Electric Co.													
Sequestration					1,203	1,203	1,130	948	882	185	210	162	83
The Estee Lauder Companies													
Direct				41	41	1,784	1,811	1,811	1,829	1,913	1,923	1,966	1,995
Indirect				109	288	352	823	944	1,298	2,145	2,711	3,108	3,507
Tucson Electric Power Company													
Direct	34,429	29,998	47,822	35,094	35,879	38,608	76,683	76,213	51,886	67,817	69,915	99,101	56,280
Indirect	6,754	36,682	67,157	93,248	108,200	101,059	128,795	109,549	117,395	122,357	124,570	117,007	119,615
Sequestration			1	2	1,214	1,225	1,163	1,808	1,701	426	495	432	313
TXU													
Direct	6,498,984	8,103,439	11,718,779	15,542,079	17,822,885	15,997,570	18,595,572	18,746,599	18,409,941	19,867,473	20,273,952	19,784,294	21,496,205
Indirect	93,354	115,225	84,618	104,562	108,526	367,665	389,882	693,813	663,549	782,062	934,197	907,063	881,730
Sequestration	542	1,086	1,628	2,172	5,630	7,567	13,099	16,752	19,293	21,969	26,119	27,705	29,470
US Energy Biogas Corp.													
Unspecified (EZ)													2,063,385
Vermont Public Power Supply Authority													
Indirect		29	62	851	1,287	1,913	2,069	2,244	1,782	1,856	1,161	2,523	1,956
Waste Management, Inc.													
Direct					10,006,541	12,211,321	14,240,657	16,582,034	18,548,879	21,631,730	26,075,353	30,086,208	32,989,245
Indirect					410,464	460,828	493,770	509,783	525,247	550,165	597,914	594,723	617,031
Waverly Light & Power Company													
Direct	3,009	5,805	9,169	11,063	11,718	12,700	13,417	13,554	15,296	15,642	16,787	18,163	17,726
Indirect	1,129	3,208	4,047	7,100	6,505	5,879	5,393	4,978	5,509	6,354	7,560	7,971	8,764
Sequestration	18	36	54	73	84	95	106	116	124	132	137	144	149
We Energies													
Direct	467,275	955,346	1,638,466	2,231,600	2,431,109	2,824,947	3,121,150	3,000,732	3,039,948	3,255,219	2,900,390	2,741,721	2,575,525
Indirect	709,256	813,922	861,951	927,820	958,462	979,954	955,315	941,702	988,223	1,193,004	1,231,660	1,346,982	1,525,966
Sequestration					162,696	162,695	207,508	380,887	380,820	240,156	206,447	74,380	58,750
Wisconsin Public Power Inc.													
Unspecified (EZ)													64,085
Wyeth Vaccines													
Unspecified (EZ)													104
Xcel Energy													
Direct	249,410	612,440	1,171,008	1,885,370	2,818,348	122,394,501	3,922,215	3,203,386	4,031,829	3,730,370	4,479,181	5,419,913	6,007,513
Indirect	82,060	125,828	172,735	230,676	385,233	480,700	531,307	639,722	635,591	732,200	853,474	787,726	803,707
Xenon Specialty Gas													
Indirect								898,237	207,440	563,916	1,799,495	2,074,555	2,184,669
Zeeland Board of Public Works													
Unspecified (EZ)													399

Notes: This table excludes data reported as confidential. A negative reduction represents an increase in emissions.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ

Table B3. Entity-Level Emission Reductions Reported, Data Year 2003

(Metric Tons Carbon Dioxide Equivalent)

Reporter and Gas	Reduction Type	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
AES Hawaii, Inc.														
CO2	Sequestration		1,540,000.0	1,540,000.0	1,540,000.0	1,540,000.0	1,540,000.0	1,540,000.0	1,540,000.0	1,540,000.0	1,540,000.0	1,540,000.0	1,540,000.0	1,540,000.0
AES Shady Point, LLC														
CO2	Sequestration			4,150,000.0	4,150,000.0	4,150,000.0	4,150,000.0	4,150,000.0	4,150,000.0	4,150,000.0	4,150,000.0	4,150,000.0	4,150,000.0	4,150,000.0
AES Thames, LLC														
CO2	Sequestration	550,000.0	70,000.0	290,000.0	370,000.0	480,000.0	440,000.0	440,000.0	590,000.0	530,000.0	370,000.0	410,000.0	410,000.0	410,000.0
AES Warrior Run, LLC														
CH4	Indirect						2,925.6	15,518.1	30,562.4	31,707.8	20,016.9	21,045.0	21,134.7	
Ajinomoto Aminoscience LLC														
CO2	Indirect		4,036.0	1,349.0	891.0	5,616.0	4,629.0	4,891.0	3,738.0	5,237.0	1,775.0	5,412.0	5,636.0	13,287.0
CO2	Direct		124.0	182.0	139.0	322.0	170.0	117.0	226.0	226.0	145.0	262.0	651.0	-581.0
Alcan Primary Products Corporation, Sebree Works														
22	Direct	-210.9	31,150.5	31,344.3	87,392.4	104,469.6	122,629.8	78,984.9	183,882.0	248,565.6	229,767.0	365,010.9	376,114.5	328,519.5
23	Direct	-47.6	6,497.4	6,545.0	18,242.7	21,812.7	25,608.8	16,493.4	38,389.4	51,895.9	47,968.9	76,207.6	78,528.1	56,049.0
Allegheny Energy, Inc.														
28	Direct							134,531.9	194,346.2	59,814.3	44,911.1	0.0	0.0	0.0
CH4	Indirect						252.5	315.1	388.1	450.7	502.9	500.8	500.8	500.8
CO2	Sequestration					4,211.8	4,211.8	5,000.1	5,007.2	5,358.0	1,394.6	1,726.5	1,431.0	738.8
CO2	Indirect	11,209.2	29,542.5	37,098.4	39,192.2	70,261.6	68,056.1	98,049.4	162,318.0	261,105.9	244,321.2	226,397.9	201,458.5	180,785.6
CO2	Direct	158,688.4	240,496.5	330,729.6	526,287.6	812,086.4	963,416.6	906,109.8	1,142,380.6	1,207,141.8	1,360,860.7	1,359,361.1	1,457,386.0	1,549,537.9
Allergan, Inc.														
03	Direct	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO2	Indirect	0.0	0.0	0.0	0.0	115.7	115.7	501.2	2,921.6	3,664.7	5,152.0	8,263.6	12,389.2	13,541.3
CO2	Direct	0.0	0.0	0.0	0.0	0.0	0.0	0.0	552.0	552.0	552.0	552.0	875.3	927.2
Alliant Energy														
22	Indirect											32.5	129.4	148.2
23	Indirect											6.0	22.6	26.2
CH4	Indirect											50.4	105.6	159.2
CO2	Sequestration	17.0	28,203.0	28,257.0	28,327.0	29,617.4	29,715.4	30,226.7	30,149.8	30,784.7	30,490.7	30,690.9	30,854.6	30,990.4
CO2	Indirect	17,835.0	27,971.0	41,300.0	59,367.0	73,045.0	371,566.0	379,493.0	393,118.0	386,945.0	458,602.0	789,319.9	794,093.9	808,665.1
CO2	Direct	49,745.0	82,568.0	142,274.0	232,179.2	317,864.9	454,535.5	554,406.5	794,214.5	1,112,819.6	1,662,104.6	1,761,644.6	2,105,972.0	2,596,442.0
Arizona Portland Cement Co.														
CO2	Sequestration											0.8	2.0	2.6
CO2	Indirect		2,482.0	3,681.0	4,507.0	5,900.0	8,014.0	8,403.0	7,058.0	11,645.0	-365.0	-5,507.0	-3,437.0	-6,806.0
CO2	Direct		21,475.0	34,332.0	28,673.0	50,013.0	33,034.0	54,636.0	61,388.0	70,151.0	39,586.0	44,053.0	44,865.0	50,339.0
Arizona Public Service Company														
CO2	Indirect	-14,801.6	-25,120.9	-11,618.3	-14,064.1	-8,917.6	-3,558.9	18,634.5	19,962.6	28,588.1	35,493.6	120,867.9	169,908.5	163,841.2
CO2	Direct	1,702,868.4	1,288,656.9	1,050,245.1	1,266,240.4	2,647,237.8	2,857,145.9	2,125,011.4	1,518,906.8	903,797.4	-594,249.6	-1,424,242.9	-161,810.0	-60,522.8
Azdel, Inc														
CO2	Indirect									231.0	1,635.0	1,059.0	2,469.0	2,035.0
CO2	Direct									0.0	0.0	0.0	0.6	0.4
Baxter Healthcare Inc.														
CO2	Indirect				0.0	1,356.0	101.0	80.0	-532.0	-1,811.0	6,770.0	11,270.0	10,855.0	21,472.0
CO2	Direct				0.0	-402.0	1,786.0	1,364.0	1,405.0	536.0	1,261.0	-129.0	1,451.0	2,712.0
Berkshire Power LLC														
CO2	Indirect										381,369.6	418,509.7	930,870.5	730,680.2
CO2	Direct										-276,913.6	-247,834.7	-533,682.3	-476,500.6
NOx	Indirect										0.0	0.0	0.0	0.0
NOx	Direct										0.0	0.0	0.0	0.0
Blue Source, LLC														
99	Indirect													0.0
99	Direct											0.0	0.0	0.0
CH4	Direct										230,667.0	482,839.0	640,067.0	663,803.0
CO2	Indirect										2,455.0	47,177.0	151,483.0	254,008.0
CO2	Direct										6,394,150.0	7,111,576.0	6,878,905.0	6,775,600.0
N2O	Direct										7,548.0	8,376.8	9,264.8	11,455.2
BMW US Holding Corp.														
CH4	Indirect													1.2
CO2	Indirect													4,608.5
CO2	Direct													38,500.9
N2O	Indirect													26.2
Bountiful City Light & Power														
CO2	Sequestration					0.0	0.2	0.5	1.0	1.4	1.9	2.4	2.9	16.3
CO2	Direct	27.6	1,337.9	10,309.7	6,426.3	11,850.7	14,618.1	16,786.4	19,226.1	15,556.1	11,626.7	9,577.1	6,423.3	6,274.0
BP America														
CH4	Direct		41.7	396.4	396.4	396.4	396.4	396.4	396.4	462,603.5	841,704.2	1,035,166.8	1,599,404.9	1,961,437.9
CO2	Sequestration							102,980.0	102,980.0	102,980.0	102,980.0	102,980.0	102,980.0	102,980.0
CO2	Indirect										303.9	607.8	1,215.6	1,215.6
CO2	Direct		353,366.6	566,664.8	770,657.1	1,060,367.5	1,354,613.8	1,748,596.9	1,986,408.1	2,265,783.8	2,220,925.4	1,986,419.0	1,989,418.2	2,032,227.3
VOC	Direct	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
California Portland Cement Co. - Colton Plant														
CO2	Indirect	-620.0	-1,432.0	2,639.0	2,311.0	3,505.0	6,832.0	5,182.0	3,851.0	3,293.0	4,005.0	1,674.0	4,520.0	5,439.0
CO2	Direct	26,301.0	7,579.0	65,154.0	-10,013.0	-2,629.0	54,645.0	49,538.0	61,666.0	34,199.0	79,684.0	114,230.0	119,104.0	125,333.0
CO2	Indirect	2,291.0	8,583.0	5,347.0	9,123.0	6,315.0	7,272.0	6,707.0	8,246.0	6,268.0	6,439.0	13,924.0	14,563.0	20,043.0
CO2	Direct	14,606.0	80,282.0	46,025.0	98,953.0	52,938.0	33,580.0	36,940.0	67,668.0	38,580.0	37,113.0	35,895.0	34,090.0	123,813.0
Cargill, Inc. - Oil Seeds Division														
CO2	Indirect					189.0	332.0	-373.0	-200.0	-255.0	907.0	1,606.0	1,614.0	943.0
CO2	Direct					1,269.0	-106.0	-695.0	-246.0	1,384.0	2,298.0	435.0	2,099.0	-5,880.0
Cinergy Corp.														
28	Direct										20,593.0	6,102.4	60,218.1	52,947.6
CH4	Indirect		454,320.0	404,931.9	439,340.8	481,156.8	633,245.7	638,159.5	674,767.6	173,075.2	174,199.8	172,188.4	169,695.0	171,798.2
CH4	Direct												13,520.7	13,061.6
CO2	Sequestration	1.6	24.2	283.9	510.8	169,479.1	169,794.2	170,722.2	170,879.3	173,861.6	30,627.9	42,167.4	35,497.9	19,645.1
CO2	Indirect	63,887.6	64,994.3	62,685.6	42,435.5	98,159.8	134,079.9	125,317.7	126,943.1	128,079.2	125,850.0	122,543.7	179,212.2	216,634.6
CO2	Direct	120.4	95,407.0	194,296.9	399,925.3	1,126,676.2	1,273,544.8	1,348,461.1	1,379,485.9	1,423,220.4	1,455,889.0	1,385,297.3	1,400,960.8	1,527,374.4
CommonWealth Bethlehem Energy, LLC														
CH4	Direct								43,545.8	83,711.4	127,987.4			60,404.9
CO2	Direct								-5,206.3	-10,009.9	-15,303.3			-7,223.9
COMMSCOPE CATAWBA PLANT														
CO2	Indirect										0.0	-4,362.0	-1,628.0	-2,494.0
CO2	Direct										0.0	-81.0	-84.0	-367.0
COMMSCOPE CLAREMONT PLANT														
CO2	Indirect											-771.0	-3,741.0	-3,380.0
CO2	Direct											205.0	-226.8	-304.0
COMMSCOPE CONOVER REEL RECYCLING														
CO2	Indirect											0.0	28.0	22.0
CO2	Direct											-16.0	-29.0	-43.0
COMMSCOPE Headquarters- Hickory														
CO2	Indirect													12.0
COMMSCOPE NEWTON PLANT														
CO2	Indirect											-329.0	-3,675.0	-2,188.0
CO2	Direct											207.0	-338.0	266.0

Table B3. Entity-Level Emission Reductions Reported, Data Year 2003 (Continued)

(Metric Tons Carbon Dioxide Equivalent)

Reporter and Gas	Reduction Type	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
COMMSCOPE SCOTTSBORO PLANT														
CO2	Indirect											-240.0	228.9	
CO2	Direct											-5.0	6.0	
COMMSCOPE SPARKS PLANT														
CO2	Indirect												886.0	757.0
CO2	Direct												261.0	161.0
COMMSCOPE STATESVILLE PLANT														
CO2	Indirect											8,007.0	13,345.0	6,619.0
CO2	Direct											-897.0	394.0	-57.0
CONNECTIVITY SOLUTONS MANUFACTURING Inc.														
CO2	Indirect											20,462.0	-16,819.0	-18,186.0
CO2	Direct											-46.5	-127.5	-99.7
Consol Coal Group														
CH4	Direct		2,065,096.4	6,948,024.1	13,354,740.9	12,109,607.1	14,389,699.1	13,752,057.0	13,917,831.4	17,195,324.1	17,681,296.6	18,747,448.3	18,853,423.0	20,243,319.9
Consolidated Edison Company of New York, Inc.														
CH4	Indirect	26,123.3	36,117.7	44,630.8	54,833.9	59,090.4	65,454.3	69,230.9	73,967.3	78,662.0	76,763.3	80,685.9	117,513.1	96,606.1
CO2	Direct	2,111,502.6	2,362,581.4	2,778,264.3	2,558,252.1	2,616,122.3	3,854,943.0	4,065,381.8	2,935,067.6	2,189,429.7	902,833.0	-194,307.2	-643,648.5	281,493.1
Constellation Energy														
01	Direct						0.0	0.0	0.0					
02	Direct			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07	Direct			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
08	Indirect					0.0	0.0							
18	Indirect												46.6	41.9
22	Indirect			9.0	2,625.1	2,504.1	2,230.5	2,347.9	1,952.3	1,838.8	1,924.9	766.9	1,481.5	760.1
23	Indirect			1.6	464.8	443.2	394.6	415.6	345.5	325.5	340.6	135.5	264.5	134.9
28	Indirect							80.6	80.6	80.6	80.6	80.6	80.6	80.6
28	Direct								4,591.9	-6,354.1				
99	Indirect							0.0	0.0					
CH4	Indirect			70.9	1,026.6	1,068.3	1,024.5	1,099.6	959.8	1,130.9	1,176.8	719.9	918.1	1,001.5
CH4	Direct			754.3	1,600.8	2,560.4	2,656.8	3,033.8	2,455.6	3,693.1	3,693.1	2,670.8	1,585.8	525.8
CO2	Sequestration					1,203.4	1,203.4	1,129.7	947.7	881.6	252.7	287.0	221.0	114.0
CO2	Indirect			87,680.3	129,606.8	128,985.3	109,937.2	112,750.4	110,359.9	150,674.3	242,344.4	140,272.5	262,303.4	289,974.4
CO2	Direct	1,495.0	1,033,402.3	2,096,505.0	1,701,476.6	2,854,995.7	2,435,663.1	3,152,599.1	3,336,918.2	3,683,032.3	4,028,110.8	3,747,775.3	5,104,444.7	6,231,892.2
NVOC	Indirect							0.0	0.0	0.0	0.0			
DaimlerChrysler Corporation														
CO2	Sequestration						1.2	1.6	1.9	3.2	4.2	4.9	5.6	6.4
CO2	Indirect					38,108.0	70,903.0	117,620.0	135,866.0	141,505.0	137,360.0	159,593.0	187,357.0	172,770.0
CO2	Direct				13,024.0	68,856.0	88,338.0	112,115.0	115,370.0	156,956.0	244,613.0	259,122.0	267,932.0	181,219.0
Danaher Controls														
CO2	Indirect							167.0	-354.0	882.0	1,576.0	1,199.0	458.0	90.0
CO2	Direct							-84.0	35.0	58.0	-75.0	-11.0	-28.0	-100.0
DTE Energy/ Detroit Edison														
CO2	Sequestration					167,972.5	168,929.6	192,001.1	205,260.5	226,573.9	84,279.3	112,781.2	117,465.9	104,507.7
CO2	Indirect	-1,162,697.0	-768,695.8	-318,143.4	-4,501,857.4	-3,423,902.3	-3,216,901.8	-4,165,280.9	-5,129,972.2	-4,729,454.6	-6,652,108.5	-4,442,287.1	-7,555,877.8	-4,314,247.0
CO2	Direct	67,920.0	3,499,116.1	1,095,962.7	-2,520,645.6	-1,899,734.8	-2,210,056.4	-2,222,171.8	-3,754,608.4	-2,373,620.9	-1,176,943.5	551,498.5	1,320,515.4	1,763,173.5
Duke Energy Corporation														
28	Direct											44,400.0	111,000.0	44,400.0
CH4	Indirect							155,112.0	208,909.0	25,645.0	28,865.0	28,497.0		
CH4	Direct			258,336.0	208,058.0	125,833.0	160,287.0	141,933.0	129,605.0	217,212.0	208,288.0	224,158.0	390,287.0	431,411.0
CO2	Sequestration					1,203.4	1,203.4	2,175.7	2,637.9	3,153.8	796.8	904.7	696.7	359.7
CO2	Indirect	-33,173.0	-15,919.0	29,057.0	72,973.0	166,484.0	126,998.0	77,916.0	94,842.0	128,661.0	105,336.0	84,672.0	83,323.0	75,191.0
CO2	Direct	7,898,659.0	6,883,847.0	6,858,749.0	9,350,458.0	12,640,570.0	5,524,723.0	3,977,240.0	12,017,898.0	13,142,008.0	14,809,531.0	14,276,289.0	12,824,739.0	11,002,933.0
Dynegy, Inc.														
CO2	Sequestration					4,813.5	11,073.1	23,163.7	34,650.1	47,788.9	90,704.2	131,344.4	151,346.6	168,337.5
CO2	Indirect		7,037.9	4,582.2	3,806.5	4,260.1	7,713.8	2,086.5	3,682.3	10,847.2	70,238.8	25,406.6	43,546.7	97,966.0
CO2	Direct	1,934.1	39,384.5	64,818.4	173,310.4	296,271.1	259,458.5	278,559.3	349,213.5	119,006.3	128,828.4	142,751.0	283,605.9	364,169.4
Eaton Corporation - Vehicle Controls Business Unit														
CO2	Indirect								0.0	-534.0	726.0	460.0	1,339.0	2,346.0
Entergy Services, Inc.														
28	Direct											3,524.5	-48,587.4	3,524.5
CH4	Direct	813.7	709.4	709.4	792.9	1,314.5	1,398.0	1,147.6	1,001.5	980.7	1,794.4	1,794.4	1,773.5	1,460.6
CO2	Sequestration					2,406.8	22,364.8	46,376.8	66,972.4	68,004.4	63,290.3	63,789.6	64,489.9	66,032.1
CO2	Indirect	70,418.4	83,248.7	94,392.6	120,298.1	227,756.9	230,687.1	267,216.7	298,034.7	333,864.0	289,077.2	276,078.1	193,372.8	14,477.8
CO2	Direct	446,689.6	426,497.5	803,763.0	736,939.8	2,512,759.5	2,862,048.3	5,600,017.3	6,427,574.9	3,743,269.5	5,939,635.5	6,738,683.9	8,346,237.1	6,673,465.5
FirstEnergy Corporation														
01	Direct				0.0									
02	Indirect				0.0	0.0	0.0							
02	Direct				0.0				0.0					
07	Direct				0.0									
22	Indirect	1,427.5	1,421.0	1,835.7	1,822.0	1,647.5	1,818.1	1,581.6	1,525.5	1,682.4	2,198.0	1,697.7	1,410.1	1,499.6
23	Indirect	252.6	251.5	324.9	322.3	291.5	321.7	280.1	269.9	298.0	389.2	300.7	249.4	264.5
28	Direct										4,168.9	2,537.6	22,808.4	-278,272.2
99	Direct				0.0				0.0					
CH4	Indirect	46,969.8	49,440.2	53,763.5	50,994.7	41,634.5	28,157.7	332,671.4	607,128.7	828,294.1	903,083.5	912,145.3	846,958.1	738,934.5
CH4	Direct	2.6	8.4	15.0	23.0	31.5	42.9	43.9	53.2	37.7	8.7	6.9	7.3	9.3
CO2	Sequestration		12.1	26.8	41.9	18,107.7	18,123.1	29,586.3	25,663.7	24,596.8	5,401.1	6,129.5	4,764.5	2,550.5
CO2	Indirect	72,364.0	77,721.3	82,682.0	74,533.7	65,904.0	83,647.4	49,713.8	64,750.7	63,165.7	4,479.5	35,590.9	73,796.8	142,359.8
CO2	Direct	3,439,754.2	4,367,833.4	1,325,633.0	2,266,758.3	5,676,463.8	4,204,905.3	5,411,061.7	11,054,134.4	10,977,100.8	14,798,440.5	14,208,697.4	10,683,024.7	7,999,735.3
N2O	Indirect		0.4	0.6	0.7	63.0	13.3	0.8	0.5	0.6	0.7	0.1	0.0	0.0
N2O	Direct	50.5	157.2	292.8	436.3	624.8	788.6	846.4	994.6	571.4	65.1	59.0	59.2	41.5
Fisher Scientific Company L.L.C														
CO2	Direct													43,837.0
Florida Power Corporation														
CO2	Direct				4,437,346.6	5,607,020.8	3,985,429.7	2,934,596.8	3,114,657.5	5,040,912.0	4,752,599.6	2,878,318.7	5,417,402.8	4,777,115.4
Ford Motor Company														
CO2	Indirect								57,290.0	67,546.0	116,710.0	133,873.0	158,668.0	111,719.0
CO2	Direct								39,468.0	38,170.0	92,990.0	108,101.0	207,466.0	178,220.0
FPL Group														
22	Indirect											10,688.5	12,283.8	11,559.9
23	Indirect											1,894.6	2,175.3	2,045.8
28	Direct									66,481.6	74,074.3	100,699.2	107,264.8	3,524.5
CH4	Indirect								46,713.1	138,111.3	241,767.7	231,018.0	279,828.0	317,673.4
CO2	Sequestration					3,008.4	3,008.4	2,824.3	2,369.4	2,204.2	461.9	524.5	403.9	208.6
CO2	Indirect								20,828.1	533,769.4	1,568,425.5	1,769,863.1	3,483,131.5	2,959,414.6
CO2	Direct	111,210.9	339,136.5	2,364,463.8	9,138,863.6	10,478,542.4	11,160,131.2	11,207,785.6	13,181,219.2	13,108,021.1	13,367,130.3	13,655,998.9	19,283,506.8	21,628,342.1
Gas Recovery Systems														
CO2	Indirect					62,305.0	66,036.0	73,062.0	73,085.0	64,596.0	405,745.0	426,286.0	426,599.0	459,145.0
General Motors Corporation														
CO2	Sequestration	0.0	65.2	160.1	266.7	873.7	1,369.3	2,159.7	2,664.0	3,300.6	3,822.0	4,460.5	5,051.6	5,616.3
CO2	Indirect	250,000.0	449,000.0	35,000.0	-272,000.0	-330,000.0	-126,000.0	-205,000.0	110,000.0	163,000.0	221,000.0	454,000.0	454,000.0	904,000.0
CO2	Direct	323,000.0	430,000.0	-50,000.0	221,000.0	389,000.0	482,000.0	755,000.0	1,413,000.0	1,375,000.0	1,234,000.0	1,672,000.0	1,791,000.0	1,683,000.0

Table B3. Entity-Level Emission Reductions Reported, Data Year 2003 (Continued)

(Metric Tons Carbon Dioxide Equivalent)

Reporter and Gas	Reduction Type	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Greater New Bedford Regional Refuse Mgt District														
CH4	Direct										74,509.8	82,501.2	131,367.6	130,908.6
CO2	Direct										-8,909.5	-9,862.9	-15,707.9	-15,653.5
Hanes Dye and Finishing, Butner Plant														
CO2	Indirect												-437.0	-468.0
CO2	Direct												1,361.0	1,521.0
Hanes Dye and Finishing, Winston-Salem Plant														
CO2	Indirect									0.0	449.0	537.0	873.0	-25.0
CO2	Direct									0.0	646.0	1,247.0	-2,793.0	-4,462.0
Hawaiian Electric Company, Inc.														
CO2	Sequestration					1,203.4	1,203.4	1,129.7	947.7	881.6	184.8	209.8	161.6	83.4
CO2	Indirect		-1,291,831.2	-1,903,273.7	-2,106,483.1	-2,220,788.4	-2,268,869.2	-2,292,456.0	-2,729,719.1	-2,718,832.8	-2,341,444.0	-2,571,868.9	-2,637,186.2	-2,640,815.0
CO2	Direct		965,244.6	1,627,489.5	1,753,588.2	1,632,025.5	1,522,256.1	1,602,088.4	1,591,202.1	1,421,558.6	1,299,995.8	1,524,977.6	1,372,570.6	1,348,076.6
Highland Industries, Inc.Kernersville Finishing Pt														
CO2	Indirect										0.0	206.0	759.0	507.0
CO2	Direct										0.0	617.0	1,687.0	1,956.0
IBM														
CO2	Indirect	119,113.4	114,033.1	91,625.7	88,087.6	89,902.0	50,167.3	67,612.5	91,386.2	92,622.7	95,035.8	132,449.0	86,794.9	93,108.9
CO2	Direct	6,985.3	6,168.9	22,498.2	12,519.2	12,791.3	7,438.9	13,308.4	16,792.9	13,565.1	11,699.1	19,410.1	17,896.0	17,785.4
Integrated Waste Services Association														
CH4	Indirect	1,316,346.9	1,649,940.5	1,983,409.0	2,316,877.4	2,656,125.5	2,997,335.0	3,334,600.9	3,671,992.0	4,474,344.3	5,292,804.6	6,111,557.0	7,859,209.5	8,624,609.5
CO	Indirect	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO2	Indirect	12,337,713.3	13,154,179.6	13,154,179.6	13,154,179.6	15,785,015.5	16,510,763.4	15,966,452.5	16,057,171.0	17,145,792.7	15,422,141.6	15,422,141.6	15,331,423.1	15,004,836.6
N2O	Indirect	71,159.6	75,993.1	75,993.1	75,993.1	91,299.1	95,327.0	92,104.7	92,910.2	99,354.9	89,419.4	89,419.4	124,327.9	121,374.1
NOx	Indirect	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NVOC	Indirect	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
International Truck and Engine Corporation														
CO2	Indirect						21,750.7	28,331.4	4,750.0	-25,812.1	-30,828.9	-13,224.9	-38,864.7	-54,104.5
CO2	Direct						-25,709.6	-19,060.0	1,672.8	-1,070.5	15,419.4	5,144.6	14,671.0	18,051.2
Jim Walter Resources, Inc.														
CH4	Direct	5,090,682.9	4,774,845.6	5,319,950.3	4,257,032.7	4,615,539.4	4,330,415.8	4,425,352.7	5,023,622.0	5,594,787.4	5,242,456.8	5,061,283.8	5,493,862.2	5,121,626.1
Johnson & Johnson														
CO2	Indirect	3,500.8	16,326.2	46,348.3	64,843.7	78,447.5	118,246.7	139,660.1	154,991.1	176,337.4	184,780.7	192,573.8	206,214.5	302,470.7
CO2	Direct	0.0	16,442.2	24,854.2	28,048.2	32,430.9	36,277.9	42,984.8	49,350.9	61,677.1	65,300.0	65,993.1	68,443.8	76,038.6
NOx	Indirect	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kansas City Power & Light Company														
CO2	Sequestration					2,406.8	2,406.8	3,305.5	3,585.6	4,035.5	981.7	1,257.5	1,069.9	552.5
CO2	Indirect	69,711.7	79,434.9	99,539.0	133,643.7	121,721.5	155,098.7	137,868.5	150,898.4	168,451.5	158,238.4	187,480.6	125,326.7	141,840.2
CO2	Direct	306,498.7	163,897.4	220,094.8	487,719.8	452,249.8	462,394.8	561,187.2	643,823.6	357,943.4	733,582.3	635,118.3	1,022,871.7	956,671.7
KeySpan Energy Corporation														
CH4	Direct	0.0	0.0	1,024.5	1,510.6	2,021.8	2,522.6	3,188.2	3,855.9	3,855.9	3,855.9	7,847.4	7,847.4	7,847.4
CO2	Direct	2,069,832.8	4,601,967.1	4,972,642.8	6,508,234.5	6,163,232.1	5,804,259.1	5,283,897.9	4,897,890.7	3,711,020.9	2,747,590.6	2,266,147.6	2,107,299.6	2,418,010.4
Lehigh Cement Co. (fmrly Lehigh Portland Cement Co														
CO2	Indirect		301,325.0	284,411.0	302,777.0	49,359.0	38,266.0	50,615.0	41,430.0	43,024.0	39,806.0	60,725.0	38,963.0	44,885.0
CO2	Direct		52,356.0	63,071.0	315,697.0	395,704.0	433,355.0	435,738.0	459,061.0	463,111.0	447,548.0	487,263.0	881,618.0	1,075,040.0
CO2	Indirect	-1,053.0	-3,328.0	-1,590.0	-284.0	-1,311.0	199.0	-448.0	205.0	-3,388.0	-3,510.0	-4,289.0	-1,465.0	-3,377.0
CO2	Direct	38,285.0	93,410.0	281,300.0	175,444.0	159,935.0	152,222.0	183,013.0	143,035.0	152,585.0	155,370.0	123,817.0	169,748.0	166,648.0
Los Angeles Department of Water and Power														
CO2	Sequestration		1,669.2	2,003.1	2,003.1	2,003.1	2,003.1	2,003.1	2,126.4	2,434.2	2,531.9	2,623.1	4,013.0	5,295.4
CO2	Indirect	172,249.0	172,249.0	82,817.8	82,817.8	-71,215.8	148,293.9	360,645.9	240,959.2	390,109.4	1,066,783.1	933,517.7	173,962.7	234,875.6
CO2	Direct	1,089,281.3	-858,909.0	125,964.4	-954,765.7	2,231,921.4	3,637,171.5	1,937,198.8	453,938.9	-569,568.7	-1,656,425.1	-1,099,134.2	1,252,007.6	615,496.8
Lower Colorado River Authority														
CO2	Indirect	47,536.5	50,802.3	68,129.6	91,172.1	112,037.3	121,018.5	126,643.0	116,936.1	151,409.1	123,286.4	139,525.0	141,158.0	147,871.1
CO2	Direct	15,422.1	26,489.8	41,458.3	59,239.2	98,429.6	226,342.6	266,258.7	285,672.5	280,138.7	310,620.1	415,672.1	511,380.1	513,920.2
Lucent Technologies Inc.														
22	Indirect						2,547.3	2,016.3	9,622.6	3.6	620.1	1,175.5	629.4	1,014.8
23	Indirect						450.8	356.9	1,703.1	0.6	109.7	208.0	111.4	179.6
CH4	Indirect						702.5	712.5	2,577.9	851.9	1,206.7	1,853.2	1,226.8	1,523.5
CO2	Indirect						17,184.0	14,014.0	65,892.9	8,313.8	19,421.8	28,735.2	15,572.8	20,797.9
CO2	Direct			7,946.9	15,508.3	13,996.0	15,790.5	13,371.0	10,332.8	12,052.9	13,149.8	11,329.2	7,236.9	6,450.6
N2O	Indirect										49.7	43.5	24.9	24.9
NVOC	Direct									0.0	0.0	0.0	0.0	
M. J. SOFFE COMPANY - Maxton														
CO2	Indirect													76.6
M. J. SOFFE COMPANY - Bladenboro														
CO2	Indirect								0.0	-18.0	24.0	-15.0	-88.0	-125.0
M. J. SOFFE COMPANY Fayettville														
CO2	Indirect								0.0	-889.0	773.0	468.0	42.0	-418.0
CO2	Direct								0.0	863.0	1,074.0	1,362.0	656.0	446.0
M. J. SOFFE COMPANY Rowland														
CO2	Indirect									0.0	72.0	-53.0	-37.0	-16.0
Mallinckrodt, Inc.														
CO2	Indirect							-341.0	-54.0	446.0	2,827.0	5,046.0	6,595.0	8,836.0
CO2	Direct							-3,791.0	1,961.0	7,937.0	8,603.0	10,750.0	16,728.0	16,665.0
Maple Springs Laundry														
CO2	Indirect									-23.0	-17.0	12.0	25.0	139.0
CO2	Direct									82.0	12.0	628.0	469.0	567.0
McNeil Generating Station														
CO2	Indirect		57,966.4	42,870.8	52,353.6	83,663.3	90,229.5	101,976.6	94,559.5	135,491.7	141,608.8	132,230.3	98,257.2	123,429.3
CO2	Direct		-43,522.2	-14,080.4	-8,626.4	-7,149.5	-1,258.3	-1,859.7	-9,956.4	-7,981.2	-66,835.9	-8,345.2	-42.8	-3,757.7
Middlesex Generating Company, LLC														
CH4	Direct							10,161.4	348,136.7	513,389.5	513,973.7	545,939.3	565,427.4	672,862.6
CO2	Direct							-1,214.7	-41,626.2	-61,383.8	-61,454.5	-65,274.7	-67,605.2	-80,451.0
Miller Brewing Company														
CO2	Indirect						12,852.0	-2,605.0	8,759.0	15,888.0	6,613.0	14,078.0	5,986.0	7,251.0
CO2	Direct						-13.0	6,156.0	2,432.0	6,181.0	2,465.0	13,904.0	17,381.0	10,455.0
Municipal Electric Auth of Georgia (MEAG Power)														
CO2	Direct	863,000.0	1,144,000.0	1,353,000.0	1,590,000.0	2,234,000.0	2,125,000.0	2,415,000.0	2,543,000.0	2,460,000.0	2,782,000.0	2,870,000.0	2,482,000.0	2,851,000.0
Mystic Development, LLC														
CO2	Indirect													1,959,022.9
CO2	Direct													-250,640.6
National Grid USA														
02	Indirect	0.0	0.0	0.0	0.0									
22	Indirect	1,153.1	1,396.2	1,525.4	1,489.2	1,815.0	1,065.2	2,663.0	2,869.9	1,561.6	1,029.0	910.1		
23	Indirect	237.5	291.5	313.1	313.1	377.8	226.7	550.6	604.5	323.9	215.9	161.9		
28	Direct										10,432.4	35,828.8		
CH4	Indirect	173.2	262.9	461.1	461.1	592.6	557.1	797.1	870.1	690.6	713.6	840.9		
CH4	Direct	536.2	1,014.1	1,617.1	2,508.0	2,775.1	3,000.4	8,296.0	8,333.6	8,665.3	9,066.0	9,913.1		
CO2	Indirect	274,967.7	-2,017,760.4	-3,770,350.7	-3,464,538.8	-3,512,166.0	-3,583,017.1	-3,302,878.4	-743,891.5	-3,079,257.4	-2,632,378.1	-3,556,527.3		
CO2	Direct	900,108.8	3,601,251.5	6,165,953.6	7,107,067.2	7,326,333.7	7,701,091.8	6,982,510.7	5,487,742.3	9,745,523.4	14,600,867.2	15,015,813.5		
N2O	Indirect											4,409.8		
N2O	Direct										5,356.1			

Table B3. Entity-Level Emission Reductions Reported, Data Year 2003 (Continued)

(Metric Tons Carbon Dioxide Equivalent)

Reporter and Gas	Reduction Type	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
National Spinning Co. Alamance Dye Plant														
CO2	Indirect													1,494.0
CO2	Direct													29,353.0
National Spinning Co., Inc. Washington														
CO2	Indirect										0.0	7,091.0	75.0	-4,173.0
CO2	Direct										0.0	2,077.0	735.0	-1,262.0
National Spinning Inc. Beulaville														
CO2	Indirect										0.0	1,167.0	436.0	-2,236.0
National Spinning Inc. Warsaw														
CO2	Indirect										0.0	-498.0	-826.0	-1,074.0
National Spinning Inc. Whiteville														
CO2	Indirect										0.0	173.0	-1,449.0	-1,864.0
NEGT														
CH4	Indirect	339,540.2	431,284.7	576,611.2	584,936.4	557,498.6	703,179.8	830,499.6	735,208.0	823,885.3	785,722.7	885,333.4	836,487.9	814,120.3
CH4	Direct			395,751.2	791,523.3	1,187,274.5	1,607,208.5	2,041,706.5	2,432,199.6	2,839,656.3	3,228,668.0	3,630,783.1	3,929,740.4	3,925,755.1
CO2	Sequestration			8,681.8	24,930.3	57,790.3	44,248.8	42,312.4	40,619.0	36,642.7	21,414.6	18,986.2	15,734.6	1,538.4
CO2	Indirect	-106,900.8	-512,457.8	-511,273.9	-720,322.9	-791,176.7	-701,282.9	-638,079.3	-833,781.8	-1,071,537.7	-1,043,098.3	-1,012,500.8	30,026.9	-43,494.1
CO2	Direct	220,965.7	960,895.6	1,065,224.6	1,575,574.1	2,035,359.8	2,876,922.5	2,981,395.7	3,047,488.7	2,334,367.0	2,120,357.6	2,179,242.0	81,628.5	65,278.3
New Jersey Meadowlands Commission														
CH4	Direct	324,940.8	368,273.8	394,914.5	378,380.9	370,838.1	397,576.9	413,895.6	871,904.6	813,857.4	735,112.0	679,351.7	506,378.8	375,249.0
New York Power Authority														
CO2	Indirect	3,927.0	14,222.0	37,146.0	68,333.0	101,178.0	132,371.0	155,992.0	179,737.0	153,096.0	164,569.0	106,366.0	109,492.0	110,384.0
CO2	Direct	3,717.0	24,219.0	58,238.0	99,951.0	128,945.0	155,276.0	197,529.0	232,789.0	272,337.0	300,493.0	321,009.0	311,600.0	382,103.0
NiSource/NIPSCO														
22	Indirect				243.0	237.9	274.1	263.7	424.0	553.3	636.0	537.8	470.6	434.4
23	Indirect				43.2	43.2	54.0	43.2	75.6	97.2	108.0	97.2	86.4	75.6
28	Direct	0.0	0.0	0.0	0.0	0.0	24,570.2	24,570.2	24,570.2	37,862.3	49,744.6	50,348.8	63,842.2	44,709.7
CH4	Indirect	0.0	6.3	18.8	135.6	154.4	173.2	227.4	262.9	290.0	331.8	361.0	415.2	550.8
CH4	Direct	4,431.8	5,909.0	494,005.7	504,041.9	584,727.8	841,099.1	620,407.4	669,273.8	695,000.6	1,449,467.2	2,224,830.4	4,787,110.2	4,814,109.9
CO2	Sequestration			4.2	58.4	1,264.9	1,348.3	1,277.5	1,098.5	1,043.2	350.2	399.1	354.3	279.9
CO2	Indirect	19,413.8	-7.3	20,867.1	29,138.8	98,882.2	115,519.1	120,990.8	113,291.8	110,431.3	97,650.6	119,351.0	128,871.0	81,119.6
CO2	Direct	2,602.7	4,370.8	6,144.4	10,890.8	41,743.3	264,581.4	937,948.4	1,373,966.8	1,833,479.4	1,638,163.5	1,287,340.8	1,785,926.6	1,091,593.7
PacifiCorp														
CH4	Indirect					1,508.6	1,508.6	3,716.1	3,716.1	3,716.1	3,716.1	3,716.1	3,716.1	3,716.1
CO2	Sequestration			360.9	2,393.6	169,906.9	169,911.2	904,612.7	903,707.1	903,011.2	759,223.3	767,719.7	81,106.0	63,780.4
CO2	Indirect	36,603.1	108,214.4	107,523.2	120,175.0	122,271.5	234,399.5	181,510.6	304,507.7	709,595.6	505,457.3	309,939.9	426,376.9	285,763.2
CO2	Direct			98,682.7	247,725.9	452,701.5	514,084.4	388,807.6	584,208.9	765,645.8	887,935.2	989,378.5	1,021,780.4	1,198,011.0
N2O	Indirect					4,672.4	4,672.4	4,672.4	4,672.4	4,672.4	4,672.4	4,672.4	4,672.4	4,672.4
Pak-Lite, Inc. - Mebane Plant														
CO2	Indirect										0.0	-76.0	-71.0	-59.0
CO2	Direct										0.0	33.0	29.0	4.0
Palmer Capital Corporation														
CH4	Direct	489,420.5	885,021.1	1,080,948.5	1,068,935.3	1,280,506.9	2,069,062.5	4,534,868.8	5,245,307.6	5,628,924.2	5,988,576.8	5,562,563.3	5,206,941.2	2,818,672.9
CO2	Indirect	-618.2	-43,422.6	-60,969.9	-42,679.1	-32,205.7	-48,600.4	-68,432.3	-89,323.0	-153,698.8	-162,019.7	-136,702.4	-127,687.1	-49,126.8
Peabody Energy														
CH4	Direct	-17,779.0	-28,750.0	789,038.0	742,233.0	420,739.0	421,130.0	873,632.0	122,199.0	-78,338.0	238,349.0	-385,043.0	-324,323.0	475,042.0
CO2	Indirect				180,562.4	207,696.3	270,679.5	214,061.1	269,252.4	192,330.4	383,095.1	405,512.5	391,714.2	414,510.9
CO2	Direct				23,242.1	43,232.8	-9,951.8	-129,800.9	-179,282.4	-135,513.5	-141,070.9	-318,416.4	-306,821.7	-256,868.5
PEI Power Corp														
CO2	Direct													696.4
Penn Compression Moulding, Inc.														
CO2	Indirect										0.0	272.0	230.0	220.0
CO2	Direct										0.0	-7.0	-5.0	12.0
PG&E Corporation														
CH4	Direct			141,654.2	159,932.1	159,347.9	167,109.8	130,658.2	96,021.9	59,653.8	28,063.8	8,554.8	8,554.8	42,356.5
CO2	Indirect	59,366.2	214,881.2	329,204.7	390,850.6	447,958.8	494,835.7	504,387.5	519,391.4	1,232,200.1	1,175,629.9	1,004,605.6	872,084.0	817,833.4
CO2	Direct	59,366.2	380,075.1	629,249.7	1,044,247.7	1,526,650.5	1,827,835.9	2,268,720.4	2,320,811.9	2,251,247.1	2,292,568.5	2,710,778.9	2,599,083.5	2,958,337.8
Portland General Electric Co.														
CO2	Sequestration						0.5	135.0	472.7	900.1	1,421.8	2,145.9	2,658.3	3,170.9
CO2	Indirect	103,214.0	175,241.8	283,700.3	475,672.4	676,652.8	757,132.8	799,550.0	854,542.7	937,796.8	1,024,665.2	1,158,682.7	1,311,036.3	1,348,683.5
CO2	Direct			2.8	8.4	8.4	11.6	23.2	39.4	52.0	59.0	59.0	63.9	56.3
Public Service Enterprise Group														
22	Indirect						4,643.6	5,284.8	1,171.2	3,800.7	1,680.6	1,967.6	8,147.0	1,934.0
23	Indirect						820.5	933.8	205.1	674.7	296.9	350.9	1,441.2	340.1
CH4	Indirect	3,088.1	6,092.7	9,055.5	11,914.1	19,050.0	29,787.2	36,622.7	43,020.0	50,487.6	57,026.8	64,146.0	72,861.5	71,108.8
CO2	Sequestration					1,203.4	1,203.4	2,175.8	2,637.8	3,153.7	796.8	904.8	696.6	359.6
CO2	Indirect	65,045.2	99,426.5	148,651.3	209,565.1	343,700.6	694,096.2	863,638.1	1,099,332.0	1,220,484.7	1,909,813.6	1,647,296.1	3,323,291.0	1,622,016.5
CO2	Direct					-442.7	-418.2	-442.7	-381.0	-356.5	-332.0	-430.9	-393.7	0.0
Republic Metals Corporation														
CO2	Indirect							-73.0	-38.0	-35.0	-70.0	-79.0	-59.0	-80.0
CO2	Direct							68.0	82.0	6.0	119.0	-12.0	49.0	-173.0
Rochester Gas and Electric Corporation														
CO2	Indirect					23,586.8	35,380.2	69,853.2	78,017.9	59,874.2	67,131.7	72,574.8	66,224.5	66,224.5
CO2	Direct					-390,089.5	71,667.6	68,038.9	-907.2	353,802.1	498,951.6	462,664.2	453,592.4	544,310.9
N2O	Direct					1,074.1	1,074.1	1,074.1	1,342.6	2,685.3	3,222.3	3,490.8	3,222.3	3,490.8
Rolls-Royce Corporation														
CH4	Indirect									40,135.0	259,808.0	265,236.0	250,171.0	202,216.0
CO2	Indirect								133,087.0	110,060.0	122,749.0	120,989.0	131,383.0	144,832.0
CO2	Direct										2,237.8	-836.8	-1,000.0	-142.6
Sacramento Municipal Utility District														
CO2	Sequestration						1,158.5	1,439.7	1,763.6	1,945.0	2,277.9	2,650.8	3,026.4	3,421.9
CO2	Indirect						786,869.4	1,067,915.3	2,179,510.6	2,067,388.9	1,786,303.1	1,278,919.2	1,194,221.7	2,445,097.1
CO2	Direct						-156,791.5	-517,708.6	-1,032,340.9	-1,124,406.6	-1,314,465.4	-1,432,553.7	-1,260,541.4	-1,027,325.1
Santee Cooper														
CH4	Indirect					313.0	20.9	20.9	20.9	83.5	125.2	20,301.9	68,083.3	113,110.5
CO2	Sequestration	155.0	397.2	874.8	921.4	940.4	979.6	1,246.7	2,173.4	2,195.4	2,268.9	3,621.0	7,664.8	8,731.7
CO2	Indirect	20,217.5	27,473.2	22,376.6	16,759.3	87,004.5	106,668.6	149,090.4	173,295.0	141,374.8	108,815.9	144,522.7	135,764.7	355,562.0
CO2	Direct	12,936.5	17,843.4	185,542.9	169,831.3	216,929.7	452,767.8	426,434.0	1,097,474.1	1,093,336.4	1,193,594.8	1,151,565.0	1,169,422.0	1,187,497.6
Seattle City Light														
CO2	Sequestration					1.8	9.1	15.4	21.8	29.7	41.3	51.8	62.0	74.2
CO2	Indirect	7,238.4	30,759.9	55,281.1	82,921.2	123,606.7	170,007.3	187,106.0	209,929.8	238,824.6	246,921.2	280,686.6	324,696.0	332,851.5
Sikorsky Aircraft Corporation														
CO2	Indirect		15.5	422.3	2,003.9	2,461.7	3,094.0	3,854.1	4,401.0	4,608.3	5,078.3	4,526.4	4,833.0	4,928.4
CO2	Direct										169.6	254.4	254.4	254.4
Southern Company														
28	Direct									384,060.0	377,400.0	421,800.0	537,240.0	555,000.0
CH4	Indirect		1,460.5	4,577.0	7,258.8	9,117.2	10,973.3	12,806.4	14,404.9	15,232.9	16,104.6	16,159.8	15,743.5	15,295.0
CO2	Sequestration	1,993.0	3,398.0	4,477.0	5,630.0	20,760.8	42,431.8	82,418.8	107,586.4	157,903.0	163,934.8	176,525.6	194,226.2	207,219.9
CO2	Indirect				174,325.0	332,019.0	407,938.0	755,507.0	946,607.0	1,603,274.0	2,065,134.0	2,486,094.0	3,072,970.0	3,650,576.0
CO2	Direct	770,340.0	2,255,635.0	2,441,647.0	2,863,002.0	3,376,687.0	3,483,795.0	3,741,520.0	2,666,235.0	4,542,236.0	5,979,127.0	11,609,127.0	15,253,747.0	14,458,796.0

Table B3. Entity-Level Emission Reductions Reported, Data Year 2003 (Continued)

(Metric Tons Carbon Dioxide Equivalent)

Reporter and Gas	Reduction Type	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Sunoco, Inc.														
CO2	Indirect	-59,621.0	-36,351.0	-27,600.0	-66,360.0	-87,535.0	-251,831.0	-279,576.0	-135,669.0	-147,236.0	-198,134.0	-308,625.0	-322,435.0	-198,182.0
CO2	Direct	120,905.0	-59,001.0	304,939.0	585,795.0	590,490.0	600,419.0	802,027.0	1,145,830.0	1,355,025.0	1,375,714.0	1,403,786.0	1,200,224.0	1,377,810.0
Tampa Electric Company														
CO2	Sequestration					1,203.4	1,203.4	1,129.7	947.7	881.6	184.8	209.8	161.6	83.4
CO2	Indirect	240,404.0	237,682.4	234,053.7	240,585.4	265,406.0	267,583.2	266,857.5	271,908.7	268,024.1	321,130.7	323,092.1	294,353.3	243,516.5
Tennessee Valley Authority														
01	Direct			0.0	0.0	0.0	0.0	0.0						
02	Direct			0.0	0.0	0.0	0.0	0.0						
03	Direct			0.0	0.0	0.0	0.0	0.0						
07	Direct			0.0	0.0	0.0	0.0	0.0						
08	Direct				0.0	0.0	0.0	0.0						
18	Direct				-29.5	-43.0	-42.5	-42.5						
99	Direct			0.0	0.0	0.0	0.0	0.0						
CH4	Indirect		84,149.6	84,775.5	94,394.4	127,945.7	147,767.7	148,894.4	132,828.2	123,564.0	143,448.6	159,827.8	153,130.1	122,437.3
CH4	Direct	440.3	1,316.6	1,051.6	1,155.9	1,544.0	3,461.5	3,705.7	3,987.3	3,999.9	4,225.2	4,181.4	4,068.7	3,883.0
CO2	Sequestration	1,064.1	1,710.0	2,700.7	3,087.1	30,548.5	31,602.7	31,749.7	28,665.2	28,575.4	13,581.5	16,352.0	17,828.0	18,141.9
CO2	Indirect	0.0	-10,048.0	-10,123.3	-9,715.0	-8,332.5	9,453.8	73,034.7	243,864.9	122,577.0	76,187.2	71,136.9	115,811.2	176,560.8
CO2	Direct	2,859,607.1	8,558,862.2	6,970,759.0	7,763,632.2	10,283,520.3	22,310,595.4	23,901,552.6	25,642,872.9	25,754,776.9	27,226,844.8	27,028,349.1	26,304,611.6	25,192,742.3
The Burlington Northern and Santa Fe Railway Co														
CO2	Direct						95,254.4	387,367.9	735,726.9	714,861.6	926,235.7	1,156,660.6	1,126,723.5	1,028,747.6
The Dow Chemical Company														
01	Direct					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
02	Direct					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03	Direct					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04	Direct					0.0	0.0	0.0				0.0		
05	Direct					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07	Direct					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08	Direct					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Direct					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	Direct					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Direct					0.0								
13	Direct					0.0				0.0				
18	Direct					-5,898.6	-9,551.6	-12,403.3	-39,502.7	-182,641.6	-322,527.8	-723,022.6	-1,237,881.6	-1,118,262.1
19	Direct					7,483.5					22,705.7	22,717.3	22,479.4	22,661.0
24	Direct					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	Direct					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	Direct					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	Direct					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	Direct					74,517.4	-81,566.4	129,640.2	301,634.4					
29	Direct					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
99	Direct					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CH4	Direct					-8,969.2	-13,100.9	22,041.3	-7,695.4	39,941.4	-121,095.2	-73,995.9	-62,002.3	9,013.1
CO	Direct					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO2	Direct					-1,120,556.4	-742,548.9	-2,929,548.5	-2,945,651.5	-2,834,196.9	-325,040.4	-164,985.3	3,772,973.4	3,825,754.5
N2O	Direct					-732.7	-443.1	-71.8	-159.8	-1,956.0	-122,307.6	-26,376.9	-21,509.8	-11,072.2
NOx	Direct					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Toyota Motor North America, Inc.														
CO2	Indirect											44,268.0	3,631.0	-33,812.0
CO2	Direct											28,251.0	13,972.0	20,563.0
TS Designs, Inc.														
CO2	Direct									-2.5	42.5	24.7	14.7	-4.0
Tucson Electric Power Company														
01	Direct				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
02	Direct						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07	Direct			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	Direct	34,429.1	29,998.3	47,822.1	35,093.7	35,879.1	38,608.1	76,672.4	76,199.1	43,189.9	41,931.1	41,226.3	77,900.9	35,556.9
CO2	Sequestration			1.2	1.8	1,213.6	1,225.1	1,163.3	1,807.9	1,701.4	426.5	494.8	431.8	313.4
CO2	Indirect	6,754.0	36,682.4	67,156.8	93,247.9	108,199.8	101,059.3	128,795.3	109,549.2	117,394.7	122,357.1	124,569.7	117,006.6	119,614.1
CO2	Direct							8.3	10.8	8,693.6	25,876.9	28,496.9	20,848.8	19,819.0
U.S. Department of Energy - Energy Management														
CO2	Indirect									114,940.3	69,127.5	40,006.8	1,451.5	-102,330.4
CO2	Direct									756,592.1	814,379.8	778,455.3	843,319.0	836,696.5
Valdese Manufacturing Company														
CO2	Indirect											-983.0	-1,461.0	-484.0
CO2	Direct											-921.6	-807.9	3,095.0
Waste Management, Inc.														
CH4	Direct					10,006,518.0	12,211,321.0	14,240,657.0	16,498,774.0	17,467,097.0	21,631,638.0	26,079,976.0	30,095,477.0	32,936,966.0
CO2	Indirect					410,462.0	460,828.0	492,957.0	509,784.0	525,248.0	548,312.0	597,735.0	619,406.0	613,760.0
Waverly Light & Power Company														
CO2	Sequestration	18.1	36.3	54.4	72.6	84.4	95.3	106.1	116.1	124.3	132.4	137.0	144.2	148.8
CO2	Indirect	1,129.4	3,207.8	4,047.0	7,099.6	6,504.5	5,878.6	5,393.2	4,977.7	5,509.3	6,353.9	7,560.5	7,969.6	8,764.3
CO2	Direct	3,009.1	5,805.1	9,168.9	11,063.1	11,718.1	12,699.7	13,417.3	13,554.2	15,296.0	15,641.7	16,786.5	18,163.7	17,726.4

Notes: This table excludes data reported as confidential; a negative reduction represents an increase in emissions.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ

Table B4. Total Emission Reductions and Sequestration Reported at Project and Entity Levels, Data Year 2003

(Metric Tons Carbon Dioxide Equivalent)

Report Name	Sector	Reduction Type	Project Level	Entity Level
A&N Electric Cooperative	Electric Providers	Indirect	4,890.4	
Advanced Micro Devices, Inc.	Industrial	Unspecified (EZ)	1,145.0	
AES Hawaii, Inc.	Electric Providers	Sequestration	2,000,000.0	1,540,000.0
AES Shady Point, LLC	Electric Providers	Sequestration	4,150,000.0	4,150,000.0
AES Thames, LLC	Electric Providers	Sequestration	410,000.0	410,000.0
AES Warrior Run, LLC	Electric Providers	Direct	41,899.2	
		Indirect		
Ajinomoto Aminoscience LLC	Industrial	Direct		-581.0
		Indirect		13,287.0
Alabama Biomass Partners, Ltd	Alternative Energy	Unspecified (EZ)	71,785.4	
Alcan Primary Products Corporation, Sebree Works	Industrial	Direct	384,568.5	384,568.5
Allegheny Energy, Inc.	Electric Providers	Direct	1,549,537.6	1,549,537.9
		Indirect	181,286.4	181,286.4
		Sequestration	738.9	738.8
Allergan, Inc.	Industrial	Direct	927.2	927.2
		Indirect	13,528.8	13,541.3
Alliant Energy	Electric Providers	Direct	2,596,442.0	2,596,442.0
		Indirect	808,998.8	808,998.6
		Sequestration	30,990.4	30,990.4
Ameren Corporation (formerly UE, CIPS, and CILCO)	Electric Providers	Direct	1,990,104.0	
		Indirect	261,019.7	
		Sequestration	154.9	
American Electric Power, Inc.	Electric Providers	Direct	6,287,995.7	
		Indirect	623,652.4	
		Sequestration	214,190.8	
Anoka Municipal Utility	Electric Providers	Unspecified (EZ)	98.3	
Arizona Electric Power Cooperative, Inc.	Electric Providers	Unspecified (EZ)	110,066.6	
Arizona Portland Cement Co.	Industrial	Direct	54,048.0	50,339.0
		Indirect	-6,805.0	-6,806.0
		Sequestration	2.6	2.6
Arizona Public Service Company	Electric Providers	Direct		-60,522.8
		Indirect		163,841.2
Asheville Landfill Gas, LLC	Alternative Energy	Direct	57,001.1	
		Indirect	83.5	
AT&T	Industrial	Direct	5,715.3	
		Indirect	317,821.0	
Azdel, Inc	Industrial	Direct		0.4
		Indirect		2,035.0
BARC Electric Cooperative	Electric Providers	Indirect	3,231.0	
Baxter Healthcare Inc.	Industrial	Direct		2,712.0
		Indirect		21,472.0
Berkshire Power LLC	Electric Providers	Direct	-476,500.6	-476,500.6
		Indirect	730,680.2	730,680.2
Biomass Partners, LP	Alternative Energy	Unspecified (EZ)	94,085.8	
Blue Source, LLC	Industrial	Direct	8,650,951.9	7,450,858.2
		Indirect	254,947.7	254,008.0
BMW US Holding Corp.	Industrial	Direct	38,500.9	38,500.9
		Indirect		4,635.9
Bountiful City Light & Power	Electric Providers	Direct	6,274.0	6,274.0
		Sequestration	16.3	16.3
BP America	Industrial	Direct	3,993,665.2	3,993,665.2
		Indirect	1,215.6	1,215.6
		Sequestration	102,980.0	102,980.0
Branson Ultrasonics Corporation	Industrial	Indirect	42.3	
Burlington County Board of Chosen Freeholders	Services and Retail	Direct	357,589.0	
		Indirect	66,019.9	
California Portland Cement Co. - Colton Plant	Industrial	Direct	74,717.0	125,333.0
		Indirect	14,036.0	5,439.0
California Portland Cement Co. - Mojave Plant	Industrial	Direct	122,808.0	123,813.0
		Indirect	16,982.0	20,043.0
Cargill, Inc. - Oil Seeds Division	Industrial	Direct		-5,880.0
		Indirect		943.0

Table B4. Total Emission Reductions and Sequestration Reported at Project and Entity Levels, Data Year 2003 (Continued)

(Metric Tons Carbon Dioxide Equivalent)

Report Name	Sector	Reduction Type	Project Level	Entity Level
Carolina Power & Light Company	Electric Providers	Direct	9,446,801.1	
Catawba Landfill Gas, LLC	Alternative Energy	Direct	101,217.3	
		Indirect	4,723.7	
CDX Gas, LLC	Alternative Energy	Direct	2,076,092.4	
ChevronTexaco Corporation	Industrial	Unspecified (EZ)	2,449.4	
Choptank Electric Cooperative	Electric Providers	Indirect	24,157.8	
Cinergy Corp.	Electric Providers	Direct	1,593,383.7	1,593,383.7
		Indirect	388,433.2	388,432.9
		Sequestration	19,645.1	19,645.1
City of Austin Electric Utility (Austin Energy)	Electric Providers	Unspecified (EZ)	954,439.5	
City of Edmond, Oklahoma, Electric Department	Electric Providers	Unspecified (EZ)	4,085.5	
City of Klamath Falls- Cogen	Electric Providers	Direct	-2,328,328.0	
		Indirect	2,385,835.0	
		Sequestration	1,373.1	
City of Palo Alto Utilities	Electric Providers	Unspecified (EZ)	5,313.7	
City of Springfield	Services and Retail	Direct	48,266.1	
City Public Service	Electric Providers	Direct	3,498,118.2	
		Indirect	164,302.1	
		Sequestration	13.4	
City Utilities of Springfield	Electric Providers	Direct	44,035.8	
		Sequestration	144.5	
CLE Resources	Industrial	Indirect	6,820.2	
Cleco Corporation	Electric Providers	Sequestration	3,887.3	
CMV Joint Venture	Alternative Energy	Direct	512,617.5	
Common Purpose Institute	Agricultural	Unspecified (EZ)	3,760.0	
CommonWealth Bethlehem Energy, LLC	Alternative Energy	Direct	53,181.0	53,181.0
COMMSCOPE CATAWBA PLANT	Industrial	Direct		-367.0
		Indirect		-2,494.0
COMMSCOPE CLAREMONT PLANT	Industrial	Direct		-304.0
		Indirect		-3,380.0
COMMSCOPE CONOVER REEL RECYCLING	Industrial	Direct		-43.0
		Indirect		22.0
COMMSCOPE Headquarters- Hickory	Industrial	Indirect		12.0
COMMSCOPE NEWTON PLANT	Industrial	Direct		266.0
		Indirect		-2,188.0
COMMSCOPE SCOTTSBORO PLANT	Industrial	Direct		
		Indirect		
COMMSCOPE SPARKS PLANT	Industrial	Direct		161.0
		Indirect		757.0
COMMSCOPE STATESVILLE PLANT	Industrial	Direct		-57.0
		Indirect		6,619.0
Community Electric Cooperative	Electric Providers	Indirect	5,871.6	
Conectiv Atlantic Generation (CAG)	Electric Providers	Direct	152.3	
		Indirect	17,261.9	
		Sequestration	25.8	
Conectiv Delmarva Generation	Electric Providers	Direct	803,173.5	
		Indirect	32,010.5	
		Sequestration	444.2	
CONNECTIVITY SOLUTONS MANUFACTURING Inc.	Industrial	Direct		-99.7
		Indirect		-18,186.0
Consol Coal Group	Industrial	Direct		20,243,319.9
Consolidated Edison Company of New York, Inc.	Electric Providers	Direct	1,617,238.0	281,493.1
		Indirect		96,606.1
Constellation Energy	Electric Providers	Direct	6,232,418.0	6,232,418.0
		Indirect	291,993.4	291,993.4
		Sequestration	114.0	114.0
County Sanitation Districts of Los Angeles County	Alternative Energy	Direct	3,819,717.0	
	Alternative Energy	Indirect	229,906.0	
DADS Landfill	Alternative Energy	Direct	77,993.0	

Table B4. Total Emission Reductions and Sequestration Reported at Project and Entity Levels, Data Year 2003 (Continued)

(Metric Tons Carbon Dioxide Equivalent)

Report Name	Sector	Reduction Type	Project Level	Entity Level
DaimlerChrysler Corporation	Industrial	Direct	181,219.0	181,219.0
		Indirect	172,770.0	172,770.0
		Sequestration		6.4
Danaher Controls	Industrial	Direct		-100.0
		Indirect		90.0
DeBourgh Manufacturing Company	Industrial	Unspecified (EZ)	70.2	
Delaware Electric Cooperative	Electric Providers	Indirect	34,708.9	
Delaware Solid Waste Authority	Alternative Energy	Direct	520,536.3	
Dominion Generation	Electric Providers	Direct	6,863,314.8	
DTE Energy/ Detroit Edison	Electric Providers	Direct	1,673,088.9	1,763,173.5
		Indirect	6,298,030.2	-4,314,247.0
		Sequestration	104,543.6	104,507.7
Duke Energy Corporation	Electric Providers	Direct	11,476,525.0	11,478,744.0
		Indirect	75,191.0	75,191.0
		Sequestration	359.8	359.7
Dynegy, Inc.	Electric Providers	Direct	364,169.4	364,169.4
		Indirect	97,966.0	97,966.0
		Sequestration	168,337.5	168,337.5
Eaton Corporation - Vehicle Controls Business Unit	Industrial	Indirect		2,346.0
El Paso Production Company	Alternative Energy	Direct	1,074,936.0	
Energy Developments, Inc.	Alternative Energy	Indirect	169,117.0	
Energy Management Partners, LP	Alternative Energy	Unspecified (EZ)	4,547,038.9	
Entergy Services, Inc.	Electric Providers	Direct	6,678,450.5	6,678,450.5
		Indirect	14,477.8	14,477.8
		Sequestration	66,032.1	66,032.1
Environmental Synergy, Inc.	Agricultural	Sequestration	3,031.8	
Exelon Corporation	Electric Providers	Direct	114,013.9	
		Indirect	9,061,748.6	
		Sequestration	7,750.2	
FirstEnergy Corporation	Electric Providers	Direct	7,744,306.6	7,721,513.9
		Indirect	883,059.0	883,058.4
		Sequestration	2,550.4	2,550.5
Fisher Scientific Company L.L.C	Industrial	Direct		43,837.0
Florida Power Corporation	Electric Providers	Direct		4,777,115.4
Ford Motor Company	Industrial	Direct	178,220.0	178,220.0
		Indirect	111,719.0	111,719.0
FPL Group	Electric Providers	Direct	21,631,866.6	21,631,866.6
		Indirect	3,290,693.7	3,290,693.7
		Sequestration	208.5	208.6
Gas Recovery Systems	Alternative Energy	Indirect	459,147.0	459,145.0
General Motors Corporation	Industrial	Direct	810,893.0	1,683,000.0
		Indirect	5,041,757.3	904,000.0
		Sequestration		5,616.3
Golden Valley Electric Association, Inc	Electric Providers	Unspecified (EZ)	66,397.7	
Granger Electric Company	Alternative Energy	Direct	-76,801.3	
		Indirect	726,673.9	
Granger Energy, LLC	Alternative Energy	Indirect	468,593.7	
Greater New Bedford Regional Refuse Mgt District	Alternative Energy	Direct	115,255.1	115,255.1
Green Mountain Energy Company	Electric Providers	Indirect	546,432.4	
Greene Energy, LLC	Alternative Energy	Unspecified (EZ)	348,244.7	
Hanes Dye and Finishing, Butner Plant	Industrial	Direct		1,521.0
		Indirect		-468.0
Hanes Dye and Finishing, Winston-Salem Plant	Industrial	Direct		-4,462.0
		Indirect		-25.0
Hawaiian Electric Company, Inc.	Electric Providers	Direct	40,712.6	1,348,076.6
		Indirect		-2,640,815.0
		Sequestration	83.4	83.4
Highland Industries, Inc.Kernersville Finishing Pt	Industrial	Direct		1,956.0
		Indirect		507.0
Hollomon Family	Other (Households)	Unspecified (EZ)	0.2	

Table B4. Total Emission Reductions and Sequestration Reported at Project and Entity Levels, Data Year 2003 (Continued)

(Metric Tons Carbon Dioxide Equivalent)

Report Name	Sector	Reduction Type	Project Level	Entity Level
IBM	Industrial	Direct		17,785.4
		Indirect		93,108.9
Integrated Waste Services Association	Alternative Energy	Direct	-7,933,286.6	
		Indirect	23,750,820.2	23,750,820.2
International Truck and Engine Corporation	Industrial	Direct		18,051.2
		Indirect		-54,104.5
Iredell Landfill Gas, LLC	Alternative Energy	Direct	71,796.4	
JEA	Electric Providers	Unspecified (EZ)	273,018.4	
Jim Walter Resources, Inc.	Alternative Energy	Direct	5,121,626.1	5,121,626.1
Johnson & Johnson	Industrial	Direct	76,039.9	76,038.6
Johnson & Johnson	Industrial	Indirect	302,475.8	302,470.7
Kansas City Power & Light Company	Electric Providers	Direct	956,671.7	956,671.7
		Indirect	141,840.2	141,840.2
		Sequestration	552.4	552.5
KeySpan Energy Corporation	Electric Providers	Direct		2,425,857.8
Klickitat County Public Utility District No. 1	Electric Providers	Direct	300,909.0	
Landfill Energy Systems	Alternative Energy	Direct	1,402,749.9	
		Indirect	899,628.0	
Lehigh Cement Co. (fmrly Lehigh Portland Cement Co	Industrial	Direct	824,178.0	1,075,040.0
		Indirect	41,171.0	44,885.0
Lehigh Cement Co. (formerly Calaveras Cement Co.)	Industrial	Direct	144,728.0	166,648.0
Lehigh Cement Co. (formerly Calaveras Cement Co.)	Industrial	Indirect	-744.0	-3,377.0
LFG Energy, Inc.	Alternative Energy	Direct	35,156.1	
		Indirect	8,319.8	
Los Angeles Department of Water and Power	Electric Providers	Direct	796,996.0	615,496.8
		Indirect	8,166.5	234,875.6
		Sequestration	5,295.4	5,295.4
Lower Colorado River Authority	Electric Providers	Direct	513,920.2	513,920.2
		Indirect	147,871.1	147,871.1
Lucent Technologies Inc.	Industrial	Direct	6,450.5	6,450.6
		Indirect	24,818.1	23,540.6
Lynchburg Gas Producers, LLC	Alternative Energy	Direct	75,665.6	
		Indirect	3,193.3	
M. J. SOFFE COMPANY - Maxton	Industrial	Indirect		76.6
M. J. SOFFE COMPANY - Bladenboro	Industrial	Indirect		-125.0
M. J. SOFFE COMPANY Fayettville	Industrial	Direct		446.0
		Indirect		-418.0
M. J. SOFFE COMPANY Rowland	Industrial	Indirect		-16.0
Mallinckrodt, Inc.	Industrial	Direct		16,665.0
		Indirect		8,836.0
Maple Springs Laundry	Services and Retail	Direct		567.0
		Indirect		139.0
McNeil Generating Station	Electric Providers	Direct		-3,757.7
		Indirect		123,429.3
Mead Johnson Nutls./Bristol-Myers Squibb	Industrial	Direct	39,817.6	
		Indirect	1,895.9	
Mecklenburg Electric Cooperative	Electric Providers	Indirect	13,122.7	
Michigan CAT	Industrial	Direct	356,107.2	
		Indirect	7,409.0	
Middlesex Generating Company, LLC	Alternative Energy	Direct	592,410.7	592,411.6
Miller Brewing Company	Industrial	Direct		10,455.0
		Indirect		7,251.0
Minnesota Power	Electric Providers	Direct	959,642.1	
		Indirect	70,737.7	
		Sequestration	15,430.3	
Minnesota Resource Recovery Association (MRRA)	Other (Households)	Unspecified (EZ)	1,439,271.6	
Model City Energy, LLC	Alternative Energy	Direct	185,814.1	
		Indirect	43,966.7	
Montauk Energy Capital	Alternative Energy	Direct	5,618,449.5	
Municipal Electric Auth of Georgia (MEAG Power)	Electric Providers	Direct	2,851,000.0	2,851,000.0

Table B4. Total Emission Reductions and Sequestration Reported at Project and Entity Levels, Data Year 2003 (Continued)

(Metric Tons Carbon Dioxide Equivalent)

Report Name	Sector	Reduction Type	Project Level	Entity Level
Mystic Development, LLC	Alternative Energy	Direct	-250,640.6	-250,640.6
		Indirect	1,959,022.9	1,959,022.9
Nashville Electric Service	Electric Providers	Unspecified (EZ)	5,707.8	
National By-Products Inc	Industrial	Direct	4,895.2	
National Grid USA	Electric Providers	Direct	98,800.1	
		Indirect	1,565,875.9	
National Spinning Co. Alamance Dye Plant	Industrial	Direct		29,353.0
		Indirect		1,494.0
National Spinning Co., Inc. Washington	Industrial	Direct		-1,262.0
		Indirect		-4,173.0
National Spinning Inc. Beulaville	Industrial	Indirect		-2,236.0
National Spinning Inc. Warsaw	Industrial	Indirect		-1,074.0
National Spinning Inc. Whiteville	Industrial	Indirect		-1,864.0
Natural Power, Inc.	Alternative Energy	Direct	200,201.2	
		Indirect	17,076.8	
NC Muni Landfill Gas Partners, LLC	Alternative Energy	Direct	61,093.5	
		Indirect	397.3	
Nebraska Public Power District	Electric Providers	Unspecified (EZ)	796,186.8	
NEGT	Electric Providers	Direct	3,991,033.4	3,991,033.4
		Indirect	770,626.3	770,626.3
		Sequestration	1,538.4	1,538.4
NEO Corporation	Alternative Energy	Direct	3,519,611.4	
New Jersey Meadowlands Commission	Alternative Energy	Direct	375,248.6	375,249.0
New York Power Authority	Electric Providers	Direct		382,103.0
		Indirect		110,384.0
Newton Landfill Gas, LLC	Alternative Energy	Direct	19,739.4	
		Indirect		
NiSource/NIPSCO	Electric Providers	Direct	5,957,782.9	5,950,413.3
		Indirect	82,181.1	82,180.4
		Sequestration	279.8	279.9
Noranda Aluminum Inc.	Industrial	Direct	3,140,400.0	
North Carolina Biomass Partners	Alternative Energy	Unspecified (EZ)	15,380.8	
North Carolina Electric Membership Corporation	Electric Providers	Unspecified (EZ)	351,046.0	
Northern Neck Electric Cooperative	Electric Providers	Indirect	4,356.4	
Northern Virginia Electric Cooperative	Electric Providers	Indirect	50,106.8	
Ocean County Landfill Corporation	Alternative Energy	Direct	539,246.0	
		Indirect	-10,607.0	
Old Dominion Electric Cooperative	Electric Providers	Indirect	70.2	
		Sequestration	5.2	
Omaha Public Power District	Electric Providers	Unspecified (EZ)	2,569,946.2	
Orlando Utilities Commission (OUC)	Alternative Energy	Unspecified (EZ)	34,617.3	
PacifiCorp	Electric Providers	Direct	1,198,011.0	1,198,011.0
		Indirect	294,193.1	294,151.7
		Sequestration	63,780.5	63,780.4
Pak-Lite, Inc. - Mebane Plant	Industrial	Direct		4.0
		Indirect		-59.0
Palmer Capital Corporation	Alternative Energy	Direct	2,818,673.3	2,818,672.9
		Indirect	-49,126.8	-49,126.8
Peabody Energy	Industrial	Direct	570,706.3	218,173.5
		Indirect		414,510.9
PEI Power Corp	Alternative Energy	Direct	47,391.1	696.4
		Indirect	44,149.1	
Penn Compression Moulding, Inc.	Industrial	Direct		12.0
		Indirect		220.0
Pfizer Pharmaceuticals LLC - Arecibo Site	Industrial	Unspecified (EZ)	3,872.6	
PG&E Corporation	Electric Providers	Direct	3,000,694.3	3,000,694.3
		Indirect	817,833.4	817,833.4
Pitt Landfill Gas, LLC	Alternative Energy	Direct	58,166.0	
		Indirect	772.0	

Table B4. Total Emission Reductions and Sequestration Reported at Project and Entity Levels, Data Year 2003 (Continued)

(Metric Tons Carbon Dioxide Equivalent)

Report Name	Sector	Reduction Type	Project Level	Entity Level
Platte River Power Authority & 4 Owner Cities	Electric Providers	Direct	11,790.0	
		Indirect	82,734.0	
Polar Refrigerant Technology, LLC	Industrial	Indirect	39,226.8	
Portland General Electric Co.	Electric Providers	Direct	56.3	56.3
		Indirect	1,348,643.9	1,348,683.5
		Sequestration	3,170.9	3,170.9
Prince George Electric Cooperative	Electric Providers	Indirect	4,264.5	
Public Service Company of New Mexico	Electric Providers	Direct	1,246,976.3	
		Indirect	11,835.1	
Public Service Enterprise Group	Electric Providers	Direct	0.0	0.0
		Indirect	1,695,399.3	1,695,399.3
		Sequestration	359.7	359.6
Public Utility District No. 1 of Snohomish County	Electric Providers	Direct	2.1	
		Indirect	205,789.6	
Rappahannock Electric Cooperative	Electric Providers	Indirect	53,335.8	
		Sequestration	5.1	
Republic Metals Corporation	Industrial	Direct		-173.0
		Indirect		-80.0
Rochester Gas and Electric Corporation	Electric Providers	Direct		547,801.7
		Indirect		66,224.5
Rolls-Royce Corporation	Industrial	Direct	34,268.4	-142.6
		Indirect	202,216.0	347,048.0
Sacramento Municipal Utility District	Electric Providers	Direct	24.5	-1,027,325.1
		Indirect	279,363.0	2,445,097.1
		Sequestration	3,421.9	3,421.9
Salt River Project	Electric Providers	Unspecified (EZ)	2,136,900.3	
Santee Cooper	Electric Providers	Direct	1,187,636.4	1,187,497.6
		Indirect	470,495.9	468,672.5
		Sequestration	8,731.7	8,731.7
Seattle City Light	Electric Providers	Indirect	332,853.4	332,851.5
		Sequestration	74.2	74.2
SeaWest WindPower, Inc.	Alternative Energy	Indirect	215,032.7	
Seminole Electric Cooperative, Inc.	Electric Providers	Unspecified (EZ)	270,597.8	
Seneca Energy II, LLC	Alternative Energy	Direct	399,110.5	
		Indirect	35,376.6	
Shenandoah Valley Electric Cooperative	Electric Providers	Indirect	20,781.2	
		Sequestration	0.9	
Sikorsky Aircraft Corporation	Industrial	Direct	254.4	254.4
		Indirect	4,926.9	4,928.4
South Carolina Electric & Gas Company	Electric Providers	Direct	1,986,206.7	
		Indirect	289,120.7	
		Sequestration	4,251.0	
Southeastern Biomass Partners, LP	Alternative Energy	Unspecified (EZ)	87,562.7	
Southern California Edison Co.	Electric Providers	Direct	7,982,984.7	
		Indirect	113,035.2	
		Sequestration	24,324.5	
Southern Company	Electric Providers	Direct	15,013,796.0	15,013,796.0
		Indirect	3,665,871.0	3,665,871.0
		Sequestration	207,219.9	207,219.9
Southside Electric Cooperative	Electric Providers	Indirect	12,199.2	
Springs Industries, Inc.	Industrial	Unspecified (EZ)	31,836.9	
Steuben Rural Electric Co-op	Electric Providers	Unspecified (EZ)	1,921.4	
Sunoco, Inc.	Industrial	Direct		1,377,810.0
		Indirect		-198,182.0
Tacoma Power	Electric Providers	Unspecified (EZ)	5,917.3	
Tampa Electric Company	Electric Providers	Indirect	243,516.5	243,516.5
		Sequestration	83.4	83.4
Tennessee Valley Authority	Electric Providers	Direct	25,196,625.4	25,196,625.4
		Indirect	298,989.6	298,998.1
		Sequestration	18,141.6	18,141.9
The Burlington Northern and Santa Fe Railway Co	Services and Retail	Direct	1,028,747.6	1,028,747.6

Table B4. Total Emission Reductions and Sequestration Reported at Project and Entity Levels, Data Year 2003 (Continued)

(Metric Tons Carbon Dioxide Equivalent)

Report Name	Sector	Reduction Type	Project Level	Entity Level
The Dow Chemical Company	Industrial	Direct		2,728,094.3
The Empire District Electric Co.	Electric Providers	Sequestration	83.4	
The Estee Lauder Companies	Industrial	Direct	1,995.3	
		Indirect	3,506.7	
Toyota Motor North America, Inc.	Industrial	Direct		20,563.0
		Indirect		-33,812.0
TS Designs, Inc.	Industrial	Direct		-4.0
Tucson Electric Power Company	Electric Providers	Direct	56,280.5	55,375.9
		Indirect	119,614.9	119,614.1
		Sequestration	313.4	313.4
TXU	Electric Providers	Direct	21,496,205.0	
		Indirect	881,729.5	
		Sequestration	29,469.8	
U.S. Department of Energy - Energy Management	Services and Retail	Direct		836,696.5
		Indirect		-102,330.4
US Energy Biogas Corp.	Alternative Energy	Unspecified (EZ)	2,063,385.5	
Valdese Manufacturing Company	Industrial	Direct		3,095.0
		Indirect		-484.0
Vermont Public Power Supply Authority	Electric Providers	Indirect	1,955.6	
Waste Management, Inc.	Alternative Energy	Direct	32,989,245.0	32,936,966.0
		Indirect	617,031.0	613,760.0
Waverly Light & Power Company	Electric Providers	Direct	17,726.4	17,726.4
		Indirect	8,764.3	8,764.3
		Sequestration	148.8	148.8
We Energies	Electric Providers	Direct	2,575,525.2	
		Indirect	1,525,966.2	
		Sequestration	58,749.9	
Wisconsin Public Power Inc.	Electric Providers	Unspecified (EZ)	64,084.5	
Wyeth Vaccines	Industrial	Unspecified (EZ)	104.5	
Xcel Energy	Electric Providers	Direct	6,007,512.6	
		Indirect	803,706.8	
Xenon Specialty Gas	Industrial	Indirect	2,184,669.1	
Zeeland Board of Public Works	Electric Providers	Unspecified (EZ)	398.7	

Notes: This table excludes data reported as confidential; a negative reduction represents an increase in emissions.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ

Table B5. Distribution of Projects Reported by Project Type and Reporting Form, Data Year 2003

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	464	23	50	91	514
Cogeneration and Waste Heat Recovery	13	21	0	0	13	21
Energy End Use	67	374	20	76	87	450
Transportation and Off-Road vehicles	35	66	6	10	41	76
Waste Treatment Disposal - Methane	54	425	5	42	59	467
Agriculture -- Methane and Nitrous Oxide	3	4	0	0	3	4
Oil and Natural Gas Systems and Coal Mining -- Methane	22	41	2	2	24	43
Carbon Sequestration	51	446	12	14	63	460
Halogenated Substances	29	43	1	1	30	44
Other Emission Reduction Projects	46	85	10	24	56	109
Total	**200**	**1,969**	**34**	**219**	**234**	**2,188**

Notes: The total number of reporters is smaller than the sum of the numbers of reporters for each project type because most reporters reported information on projects of more than one type. This table includes reporters classified as confidential but excludes projects reported as confidential.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ

Table B6. Distribution of Emission Reductions by Project Type and Reduction Type, Data Year 2003
(Metric Tons Carbon Dioxide Equivalent)

Project Type	Reduction Type			
	Direct	Indirect	Unspecified (EZ)	Sequestration
Electricity Generation, Transmission, and Distribution	157,843,460	14,666,163	11,027,492	-
Cogeneration and Waste Heat Recovery	163,821	3,159,085	-	-
Energy End Use	25,232,544	9,955,603	431,407	-
Transportation and Off-Road vehicles	2,459,095	134,867	2,413	-
Waste Treatment Disposal - Methane	48,046,991	39,831,337	3,504,727	-
Agriculture -- Methane and Nitrous Oxide	1,616	2,204	-	-
Oil and Natural Gas Systems and Coal Mining -- Methane	20,597,785	2,208	348,245	-
Carbon Sequestration	1,932	0	28,576	7,733,051
Halogenated Substances	6,136,879	2,224,018	6,495	-
Other Emission Reduction Projects	7,819,768	11,103,117	1,011,383	-
Total (All Project Types)	**268,303,892**	**81,078,602**	**16,360,738**	**7,733,051**

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

Table B7. Affiliation of Reported Emission Reduction and Carbon Sequestration Projects with Voluntary Programs, by Project Type, Data Year 2003

Voluntary Program	Number of Reporters	Number of Projects by Type						
		Electricity	End Use	Transportation	Carbon Sequestration	Methane	Halogens and Other	Total
Climate Challenge	76	328	164	38	423	36	77	1,066
Landfill Methane Outreach Program	39	13	2			365	1	381
Energy Star Building Program	9	1	66			1	1	69
Climate Wise Recognition Program	8	2	38	1	2	2	5	50
United States Initiative on Joint Implementation	30	3			36	0	0	39
Natural Gas STAR	11	0				23	0	23
Other Energy Star Programs	7	0	16			0	1	17
Other Federal, state and local programs	10	4	6	3	1	2	1	17
Green Lights Program	14	0	16			0	0	16
Sulfur Hexafluoride Emissions Reduction Partnership	10	1				0	10	11
Waste Wi$e Program	7	0				0	9	9
Compressed Air Challenge	3	0	6		1	0	0	7
Energy Star Transformers	7	6	1			0	0	7
Coalbed Methane Outreach Program	4	0				6	0	6
Motor Challenge Program	4	0	4			0	0	4
Rebuild America	1	0	1			0	1	2
Voluntary Aluminum Industrial Partnership	2	0				0	2	2
Cool Communities Program	1	0			1	0	0	1
Energy Star Computers Program	1	0	1			0	0	1

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

Table B8. Reporting Enitities by Sector and SIC Code, Data Year 2003

Sector	SIC Code	Reporter Name	Type of Form	Number of Projects Reported (Schedule II)	Entity-Wide Report (Schedule III)	Commitments (Schedule IV)
Agricultural and Forestry						
	08 - Forestry					
		Common Purpose Institute	1605EZ	1	No	No
		Environmental Synergy, Inc.	1605	2	No	No
Total Number of Projects Reported by Entities in Sector				**3**		
Total Number of Entities in Sector Reporting on Schedule				**2**		
Alternative Energy						
	12 - Coal Mining					
		Greene Energy, LLC	1605EZ	1	No	No
		Jim Walter Resources, Inc.	1605	4	Yes	No
	13 - Oil and Gas Extraction					
		El Paso Production Company	1605	1	No	No
	29-Petroleum Refining and other related Industries					
		CDX Gas, LLC	1605	2	No	No
		CMV Joint Venture	1605	2	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	No
		County Sanitation Districts of Los Angeles County	1605	2	No	No
		DADS Landfill	1605	1	No	No
		Delaware Solid Waste Authority	1605	4	No	No
		Energy Developments, Inc.	1605	8	Yes	No
		Energy Management Partners, LP	1605EZ	1	No	No
		Gas Recovery Systems	1605	29	Yes	No
		Granger Electric Company	1605	7	No	No
		Granger Energy, LLC	1605	2	No	No
		Greater New Bedford Regional Refuse Mgt District	1605	1	Yes	Yes
		Integrated Waste Services Association	1605	1	Yes	No
		Iredell Landfill Gas, LLC	1605	1	No	No
		Landfill Energy Systems	1605	14	No	No
		LFG Energy, Inc.	1605	2	No	No
		Lynchburg Gas Producers, LLC	1605	1	No	No
		Middlesex Generating Company, LLC	1605	3	Yes	Yes
		Model City Energy, LLC	1605	1	No	No
		Montauk Energy Capital	1605	27	No	No
		Mystic Development, LLC	1605	1	Yes	No
		Natural Power, Inc.	1605	1	No	No
		NC Muni Landfill Gas Partners, LLC	1605	1	No	No
		NEO Corporation	1605	34	No	No
		New Jersey Meadowlands Commission	1605	5	Yes	No
		Newton Landfill Gas, LLC	1605	1	No	No
		North Carolina Biomass Partners	1605EZ	1	No	No
		Ocean County Landfill Corporation	1605	2	No	No
		Orlando Utilities Commission (OUC)	1605EZ	1	No	No
		Palmer Capital Corporation	1605	10	Yes	No
		PEI Power Corp	1605	1	Yes	No
		Pitt Landfill Gas, LLC	1605	1	No	No
		SeaWest WindPower, Inc.	1605	10	No	No
		Seneca Energy II, LLC	1605	2	No	No
		Southeastern Biomass Partners, LP	1605EZ	1	No	No
		US Energy Biogas Corp.	1605EZ	36	No	No
		Waste Management, Inc.	1605	218	Yes	No
Total Number of Projects Reported by Entities in Sector				**446**		
Total Number of Entities in Sector Reporting on Schedule				**44**	**12**	**2**

Table B8. Reporting Enitities by Sector and SIC Code, Data Year 2003 (Continued)

Sector	SIC Code	Reporter Name	Type of Form	Number of Projects Reported (Schedule II)	Entity-Wide Report (Schedule III)	Commitments (Schedule IV)
Electric Providers						
	49-Electric, Gas, and Sanitary Services					
		A&N Electric Cooperative	1605	2	No	Yes
		AES Hawaii, Inc.	1605	1	Yes	No
		AES Shady Point, LLC	1605	1	Yes	No
		AES Thames, LLC	1605	1	Yes	Yes
		AES Warrior Run, LLC	1605	2	Yes	No
		Allegheny Energy, Inc.	1605	49	Yes	Yes
		Alliant Energy	1605	45	Yes	Yes
		Ameren Corporation (formerly UE, CIPS, and CILCO)	1605	34	No	Yes
		American Electric Power, Inc.	1605	100	No	No
		Anoka Municipal Utility	1605EZ	4	No	No
		Arizona Electric Power Cooperative, Inc.	1605EZ	6	No	No
		Arizona Public Service Company	1605	0	Yes	Yes
		BARC Electric Cooperative	1605	2	No	No
		Berkshire Power LLC	1605	1	Yes	No
		Bountiful City Light & Power	1605	7	Yes	Yes
		Carolina Power & Light Company	1605	1	No	No
		Choptank Electric Cooperative	1605	1	No	No
		Cinergy Corp.	1605	47	Yes	No
		City of Austin Electric Utility (Austin Energy)	1605EZ	9	No	No
		City of Edmond, Oklahoma, Electric Department	1605EZ	5	No	No
		City of Palo Alto Utilities	1605EZ	4	No	No
		City Public Service	1605	9	No	No
		City Utilities of Springfield	1605	6	No	No
		Cleco Corporation	1605	12	No	Yes
		Community Electric Cooperative	1605	1	No	No
		Conectiv Atlantic Generation (CAG)	1605	8	No	Yes
		Conectiv Delmarva Generation	1605	22	No	No
		Consolidated Edison Company of New York, Inc.	1605	5	Yes	Yes
		Constellation Energy	1605	28	Yes	Yes
		Delaware Electric Cooperative	1605	1	No	No
		Dominion Generation	1605	2	No	No
		DTE Energy/ Detroit Edison	1605	47	Yes	No
		Duke Energy Corporation	1605	28	Yes	Yes
		Dynegy, Inc.	1605	36	Yes	Yes
		Entergy Services, Inc.	1605	82	Yes	Yes
		Exelon Corporation	1605	42	No	No
		FirstEnergy Corporation	1605	56	Yes	Yes
		Florida Power Corporation	1605	0	Yes	No
		FPL Group	1605	32	Yes	Yes
		Golden Valley Electric Association, Inc	1605EZ	3	No	No
		Green Mountain Energy Company	1605	3	Yes	No
		Hawaiian Electric Company, Inc.	1605	16	Yes	No
		JEA	1605EZ	6	No	No
		Kansas City Power & Light Company	1605	19	Yes	Yes
		KeySpan Energy Corporation	1605	0	Yes	No
		Klickitat County Public Utility District No. 1	1605	1	No	No
		Los Angeles Department of Water and Power	1605	27	Yes	No
		Lower Colorado River Authority	1605	6	Yes	Yes
		McMinnville Electric System	1605	1	Yes	Yes
		McNeil Generating Station	1605	0	Yes	No
		Mecklenburg Electric Cooperative	1605	1	No	No
		Minnesota Power	1605	10	No	Yes
		Municipal Electric Auth of Georgia (MEAG Power)	1605	1	Yes	Yes
		Nashville Electric Service	1605EZ	3	No	No
		National Grid USA	1605	23	Yes	Yes
		Nebraska Public Power District	1605EZ	13	No	No
		NEGT	1605	24	Yes	No
		New York Power Authority	1605	0	Yes	Yes
		NiSource/NIPSCO	1605	41	Yes	Yes
		North Carolina Electric Membership Corporation	1605EZ	1	No	No
		Northern Neck Electric Cooperative	1605	2	No	No
		Northern Virginia Electric Cooperative	1605	2	No	No
		Old Dominion Electric Cooperative	1605	2	No	No
		Omaha Public Power District	1605EZ	10	No	No

Table B8. Reporting Enitities by Sector and SIC Code, Data Year 2003 (Continued)

Sector	SIC Code	Reporter Name	Type of Form	Number of Projects Reported (Schedule II)	Entity-Wide Report (Schedule III)	Commitments (Schedule IV)
		PacifiCorp	1605	44	Yes	Yes
		PG&E Corporation	1605	7	Yes	No
		Platte River Power Authority & 4 Owner Cities	1605	28	No	No
		Portland General Electric Co.	1605	31	Yes	No
		Prince George Electric Cooperative	1605	1	No	No
		Public Service Company of New Mexico	1605	5	No	Yes
		Public Service Enterprise Group	1605	17	Yes	Yes
		Public Utility District No. 1 of Snohomish County	1605	9	No	No
		Rappahannock Electric Cooperative	1605	3	No	No
		Rochester Gas and Electric Corporation	1605	0	Yes	No
		Sacramento Municipal Utility District	1605	7	Yes	No
		Salt River Project	1605EZ	22	No	No
		Santee Cooper	1605	12	Yes	Yes
		Seattle City Light	1605	20	Yes	No
		Seminole Electric Cooperative, Inc.	1605EZ	5	No	No
		Shenandoah Valley Electric Cooperative	1605	3	No	No
		South Carolina Electric & Gas Company	1605	19	No	Yes
		Southern California Edison Co.	1605	19	No	No
		Southern Company	1605	35	Yes	Yes
		Southside Electric Cooperative	1605	1	No	No
		Steuben Rural Electric Co-op	1605EZ	12	No	No
		Tacoma Power	1605EZ	6	No	No
		Tampa Electric Company	1605	11	Yes	Yes
		Tennessee Valley Authority	1605	27	Yes	Yes
		The Empire District Electric Co.	1605	10	No	No
		Tucson Electric Power Company	1605	21	Yes	Yes
		TXU	1605	26	No	Yes
		Vermont Public Power Supply Authority	1605	13	No	No
		Waverly Light & Power Company	1605	9	Yes	Yes
		We Energies	1605	25	No	No
		Wisconsin Public Power Inc.	1605EZ	30	No	No
		Xcel Energy	1605	46	No	Yes
		Zeeland Board of Public Works	1605EZ	3	No	No
	89 - Servicies not elsewhere classified					
		City of Klamath Falls- Cogen	1605	4	No	Yes
Total Number of Projects Reported by Entities in Sector				**1,485**		
Total Number of Entities in Sector Reporting on Schedule				**92**	**45**	**38**
Industrial						
	12 - Coal Mining					
		Consol Coal Group	1605	0	Yes	No
		Peabody Energy	1605	2	Yes	No
	20 - Food and Kindred Products					
		Cargill, Inc. - Oil Seeds Division	1605	0	Yes	Yes
		Mead Johnson Nutls./Bristol-Myers Squibb	1605	2	No	No
		Miller Brewing Company	1605	0	Yes	Yes
		National By-Products Inc	1605	1	No	No
	22-Textile Mill Products					
		Hanes Dye and Finishing, Butner Plant	1605	0	Yes	Yes
		Hanes Dye and Finishing, Winston-Salem Plant	1605	0	Yes	Yes
		Highland Industries, Inc.Kernersville Finishing Pt	1605	0	Yes	Yes
		M. J. SOFFE COMPANY - Maxton	1605	0	Yes	Yes
		M. J. SOFFE COMPANY - Bladenboro	1605	0	Yes	Yes
		M. J. SOFFE COMPANY Rowland	1605	0	Yes	Yes
		National Spinning Co. Alamance Yarn Plant	1605	0	Yes	Yes
		National Spinning Co. Alamance Dye Plant	1605	0	Yes	Yes
		National Spinning Co., Inc. Washington	1605	0	Yes	Yes
		National Spinning Inc. Beulaville	1605	0	Yes	Yes
		National Spinning Inc. Warsaw	1605	0	Yes	Yes
		National Spinning Inc. Whiteville	1605	0	Yes	Yes
		Springs Industries, Inc.	1605EZ	6	No	No
		Valdese Manufacturing Company	1605	0	Yes	Yes
	23-Apparel and Other Textile Products					
		M. J. SOFFE COMPANY Fayettville	1605	0	Yes	Yes
		TS Designs, Inc.	1605	0	Yes	No

Table B8. Reporting Enitities by Sector and SIC Code, Data Year 2003 (Continued)

Sector	SIC Code	Reporter Name	Type of Form	Number of Projects Reported (Schedule II)	Entity-Wide Report (Schedule III)	Commitments (Schedule IV)
	28-Chemicals and Allied Products					
		Ajinomoto Aminoscience LLC	1605	0	Yes	Yes
		Allergan, Inc.	1605	46	Yes	Yes
		Baxter Healthcare Inc.	1605	0	Yes	Yes
		Bristol-Myers Squibb Company	1605	0	Yes	No
		Fisher Scientific Company L.L.C	1605	0	Yes	No
		Johnson & Johnson	1605	14	Yes	No
		Mallinckrodt, Inc.	1605	0	Yes	Yes
		Pfizer Pharmaceuticals LLC - Arecibo Site	1605EZ	9	No	No
		The Dow Chemical Company	1605	0	Yes	Yes
		The Estee Lauder Companies	1605	26	No	No
		Wyeth Vaccines	1605EZ	2	No	No
	29-Petroleum Refining and other related Industries					
		BP America	1605	12	Yes	Yes
		ChevronTexaco Corporation	1605EZ	1	No	No
		Sunoco, Inc.	1605	0	Yes	Yes
	30-Rubber and Micsellaneous Products					
		Azdel, Inc	1605	0	Yes	Yes
		Pak-Lite, Inc. - Mebane Plant	1605	0	Yes	Yes
	32-Stone, Clay, Glass, and Concrete Products					
		Arizona Portland Cement Co.	1605	13	Yes	Yes
		California Portland Cement Co. - Colton Plant	1605	8	Yes	Yes
		California Portland Cement Co. - Mojave Plant	1605	6	Yes	Yes
		Lehigh Cement Co. (fmrly Lehigh Portland Cement Co	1605	9	Yes	No
		Lehigh Cement Co. (formerly Calaveras Cement Co.)	1605	2	Yes	No
	33-Primary Metals Industries					
		Alcan Primary Products Corporation, Sebree Works	1605	1	Yes	Yes
		COMMSCOPE CATAWBA PLANT	1605	0	Yes	Yes
		COMMSCOPE CLAREMONT PLANT	1605	0	Yes	Yes
		COMMSCOPE CONOVER REEL RECYCLING	1605	0	Yes	Yes
		COMMSCOPE Headquarters- Hickory	1605	0	Yes	Yes
		COMMSCOPE NEWTON PLANT	1605	0	Yes	Yes
		COMMSCOPE SCOTTSBORO PLANT	1605	0	Yes	Yes
		COMMSCOPE SPARKS PLANT	1605	0	Yes	Yes
		COMMSCOPE STATESVILLE PLANT	1605	0	Yes	Yes
		CONNECTIVITY SOLUTONS MANUFACTURING Inc.	1605	0	Yes	Yes
		Noranda Aluminum Inc.	1605	1	No	Yes
	34-Fabricated Metal Products except machinery and transportation equipment					
		DeBourgh Manufacturing Company	1605EZ	4	No	No
	35-Industrial and Commercial Equipment and Components					
		General Electric Company	1605	0	Yes	No
		Michigan CAT	1605	2	No	No
	36-Electronic and Other Electrical Equipment					
		Advanced Micro Devices, Inc.	1605EZ	7	No	No
		Branson Ultrasonics Corporation	1605	1	No	No
		Eaton Corporation - Vehicle Controls Business Unit	1605	0	Yes	Yes
		IBM	1605	0	Yes	Yes
		Lucent Technologies Inc.	1605	26	Yes	Yes
		Penn Compression Moulding, Inc.	1605	0	Yes	Yes
	37-Transportation Equipment					
		BMW US Holding Corp.	1605	1	Yes	No
		DaimlerChrysler Corporation	1605	2	Yes	No
		Ford Motor Company	1605	3	Yes	No
		General Motors Corporation	1605	4	Yes	No
		International Truck and Engine Corporation	1605	0	Yes	Yes
		Mitsubishi Motors North America, Inc.	1605	0	Yes	No
		Nissan North America, Inc.	1605	0	Yes	No
		Rolls-Royce Corporation	1605	4	Yes	No
		Sikorsky Aircraft Corporation	1605	5	Yes	Yes
		Toyota Motor North America, Inc.	1605	0	Yes	Yes
	38-Instrumentation and Related Products					
		Danaher Controls	1605	0	Yes	Yes
	39-Miscellaneous Manufacturing Industries					
		Republic Metals Corporation	1605	0	Yes	No
	48-Communications					
		AT&T	1605	4	No	No

Table B8. Reporting Enitities by Sector and SIC Code, Data Year 2003 (Continued)

Sector	SIC Code	Reporter Name	Type of Form	Number of Projects Reported (Schedule II)	Entity-Wide Report (Schedule III)	Commitments (Schedule IV)
	49-Electric, Gas, and Sanitary Services					
		Dakota Gasification Company	1605	W	W	W
		Polar Refrigerant Technology, LLC	1605	1	No	No
		Xenon Specialty Gas	1605	1	No	No
	67-Holding and Other Investment Offices					
		Blue Source, LLC	1605	9	Yes	No
		CLE Resources	1605	10	No	Yes
Total Number of Projects Reported by Entities in Sector				**245**		
Total Number of Entities in Sector Reporting on Schedule				**34**	**64**	**49**
Other (Households)						
	49-Electric, Gas, and Sanitary Services					
		Minnesota Resource Recovery Association (MRRA)	1605EZ	3	No	No
	88-Private Household					
		Hollomon Family	1605EZ	1	No	No
Total Number of Projects Reported by Entities in Sector				**4**		
Total Number of Entities in Sector Reporting on Schedule				**2**	**0**	**0**
Services and Retail						
	40-Railroad Transportation					
		The Burlington Northern and Santa Fe Railway Co	1605	1	Yes	Yes
	49-Electric, Gas, and Sanitary Services					
		Burlington County Board of Chosen Freeholders	1605	3	No	No
		City of Springfield	1605	1	No	No
	57-Furniture and Home Furnishing Stores					
		Abe Krasne Home Furnishings, Inc.	1605	0	Yes	No
	63-Insurance Carrier					
		State Farm Mutual Automobile Insurance Co.	1605	0	Yes	No
	72-Personal Services					
		Maple Springs Laundry	1605	0	Yes	Yes
	91-Executive, Legislative, and General					
		U.S. Department of Energy - Energy Management	1605	0	Yes	No
Total Number of Projects Reported by Entities in Sector				**5**		
Total Number of Entities in Sector Reporting on Schedule				**3**	**5**	**2**
Total Number of Projects Reported for 2003				**2,188**		
Total Number of Entities Reporting on Schedule				**177**	**126**	**89**

Notes: W indicates that a report is confidential and its data is withheld from publication.
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ

Table B9. Emission Reduction Projects by Entity, Data Year 2003

Reporter	Form Type	Project	Location	Project Type
A&N Electric Cooperative	1605	Transmission and Distribution Efficiency Improvements	U.S.	High-efficiency transformers
		Transmission and Distribution Efficiency Improvements	U.S.	Reconductoring
		Demand-Side Management Load Control Program	U.S.	Equipment and appliances improvement or replacement
		Demand-Side Management Load Control Program	U.S.	Load control
Advanced Micro Devices, Inc.	1605EZ	Replacement of Chiller with New Efficient Chiller	U.S.	Equipment and appliances improvement or replacement
		Temperature Setpoint Adjusted in Electrical Rooms	U.S.	Heating, ventilation, and air conditioning
		Gas Cabinet Exhaust Reduction	U.S.	Heating, ventilation, and air conditioning
		Installation of Reflective Roof Insulation	U.S.	Building shell improvement
		Ballast and Bulb Replacement	U.S.	Lighting and lighting control
		Installation of Lighting Control	U.S.	Lighting and lighting control
		Change Coffee System from Heated Pots to Insulated Carafes	U.S.	Equipment and appliances improvement or replacement
AES Hawaii, Inc.	1605	Mbaracayu Conservation	Foreign	Forest preservation
AES Shady Point, LLC	1605	OXFAM America Amazon	Foreign	Forest preservation
AES Thames, LLC	1605	CARE Agroforestry	Foreign	Woody biomass production and other agroforestry
AES Warrior Run, LLC	1605	Carbon Dioxide Plant	U.S.	All other projects not included in the above categories
		Indian Dairy Poject	Foreign	Livestock
Alabama Biomass Partners, Ltd	1605EZ	Biomass Waste to Energy	U.S.	Fuel switching
Alcan Primary Products Corporation, Sebree Works	1605	PFC Reduction Project	U.S.	Emission avoidance
Allegheny Energy, Inc.	1605	Armstrong Boiler No. 2 Emissions Reduction Project	U.S.	Heat rate or other efficiency improvement
		Armstrong Boiler No. 2 Emissions Reduction Project	U.S.	Availability improvement
		Auxiliary Fuel Switching	U.S.	Fuel switching
		Wire Replacement on Transmission Lines	U.S.	Reconductoring
		Potomac Edison 138/500 kV System Split	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Armstrong Unit 2 - Boiler Controls Replacement	U.S.	Heat rate or other efficiency improvement
		Rivesville Unit No. 6 - Boiler Controls Replacement	U.S.	Heat rate or other efficiency improvement
		R. P. Smith Unit 4 - Boiler Controls Replacement	U.S.	Heat rate or other efficiency improvement
		Hatfield's Ferry Unit 1 - HP/IP Turbine Rotor Replacement	U.S.	Heat rate or other efficiency improvement
		Hatfield's Ferry Unit 1 - HP/IP Turbine Rotor Replacement	U.S.	Availability improvement
		Hatfield's Ferry Unit 2 - HP/IP Turbine Rotor Replacement	U.S.	Heat rate or other efficiency improvement
		Hatfield's Ferry Unit 2 - HP/IP Turbine Rotor Replacement	U.S.	Availability improvement
		Rivesville Unit 6 - High Pressure Turbine Rotor Replacement	U.S.	Heat rate or other efficiency improvement
		Rivesville Unit 6 - High Pressure Turbine Rotor Replacement	U.S.	Availability improvement
		Willow Island Unit 1- Low Pressure Turbine Rotor Replacement	U.S.	Heat rate or other efficiency improvement
		Willow Island Unit 1- Low Pressure Turbine Rotor Replacement	U.S.	Availability improvement
		Efficient Distribution Transformers	U.S.	High-efficiency transformers
		Application of Capacitors	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Economic Conductor Selection	U.S.	Reconductoring
		Replace Small Primary Conductors	U.S.	Reconductoring
		Conversion to Higher Voltage Distribution	U.S.	Distribution voltage upgrade
		Small Hydroelectric Station Relicensing	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Demand-Side Management Programs	U.S.	Equipment and appliances improvement or replacement
		Demand-Side Management Programs	U.S.	Lighting and lighting control
		Demand-Side Management Programs	U.S.	Load control
		Demand-Side Management Programs	U.S.	Heating, ventilation, and air conditioning
		Demand-Side Management Programs	U.S.	Building shell improvement
		Demand-Side Management Programs	U.S.	Motor and motor drive
		Green Lights Utility Ally Program	U.S.	Lighting and lighting control
		Adjustable Speed Drives-Plastic Injection Molding Machines	U.S.	Motor and motor drive
		Fly Ash use as replacement for cement	U.S.	Coal ash reuse
		Energy Star Transformer Program	U.S.	High-efficiency transformers
		Armstrong Boiler No. 1 Emissions Reduction Project	U.S.	Heat rate or other efficiency improvement
		Lake Lynn Hydro Electric Station Relicensing	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Armstrong Unit 1 - Boiler Controls Replacement	U.S.	Heat rate or other efficiency improvement
		Hatfield's Ferry Unit 3 - LP Turbine Rotor Replacement	U.S.	Heat rate or other efficiency improvement
		Carryall Vehicle Program	U.S.	Operation of efficient vehicles
		Hatfield's Ferry Unit 1 - LP Turbine Rotor Replacement	U.S.	Heat rate or other efficiency improvement
		Performance Monitoring Systems	U.S.	Heat rate or other efficiency improvement
		EnviroTech Fund - Domestic Activities	U.S.	All other projects not included in the above categories
		Adjustable Speed Drives for PA Fans - Hatfield's Ferry P.S.	U.S.	Heat rate or other efficiency improvement
		EnviroTech Fund - Foreign Activities	Foreign	All other projects not included in the above categories
		Hatfield's Ferry Unit 2 LP Turbine Rotor Replacement	U.S.	Heat rate or other efficiency improvement
		Willow Island Unit 2 Boiler Controls Replacement	U.S.	Heat rate or other efficiency improvement
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		Pleasants Unit 2 - Boiler Controls Replacement	U.S.	Heat rate or other efficiency improvement
		High Pressure Sodium Vapor Streetlight Replacement Program	U.S.	Lighting and lighting control
		Harrison Unit #3 HP Turbine Rotor Replacement	U.S.	Heat rate or other efficiency improvement
		Harrison Unit #3 HP Turbine Rotor Replacement	U.S.	Availability improvement
		Harrison Unit #3 Boiler Controls Replacement	U.S.	Heat rate or other efficiency improvement
		Harrison Unit #2 Boiler Controls Replacement	U.S.	Heat rate or other efficiency improvement
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		St. Francis River Carbon Offset Project	U.S.	Afforestation
Allergan, Inc.	1605	AMO Facility Closure	U.S.	Other energy efficiency project
		Allergan LOK Brazil Operation Consolidation	Foreign	Other energy efficiency project
		Allergan Medical Plastics Energy Managment System Upgrade	U.S.	Load control
		Allergan Medical Plastics Energy Managment System Upgrade	U.S.	Heating, ventilation, and air conditioning
		Allergan Brazil Building Management System Installation	Foreign	Lighting and lighting control
		Allergan Brazil Building Management System Installation	Foreign	Load control
		Allergan Brazil Building Management System Installation	Foreign	Heating, ventilation, and air conditioning
		Reduction in Operating Time for Blowmolding Equipment	Foreign	Load control
		Compressed Air Leak Repair	Foreign	Equipment and appliances improvement or replacement
		Air Compressor System Upgrade	U.S.	Equipment and appliances improvement or replacement
		Air Compressor System Upgrade	U.S.	Load control

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
		Allergan Italy Facility Closure	Foreign	Other energy efficiency project
		Allergan Facility Divestiture	U.S.	Other energy efficiency project
		Lighting Retrofits and Upgrades	U.S.	Lighting and lighting control
		Direct Expansion Cooler Unit Redesign	U.S.	Heating, ventilation, and air conditioning
		Elimination of Catalytic Thermal Oxidizer	U.S.	Equipment and appliances improvement or replacement
		Curtail Weekend Energy Usage	Foreign	Load control
		Curtail Weekend Energy Usage	Foreign	Heating, ventilation, and air conditioning
		Replace Mercury Vapor Lamps with Fluorescent Lamps	Foreign	Lighting and lighting control
		Insulate Process Lines	Foreign	Heating, ventilation, and air conditioning
		Elimination of CFCs at U.S. Plants	U.S.	Substitution
		Elimination of CFCs at Farnborough, UK	Foreign	Substitution
		Compressor Replacement	U.S.	Equipment and appliances improvement or replacement
		Chilled Water Decouple Loop	U.S.	Heating, ventilation, and air conditioning
		Floor Fan Elimination	U.S.	Equipment and appliances improvement or replacement
		Chiller Replacement	U.S.	Heating, ventilation, and air conditioning
		CFC Substitution with Chiller Replacement	U.S.	Substitution
		Add Variable Frequency Drive to Existing Chiller	U.S.	Heating, ventilation, and air conditioning
		Lighting Upgrade at Allergan Irvine	U.S.	Lighting and lighting control
		Allergan America Facility Closure	U.S.	Other energy efficiency project
		Reduce Air Compressor Discharge Pressure	U.S.	Other energy efficiency project
		Install Photoelectric Sensor on Grinder and Blowers	U.S.	Load control
		Install Higher Efficiency Motors	U.S.	Motor and motor drive
		Install Occupancy Sensors	U.S.	Lighting and lighting control
		Install Bi-Level Lighting Controls on HID Lighting	U.S.	Lighting and lighting control
		Replace Existing Hot Water Boiler with Heat Exchanger	U.S.	Heating, ventilation, and air conditioning
		Install On/Off Controller on Hot/Cold Water Pumps	U.S.	Load control
		Downsize Boiler to Meet Requirements	Foreign	Heating, ventilation, and air conditioning
		Acetone Catalytic Oxidizer Improvement	Foreign	Equipment and appliances improvement or replacement
		Motor Replacement Project	Foreign	Motor and motor drive
		Install VSD on 50 HP Water Pump	U.S.	Heating, ventilation, and air conditioning
		Install VSD on 40 HP Cooling Water Pump	U.S.	Heating, ventilation, and air conditioning
		Install High Efficiency T8 Fixtures in Office Areas	U.S.	Lighting and lighting control
		Install VSD Air Handler Fan #20	U.S.	Heating, ventilation, and air conditioning
		Install VSDs on Hot Water Pumps	U.S.	Heating, ventilation, and air conditioning
		Install Higher Efficiency Chiller	U.S.	Heating, ventilation, and air conditioning
		Install Wattman Controller in parking structure	U.S.	Lighting and lighting control
		HID Lighting Upgrade	Foreign	Lighting and lighting control
		Air Compressor System Upgrade	Foreign	Equipment and appliances improvement or replacement
		Classified Area Lighting Upgrade	Foreign	Lighting and lighting control
Alliant Energy	1605	Columbia 1&2 Turbine Efficiency	U.S.	Heat rate or other efficiency improvement
		SFDL Fuel Switching	U.S.	Fuel switching
		Tire Derived Fuel Generation	U.S.	Fuel switching
		Energy end use-Electric WP&L	U.S.	Equipment and appliances improvement or replacement
		Energy end use-Electric WP&L	U.S.	Lighting and lighting control
		Energy end use-Electric WP&L	U.S.	Load control
		Energy end use-Electric WP&L	U.S.	Heating, ventilation, and air conditioning
		Energy end use-Electric WP&L	U.S.	Building shell improvement
		Energy end use-Electric WP&L	U.S.	Motor and motor drive
		Energy end use-Electric WP&L	U.S.	Fuel switching
		Energy end use-Gas WP&L	U.S.	Equipment and appliances improvement or replacement
		Energy end use-Gas WP&L	U.S.	Load control
		Energy end use-Gas WP&L	U.S.	Heating, ventilation, and air conditioning
		Energy end use-Gas WP&L	U.S.	Fuel switching
		Conservation tillage	U.S.	Conservation tillage
		Forest preservation	U.S.	Forest preservation
		Afforestation	U.S.	Afforestation
		Afforestation	U.S.	Modified forest management
		Habitat Restoration	U.S.	Other carbon sequestration projects/activities
		Transmission line improvements	U.S.	Other transmission & distribution improvements
		WP&L Green Lights Projects	U.S.	Lighting and lighting control
		Energy End Use - Gas IES	U.S.	Heating, ventilation, and air conditioning
		Energy End Use - Electric IES	U.S.	Urban forestry (energy effects only)
		Energy End Use - Gas IPC	U.S.	Building shell improvement
		Energy End Use - Electric IPC	U.S.	Industrial power systems
		Urban Forestry IES	U.S.	Urban forestry (energy effects only)
		Urban Forestry IPC	U.S.	Urban forestry (energy effects only)
		Wind Power-Iowa	U.S.	Zero/Low Emission Power Purchases
		Minergy Waste Generation	U.S.	Zero/Low Emission Power Purchases
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		Switchgrass Cofiring	U.S.	Fuel switching
		Fly Ash Utilization	U.S.	Coal ash reuse
		Verona Landfill	U.S.	Zero/Low Emission Power Purchases
		Mallard Ridge Landfill	U.S.	Zero/Low Emission Power Purchases
		Cedar Rapids Landfill (IES)	U.S.	Fuel switching
		Recycling Activities	U.S.	Materials recycling/reuse
		Onyx Glacier Ridge Landfill	U.S.	Zero/Low Emission Power Purchases
		Berlin Landfill	U.S.	Fuel switching
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		Wind Power-Wisconsin	U.S.	Zero/Low Emission Power Purchases
		Urban Forestry IP&L	U.S.	Urban Forestry (sequestration only)
		Sauk County Landfill	U.S.	Fuel switching
		Biomass - IA	U.S.	Zero/Low Emission Power Purchases
		Hydro - WI	U.S.	Zero/Low Emission Power Purchases
		Hydro - IA	U.S.	Zero/Low Emission Power Purchases
		Deer Ridge Dairy	U.S.	Livestock
		Double S Dairy	U.S.	Livestock
		St. Francis River Carbon Offset Project	U.S.	Afforestation

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
Ameren Corporation (formerly UE, CIPS, and CILCO)	1605	Subtransmission Reconductoring	U.S.	Reconductoring
		Transformer Replacement	U.S.	High-efficiency transformers
		Waste Oil Heat Recovery	U.S.	Fuel switching
		Meramec Power Plant Control Upgrade	U.S.	Heat rate or other efficiency improvement
		Meramec Power Plant Control Upgrade	U.S.	Availability improvement
		Conversion to a dry flyash handling system.	U.S.	Heat rate or other efficiency improvement
		Conversion to a dry flyash handling system.	U.S.	Availability improvement
		Install adjustible speed fan drives replacing fixed speed	U.S.	Heat rate or other efficiency improvement
		Replaced motor-generator exciters with static exciter system	U.S.	Heat rate or other efficiency improvement
		Demand Side Management Projects	U.S.	Equipment and appliances improvement or replacement
		Demand Side Management Projects	U.S.	Lighting and lighting control
		Demand Side Management Projects	U.S.	Load control
		Demand Side Management Projects	U.S.	Heating, ventilation, and air conditioning
		Demand Side Management Projects	U.S.	Building shell improvement
		Demand Side Management Projects	U.S.	Motor and motor drive
		Meramec Power Plant Lighting Upgrade	U.S.	Lighting and lighting control
		Street Light Conversion	U.S.	Lighting and lighting control
		Purchase of Light Weight Rail Cars	U.S.	Operation of efficient vehicles
		Milam Landfill Methane Recovery	U.S.	Landfill
		Increased Nuclear generation	U.S.	Increase in low-emitting capacity
		Carpooling	U.S.	Demand Modification: Carpooling/Vanpooling
		Green Leaf Project	U.S.	Urban Forestry (sequestration only)
		Flyash substitution for cement	U.S.	Coal ash reuse
		Sioux Plant Control Upgrade	U.S.	Heat rate or other efficiency improvement
		EnviroTech Fund - US	U.S.	Other energy efficiency project
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		EnviroTech Fund - Foreign	Foreign	Other energy efficiency project
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		Tire Burning	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Grand Tower Repowering	U.S.	Fuel switching
		CILCO Landfill Gas Purchase	U.S.	Landfill
		CIPS Mine Gas to Energy	U.S.	Production coal mines, underground, other
		CILCO Demand Side Management	U.S.	Load control
		St. Francis River Carbon Offset Project	U.S.	Afforestation
American Electric Power, Inc.	1605	AEP-West Land Management	U.S.	Afforestation
		Renewable Generation - Solar	U.S.	Increase in low-emitting capacity
		Renewable Generation - Wind: AEP-West	U.S.	Increase in low-emitting capacity
		Transmission Efficiency Improvements: AEP-West	U.S.	Distribution voltage upgrade
		Demand Side Management Activities: AEP-West	U.S.	Equipment and appliances improvement or replacement
		Demand Side Management Activities: AEP-West	U.S.	Lighting and lighting control
		Demand Side Management Activities: AEP-West	U.S.	Heating, ventilation, and air conditioning
		ClearChoice(sm) Green Pricing Initiative: AEP-West	U.S.	Zero/Low Emission Power Purchases
		Watts on Schools	U.S.	Increase in low-emitting capacity
		Southwest Mesa Wind Farm	U.S.	Increase in low-emitting capacity
		Heat Rate Improvement Projects (Oper. and Equip. Changes)	U.S.	Heat rate or other efficiency improvement
		Heat Rate Improvement (Due to improved load optimization)	U.S.	Heat rate or other efficiency improvement
		Open-Loop Transmission Groundwire Resistive Loss Reduction	U.S.	Other transmission & distribution improvements
		Distribution System Equipment Improvements	U.S.	Reconductoring
		Distribution System Equipment Improvements	U.S.	Distribution voltage upgrade
		Transmission System Reinforcements	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Nuclear Plant Improved Utilization	U.S.	Availability improvement
		Hydroelectric Facility Improvements: AEP-East	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Residential Demand Side Management Programs: AEP-East	U.S.	Equipment and appliances improvement or replacement
		Residential Demand Side Management Programs: AEP-East	U.S.	Lighting and lighting control
		Residential Demand Side Management Programs: AEP-East	U.S.	Load control
		Residential Demand Side Management Programs: AEP-East	U.S.	Heating, ventilation, and air conditioning
		Residential Demand Side Management Programs: AEP-East	U.S.	Building shell improvement
		Commercial/Industrial DSM Programs: AEP-East	U.S.	Lighting and lighting control
		Commercial/Industrial DSM Programs: AEP-East	U.S.	Heating, ventilation, and air conditioning
		Commercial/Industrial DSM Programs: AEP-East	U.S.	Motor and motor drive
		AEP-MARAG-1994-2	U.S.	Afforestation
		AEP-MARAG-1993-2	U.S.	Afforestation
		Fly Ash Utilization Program (Cement Replacement)	U.S.	Coal ash reuse
		Fuel Switch Coal to Natural Gas (Conesville Unit 1-3)	U.S.	Fuel switching
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Green Lights	U.S.	Lighting and lighting control
		AEP-FM-1991	U.S.	Modified forest management
		AEP-FM-1992	U.S.	Modified forest management
		AEP-FM-1993	U.S.	Modified forest management
		AEP-FM-1994	U.S.	Modified forest management
		AEP-FM-1995	U.S.	Modified forest management
		AEP-FM-1996	U.S.	Modified forest management
		AEP-AGSPOIL-1995	U.S.	Afforestation
		AEP-AGSPOIL-1996	U.S.	Afforestation
		AEP-MARAG-1995	U.S.	Afforestation
		AEP-MARAG-1996	U.S.	Afforestation
		AEP-MARAG-1991	U.S.	Afforestation
		AEP-AGSPOIL-1992	U.S.	Afforestation
		AEP-MARAG- 1992	U.S.	Afforestation
		AEP-MARAG-1993	U.S.	Afforestation
		AEP-AGSPOIL-1993	U.S.	Afforestation
		AEP-MARAG-1994	U.S.	Afforestation
		AEP-AGSPOIL-1994	U.S.	Afforestation
		Enviro Tech Investment Fund I Limited Partnership - US	U.S.	Research and development programs
		Enviro Tech Investment Funds - Foreign	Foreign	Research and development programs
		Noel Kempff Mercado Climate Action Project	Foreign	Forest preservation
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
		AEP-FM-1997	U.S.	Modified forest management
		AEP-AGSPOIL-1997	U.S.	Afforestation
		AEP-MARAG-1997	U.S.	Afforestation
		AEP-FM-1998	U.S.	Modified forest management
		AEP-AGSPOIL-1998	U.S.	Afforestation
		AEP-MARAG-1998	U.S.	Afforestation
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		AEP-FM-1999	U.S.	Modified forest management
		AEP-MARAG-1999	U.S.	Afforestation
		AEP-AGSPOIL-1999	U.S.	Afforestation
		AEP-MARAG-2000	U.S.	Afforestation
		AEP-AGSPOIL-2000	U.S.	Afforestation
		AEP-FM-2000	U.S.	Modified forest management
		Renewable Generation - Wind: AEP-East	U.S.	Increase in low-emitting capacity
		Sulfur Hexafluoride Gas Reduction	U.S.	Emission avoidance
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-NFWF	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		AEP-FM-2001	U.S.	Modified forest management
		Catahoula Reforestation Project-2001	U.S.	Afforestation
		AEP-AGSPOIL-2001	U.S.	Afforestation
		AEP-Private lands-2001	U.S.	Afforestation
		AEP-Fernwood-2001	U.S.	Afforestation
		Guaraquecaba Climate Action Project	Foreign	Modified forest management
		ECCF-MARAG-1991	U.S.	Afforestation
		ECCF-MARAG-1992	U.S.	Afforestation
		ECCF-MARAG-1993	U.S.	Afforestation
		ECCF-AGSPOIL-1995	U.S.	Afforestation
		ECCF-MARAG-1995	U.S.	Afforestation
		Ohio Central Station Site-MARAG-1996	U.S.	Afforestation
		ECCF-MARAG-1996	U.S.	Afforestation
		AEP-FM-2002	U.S.	Modified forest management
		ECCF-MARAG-1997	U.S.	Afforestation
		ECCF-AGSPOIL-1997	U.S.	Afforestation
		WCFGPL-MARAG-1996	U.S.	Afforestation
		ECCF-MARAG-1998	U.S.	Afforestation
		WILDS PROJECT-MARAG-1998	U.S.	Afforestation
		DUNDAS-MARAG-1998	U.S.	Afforestation
		ECCF-AGSPOIL-1998	U.S.	Afforestation
		DUNDAS-AGSPOIL-1998	U.S.	Afforestation
		ECCF-MARAG-1999	U.S.	Afforestation
		ECCF-MARAG-2000	U.S.	Afforestation
		WCFGPL-MARAG-2000	U.S.	Afforestation
		ECCF-AGSPOIL-2000	U.S.	Afforestation
		AEP-AGCROP-2002	U.S.	Afforestation
		AEP-Private Lands-2002	U.S.	Afforestation
		AEP-AGSPOIL-2002	U.S.	Afforestation
		Catahoula-Reforestation Project-2002	U.S.	Afforestation
		USFWS Catahoula Reforestation Project-2002	U.S.	Afforestation
		AEP-Private Lands-2003	U.S.	Afforestation
		AEP-AGSPOIL-2003	U.S.	Afforestation
		AEP-FM-2003	U.S.	Modified forest management
		St. Francis River Carbon Offset Project	U.S.	Afforestation
Anoka Municipal Utility	1605EZ	Urban Foresttry	U.S.	Urban Forestry (sequestration only)
		Lighting Replacement	U.S.	Lighting and lighting control
		Central A/C Replacement	U.S.	Heating, ventilation, and air conditioning
		Demand Management	U.S.	General energy use
Arizona Electric Power Cooperative, Inc.	1605EZ	Fly Ash Sales	U.S.	Coal ash reuse
		Distributive Control System Installed on Steam Unit 2 (coal-	U.S.	General generation, transmission & distribution projects
		Distributive Control System installed on Steam Unit 3 (coal-	U.S.	General generation, transmission & distribution projects
		Condensate pump upgrade	U.S.	General generation, transmission & distribution projects
		Lighting & Exit Sign Replacement	U.S.	Lighting and lighting control
		Carpool	U.S.	Demand Modification: Carpooling/Vanpooling
Arizona Portland Cement Co.	1605	Rimod 3000	U.S.	Equipment and appliances improvement or replacement
		Lighting Program	U.S.	Lighting and lighting control
		Optimize Compressed Air System	U.S.	Equipment and appliances improvement or replacement
		D3 Finish Grind System Improvements	U.S.	Equipment and appliances improvement or replacement
		Optimize AC Raw Mill Systems DISCONTUNED in 2001	U.S.	Equipment and appliances improvement or replacement
		PGNA Analyzer	U.S.	Equipment and appliances improvement or replacement
		CM7 High Efficiency Separator	U.S.	Equipment and appliances improvement or replacement
		100 Ton Haul Trucks	U.S.	Operation of efficient vehicles
		Bulk Load Bin Filling	U.S.	Equipment and appliances improvement or replacement
		Upgrade the D2 Raw Mill System DISCONTINUED	U.S.	Equipment and appliances improvement or replacement
		Upgrade the D2 Raw Mill System DISCONTINUED	U.S.	Motor and motor drive
		New Vertical Roller Mill	U.S.	Equipment and appliances improvement or replacement
		Tree Planting	U.S.	Urban Forestry (sequestration only)
		D2 Finish Mill Conversion with High Efficiency Separator	U.S.	Equipment and appliances improvement or replacement
Asheville Landfill Gas, LLC	1605	Buncombe County Landfill	U.S.	Landfill
AT&T	1605	Electricity Use Reduction Program	U.S.	Lighting and lighting control
		Electricity Use Reduction Program	U.S.	Heating, ventilation, and air conditioning
		Telecommuting	U.S.	Demand Modification: Telecommuting
		Fleet Cost Reduction Program	U.S.	Demand Modification: Other
		Recycling/Takeback/Reuse Projects	U.S.	Materials recycling/reuse
BARC Electric Cooperative	1605	System Line Conversions and Reconductoring	U.S.	High-efficiency transformers
		System Line Conversions and Reconductoring	U.S.	Reconductoring
		System Line Conversions and Reconductoring	U.S.	Distribution voltage upgrade
		Demand-Side Management Load Control Programs	U.S.	Heating, ventilation, and air conditioning
Berkshire Power LLC	1605	Natural gas fired electric generation	U.S.	Increase in low-emitting capacity
		Natural gas fired electric generation	U.S.	Decrease in high-emitting capacity
Biomass Partners, LP	1605EZ	Biomass Waste to Energy	U.S.	Fuel switching

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
Blue Source, LLC	1605	West Texas CO2 Pipeline-EOR	U.S.	Carbon dioxide injection into the ground
		Wyoming EOR	U.S.	Carbon dioxide injection into the ground
		Mississippi EOR	U.S.	Carbon dioxide injection into the ground
		West Texas EOR-A	U.S.	Carbon dioxide injection into the ground
		Energy Conservation Management	U.S.	Equipment and appliances improvement or replacement
		Energy Conservation Management	U.S.	Lighting and lighting control
		Energy Conservation Management	U.S.	Load control
		Energy Conservation Management	U.S.	Heating, ventilation, and air conditioning
		Energy Conservation Management	U.S.	Other energy efficiency project
		Methane Capture and Flare at Wastewater Treatment Facilities	U.S.	Wastewater treatment
		Idling Reduction Bonus Program Project	U.S.	Other transportation and off-road vehicle projects/activities
		Empty Mile Reduction Project	U.S.	Service efficiency improvements
		Intermodal Transport Project	U.S.	Infrastructure improvement
BMW US Holding Corp.	1605	BMW Landfill Gas Project	U.S.	Fuel switching
Bountiful City Light & Power	1605	Hydroelectric plant operations	U.S.	Increase in low-emitting capacity
		Capacitor bank installation - increasing system efficiency	U.S.	Distribution voltage upgrade
		Air fuel ratio controller installed in dual fuel engine	U.S.	Heat rate or other efficiency improvement
		Tree planting	U.S.	Urban Forestry (sequestration only)
		Street lighting replacement	U.S.	Lighting and lighting control
		Residential compact fluorescent lighting program	U.S.	Lighting and lighting control
BP America	1605	Noel Kempff Mercado Climate Action Project	Foreign	Forest preservation
		Petroleum Refining and Chemicals process modifications	U.S.	Equipment and appliances improvement or replacement
		Crude production and exploration process improvements	U.S.	Equipment and appliances improvement or replacement
		Crude production and exploration process improvements	U.S.	Industrial power systems
		Crude production and exploration process improvements	U.S.	Other energy efficiency project
		Petroleum refining and Chemical Plant VOC control projects	U.S.	Reduction of process emissions
		Petroleum refining + Chemical plant emission control project	U.S.	All other projects not included in the above categories
		Crude Production Emission Reduction	U.S.	Reduction of process emissions
		Petroleum Marketing Power Generation	U.S.	Increase in low-emitting capacity
		Oil and Gas Methane Reduction-Reduced Vent with Flaring	U.S.	Production natural gas wells
		Oil and Gas Methane Reductions-Reduced Venting with Recovery	U.S.	Production natural gas wells
		Oil and Gas Methane Reduction-from Equipment Upgrade	U.S.	Production natural gas wells
		Non-VOCs for Upstream	U.S.	All other projects not included in the above categories
Branson Ultrasonics Corporation	1605	Electrical Energy Consumption	U.S.	Lighting and lighting control
Burlington County Board of Chosen Freeholders	1605	Landfill Gas Flaring	U.S.	Landfill
		Burlington County Regional Recycling Program	U.S.	Materials recycling/reuse
		Demonstration Greenhouse Boiler (Gas to Heat Conversion)	U.S.	Landfill
California Portland Cement Co. - Colton Plant	1605	Kiln Systems Optimization	U.S.	Equipment and appliances improvement or replacement
		Kiln Systems Optimization	U.S.	Other energy efficiency project
		Energy Conservation in Office, Lab, Garage and Shop Areas	U.S.	Equipment and appliances improvement or replacement
		Energy Conservation in Office, Lab, Garage and Shop Areas	U.S.	Lighting and lighting control
		Energy Conservation in Office, Lab, Garage and Shop Areas	U.S.	Load control
		Energy Conservation in Office, Lab, Garage and Shop Areas	U.S.	Heating, ventilation, and air conditioning
		Energy Conservation in Office, Lab, Garage and Shop Areas	U.S.	Building shell improvement
		Optimize High Pressure Air System	U.S.	Equipment and appliances improvement or replacement
		Optimize High Pressure Air System	U.S.	Load control
		Finish Mill System Optimization	U.S.	Equipment and appliances improvement or replacement
		Finish Mill System Optimization	U.S.	Load control
		Reduce Plant Water Consumption	U.S.	Equipment and appliances improvement or replacement
		Install New Raw Material Transport System	U.S.	Equipment and appliances improvement or replacement
		Install New Raw Material Transport System	U.S.	Load control
		Install New Gravity Blend Homogenizing Silo	U.S.	Equipment and appliances improvement or replacement
		Install New Gravity Blend Homogenizing Silo	U.S.	Motor and motor drive
		Raw Grinding System Improvements	U.S.	Equipment and appliances improvement or replacement
California Portland Cement Co. - Mojave Plant	1605	Optimize the D3-1 Finish Mill System DISCONTINUED in 1996	U.S.	Equipment and appliances improvement or replacement
		New D3-1/FM6 Finish Mill System	U.S.	Equipment and appliances improvement or replacement
		Pyro System Optimization	U.S.	Equipment and appliances improvement or replacement
		Raw Mill Energy Efficiency Improvements	U.S.	Equipment and appliances improvement or replacement
		Plant High Pressure Air System Improvements	U.S.	Equipment and appliances improvement or replacement
		Finish Grinding Process Addition	U.S.	Reduction of process emissions
Carolina Power & Light Company	1605	Nuclear Capacity Improvement	U.S.	Availability improvement
		Nuclear Capacity Improvement	U.S.	Increase in low-emitting capacity
Catawba Landfill Gas, LLC	1605	Blackburn Landfill	U.S.	Landfill
CDX Gas, LLC	1605	Pinnacle Mine Coalbed Methane Recovery	U.S.	Production coal mines, underground, longwall
		Arkoma Mine Coalbed Methane Recovery	U.S.	Production coal mines, underground, longwall
ChevronTexaco Corporation	1605EZ	ChevronTexaco Lower Mississippi River Valley Reforestation	U.S.	Afforestation
Choptank Electric Cooperative	1605	System Line Conversions and Reconductoring	U.S.	High-efficiency transformers
		System Line Conversions and Reconductoring	U.S.	Reconductoring
		System Line Conversions and Reconductoring	U.S.	Distribution voltage upgrade
Cinergy Corp.	1605	Gibson Performance Maximization Program	U.S.	Heat rate or other efficiency improvement
		Cayuga Heat Rate Improvements	U.S.	Heat rate or other efficiency improvement
		Wabash River Heat Rate Improvement	U.S.	Heat rate or other efficiency improvement
		Residential Wrap-Up Program	U.S.	Equipment and appliances improvement or replacement
		Residential Wrap-Up Program	U.S.	Lighting and lighting control
		Residential Energy Efficient Lighting Program	U.S.	Lighting and lighting control
		Residential Smart $aver & Heat Pump Savings Programs	U.S.	Equipment and appliances improvement or replacement
		Residential Smart $aver & Heat Pump Savings Programs	U.S.	Lighting and lighting control
		Residential Smart $aver & Heat Pump Savings Programs	U.S.	Heating, ventilation, and air conditioning
		Residential Smart $aver & Heat Pump Savings Programs	U.S.	Building shell improvement

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
		Residential Seal-Up & Low-Income Efficiency Program	U.S.	Lighting and lighting control
		Residential Seal-Up & Low-Income Efficiency Program	U.S.	Heating, ventilation, and air conditioning
		Residential Seal-Up & Low-Income Efficiency Program	U.S.	Building shell improvement
		Commercial Audit/Incentive Program	U.S.	Lighting and lighting control
		Commercial Audit/Incentive Program	U.S.	Heating, ventilation, and air conditioning
		Commercial Audit/Incentive Program	U.S.	Motor and motor drive
		Commercial Direct Lighting	U.S.	Lighting and lighting control
		Industrial Efficiency Improvement & Energy Awareness Program	U.S.	Equipment and appliances improvement or replacement
		Industrial Efficiency Improvement & Energy Awareness Program	U.S.	Lighting and lighting control
		Industrial Efficiency Improvement & Energy Awareness Program	U.S.	Heating, ventilation, and air conditioning
		Industrial Efficiency Improvement & Energy Awareness Program	U.S.	Motor and motor drive
		Commercial/Industrial Peak Reduction Program	U.S.	Load control
		Planergy	U.S.	Load control
		Green Lights Program	U.S.	Lighting and lighting control
		Commercial/Industrial Lighting Rebate Program	U.S.	Lighting and lighting control
		Thermal Energy (Cool) Storage Program	U.S.	Load control
		Thermal Energy (Cool) Storage Program	U.S.	Heating, ventilation, and air conditioning
		Commercial/Industrial High Efficiency Motors Plan	U.S.	Motor and motor drive
		Commercial/Industrial Adjustable Speed Drive Plan	U.S.	Motor and motor drive
		Fleet Alternative Fuels	U.S.	Operation of alternative fuel vehicles (AFVs)
		Fleet Alternative Fuels	U.S.	Infrastructure improvement
		Danville, IN Electric Generation	U.S.	Landfill
		Rumpke Landfill Gas Recovery	U.S.	Landfill
		Facility Tree Planting Program	U.S.	Afforestation
		Facility Tree Planting Program	U.S.	Urban Forestry (sequestration only)
		Benificial Use of Coal Fly Ash	U.S.	Coal ash reuse
		Recycling Programs	U.S.	Materials recycling/reuse
		Merger Dispatch Savings	U.S.	Dispatching changes only
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Rio Bravo Carbon Sequestration Pilot Project (Full Share)	Foreign	Forest preservation
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		WRP Tree Planting Program	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Cinergy Corp. Ducks Unlimited Bottomland Hardwood Reforest.	U.S.	Afforestation
		Cinergy Corp. The Nature Conservancy Reforestation and Bio.	U.S.	Afforestation
		Cinergy Corp. Wild Turkey Federation Operation Big Sky.	U.S.	Afforestation
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		Home Energy House Call	U.S.	Equipment and appliances improvement or replacement
		SF6 Emission Reduction Partnership	U.S.	Reclamation: Recycling
		Hendricks County McCloud Park Project	U.S.	Afforestation
		Natural Gas Star Program	U.S.	Natural gas distribution
		Sycamore Land Trust	U.S.	Afforestation
		NICHES project	U.S.	Afforestation
		Photovoltaic systems	U.S.	Fuel switching
		Noblesville repowering	U.S.	Fuel switching
		St. Francis River Carbon Offset Project	U.S.	Afforestation
City of Austin Electric Utility (Austin Energy)	1605EZ	Coal Combustion Byproduct Reutilization	U.S.	Coal ash reuse
		NOx Reduction at Coal Fired Power Plant	U.S.	Reduction of process emissions
		Hydro Power Purchase	U.S.	Zero/Low Emission Power Purchases
		SF-6 Leak Reduction Project	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Transmission Improvement Project	U.S.	General generation, transmission & distribution projects
		South Texas Project	U.S.	Increase in low-emitting capacity
		West Texas Wind Power Purchase	U.S.	Zero/Low Emission Power Purchases
		Demand Side Management	U.S.	General energy use
		Landfill Gas Generation	U.S.	Landfills: Landfill gas recovery for energy use
City of Edmond, Oklahoma, Electric Department	1605EZ	High Efficiency Transformers	U.S.	High-efficiency transformers
		High Efficiency Heat Pumps	U.S.	Heating, ventilation, and air conditioning
		General Energy Use	U.S.	Equipment and appliances improvement or replacement
		Lighting and lighting control	U.S.	Lighting and lighting control
		Trees/Shrubs Planting	U.S.	Urban Forestry (sequestration only)
City of Klamath Falls- Cogen	1605	FOSSIL FUEL DISPLACEMENT THROUGH COALBED METHANE UTILIZATION	U.S.	Increase in low-emitting capacity
		Oregon Forest Resources Trust Reforestation Program	U.S.	Reforestation
		SOLAR RURAL ELECTRIFICATION WITH PHOTOVOLTAICS IN ASIA	Foreign	Increase in low-emitting capacity
City of Palo Alto Utilities	1605EZ	PV Partners Program	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Residential Energy Efficiency Program	U.S.	Equipment and appliances improvement or replacement
		Commercial Energy Efficiency Program	U.S.	Equipment and appliances improvement or replacement
		Palo Alto Green	U.S.	Other energy efficiency project
City of Springfield	1605	Springfield Sanitary Landfill	U.S.	Landfill
City Public Service	1605	Desert Sky Wind Turbine Power Purchase	U.S.	Zero/Low Emission Power Purchases
		Streetlight Replacements	U.S.	Lighting and lighting control
		Wash Right Rebates	U.S.	Equipment and appliances improvement or replacement
		SF6 Inventory	U.S.	Emission avoidance
		Flyash Sales	U.S.	Materials recycling/reuse
		All Other Recycling	U.S.	Materials recycling/reuse
		Tree Planting	U.S.	Urban Forestry (sequestration only)
		South Texas Project Nuclear Operating Company	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Mow Down Smog	U.S.	Equipment and appliances improvement or replacement
City Utilities of Springfield	1605	LOW SULFUR FUEL SWITCH - SWPS	U.S.	Fuel switching
		HEAT RATE IMPROVEMENTS - SWPS	U.S.	Heat rate or other efficiency improvement
		Urban Forestry	U.S.	Urban Forestry (sequestration only)
		Natural Gas Fleet	U.S.	Operation of alternative fuel vehicles (AFVs)
		Natural Gas Fleet	U.S.	Infrastructure improvement
		SF6 Recovery	U.S.	Reclamation: Recycling
		Wind Energy offering	U.S.	Zero/Low Emission Power Purchases

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
CLE Resources	1605	Cycloid	U.S.	Use of more efficient vehicle components (e.g. tires)
		Revolve Technologies - Magnetic Bearings	U.S.	Motor and motor drive
		Electronic Lighting (OK Industries)	U.S.	Lighting and lighting control
		Industrial Devices Corporation (IDC)	U.S.	Motor and motor drive
		Active Power	U.S.	Industrial power systems
		Revolve Technologies - Dry Gas Seals	U.S.	Natural gas transmission
		Lightware	U.S.	Equipment and appliances improvement or replacement
		Valdor	U.S.	Emission avoidance
		McHugh Software	U.S.	Service efficiency improvements
		McHugh Software - Foreign	Foreign	Service efficiency improvements
Cleco Corporation	1605	Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		Bayou Jean de Jean Reforestation	U.S.	Afforestation
		Maknockanut Lake Plantation Carbon Unit #1	U.S.	Afforestation
		St. Francis River Carbon Offset Project	U.S.	Afforestation
CMV Joint Venture	1605	Oak Grove Coalbed Methane Recovery Project	U.S.	Other
		White Oak Creek Coalbed Methane Recovery	U.S.	Other
Common Purpose Institute	1605EZ	Energy Crop Tree Farm	U.S.	Woody biomass production and other agroforestry
CommonWealth Bethlehem Energy, LLC	1605	North Country Landfill Gas Utilization Facility	U.S.	Landfill
Community Electric Cooperative	1605	System Line Conversion and Reconductoring	U.S.	High-efficiency transformers
		System Line Conversion and Reconductoring	U.S.	Reconductoring
		System Line Conversion and Reconductoring	U.S.	Distribution voltage upgrade
Conectiv Atlantic Generation (CAG)	1605	Peach Bottom Nuclear Units #2 & 3 Uprate Program	U.S.	Increase in low-emitting capacity
		Urban Tree Planting	U.S.	Urban Forestry (sequestration only)
		Deepwater Natural Gas Usage	U.S.	Fuel switching
		Employee Van Pooling	U.S.	Demand Modification: Carpooling/Vanpooling
		Employee Telecommuting	U.S.	Demand Modification: Telecommuting
		Wetlands Reclamation Project	U.S.	Other carbon sequestration projects/activities
Conectiv Delmarva Generation	1605	T&D Loss Reduction	U.S.	High-efficiency transformers
		T&D Loss Reduction	U.S.	Reconductoring
		T&D Loss Reduction	U.S.	Distribution voltage upgrade
		T&D Loss Reduction	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Hay Road Combined Cycle	U.S.	Heat rate or other efficiency improvement
		Hay Road Combined Cycle	U.S.	Availability improvement
		Hay Road Combined Cycle	U.S.	Increase in low-emitting capacity
		DP&L Facility Energy Saving	U.S.	Lighting and lighting control
		DP&L Facility Energy Saving	U.S.	Load control
		DP&L Facility Energy Saving	U.S.	Heating, ventilation, and air conditioning
		Demand Side Management	U.S.	Equipment and appliances improvement or replacement
		Demand Side Management	U.S.	Lighting and lighting control
		Demand Side Management	U.S.	Load control
		Demand Side Management	U.S.	Heating, ventilation, and air conditioning
		Demand Side Management	U.S.	Building shell improvement
		Demand Side Management	U.S.	Motor and motor drive
		CNG Vehicles	U.S.	Operation of alternative fuel vehicles (AFVs)
		Urban Tree Planting	U.S.	Urban Forestry (sequestration only)
		Ash Reuse	U.S.	Coal ash reuse
		Edge Moor Fuel Substitution	U.S.	Fuel switching
		Edge Moor Landfill Gas Use	U.S.	Landfill
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Peach Bottom Nuclear Units #2 & #3 Uprate Program	U.S.	Increase in low-emitting capacity
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		St. Catherine NFWF Project	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		Mass Transit to DC	U.S.	Demand Modification: Use of mass transit
		Soy Vehicles	U.S.	Operation of alternative fuel vehicles (AFVs)
		St. Francis River Carbon Offset Project	U.S.	Afforestation
Consolidated Edison Company of New York, Inc.	1605	Natural Gas STAR Best Management Practices	U.S.	Natural gas distribution
		Arthur Kill - Fuel Switching to Natural Gas	U.S.	Fuel switching
		SF6 Best Management Practices	U.S.	Reclamation: Recycling
		SF6 Best Management Practices	U.S.	Emission avoidance
		Alternative Fuel Vehicles - CNG	U.S.	Operation of alternative fuel vehicles (AFVs)
		Alternative Fuel Vehicles - Bio diesel	U.S.	Operation of alternative fuel vehicles (AFVs)
Constellation Energy	1605	Brandon Shores Generating Station Heat Rate Improvement	U.S.	Heat rate or other efficiency improvement
		C.P. Crane Generating Station Heat Rate Improvements	U.S.	Heat rate or other efficiency improvement
		H.A. Wagner Generating Station Heat Rate Improvements	U.S.	Heat rate or other efficiency improvement
		Hydroelectric Generation Improvements	U.S.	Heat rate or other efficiency improvement
		Hydroelectric Generation Improvements	U.S.	Increase in low-emitting capacity
		Transmission / Distribution Improvements	U.S.	Distribution voltage upgrade
		Transmission / Distribution Improvements	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Demand Side Management Programs	U.S.	Equipment and appliances improvement or replacement
		Demand Side Management Programs	U.S.	Load control
		Demand Side Management Programs	U.S.	Heating, ventilation, and air conditioning

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
		Demand Side Management Programs	U.S.	Building shell improvement
		Demand Side Management Programs	U.S.	Motor and motor drive
		Gas Systems O & M (Natural Gas Star Partnership)	U.S.	Natural gas distribution
		Refrigerant/Solvent Recycling and Reduction	U.S.	Reclamation: Recycling
		Solid Waste Recycling and Source Reduction	U.S.	Materials recycling/reuse
		Solid Waste Recycling and Source Reduction	U.S.	waste/source reduction
		Solid Waste Recycling and Source Reduction	U.S.	Education and training programs
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Alternatively Fueled Vehicles	U.S.	Operation of alternative fuel vehicles (AFVs)
		Coal Ash Substitution for Portland Cement	U.S.	Coal ash reuse
		Brandon Shores Station Auxiliary-Load Reductions	U.S.	Equipment and appliances improvement or replacement
		Brandon Shores Station Auxiliary-Load Reductions	U.S.	Lighting and lighting control
		Brandon Shores Station Auxiliary-Load Reductions	U.S.	Heating, ventilation, and air conditioning
		Brandon Shores Station Auxiliary-Load Reductions	U.S.	Other energy efficiency project
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Energy Star Buildings/Green Lights Program Participation	U.S.	Equipment and appliances improvement or replacement
		Energy Star Buildings/Green Lights Program Participation	U.S.	Load control
		Energy Star Buildings/Green Lights Program Participation	U.S.	Heating, ventilation, and air conditioning
		Energy Star Buildings/Green Lights Program Participation	U.S.	Building shell improvement
		Energy Star Buildings/Green Lights Program Participation	U.S.	Motor and motor drive
		Calvert Cliffs Nuclear Power Plant Generation Increases	U.S.	Availability improvement
		SF6 Handling Procedures in Electric Distribution	U.S.	Reclamation: Recycling
		SF6 Handling Procedures in Electric Distribution	U.S.	Emission avoidance
		Baltimore RESCO Waste-to-Energy MWh Purchases	U.S.	Zero/Low Emission Power Purchases
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		Employee Commute Options	U.S.	Demand Modification: Carpooling/Vanpooling
		Employee Commute Options	U.S.	Demand Modification: Use of mass transit
		Employee Commute Options	U.S.	Demand Modification: Other
		Nine Mile Pt Nuclear Generating Improvements	U.S.	Availability improvement
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		St. Francis River Carbon Offset Project	U.S.	Afforestation
County Sanitation Districts of Los Angeles County	1605	Wastewater Treatment Plants	U.S.	Wastewater treatment
		Solid Waste Management	U.S.	Landfill
DADS Landfill	1605	Landfill Methane Flaring	U.S.	Landfill
DaimlerChrysler Corporation	1605	Facility Energy Reduction Projects	U.S.	Equipment and appliances improvement or replacement
		Facility Energy Reduction Projects	U.S.	Lighting and lighting control
		Facility Energy Reduction Projects	U.S.	Heating, ventilation, and air conditioning
		Facility Energy Reduction Projects	U.S.	Motor and motor drive
		Powerhouse Conversion Projects	U.S.	Fuel switching
DeBourgh Manufacturing Company	1605EZ	Make Up Air Unit	U.S.	Heating, ventilation, and air conditioning
		Electrical Mgmt. System	U.S.	Load control
		Powder Reclaimers	U.S.	Landfills: Modification of waste stream (e.g., yard waste bans, recycling)
		Computerized Temp Controller	U.S.	Oil and Natural Gas Systems: Changes in operation and maintenance practices
Delaware Electric Cooperative	1605	System Line Conversions & Reconductoring	U.S.	High-efficiency transformers
		System Line Conversions & Reconductoring	U.S.	Reconductoring
Delaware Solid Waste Authority	1605	Southern Solid Waste Management Center (SSWMC)	U.S.	Landfill
		Central Solid Waste Management Center (CSWMC)	U.S.	Landfill
		Cherry Island Landfill (CIL)	U.S.	Landfill
		Pigeon Point Landfill (PPLF)	U.S.	Landfill
Dominion Generation	1605	Increased Nuclear Generation at Surry Power Station	U.S.	Availability improvement
		Increased Nuclear Generation at North Anna Nuclear Power St.	U.S.	Availability improvement
DTE Energy/ Detroit Edison	1605	Increased Nuclear Utilization	U.S.	Availability improvement
		Increased Nuclear Utilization	U.S.	Increase in low-emitting capacity
		Greenwood Energy Center Fuel Switching	U.S.	Fuel switching
		Distribution Improvements	U.S.	Reconductoring
		Distribution Improvements	U.S.	Distribution voltage upgrade
		Distribution Improvements	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Energy Partnerships	U.S.	Lighting and lighting control
		Energy Partnerships	U.S.	Motor and motor drive
		Energy Partnerships	U.S.	Other energy efficiency project
		Electric Vehicle Demonstration Project	U.S.	Operation of alternative fuel vehicles (AFVs)
		LFG Recovery & Energy Gen - DTE Projects in Service Area	U.S.	Landfill
		Forest Land Management	U.S.	Modified forest management
		Southeastern Michigan Afforestation - 1995	U.S.	Afforestation
		Miscellaneous Tree Plantings - 1995	U.S.	Urban Forestry (sequestration only)
		Geothermal Projects	U.S.	Heating, ventilation, and air conditioning
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		State Forest Land Afforestation - 1996	U.S.	Afforestation
		Solar Power - Michigan	U.S.	Increase in low-emitting capacity
		Plant Efficiency Improvements	U.S.	Heat rate or other efficiency improvement
		Coal Ash Reuse - U.S.	U.S.	Coal ash reuse
		Coal Ash Reuse - Canada	Foreign	Coal ash reuse
		State Forest Land Afforestation - 1997	U.S.	Afforestation
		Miscellaneous Tree Plantings - 1996	U.S.	Urban Forestry (sequestration only)
		Miscellaneous Tree Plantings - 1997	U.S.	Urban Forestry (sequestration only)
		Southeast Michigan Afforestation - 1996	U.S.	Afforestation
		Southeast Michigan Afforestation - 1997	U.S.	Afforestation
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		State Forest Land Afforestation - 1998	U.S.	Afforestation

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
		Miscellaneous Tree Plantings - 1998	U.S.	Urban Forestry (sequestration only)
		Landfill Energy Purchases, non-DTE Projects	U.S.	Landfill
		Landfill Gas Recovery Projects	U.S.	Landfill
		State Forest Land Afforestation - 1999	U.S.	Afforestation
		Miscellaneous Tree Plantings - 1999	U.S.	Urban Forestry (sequestration only)
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		LFG Recovery & Energy Gen - DTE Proj outside Service Area	U.S.	Landfill
		State Forest Land Afforestation - 2000	U.S.	Afforestation
		Miscellaneous Tree Plantings - 2000	U.S.	Urban Forestry (sequestration only)
		Solar Power - California	U.S.	Increase in low-emitting capacity
		Rio Bravo Carbon Sequestration Pilot Project (Full Share)	Foreign	Forest preservation
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		State Forest Land Afforestation - 2001	U.S.	Afforestation
		Miscellaneous Tree Plantings - 2001	U.S.	Urban Forestry (sequestration only)
		Miscellaneous Tree Plantings - 2002	U.S.	Urban Forestry (sequestration only)
		State Forest Land Afforestation - 2002	U.S.	Afforestation
		Six Lakes - 2002	U.S.	Afforestation
		Miscellaneous Tree Plantings - 2003	U.S.	Urban Forestry (sequestration only)
		St. Francis River Carbon Offset Project	U.S.	Afforestation
Duke Energy Corporation	1605	Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Increased Nuclear Generation at McGuire Nuclear Station	U.S.	Availability improvement
		Increased Nuclear Generation at Catawba Nuclear Station	U.S.	Availability improvement
		Recycling Flyash	U.S.	Coal ash reuse
		Increased Nuclear Generation at Oconee Nuclear Station	U.S.	Availability improvement
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		White Street Landfill Gas Recovery Project	U.S.	Landfill
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		Improved Hydro Efficiency at Lookout Shoals Hydro	U.S.	Heat rate or other efficiency improvement
		Improved Hydro Efficiency at Dearborn Hydro	U.S.	Heat rate or other efficiency improvement
		Improved Hydro Efficiency at Oxford Hydro	U.S.	Heat rate or other efficiency improvement
		Improved Hydro Efficiency at Wylie Hydro	U.S.	Heat rate or other efficiency improvement
		Improved Hydro Eficiency at Wateree Hydro	U.S.	Heat rate or other efficiency improvement
		Improved Hydro efficiency at Fishing Creek Hydro	U.S.	Heat rate or other efficiency improvement
		Natural Gas Star - Pipeline Pull Downs	U.S.	Natural gas transmission
		Natural Gas Star - Sleeve Repairs	U.S.	Natural gas transmission
		Natural Gas Star - Use of Hot Taps for New Connections	U.S.	Natural gas transmission
		Natural Gas Star - Emergency Shutdowm Practices	U.S.	Natural gas transmission
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		Tranmission Breaker Repairs	U.S.	Emission avoidance
		Improved Efficiency at Cedar Creek Hydro	U.S.	Heat rate or other efficiency improvement
		Improved Efficiency an Nantahala Hydro	U.S.	Heat rate or other efficiency improvement
		St. Francis River Carbon Offset Project	U.S.	Afforestation
Dynegy, Inc.	1605	Burn Waste Oil at Baldwin 3	U.S.	Fuel switching
		Tire-Derived Fuel Cofiring at Baldwin	U.S.	Fuel switching
		Baldwin 3 Heat Rate Improvement	U.S.	Heat rate or other efficiency improvement
		Install Natural Gas Fired Aux. Boiler at Havana	U.S.	Fuel switching
		Hennepin Gas Reburn Project	U.S.	Fuel switching
		New Boiler Controls at Hennepin	U.S.	Heat rate or other efficiency improvement
		Vermilion 1 Heat Rate Improvements	U.S.	Heat rate or other efficiency improvement
		Vermilion 2 Heat Rate Improvements	U.S.	Heat rate or other efficiency improvement
		Add Turbine Shell Heaters on Wood River 4	U.S.	Heat rate or other efficiency improvement
		Fuel Switch To Natural Gas at Hennepin	U.S.	Fuel switching
		Fuel Switch To Natural Gas at Wood River	U.S.	Fuel switching
		Flyash Sales (Baldwin, Havana, Hennepin, Vermilion, Wd Rvr)	U.S.	Coal ash reuse
		Convert Vermilion Units 1 And 2 To Natural Gas	U.S.	Fuel switching
		Wood River 4 Turbine Rotor Replacement	U.S.	Heat rate or other efficiency improvement
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		IDNR Tree Planting Partnership	U.S.	Afforestation
		Baldwin 2 Turbine H.E.L.P. Blades Installation	U.S.	Heat rate or other efficiency improvement
		Hennepin I Turbine Steam Path Upgrade	U.S.	Heat rate or other efficiency improvement
		Havana 6 Cooling Tower Upgrade	U.S.	Heat rate or other efficiency improvement
		Hennepin Orimulsion Reburn	U.S.	Fuel switching
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Cofire Plastic at Baldwin	U.S.	Fuel switching
		Combustion of used lubricating oil	U.S.	Fuel switching
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		Reduce Number of Plant Start-ups	U.S.	Heat rate or other efficiency improvement
		Dynegy Mississippi River Valley Reforestation Project	U.S.	Afforestation
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		Hennepin Boiler Optimizer	U.S.	Heat rate or other efficiency improvement
		Hennepin Feedwater Heater Orifice Replacements	U.S.	Heat rate or other efficiency improvement
		Flyash Sales	U.S.	Coal ash reuse
		St. Francis River Carbon Offset Project	U.S.	Afforestation
El Paso Production Company	1605	White Oak Creek Coalbed Methane Recovery	U.S.	Production natural gas wells
Energy Developments, Inc.	1605	Ottawa County Power Station	U.S.	Increase in low-emitting capacity
		Lorain Power Station	U.S.	Increase in low-emitting capacity
		Carbon-Limestone Power Station	U.S.	Increase in low-emitting capacity
		Zion Power Station	U.S.	Increase in low-emitting capacity
		Tessman Road Power Station	U.S.	Increase in low-emitting capacity
		Taylor County Power Station	U.S.	Increase in low-emitting capacity
		Roberts Road Power Station	U.S.	Increase in low-emitting capacity
		Middle Point Power Station	U.S.	Increase in low-emitting capacity

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
Energy Management Partners, LP	1605EZ	Biomass Waste to Energy	U.S.	Fuel switching
Entergy Services, Inc.	1605	Raise Nuclear Unit Targets on Annual Capacity Factor	U.S.	Increase in low-emitting capacity
		Grand Gulf Nuclear Station Turbine Upgrade	U.S.	Heat rate or other efficiency improvement
		Independence Unit 1 Feedwater Heater Replacement	U.S.	Heat rate or other efficiency improvement
		Sabine Unit 2 Feedwater Heater Replacement	U.S.	Heat rate or other efficiency improvement
		Ninemile Turbine Retrofit	U.S.	Heat rate or other efficiency improvement
		Transmission and Distribution Efficiency	U.S.	High-efficiency transformers
		Transmission and Distribution Efficiency	U.S.	Reconductoring
		Transmission and Distribution Efficiency	U.S.	Distribution voltage upgrade
		Transmission and Distribution Efficiency	U.S.	Other transmission & distribution improvements
		Vidalia Hydroelectric Station	U.S.	Zero/Low Emission Power Purchases
		Lewis Creek Combustion Control	U.S.	Heat rate or other efficiency improvement
		Entergy Integrated Solutions, Inc. (Entergy SASI Lighting)	U.S.	Equipment and appliances improvement or replacement
		Entergy Integrated Solutions, Inc. (Entergy SASI Lighting)	U.S.	Lighting and lighting control
		Entergy Integrated Solutions, Inc. (Entergy SASI Lighting)	U.S.	Heating, ventilation, and air conditioning
		White Bluff Unit 1 Feedwater Heater Replacement	U.S.	Heat rate or other efficiency improvement
		Tennessee Gas Compressor Replacement	U.S.	Fuel switching
		White Bluff Unit 2 Feedwater Heaters Replacement	U.S.	Heat rate or other efficiency improvement
		Michoud Unit 3 Efficiency Improvement Project	U.S.	Heat rate or other efficiency improvement
		Wetlands and Carbon Sequestration - Southeast LA & TX	U.S.	Other carbon sequestration projects/activities
		Entergy Forestry Projects	U.S.	Reforestation
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		SF6 Reductions	U.S.	Emission avoidance
		Fly Ash use as replacement for cement	U.S.	Coal ash reuse
		Lake Catherine Unit 4 Efficiency Improvement Project	U.S.	Heat rate or other efficiency improvement
		Willow Glen Unit 5 Air Heater Replacement Project	U.S.	Heat rate or other efficiency improvement
		Willow Glen Unit 5 Kidney Trap Replacement	U.S.	Heat rate or other efficiency improvement
		Little Gypsy Unit 3 #6LP Feedwater Heater Replacement	U.S.	Heat rate or other efficiency improvement
		Willow Glen Unit 3 #2B Feedwater Heater Replacment	U.S.	Heat rate or other efficiency improvement
		Louisiana Station 1 Repowering and Unit Upgrade	U.S.	General generator Improvements
		Natural Gas Vehicle Program	U.S.	Operation of alternative fuel vehicles (AFVs)
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		Natural Gas Pipeline Leak Repairs	U.S.	Natural gas distribution
		White Bluff 2 Aux Fuel Air Dampers	U.S.	Heat rate or other efficiency improvement
		Independence 1 Burner Tilt Upgrade	U.S.	Heat rate or other efficiency improvement
		Independence 2 APH Basket & Turbine Refurbish	U.S.	Heat rate or other efficiency improvement
		Ritchie 1, No. 1 Condenser Retubing	U.S.	Heat rate or other efficiency improvement
		Sabine 2 Furnace Membrane	U.S.	Heat rate or other efficiency improvement
		Sabine 4 - 4C & 4D Condneser Retubing	U.S.	Heat rate or other efficiency improvement
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		Energy Efficiency Programs at Entergy Gulf States, Inc.	U.S.	Building shell improvement
		St. Francis River Carbon Offset Project	U.S.	Afforestation
		ANO - SF6 Breaker Replacement	U.S.	Substitution
		Baxter Wilson 1- Air Preheater & By Pass Seal Replacement	U.S.	Heat rate or other efficiency improvement
		Baxter WIlson 1 - Condenser Vacuum Pump Replacement	U.S.	Heat rate or other efficiency improvement
		Baxter Wilson 2 - Air Preheater Seal Replacement	U.S.	Heat rate or other efficiency improvement
		Baxter Wilson 2 - Burner Management System	U.S.	Heat rate or other efficiency improvement
		Lewis Creek 1 - Minimum Load Reduction	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Lewis Creek 2 - Lower Minimum Load	U.S.	Other transmission & distribution improvements
		Little Gypsy 2 - Minimum Load Reduction	U.S.	Other transmission & distribution improvements
		Little Gypsy 3 - Optimized Temperature Control	U.S.	Heat rate or other efficiency improvement
		Michoud 3 - Boiler Feedwater Control System	U.S.	Heat rate or other efficiency improvement
		Little Gypsy Plant Reforestation	U.S.	Reforestation
		Willow Glen Plant - Reforestation	U.S.	Reforestation
		Ninemile 4 - RheoVac Air In-Leakage Monitoring	U.S.	Heat rate or other efficiency improvement
		Ninemile 4 - Cold End Pre-Heater Basket Replacement	U.S.	Heat rate or other efficiency improvement
		Ninemile 5 - RheoVac Air In-Leakage Monitoring	U.S.	Heat rate or other efficiency improvement
		Ninemile 5 - Cold End Pre-heater Basket Replacement	U.S.	Heat rate or other efficiency improvement
		Ninemile 5 - Neural Network Installation	U.S.	Heat rate or other efficiency improvement
		Nelson 6 - Preheat Basket Replacement	U.S.	Heat rate or other efficiency improvement
		Nelson 6 - Neural Net Installation and Analog Boiler Control	U.S.	Heat rate or other efficiency improvement
		Sabine 1 - Install New Design Condenser Tube Plugs	U.S.	Heat rate or other efficiency improvement
		Sabine 2 - Install New Design Condenser Tube Plugs	U.S.	Heat rate or other efficiency improvement
		Sabine 3 - Install New Design Condenser Tube Plugs	U.S.	Heat rate or other efficiency improvement
		Sabine 4 - Install New Design Condenser Tube Plugs	U.S.	Heat rate or other efficiency improvement
		Sabine 5 - Install New Design Condenser Tube Plugs	U.S.	Heat rate or other efficiency improvement
		White Bluff 1 - Replacement of Perimeter Fill in Cooling	U.S.	Heat rate or other efficiency improvement
		White Bluff 2 - Replacement of Perimeter Fill in Cooling	U.S.	Heat rate or other efficiency improvement
		White Bluff 1 - Install RheoVac Air In-Leakage Monitor	U.S.	Heat rate or other efficiency improvement
		White Bluff 2 - Install Rheo Vac Air In-Leakage Monitor	U.S.	Heat rate or other efficiency improvement
		White Bluff 1 - Install the Control Values ASV-4 & ASV-6	U.S.	Other electricity generation, transmission, and distribution projects/activities
		White Bluff 2 - Install the Control Valves ASV-4 & ASV-6	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Sabine 1 - Install New Drip Pump & Bypass Line	U.S.	Heat rate or other efficiency improvement
		Sabine 2 - Install New Drip Pump & Bypass Line	U.S.	Heat rate or other efficiency improvement
		Sabine 3 - Control Valve Repair and Replacement	U.S.	Heat rate or other efficiency improvement
		Sabine 4 - Control Valve Repair and Replacement	U.S.	Heat rate or other efficiency improvement
		Sabine 3 - Install RheoVac Air In-Leakage Monitor	U.S.	High-efficiency transformers
		Sabine 4 - Install RheoVac Air In-Leakage Monitor	U.S.	High-efficiency transformers
		Sabine 5 - Install RheoVac Air In-Leakage Monitor	U.S.	Heat rate or other efficiency improvement
		Sabine 4 - Install New Reheat Spray Valves	U.S.	Heat rate or other efficiency improvement
		Sabine 4 - Install New Air Preheater Seals	U.S.	Heat rate or other efficiency improvement
		Sabine 5 - Install Condensate Filtration System	U.S.	Heat rate or other efficiency improvement
Environmental Synergy, Inc.	1605	ESI Bottomland Hardwood Restoration Project	U.S.	Afforestation
		ESI Florida Longleaf Pine Restoration	U.S.	Afforestation
Exelon Corporation	1605	High Efficiency Transformers	U.S.	High-efficiency transformers
		Zion Power House Windmill	U.S.	Increase in low-emitting capacity
		International Brotherhood of Electrical Workers Solar Panels	U.S.	Increase in low-emitting capacity
		Wind and Photovoltaic Generation Pricing Experiment	U.S.	Zero/Low Emission Power Purchases
		ComEd North Commercial Center - Solar Panels	U.S.	Increase in low-emitting capacity

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
		Chicago Public School Solar Partnership	U.S.	Increase in low-emitting capacity
		Energy Cooperative & Demand Side Management Activities	U.S.	Load control
		Alternative Fuel Vehicles - ComEd Fleet	U.S.	Operation of alternative fuel vehicles (AFVs)
		Landfill Gas Power Purchases	U.S.	Landfill
		Illinois Prairie Grass Plantings	U.S.	Other carbon sequestration projects/activities
		Utility Pole Reuse	U.S.	Other carbon sequestration projects/activities
		Urban Tree Planting	U.S.	Urban Forestry (sequestration only)
		Afforestation	U.S.	Afforestation
		Investment Recovery/Life Cycle Management/Recycling	U.S.	Materials recycling/reuse
		Rerate of Peach Bottom Unit 2	U.S.	Availability improvement
		Rerate of Limerick Unit 2	U.S.	Availability improvement
		Rerate of Peach Bottom Unit 3	U.S.	Availability improvement
		Rerate of Limerick Unit 1	U.S.	Availability improvement
		Overhaul of Conowingo Unit 8	U.S.	Heat rate or other efficiency improvement
		Overhaul of Conowingo Unit 10	U.S.	Heat rate or other efficiency improvement
		Overhaul of Conowingo Unit 9	U.S.	Heat rate or other efficiency improvement
		Overhaul of Conowingo Unit 5	U.S.	Heat rate or other efficiency improvement
		Overhaul of Muddy Run Units 5-8	U.S.	Heat rate or other efficiency improvement
		Operation of CNG Vehicles - PECO Fleet	U.S.	Operation of alternative fuel vehicles (AFVs)
		Fairless Hills LFG to Energy Operation	U.S.	Landfill
		Pennsbury LFG to Energy Operation	U.S.	Landfill
		Wind Power Marketing in Pennsylvania	U.S.	Zero/Low Emission Power Purchases
		Rerate of Lasalle Unit 1	U.S.	Availability improvement
		Rerate of Lasalle Unit 2	U.S.	Availability improvement
		Rerate of Byron Unit 1	U.S.	Availability improvement
		Rerate of Byron Unit 1	U.S.	Increase in low-emitting capacity
		Rerate of Byron Unit 2	U.S.	Availability improvement
		Rerate of Braidwood Unit 1	U.S.	Availability improvement
		Rerate of Braidwood Unit 1	U.S.	Increase in low-emitting capacity
		Rerate of Quad Cities Unit 2	U.S.	Availability improvement
		Natural Gas STAR Best Management Practices	U.S.	Natural gas distribution
		Change the Light Change the World	U.S.	Lighting and lighting control
		Clothes Washer Rebate Program	U.S.	Equipment and appliances improvement or replacement
		ComEd Solar Schools Program	U.S.	Increase in low-emitting capacity
		ComEd South Commercial Center - Solar Panels	U.S.	Increase in low-emitting capacity
		Chicago Photovoltaic Initiative	U.S.	Increase in low-emitting capacity
		Rerate of Braidwood Unit 2	U.S.	Availability improvement
		Low Income Usage Reduction Program - Solar hot water	U.S.	Equipment and appliances improvement or replacement
FirstEnergy Corporation	1605	Heat Rate Improvement	U.S.	Heat rate or other efficiency improvement
		Heat Rate Improvement	U.S.	Decrease in high-emitting capacity
		Fuel Switching	U.S.	Fuel switching
		Efficient Lighting (Industrial and Commercial)	U.S.	Lighting and lighting control
		Efficient Motors	U.S.	Motor and motor drive
		Refrigerator Recycling Program	U.S.	Equipment and appliances improvement or replacement
		Refrigerator Recycling Program	U.S.	Other energy efficiency project
		Tree Source	U.S.	Urban Forestry (sequestration only)
		Refrigerator Recycling	U.S.	Reclamation: Recycling
		Substitution of Fly Ash for Portland Cement in Concrete	U.S.	Coal ash reuse
		Good Cents New Home Program	U.S.	Equipment and appliances improvement or replacement
		Good Cents New Home Program	U.S.	Heating, ventilation, and air conditioning
		Hot Water Conservation	U.S.	Equipment and appliances improvement or replacement
		Water Heater Efficiency Improvements	U.S.	Equipment and appliances improvement or replacement
		Audit/Infiltration Single and Multi-Family	U.S.	Equipment and appliances improvement or replacement
		Audit/Infiltration Single and Multi-Family	U.S.	Lighting and lighting control
		Audit/Infiltration Single and Multi-Family	U.S.	Heating, ventilation, and air conditioning
		Food Service Conservation	U.S.	Equipment and appliances improvement or replacement
		Food Service Conservation	U.S.	Lighting and lighting control
		Water Heating - Conservation	U.S.	Equipment and appliances improvement or replacement
		High Efficiency Heat Pump Rebates	U.S.	Heating, ventilation, and air conditioning
		Thermal Energy Storage - Cooling	U.S.	Load control
		Heat Pump Maintenance Check	U.S.	Equipment and appliances improvement or replacement
		Heat Pump Maintenance Check	U.S.	Heating, ventilation, and air conditioning
		Efficient Lighting (Residential)	U.S.	Lighting and lighting control
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Energy Efficient Geothermal System	U.S.	Heating, ventilation, and air conditioning
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Increased Generation at Perry Nuclear Power Plant	U.S.	Availability improvement
		Increased Generation at Davis-Besse Nuclear Power Station	U.S.	Availability improvement
		Various CFC Replacements	U.S.	Substitution
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		Energy Star	U.S.	Equipment and appliances improvement or replacement
		SF6 Emissions Reduction	U.S.	Emission avoidance
		Increased Generation at Beaver Valley Nuclear Power Station	U.S.	Availability improvement
		Yards Creek Pumped Storage Upgrade	U.S.	Heat rate or other efficiency improvement
		Transformer Loss Evaluation Program	U.S.	High-efficiency transformers
		Shunt Capacitor Program	U.S.	Distribution voltage upgrade
		T & D System Improvements	U.S.	Reconductoring
		Met-Ed/Penelec DSM, Efficiency & Electrotechnology Program	U.S.	Equipment and appliances improvement or replacement
		Met-Ed/Penelec DSM, Efficiency & Electrotechnology Program	U.S.	Lighting and lighting control
		Met-Ed/Penelec DSM, Efficiency & Electrotechnology Program	U.S.	Load control
		Met-Ed/Penelec DSM, Efficiency & Electrotechnology Program	U.S.	Heating, ventilation, and air conditioning
		Met-Ed/Penelec DSM, Efficiency & Electrotechnology Program	U.S.	Building shell improvement
		Met-Ed/Penelec DSM, Efficiency & Electrotechnology Program	U.S.	Other energy efficiency project
		JCP&L DSM, Efficiency & Electrotechnology Program	U.S.	Equipment and appliances improvement or replacement
		JCP&L DSM, Efficiency & Electrotechnology Program	U.S.	Lighting and lighting control
		JCP&L DSM, Efficiency & Electrotechnology Program	U.S.	Load control
		JCP&L DSM, Efficiency & Electrotechnology Program	U.S.	Heating, ventilation, and air conditioning
		JCP&L DSM, Efficiency & Electrotechnology Program	U.S.	Building shell improvement
		JCP&L DSM, Efficiency & Electrotechnology Program	U.S.	Motor and motor drive
		Met-Ed Lighting & Building Energy Consumption Reduction Prog	U.S.	Lighting and lighting control
		Met-Ed Lighting & Building Energy Consumption Reduction Prog	U.S.	Heating, ventilation, and air conditioning
		Information Services - Green Computers	U.S.	Equipment and appliances improvement or replacement
		Information Services - Green Computers	U.S.	Other energy efficiency project
		GPU Service Lighting & Building Energy Efficiency Project	U.S.	Heating, ventilation, and air conditioning
		Electric Vehicles and Employee Trip Reduction Program	U.S.	Operation of alternative fuel vehicles (AFVs)
		Electric Vehicles and Employee Trip Reduction Program	U.S.	Demand Modification: Carpooling/Vanpooling

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
		Electric Vehicles and Employee Trip Reduction Program	U.S.	Demand Modification: Use of mass transit
		Hamm's Landfill NUG	U.S.	Landfill
		Corry	U.S.	Wastewater treatment
		Manchester Renewable	U.S.	Landfill
		Lake View Landfill	U.S.	Landfill
		Modern Landfill NUG	U.S.	Landfill
		Monmouth County Reclamation Center NUG	U.S.	Wastewater treatment
		Mason Dixon Farms, Inc.	U.S.	Livestock
		Recycling Program	U.S.	Materials recycling/reuse
		Municipal Tree Replacement	U.S.	Urban Forestry (sequestration only)
		Video-Conferencing	U.S.	Demand Modification: Other
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		Compressed Air Solution	U.S.	Equipment and appliances improvement or replacement
		St. Francis River Carbon Offset Project	U.S.	Afforestation
Ford Motor Company	1605	Process Upgrades	U.S.	Equipment and appliances improvement or replacement
		1998 - 2003 Plant Energy Efficiency Programs	U.S.	Equipment and appliances improvement or replacement
		1998 - 2003 Performance Projects	U.S.	Other energy efficiency project
FPL Group	1605	Montenay Power Plant	U.S.	Other waste facility
		Aroostook Valley Electric Company	U.S.	Other waste facility
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		FPL Energy Renewable Projects - Hydro	U.S.	Increase in low-emitting capacity
		FPLE Renewable Projects - Wind	U.S.	Increase in low-emitting capacity
		SEGS VIII & IX - solar	U.S.	Increase in low-emitting capacity
		Sanford Power Plant Fuel Switching	U.S.	Fuel switching
		Port Everglades Unit 4 Efficiency Improvement Project	U.S.	Heat rate or other efficiency improvement
		Cape Canaveral Boiler Enhansements and Controls Upgrades	U.S.	Heat rate or other efficiency improvement
		Putnam Plant Unit 1-2 HRSG replacement	U.S.	Heat rate or other efficiency improvement
		Turkey Point Fossil Power Plt Blr, Controls, Turbine Improve	U.S.	Heat rate or other efficiency improvement
		Riviera Plant Boiler Enhancements, Controls Upgrade, LP Turb	U.S.	Heat rate or other efficiency improvement
		Martin Plant LP turbine Improvements	U.S.	Heat rate or other efficiency improvement
		Manatee Plant Low NOx Burners	U.S.	Heat rate or other efficiency improvement
		Fort Myers LP Turbine Improvements	U.S.	Heat rate or other efficiency improvement
		SF6 Reductions	U.S.	Emission avoidance
		Sanford Plant Blr & Controls Upgrades, LP Turbine	U.S.	Heat rate or other efficiency improvement
		FPLE East Mesa Geothermal Projects	U.S.	Increase in low-emitting capacity
		FPL Corporate Recycling	U.S.	Materials recycling/reuse
		Radio Controlled Capacitor System (RCCS)	U.S.	Other transmission & distribution improvements
		Nuclear Generation Improvement	U.S.	Increase in low-emitting capacity
		Gas Expansion Project	U.S.	Fuel switching
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		Multitrade Power Plant	U.S.	Other waste facility
		St. Francis River Carbon Offset Project	U.S.	Afforestation
Gas Recovery Systems	1605	Menlo Park	U.S.	Landfill
		Guadalupe	U.S.	Landfill
		Newby Island Landfill	U.S.	Landfill
		GRS American Canyon Landfill	U.S.	Landfill
		GRS Coyote Canyon	U.S.	Landfill
		LGP Orange County, New York	U.S.	Landfill
		Kapaa	U.S.	Landfill
		Santa Cruz	U.S.	Landfill
		Sycamore	U.S.	Landfill
		San Marcos	U.S.	Landfill
		Arbor Hills Electric	U.S.	Landfill
		Lyon Electric	U.S.	Landfill
		C&C Electric	U.S.	Landfill
		Vienna Junction	U.S.	Landfill
		Pine Bend	U.S.	Landfill
		Mallard Lake	U.S.	Landfill
		Rockford Electric	U.S.	Landfill
		South Barrington	U.S.	Landfill
		Quad Cities Electric	U.S.	Landfill
		Charlotte Motor Speedway	U.S.	Landfill
		Richmond Electric	U.S.	Landfill
		Sunset Farms	U.S.	Landfill
		Fall River	U.S.	Landfill
		East Bridgewater	U.S.	Landfill
		Halifax	U.S.	Landfill
		Randolph	U.S.	Landfill
		Chicopee Electric	U.S.	Landfill
		Sacramento	U.S.	Landfill
		Newby Island 3	U.S.	Landfill
General Motors Corporation	1605	1991-2003 GM Annual Energy Competition & Projects	U.S.	Equipment and appliances improvement or replacement
		1991-2003 GM Annual Energy Competition & Projects	U.S.	Lighting and lighting control
		1991-2003 GM Annual Energy Competition & Projects	U.S.	Heating, ventilation, and air conditioning
		1991-2003 GM Annual Energy Competition & Projects	U.S.	Motor and motor drive
		1993 - 1997 Mich. Demand Side Mgt and Energy Partner Program	U.S.	Equipment and appliances improvement or replacement
		1993 - 1997 Mich. Demand Side Mgt and Energy Partner Program	U.S.	Lighting and lighting control
		1993 - 1997 Mich. Demand Side Mgt and Energy Partner Program	U.S.	Heating, ventilation, and air conditioning
		1993 - 1997 Mich. Demand Side Mgt and Energy Partner Program	U.S.	Motor and motor drive
		1991-2003 Powerhouse Conversions	U.S.	Fuel switching
		Resource Management Programs i.e. EPA WasteWise	U.S.	waste/source reduction
Golden Valley Electric Association, Inc	1605EZ	Use of Hydropower	U.S.	Increase in low-emitting capacity
		Energy Sense DSM Program	U.S.	General energy use
		Tree Give-Away for planting under power lines	U.S.	Urban Forestry (sequestration only)

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
Granger Electric Company	1605	Granger #1 Generating Station - Wood Road Landfill	U.S.	Landfill
		Granger #2 Generating Station - Grand River Avenue Landfill	U.S.	Landfill
		Ottawa County Farms Landfill Generating Station	U.S.	Landfill
		Grand Blanc Landfill Generating Station	U.S.	Landfill
		Seymour Road Landfill Generating Station	U.S.	Landfill
		Granger MotorWheel Facility	U.S.	Landfill
		Brent Run Landfill Generating Station	U.S.	Landfill
Granger Energy, LLC	1605	Lake County Landfill Gas Project	U.S.	Landfill
		Indianapolis/South Side Landfill Gas Project	U.S.	Landfill
Greater New Bedford Regional Refuse Mgt District	1605	Crapo Hill Landfill Gas Control Project	U.S.	Landfill
Green Mountain Energy Company	1605	GMEC energy purchases for corporate offices	U.S.	Fuel switching
		Kinko's	U.S.	Fuel switching
		All Other GMEC Customers	U.S.	Fuel switching
Greene Energy, LLC	1605EZ	Methane Recovery	U.S.	Oil and Natural Gas Systems: Reduction in gas vented due to recovery for energy
Hawaiian Electric Company, Inc.	1605	Commercial & Industrial Energy Efficiency Program	U.S.	Equipment and appliances improvement or replacement
		Commercial & Industrial Energy Efficiency Program	U.S.	Lighting and lighting control
		Commercial & Industrial Energy Efficiency Program	U.S.	Heating, ventilation, and air conditioning
		Commercial & Industrial Energy Efficiency Program	U.S.	Motor and motor drive
		Commercial & Industrial New Construction Program	U.S.	Lighting and lighting control
		Commercial & Industrial New Construction Program	U.S.	Heating, ventilation, and air conditioning
		Commercial & Industrial New Construction Program	U.S.	Motor and motor drive
		Commercial & Industrial Custom Rebate Program	U.S.	Other energy efficiency project
		Residential Eff. Water Heating Program (Existing Customers)	U.S.	Equipment and appliances improvement or replacement
		Showerhead Distribution	U.S.	Equipment and appliances improvement or replacement
		Residential Efficient Water Heating (New Construction)	U.S.	Equipment and appliances improvement or replacement
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		St. Francis River Carbon Offsett Project	U.S.	Afforestation
Hollomon Family	1605EZ	High Efficiency Air-Conditioner Replacement	U.S.	Heating, ventilation, and air conditioning
Integrated Waste Services Association	1605	Waste-to-Energy - Waste Diversion	U.S.	Other waste facility
Iredell Landfill Gas, LLC	1605	Iredell County Landfil	U.S.	Landfill
JEA	1605EZ	Fuel Swiching	U.S.	Fuel switching
		Fuel Switching	U.S.	Fuel switching
		Photovoltaic Systems	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Variable Speed Fan Drives	U.S.	Motor and motor drive
		Biodiesel in vehicles	U.S.	Operation of alternative fuel vehicles (AFVs)
		Urban Forestry	U.S.	Urban Forestry (sequestration only)
Jim Walter Resources, Inc.	1605	Horizontal Degasification Program	U.S.	Production coal mines, underground, longwall
		Gobwell Degasification Program	U.S.	Production coal mines, underground, longwall
		Standard Degasification Well Program	U.S.	Production coal mines, underground, longwall
		Nitrogen Rejection Plant Program (LQG)	U.S.	Processing
Johnson & Johnson	1605	Building Shell	U.S.	Building shell improvement
		Process Improvements	U.S.	Other energy efficiency project
		HVAC	U.S.	Heating, ventilation, and air conditioning
		Installation of Timer Controls and Shutdowns	U.S.	Load control
		Fuel Switching	U.S.	Fuel switching
		Motor & Motor Drives	U.S.	Motor and motor drive
		Equipment & Appliances	U.S.	Equipment and appliances improvement or replacement
		Load Control	U.S.	Load control
		Lighting & Lighting Controls	U.S.	Lighting and lighting control
		Installation of Energy Efficient Systems	U.S.	Equipment and appliances improvement or replacement
		On-site Renewable Energy - Solar	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Green Tag Purchase	U.S.	All other projects not included in the above categories
		Zero/low emitting power purchase (Green Power)	U.S.	Zero/Low Emission Power Purchases
Kansas City Power & Light Company	1605	Improve heat rate	U.S.	Heat rate or other efficiency improvement
		Nuclear Unit Uprate	U.S.	Increase in low-emitting capacity
		EPA's Green Lights	U.S.	Lighting and lighting control
		Coal Fly Ash Recycling	U.S.	Coal ash reuse
		New Transmission Line & Reconductoring	U.S.	Reconductoring
		New Transmission Line & Reconductoring	U.S.	Distribution voltage upgrade
		New Transmission Line & Reconductoring	U.S.	Other transmission & distribution improvements
		Aluminum Coal Cars	U.S.	Use of more efficient vehicle components (e.g. tires)
		Street Light Upgrade	U.S.	Lighting and lighting control
		DSM - AC upgrade	U.S.	Equipment and appliances improvement or replacement
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		ENVIROTECH Fund	U.S.	Research and development programs
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		St. Francis River Carbon Offset Project	U.S.	Afforestation

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
Klickitat County Public Utility District No. 1	1605	H.W. Hill Landfill Gas Power Plant	U.S.	Landfill
Landfill Energy Systems	1605	Riverview	U.S.	Landfill
		I-95 Phase I	U.S.	Landfill
		I-95 Phase II	U.S.	Landfill
		Adrian	U.S.	Landfill
		MRPC	U.S.	Landfill
		MRPC Flare	U.S.	Landfill
		Ann Arbor	U.S.	Landfill
		Pine Tree	U.S.	Landfill
		Carleton Farms	U.S.	Landfill
		Salem	U.S.	Landfill
		Sumpter	U.S.	Landfill
		Wichita	U.S.	Landfill
		Salem Flare	U.S.	Landfill
		Sunshine Canyon	U.S.	Landfill
Lehigh Cement Co. (fmrly Lehigh Portland Cement Co	1605	Project 1: Plant Shutdown	U.S.	Other energy efficiency project
		Project 2: Waste Tire Burning	U.S.	Fuel switching
		Project 2: Waste Tire Burning	U.S.	Other energy efficiency project
		Project 3: Waste Tire Burning	U.S.	Fuel switching
		Project 3: Waste Tire Burning	U.S.	Other energy efficiency project
		Project 4: Plant Modernization	U.S.	Equipment and appliances improvement or replacement
		Project 4: Plant Modernization	U.S.	Lighting and lighting control
		Project 4: Plant Modernization	U.S.	Load control
		Project 4: Plant Modernization	U.S.	Heating, ventilation, and air conditioning
		Project 4: Plant Modernization	U.S.	Building shell improvement
		Project 4: Plant Modernization	U.S.	Motor and motor drive
		Project 4: Plant Modernization	U.S.	Fuel switching
		Project 5: Lighting retrofit	U.S.	Lighting and lighting control
		Project 6: Motor retrofit	U.S.	Motor and motor drive
		Project 7. Waste Oil Burning	U.S.	Fuel switching
		Project 7. Waste Oil Burning	U.S.	Other energy efficiency project
		Project 8. Waste Tire Burning	U.S.	Fuel switching
		Project 8. Waste Tire Burning	U.S.	Other energy efficiency project
		Project 9: Kiln Modernization	U.S.	Equipment and appliances improvement or replacement
		Project 9: Kiln Modernization	U.S.	Other energy efficiency project
Lehigh Cement Co. (formerly Calaveras Cement Co.)	1605	Project 1. Plant Modernization	U.S.	Equipment and appliances improvement or replacement
		Project 1. Plant Modernization	U.S.	Lighting and lighting control
		Project 1. Plant Modernization	U.S.	Load control
		Project 1. Plant Modernization	U.S.	Heating, ventilation, and air conditioning
		Project 1. Plant Modernization	U.S.	Building shell improvement
		Project 1. Plant Modernization	U.S.	Motor and motor drive
		Project 1. Plant Modernization	U.S.	Fuel switching
		Project 2. Waste Tire & Rice Hull Burning	U.S.	Other energy efficiency project
LFG Energy, Inc.	1605	LFG Energy Upgrade Facility	U.S.	Landfill
		LFG Energy - Phases I & II	U.S.	Landfill
Los Angeles Department of Water and Power	1605	Electric Vehicles	U.S.	Operation of alternative fuel vehicles (AFVs)
		LADWP Rideshare Program	U.S.	Demand Modification: Carpooling/Vanpooling
		Energy Efficient Transformers	U.S.	High-efficiency transformers
		Mountain Reforestation Project	U.S.	Reforestation
		Solar Power	U.S.	Increase in low-emitting capacity
		High Efficiency Clothes Washers	U.S.	Equipment and appliances improvement or replacement
		HVAC Replacement Program	U.S.	Heating, ventilation, and air conditioning
		Refrigeration Tune-Up Program	U.S.	Equipment and appliances improvement or replacement
		Commercial Lighting Program	U.S.	Lighting and lighting control
		Refrigerator Replacement Program	U.S.	Equipment and appliances improvement or replacement
		NBRS ("Neighborhood Bill Reduction Service") Program	U.S.	Equipment and appliances improvement or replacement
		NBRS ("Neighborhood Bill Reduction Service") Program	U.S.	Lighting and lighting control
		JFB Lighting Retrofit	U.S.	Lighting and lighting control
		Cool Schools Urban Forestry Project	U.S.	Urban Forestry (sequestration only)
		Cool Schools Urban Forestry - Energy Efficiency Effects	U.S.	Urban forestry (energy effects only)
		Fuel Switching (Fuel Oil #6 to Natural Gas)	U.S.	Fuel switching
		Scattergood - Digester Gas Displacement of Natural Gas	U.S.	Wastewater treatment
		HVAC Tune-up	U.S.	Heating, ventilation, and air conditioning
		Chiller Replacement / Efficiency Program	U.S.	Equipment and appliances improvement or replacement
		Water Conservation Program	U.S.	Other energy efficiency project
		Energy Star Office Equipment	U.S.	Equipment and appliances improvement or replacement
		LADWP Recycling Program	U.S.	Materials recycling/reuse
		Reflective Window Film Rebate Program	U.S.	Load control
		Reflective Window Film Rebate Program	U.S.	Building shell improvement
		Trees for a Green LA	U.S.	Urban Forestry (sequestration only)
		Trees For a Green LA Urban Forestry - Energy Efficiency	U.S.	Urban forestry (energy effects only)
		Cool Roofs Program	U.S.	Building shell improvement
		Consumer Rebate Program	U.S.	Equipment and appliances improvement or replacement
		Consumer Rebate Program	U.S.	Lighting and lighting control
		Consumer Rebate Program	U.S.	Heating, ventilation, and air conditioning
		Consumer Rebate Program	U.S.	Building shell improvement
		Lopez Canyon Microturbines - Landfill Gas-to-Energy Project	U.S.	Landfill
Lower Colorado River Authority	1605	Residential & Commercial DSM Program	U.S.	Lighting and lighting control
		Residential & Commercial DSM Program	U.S.	Heating, ventilation, and air conditioning
		Residential & Commercial DSM Program	U.S.	Building shell improvement
		Coal Combustion By-Product Recycling	U.S.	Coal ash reuse
		Wind Power Project	U.S.	Increase in low-emitting capacity
		Hydroelectric Dam Modernization	U.S.	Availability improvement
		Hydroelectric Dam Modernization	U.S.	Increase in low-emitting capacity
		Supply-Side Efficiency Improvements	U.S.	Heat rate or other efficiency improvement
		Neural-Network Technology	U.S.	Heat rate or other efficiency improvement

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
Lucent Technologies Inc.	1605	ME - #1	U.S.	Equipment and appliances improvement or replacement
		ME - #2	U.S.	Equipment and appliances improvement or replacement
		ME - #3	U.S.	Equipment and appliances improvement or replacement
		ME - #4	U.S.	Equipment and appliances improvement or replacement
		ME - #4	U.S.	Heating, ventilation, and air conditioning
		ME - #5	U.S.	Equipment and appliances improvement or replacement
		ME - #5	U.S.	Heating, ventilation, and air conditioning
		ME - #6	U.S.	Heating, ventilation, and air conditioning
		ME - #7	U.S.	Heating, ventilation, and air conditioning
		ME - #8	U.S.	Equipment and appliances improvement or replacement
		ONG - #1	U.S.	Heating, ventilation, and air conditioning
		ONG - #2	U.S.	Heating, ventilation, and air conditioning
		LRE #1	U.S.	Heating, ventilation, and air conditioning
		OFS - #1	U.S.	Heating, ventilation, and air conditioning
		OFS - #2	U.S.	Equipment and appliances improvement or replacement
		OFS - #2	U.S.	Heating, ventilation, and air conditioning
		OFS - #3	U.S.	Heating, ventilation, and air conditioning
		OFS - #4	U.S.	Equipment and appliances improvement or replacement
		WNG - #1	U.S.	Building shell improvement
		WNG - #2	U.S.	Lighting and lighting control
		WNG - #3	U.S.	Equipment and appliances improvement or replacement
		WNG - #4	U.S.	Landfill
		LU - #1 (US only)	U.S.	Materials recycling/reuse
		LU - #2 (International)	Foreign	Materials recycling/reuse
		OFS - Addition of VDFs	U.S.	Heating, ventilation, and air conditioning
		OFS - Light Timer	U.S.	Lighting and lighting control
		OFS - Light Switch	U.S.	Lighting and lighting control
		OFS - Eliminate fan	U.S.	Equipment and appliances improvement or replacement
		Replacement of TCE in Circuit Board Cleaning Operation	U.S.	Substitution
		Replacement of TCE in Circuit Board Cleaning Operation	U.S.	Emission avoidance
Lynchburg Gas Producers, LLC	1605	Lynchburg Landfill	U.S.	Landfill
McMinnville Electric System	1605	McMinnville Generation Project	U.S.	Other electricity generation, transmission, and distribution projects/activities
Mead Johnson Nutls./Bristol-Myers Squibb	1605	Coal-Fired Boilers Replaced with Nat Gas/Oil Fired Boilers	U.S.	Fuel switching
		Compressed Air System Renovation & Leak Survey/Repair	U.S.	Equipment and appliances improvement or replacement
		Compressed Air System Renovation & Leak Survey/Repair	U.S.	Load control
Mecklenburg Electric Cooperative	1605	System Line Conversion and Reconductoring	U.S.	High-efficiency transformers
		System Line Conversion and Reconductoring	U.S.	Reconductoring
		System Line Conversion and Reconductoring	U.S.	Distribution voltage upgrade
Michigan CAT	1605	Lower Potomac	U.S.	Landfill
		Sacramento	U.S.	Landfill
Middlesex Generating Company, LLC	1605	MCUA Landfill Gas Utilization Project - MCUA Landfill	U.S.	Landfill
		MCUA Landfill Gas Utilization Project - ILR Landfill	U.S.	Landfill
		MCUA Landfill Gas Utilization Project - Edison Landfill	U.S.	Landfill
Minnesota Power	1605	Heat Rate Improvements, Boswell Energy Center	U.S.	Heat rate or other efficiency improvement
		Expanded Generation from Existing Hydro Electric Resources	U.S.	Increase in low-emitting capacity
		Expanded Generation from Existing Hydro Electric Resources	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Demand Side Mgmt., Conservation and Efficiency Improvements	U.S.	Equipment and appliances improvement or replacement
		Demand Side Mgmt., Conservation and Efficiency Improvements	U.S.	Lighting and lighting control
		Demand Side Mgmt., Conservation and Efficiency Improvements	U.S.	Load control
		Demand Side Mgmt., Conservation and Efficiency Improvements	U.S.	Heating, ventilation, and air conditioning
		Demand Side Mgmt., Conservation and Efficiency Improvements	U.S.	Building shell improvement
		Demand Side Mgmt., Conservation and Efficiency Improvements	U.S.	Motor and motor drive
		Demand Side Mgmt., Conservation and Efficiency Improvements	U.S.	Fuel switching
		Expanded Use of Renewable Biomass (wood waste)	U.S.	Fuel switching
		Short Rotation Woody Crop Establishment	U.S.	Afforestation
		Short Rotation Woody Crop Establishment	U.S.	Woody biomass production and other agroforestry
		Waste Paper Recycling Development	U.S.	Materials recycling/reuse
		Electricity Substation, SF6 Breaker Replacement	U.S.	Reclamation: Recycling
		Mud Lake Substation - Reduced Transmission Losses	U.S.	Heat rate or other efficiency improvement
		Mud Lake Substation - Reduced Transmission Losses	U.S.	Other transmission & distribution improvements
		Wind Sense Wind Energy Program	U.S.	Zero/Low Emission Power Purchases
Minnesota Resource Recovery Association (MRRA)	1605EZ	Paper Recycling-Methane	U.S.	Materials recycling/reuse
		Paper Recycling- Carbon Dioxide	U.S.	Materials recycling/reuse
		MSW Incineration	U.S.	Other waste treatment and disposal activities reducing emissions of methane
Model City Energy, LLC	1605	Model City Energy Facility	U.S.	Landfill
Montauk Energy Capital	1605	Rumpke Landfill Gas Recovery Plant	U.S.	Landfill
		Davis Street Landfill Gas Recovery Plant	U.S.	Landfill
		Fresh Kills Landfill Gas Recovery Plant	U.S.	Landfill
		Kearny Landfill Gas Recovery Plant	U.S.	Landfill
		McCarty Road Landfill Gas Recovery Plant	U.S.	Landfill
		Mountaingate Landfill Gas Recovery Plant	U.S.	Landfill
		Olinda Landfill Gas Recovery Plant	U.S.	Landfill
		Bowerman Landfill Gas Recovery Plant	U.S.	Landfill
		Monmouth Landfill Gas Recovery Plant	U.S.	Landfill
		Edison (COP, LLC)	U.S.	Landfill
		ILR (COP, LLC)	U.S.	Landfill
		MCUA (COP, LLC)	U.S.	Landfill
		Chautauqua (COP, LLC)	U.S.	Landfill
		Oaks (COP, LLC)	U.S.	Landfill
		Colebrookdale (COP, LLC)	U.S.	Landfill
		El Dorado (COP, LLC)	U.S.	Landfill
		Attleboro (MASS Energy, LLC)	U.S.	Landfill
		Glacier Ridge (Glacier Ridge LFG, LLC)	U.S.	Landfill

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
		Roosevelt (Roosevelt Landfill Gas Recovery, LLC)	U.S.	Landfill
		Virginia Beach (VB LFG, LLC)	U.S.	Landfill
		Zion (Zion LFG, LLC)	U.S.	Landfill
		Dade County (Monteco)	U.S.	Landfill
		Rosenberg (Monteco)	U.S.	Landfill
		Nelson Gardens (Monteco)	U.S.	Landfill
		McCommas Bluff (Monteco)	U.S.	Landfill
		North Country (CRMC Bethlehem, LLC)	U.S.	Landfill
		Pigeon Point LFG, Inc (COP, LLC)	U.S.	Landfill
Municipal Electric Auth of Georgia (MEAG Power)	1605	Nuclear Generation Utilization	U.S.	Availability improvement
		Nuclear Generation Utilization	U.S.	Increase in low-emitting capacity
Mystic Development, LLC	1605	Gas-fired electric generation	U.S.	Increase in low-emitting capacity
Nashville Electric Service	1605EZ	Distribution Voltage Upgrade	U.S.	Distribution voltage upgrade
		High-efficiency Transformers	U.S.	High-efficiency transformers
		Ongoing Urban Forestry (tree planting)	U.S.	Urban Forestry (sequestration only)
National By-Products Inc	1605	Landfill gas-boiler fuel	U.S.	Landfill
National Grid USA	1605	Nuclear Generation Performance Improvements	U.S.	Availability improvement
		Amorphous Metal Core Transformers	U.S.	High-efficiency transformers
		Installation and Operation of Wind Turbines	U.S.	Increase in low-emitting capacity
		Installation & Operation of Photovoltaic Energy Systems - NY	U.S.	Increase in low-emitting capacity
		Energy Efficiency and Conservation Programs (DSM) - NY	U.S.	Equipment and appliances improvement or replacement
		Energy Efficiency and Conservation Programs (DSM) - NY	U.S.	Lighting and lighting control
		Energy Efficiency and Conservation Programs (DSM) - NY	U.S.	Load control
		Energy Efficiency and Conservation Programs (DSM) - NY	U.S.	Heating, ventilation, and air conditioning
		Energy Efficiency and Conservation Programs (DSM) - NY	U.S.	Building shell improvement
		Energy Efficiency and Conservation Programs (DSM) - NY	U.S.	Motor and motor drive
		Alternative Fuel Vehicles	U.S.	Operation of alternative fuel vehicles (AFVs)
		Identify & Rehabilitate Leaky Gas Distribution Pipe	U.S.	Natural gas distribution
		Refrigerator Roundup	U.S.	Reclamation: Recycling
		Coal Ash Utilization	U.S.	Coal ash reuse
		Investment Recovery Program (Recycling)	U.S.	Materials recycling/reuse
		Nuclear Generation Capacity Improvements	U.S.	Increase in low-emitting capacity
		Partial Conversion of Oil-Fired Plant to Natural Gas	U.S.	Fuel switching
		Cowley Ridge Windplant	Foreign	Increase in low-emitting capacity
		SF6 Emission Reductions - New York	U.S.	Emission avoidance
		Distribution Voltage Upgrade	U.S.	Distribution voltage upgrade
		Distribution Reconductoring	U.S.	Reconductoring
		Photovoltaic - New England	U.S.	Increase in low-emitting capacity
		Transmission Reconductoring	U.S.	Reconductoring
		Demand-Side Management (DSM) Programs - New England	U.S.	Equipment and appliances improvement or replacement
		Demand-Side Management (DSM) Programs - New England	U.S.	Lighting and lighting control
		Demand-Side Management (DSM) Programs - New England	U.S.	Load control
		Demand-Side Management (DSM) Programs - New England	U.S.	Heating, ventilation, and air conditioning
		Demand-Side Management (DSM) Programs - New England	U.S.	Building shell improvement
		Demand-Side Management (DSM) Programs - New England	U.S.	Motor and motor drive
		Carpool	U.S.	Demand Modification: Carpooling/Vanpooling
		Electric Vehicles	U.S.	Operation of alternative fuel vehicles (AFVs)
		Appliance Removal Program, Residential DSM Programs	U.S.	Reclamation: Recycling
		Appliance Removal Program, Residential DSM Programs	U.S.	Reclamation: Destruction
		SF6 Emission Reductions - New England	U.S.	Emission avoidance
Natural Power, Inc.	1605	Wilder's Grove Landfill Gas Project	U.S.	Landfill
NC Muni Landfill Gas Partners, LLC	1605	Henderson County Landfill	U.S.	Landfill
Nebraska Public Power District	1605EZ	Materials Recycling	U.S.	Materials recycling/reuse
		Coal Ash Reuse	U.S.	Coal ash reuse
		CH4 Reductions from Material Recycling	U.S.	Materials recycling/reuse
		Plant Efficiency Improvements	U.S.	General generation, transmission & distribution projects
		1994-1997 Transformer Changeouts	U.S.	High-efficiency transformers
		1994-1996 Distribution Improvements	U.S.	General transmission and distribution
		Wind Turbines	U.S.	Increase in low-emitting capacity
		Nuclear Plant Improved Utilization	U.S.	Availability improvement
		Electric Heat Pump Program, 1998-2003	U.S.	Heating, ventilation, and air conditioning
		Video Conferencing	U.S.	Demand Modification: Telecommuting
		Tree planting	U.S.	General Tree Planting
		Tree planting	U.S.	General Tree Planting
		SF6 Gas Circuit Breaker Leak Detection and Repair	U.S.	Emission avoidance
NEGT	1605	Brayton Point Station Unit No. 4 Gas Conversion	U.S.	Fuel switching
		Power Purchases from Natural Gas Generation	U.S.	Increase in low-emitting capacity
		Johnston Landfill Gas to Electricity Project	U.S.	Landfill
		Turnkey Landfill Gas to Electricity Project	U.S.	Landfill
		Reduced Impact Logging Project (NEP Pilot Project)	Foreign	Modified forest management
		Coal Ash Recycling as Cement Replacement	U.S.	Coal ash reuse
		Manchester Street Repowering	U.S.	Increase in low-emitting capacity
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Brayton Point Station Units No. 1, 2, 3 Natural Gas Usage	U.S.	Fuel switching
		Nashua Landfill Gas To Electricity Project	U.S.	Landfill
		Barre Landfill Gas to Electricity Project	U.S.	Landfill
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		Millennium Power Partners	U.S.	Landfill
		Wind Turbines in Mountain View, CA	U.S.	Increase in low-emitting capacity
		Wind Turbines in Mountain View, CA	U.S.	Other electricity generation, transmission, and distribution projects/activities
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		Madison Windpower	U.S.	Other electricity generation, transmission, and distribution projects/activities
		St. Francis River Carbon Offset Project	U.S.	Afforestation

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
		Natural Gas Star Program - NEGT	U.S.	Natural gas transmission
		Natural Gas Star Program - NEGT	U.S.	Natural gas distribution
NEO Corporation	1605	Acme Landfill Gas Utilization Project	U.S.	Landfill
		Albany Landfill Gas Utilization Project	U.S.	Landfill
		Balefill Landfill Gas Utilization Project	U.S.	Landfill
		Corona Landfill Gas Utilization Project	U.S.	Landfill
		Cuyahoga Landfill Gas Utilization Project	U.S.	Landfill
		Denver Landfill Gas Utilization Project	U.S.	Landfill
		Edgeboro Landfill Gas Utilization Project	U.S.	Landfill
		Fitchburg Landfill Gas Utilization Project	U.S.	Landfill
		Flying Cloud Landfill Gas Utilization Project	U.S.	Landfill
		Fort Smith Landfill Gas Utilization Project	U.S.	Landfill
		Hartford Landfill Gas Utilization Project	U.S.	Landfill
		Kingsland Landfill Gas Utilization Project	U.S.	Landfill
		Kraemer Landfill Gas Utilization Project	U.S.	Landfill
		Lopez Landfill Gas Utilization Project	U.S.	Landfill
		Lowell Landfill Gas Utilization Project	U.S.	Landfill
		Mazzaro Landfill Gas Utilization Project	U.S.	Landfill
		Phoenix Landfill Gas Utilization Project	U.S.	Landfill
		Prima Deshecha Landfill Gas Utilization Project	U.S.	Landfill
		Prince William Landfill Gas Utilization Project	U.S.	Landfill
		Riverside Landfill Gas Utilization Project	U.S.	Landfill
		San Bernadino Landfill Gas Utilization Project	U.S.	Landfill
		San Diego Landfill Gas Utilization Project	U.S.	Landfill
		SKB Landfill Gas Utilization Project	U.S.	Landfill
		Spokane Landfill Gas Utilization Project	U.S.	Landfill
		Tacoma Landfill Gas Utilization Project	U.S.	Landfill
		Tajiguas Landfill Gas Utilization Project	U.S.	Landfill
		Taunton Landfill Gas Utilization Project	U.S.	Landfill
		Visalia Landfill Gas Utilization Project	U.S.	Landfill
		Volusia Landfill Gas Utilization Project	U.S.	Landfill
		West Covina Landfill Gas Utilization Project	U.S.	Landfill
		Woodville Landfill Gas Utilization Project	U.S.	Landfill
		Yolo Landfill Gas Utilization Project	U.S.	Landfill
		Four Hills Landfill Gas Utilization Project	U.S.	Landfill
		Bordeaux Landfill Gas Utilization Project	U.S.	Landfill
New Jersey Meadowlands Commission	1605	NJMC 1-C Landfill	U.S.	Landfill
		NJMC 1-A Landfill	U.S.	Landfill
		MSLA 1-D Landfill	U.S.	Landfill
		NJMC Balefill	U.S.	Landfill
		Kingsland Landfill	U.S.	Landfill
Newton Landfill Gas, LLC	1605	Newton Landfill	U.S.	Landfill
NiSource/NIPSCO	1605	Landfill Methane Recovery - Deercroft	U.S.	Landfill
		Low Loss Transformers	U.S.	High-efficiency transformers
		Capacitor Additions	U.S.	Other transmission & distribution improvements
		Electric Vehicles	U.S.	Operation of alternative fuel vehicles (AFVs)
		Natural Gas Vehicles	U.S.	Marketing/manufacturing of alternative fuel vehicles (AFVs)
		Natural Gas Vehicles	U.S.	Operation of alternative fuel vehicles (AFVs)
		Natural Gas Vehicles	U.S.	Infrastructure improvement
		Employee Commute Options	U.S.	Demand Modification: Carpooling/Vanpooling
		Landfill Methane Recovery-Prairie View	U.S.	Landfill
		North Trenton Pipeline Replacement	U.S.	Natural gas transmission
		North Trenton Pipeline Replacement	U.S.	Natural gas distribution
		Rural Tree Planting	U.S.	Afforestation
		Urban Tree Planting	U.S.	Urban Forestry (sequestration only)
		Ozone Depleting Chemicals	U.S.	Reclamation: Recycling
		Ozone Depleting Chemicals	U.S.	Substitution
		Coal Combustion Byproduct Utilization	U.S.	Coal ash reuse
		Recycling program	U.S.	Materials recycling/reuse
		Employee Training	U.S.	Education and training programs
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		NG Star - NIPSCO	U.S.	Natural gas transmission
		NG Star - NIPSCO	U.S.	Natural gas distribution
		Landfill Methane Recovery - Wheeler	U.S.	Landfill
		SF6 Reductions	U.S.	Emission avoidance
		Biomass Initiative	U.S.	Fuel switching
		NG Star Bay State Gas	U.S.	Natural gas distribution
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		NG Star - Columbia Gulf Transmission Company	U.S.	Natural gas transmission
		NG Star - Columbia Gas Transmission Company	U.S.	Natural gas transmission
		NG Star - Columbia Gas of Pennsylvania and Maryland	U.S.	Natural gas distribution
		NG Star - Columbia Gas of Virginia	U.S.	Natural gas distribution
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		NG Star - Columbia Gas of Ohio	U.S.	Natural gas distribution
		NG Star - Columbia Gas of Kentucky	U.S.	Natural gas distribution
		St. Francis River Carbon Offset Project	U.S.	Afforestation
Noranda Aluminum Inc.	1605	PFC Emission Reduction via Reductions in Anode Effects	U.S.	Emission avoidance
North Carolina Biomass Partners	1605EZ	Biomass Waste to Energy	U.S.	Fuel switching
North Carolina Electric Membership Corporation	1605EZ	Switch Away from Fossil Fuel Generated Power Purchases	U.S.	Zero/Low Emission Power Purchases

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
Northern Neck Electric Cooperative	1605	System Line Conversion and Reconductoring	U.S.	High-efficiency transformers
		System Line Conversion and Reconductoring	U.S.	Reconductoring
		Demand-Side Management Programs	U.S.	Load control
Northern Virginia Electric Cooperative	1605	System Line Conversions and Reconductoring	U.S.	High-efficiency transformers
		System Line Conversions and Reconductoring	U.S.	Reconductoring
		System Line Conversions and Reconductoring	U.S.	Distribution voltage upgrade
		Demand-side Management Load Control Programs	U.S.	Heating, ventilation, and air conditioning
Ocean County Landfill Corporation	1605	Flare Control of Landfill Gas	U.S.	Landfill
		Supplying Landfill Gas for Energy Recovery	U.S.	Landfill
Old Dominion Electric Cooperative	1605	Green Lights	U.S.	Lighting and lighting control
		Clover Power Station - Visual Screening	U.S.	Urban Forestry (sequestration only)
Omaha Public Power District	1605EZ	Recycling Fly Ash	U.S.	Coal ash reuse
		Recycling Programs	U.S.	Materials recycling/reuse
		Coal Heat Rate Improvement	U.S.	Heat rate or other efficiency improvement
		T&D Capacitor Installations	U.S.	General transmission and distribution
		Nuclear Capacity Factor Improvement	U.S.	Increase in low-emitting capacity
		Heat Pump Program (RECP)	U.S.	Heating, ventilation, and air conditioning
		Street Light Replacement	U.S.	Lighting and lighting control
		Commercial & Industrial Audits	U.S.	General energy use
		Right Lights	U.S.	Lighting and lighting control
		Tree Planting	U.S.	Urban Forestry (sequestration only)
Orlando Utilities Commission (OUC)	1605EZ	Landfill Gas to Energy	U.S.	Fuel switching
PacifiCorp	1605	Salt Lake City Urban Forestry Project	U.S.	Urban Forestry (sequestration only)
		Super Good Cents	U.S.	Building shell improvement
		Manufactured Housing Acquisition Program (MAP)	U.S.	Building shell improvement
		Low Income Weatherization and Conservation Programs	U.S.	Building shell improvement
		Low Income Weatherization and Conservation Programs	U.S.	Other energy efficiency project
		Residential Weatherization Programs	U.S.	Building shell improvement
		Home Comfort	U.S.	Lighting and lighting control
		Home Comfort	U.S.	Building shell improvement
		Water Heater / Solar	U.S.	Equipment and appliances improvement or replacement
		Hassle-Free Program	U.S.	Equipment and appliances improvement or replacement
		Showerhead Program	U.S.	Equipment and appliances improvement or replacement
		Utah Water Smart Kits (Schedule 5)	U.S.	Equipment and appliances improvement or replacement
		Super Efficiency Refrigerator Program (SERP)	U.S.	Equipment and appliances improvement or replacement
		H_PRO: High Efficiency Heat Pumps	U.S.	Heating, ventilation, and air conditioning
		Energy FinAnswer	U.S.	Equipment and appliances improvement or replacement
		Energy FinAnswer	U.S.	Lighting and lighting control
		Energy FinAnswer	U.S.	Load control
		Energy FinAnswer	U.S.	Heating, ventilation, and air conditioning
		Energy FinAnswer	U.S.	Building shell improvement
		Energy FinAnswer Prescriptive	U.S.	Lighting and lighting control
		Energy FinAnswer Prescriptive	U.S.	Load control
		Energy FinAnswer Prescriptive	U.S.	Heating, ventilation, and air conditioning
		Energy FinAnswer Prescriptive	U.S.	Motor and motor drive
		Energy FinAnswer Retrofit	U.S.	Lighting and lighting control
		Energy FinAnswer Retrofit	U.S.	Load control
		Energy FinAnswer Retrofit	U.S.	Heating, ventilation, and air conditioning
		Energy FinAnswer Retrofit	U.S.	Building shell improvement
		Industrial Energy FinAnswer	U.S.	Equipment and appliances improvement or replacement
		Industrial Energy FinAnswer	U.S.	Lighting and lighting control
		Industrial Energy FinAnswer	U.S.	Load control
		Industrial Energy FinAnswer	U.S.	Heating, ventilation, and air conditioning
		Industrial Energy FinAnswer	U.S.	Building shell improvement
		Industrial Energy FinAnswer	U.S.	Motor and motor drive
		Major Accounts Program	U.S.	Equipment and appliances improvement or replacement
		Major Accounts Program	U.S.	Lighting and lighting control
		Major Accounts Program	U.S.	Load control
		Major Accounts Program	U.S.	Heating, ventilation, and air conditioning
		Major Accounts Program	U.S.	Building shell improvement
		Major Accounts Program	U.S.	Motor and motor drive
		Major Accounts Program	U.S.	Other energy efficiency project
		Irrigation FinAnswer Program	U.S.	Equipment and appliances improvement or replacement
		Salt Lake City Urban Forestry Project	U.S.	Load control
		Salt Lake City Urban Forestry Project	U.S.	Urban forestry (energy effects only)
		Reforestation in Eastern Washington	U.S.	Reforestation
		Reforestation of Private Lands in Oregon - Site Class III	U.S.	Afforestation
		Reforestation of Private Lands in Oregon - Site Class II	U.S.	Afforestation
		Coal Ash Recycling	U.S.	Coal ash reuse
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Residential Competitive Bid - ECONS	U.S.	Equipment and appliances improvement or replacement
		Small Commercial Retrofit	U.S.	Lighting and lighting control
		Commercial Competitive Bid - EUA/Onsite	U.S.	Lighting and lighting control
		Competitive Bid - CES/Way	U.S.	Equipment and appliances improvement or replacement
		Competitive Bid - CES/Way	U.S.	Lighting and lighting control
		Competitive Bid - CES/Way	U.S.	Load control
		Competitive Bid - CES/Way	U.S.	Heating, ventilation, and air conditioning
		Competitive Bid - CES/Way	U.S.	Building shell improvement
		Competitive Bid - CES/Way	U.S.	Motor and motor drive
		Ethanol Production Carbon Offset Project	U.S.	Reduction of process emissions
		PacifiCorp Facility DSM	U.S.	Lighting and lighting control
		PacifiCorp Facility DSM	U.S.	Motor and motor drive
		Northwest Fuels Methane Recovery From Coal Mines	U.S.	Production coal mines, underground, longwall
		Noel Kempff Mercado Climate Action Project	Foreign	Forest preservation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Northwest Energy Efficiency Alliance (NEEA)	U.S.	Equipment and appliances improvement or replacement

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
		Northwest Energy Efficiency Alliance (NEEA)	U.S.	Lighting and lighting control
		Northwest Energy Efficiency Alliance (NEEA)	U.S.	Heating, ventilation, and air conditioning
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		Rio Bravo Carbon Sequestration Pilot Project (Full Share)	Foreign	Forest preservation
		CFL Bulbs	U.S.	Lighting and lighting control
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		St. Francis River Carbon Offset Project	U.S.	Afforestation
Palmer Capital Corporation	1605	Scholl Canyon LFG Limited Partnership	U.S.	Landfill
		Central Gas Limited Partnership	U.S.	Landfill
		Raleigh Landfill Gas Corporation	U.S.	Landfill
		Brookhaven Landfill Gas Limited Partnership	U.S.	Landfill
		Portland LFG Joint Venture	U.S.	Landfill
		LKD Los Angeles L.P.	U.S.	Landfill
		Sun LFG Corporation	U.S.	Landfill
		Lebanon Landfill Gas Corporation	U.S.	Landfill
		Janes LFG Corporation	U.S.	Landfill
		Lancaster Landfill Gas Corporation	U.S.	Landfill
Peabody Energy	1605	Coal Mine Methane Utilization	U.S.	Production coal mines, underground, longwall
		Coal Bed Methane Utilization	U.S.	Production coal mines, surface
Pfizer Pharmaceuticals LLC - Arecibo Site	1605EZ	Collection/Reuse of HVAC Condensates from ADP3	U.S.	Waste reduction
		Decrease of Pressure in Steam Main Header	U.S.	All other projects not included in the above categories
		Partial Shutdown of ADP-4 Operations	U.S.	All other projects not included in the above categories
		Process Waste Improvement	U.S.	Materials recycling/reuse
		Electrical Power Monitoring System Upgrade	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Independent Control System on Steam Header	U.S.	Equipment and appliances improvement or replacement
		Ultrasonic Levels on Five Lift Stations	U.S.	Equipment and appliances improvement or replacement
		Process Water Improvement	U.S.	Equipment and appliances improvement or replacement
		Replacement of Chilled Water Pumps	U.S.	Equipment and appliances improvement or replacement
PG&E Corporation	1605	SF6 Emission Reduction Partnership	U.S.	Emission avoidance
		Electrical Energy Conservation Savings	U.S.	Lighting and lighting control
		Electrical Energy Conservation Savings	U.S.	Heating, ventilation, and air conditioning
		Natural Gas Energy Conservation Savings	U.S.	Heating, ventilation, and air conditioning
		Natural Gas Vehicles	U.S.	Marketing/manufacturing of alternative fuel vehicles (AFVs)
		Electric Vehicles	U.S.	Marketing/manufacturing of alternative fuel vehicles (AFVs)
		Natural Gas Substitution for Residual Oil	U.S.	Fuel switching
		Natural Gas Star Program - PG&E California	U.S.	Natural gas distribution
Pitt Landfill Gas, LLC	1605	Pitt County Landfill	U.S.	Landfill
Platte River Power Authority & 4 Owner Cities	1605	Loveland Thrifty Light Project	U.S.	Lighting and lighting control
		Loveland Hydroelectric Plant	U.S.	Increase in low-emitting capacity
		Loveland Digester Gas Production and Use	U.S.	Wastewater treatment
		Loveland Recycling Program	U.S.	Materials recycling/reuse
		Longmont Efficient Lighting Projects	U.S.	Lighting and lighting control
		Longmont Wastewater Plant Waste Gas Flare	U.S.	Wastewater treatment
		Longmont Hydro Project Upgrades	U.S.	Increase in low-emitting capacity
		Longmont Distribution System Improvements	U.S.	Other transmission & distribution improvements
		Fort Collins Distribution System Improvements	U.S.	Other transmission & distribution improvements
		PRPA Heat Rate Improvements at Craig Powerplant	U.S.	Heat rate or other efficiency improvement
		Estes Park Streetlight Conversions	U.S.	Lighting and lighting control
		Estes Park Low-Loss Transformers	U.S.	High-efficiency transformers
		PRPA Wind Power Project	U.S.	Increase in low-emitting capacity
		Loveland Area Lighting Project	U.S.	Lighting and lighting control
		Estes Park Recycling Program	U.S.	Materials recycling/reuse
		Fort Collins Building Codes	U.S.	Heating, ventilation, and air conditioning
		Fort Collins Building Codes	U.S.	Building shell improvement
		Fort Collins Design Assistance	U.S.	Lighting and lighting control
		Fort Collins Design Assistance	U.S.	Load control
		Fort Collins Design Assistance	U.S.	Heating, ventilation, and air conditioning
		Fort Collins Design Assistance	U.S.	Building shell improvement
		Fort Collins Transportation Demand Management	U.S.	Demand Modification: Carpooling/Vanpooling
		Fort Collins Transportation Demand Management	U.S.	Demand Modification: Use of mass transit
		Fort Collins Transportation Demand Management	U.S.	Demand Modification: Telecommuting
		Fort Collins Transportation Demand Management	U.S.	Driver/operator training
		Fort Collins LED Traffic Lights	U.S.	Lighting and lighting control
		Fort Collins City Lighting Upgrades	U.S.	Lighting and lighting control
		Fort Collins Zero Interest Loan for Conservation Help	U.S.	Equipment and appliances improvement or replacement
		Fort Collins Zero Interest Loan for Conservation Help	U.S.	Heating, ventilation, and air conditioning
		Fort Collins Zero Interest Loan for Conservation Help	U.S.	Building shell improvement
		Fort Collins Wastewater Methane Flare	U.S.	Wastewater treatment
		Fort Collins Recycling Program	U.S.	Materials recycling/reuse
		PRPA Photovoltaic Project	U.S.	Increase in low-emitting capacity
		PRPA Paper Recycling Program	U.S.	Materials recycling/reuse
		Longmont LED Traffic Lights	U.S.	Lighting and lighting control
		Platte River Cooling Rebate Program	U.S.	Heating, ventilation, and air conditioning
		Platte River Electric Efficiency Program	U.S.	Lighting and lighting control
Polar Refrigerant Technology, LLC	1605	Recycle / Reclaim Operation	U.S.	Reclamation: Recycling
Portland General Electric Co.	1605	T&D: Power Factor Correction Capacitors	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Oak Grove Turbine Runner Replacements - 1991 - Units 1&2	U.S.	Heat rate or other efficiency improvement
		Oak Grove Turbine Runner Replacements - 1991 - Units 1&2	U.S.	Increase in low-emitting capacity
		Sullivan turbine rebuilds	U.S.	Heat rate or other efficiency improvement
		Sullivan turbine rebuilds	U.S.	Increase in low-emitting capacity
		Bull Run Turbine Runner Replacements	U.S.	Heat rate or other efficiency improvement
		Bull Run Turbine Runner Replacements	U.S.	Increase in low-emitting capacity
		Faraday Units 4&5 1994	U.S.	Heat rate or other efficiency improvement
		Faraday Units 4&5 1994	U.S.	Increase in low-emitting capacity
		Beaver Efficiency Improvements	U.S.	Heat rate or other efficiency improvement
		Beaver Efficiency Improvements	U.S.	Increase in low-emitting capacity

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
		Boardman Efficiency Improvements	U.S.	Heat rate or other efficiency improvement
		Demand-Side Management Projects	U.S.	Equipment and appliances improvement or replacement
		Demand-Side Management Projects	U.S.	Lighting and lighting control
		Demand-Side Management Projects	U.S.	Load control
		Demand-Side Management Projects	U.S.	Heating, ventilation, and air conditioning
		Demand-Side Management Projects	U.S.	Building shell improvement
		Demand-Side Management Projects	U.S.	Motor and motor drive
		Demand-Side Management Projects	U.S.	Fuel switching
		Natural Gas Fleet Vehicles	U.S.	Operation of alternative fuel vehicles (AFVs)
		Transformer Efficiency Improvements	U.S.	High-efficiency transformers
		1995 Colstrip Units 3&4 Ruggedizing	U.S.	Heat rate or other efficiency improvement
		Green Lights Programs	U.S.	Lighting and lighting control
		Energy Management Systems	U.S.	Equipment and appliances improvement or replacement
		Energy Management Systems	U.S.	Lighting and lighting control
		Energy Management Systems	U.S.	Heating, ventilation, and air conditioning
		Energy Management Systems	U.S.	Building shell improvement
		Electric Fleet Vehicles	U.S.	Operation of alternative fuel vehicles (AFVs)
		Gas Lawnmower Turn In Rebate	U.S.	Equipment and appliances improvement or replacement
		Gas Lawnmower Turn In Rebate	U.S.	Fuel switching
		Friends of Trees	U.S.	Urban Forestry (sequestration only)
		River Mill Efficiency Improvements	U.S.	Heat rate or other efficiency improvement
		Heat Pump Rebate	U.S.	Equipment and appliances improvement or replacement
		Heat Pump Rebate	U.S.	Heating, ventilation, and air conditioning
		Photoelectric Streetlight Controls	U.S.	Lighting and lighting control
		Vansycle Ridge Wind Generation	U.S.	Increase in low-emitting capacity
		PGE Corporate Recycling Program	U.S.	Materials recycling/reuse
		Coyote Springs Efficiency Improvements	U.S.	Heat rate or other efficiency improvement
		Building Rooftop Photovoltaic Systems	U.S.	Increase in low-emitting capacity
		Fly Ash Reuse Program	U.S.	Coal ash reuse
		North Fork Hydro Improvements	U.S.	Heat rate or other efficiency improvement
		Round Butte	U.S.	Heat rate or other efficiency improvement
		Hunt Turtle Technology	U.S.	Demand Modification: Other
		Faraday Efficiency Improvements 2002	U.S.	Heat rate or other efficiency improvement
		Beaver Efficiency Improvements 2003	U.S.	Heat rate or other efficiency improvement
		Coyote Springs Improvements 2003	U.S.	Heat rate or other efficiency improvement
		Cal-Gon Farms Biogas Pilot	U.S.	Increase in low-emitting capacity
Prince George Electric Cooperative	1605	Transmission and Dist. Efficiency Improvements	U.S.	High-efficiency transformers
		Transmission and Dist. Efficiency Improvements	U.S.	Reconductoring
		Transmission and Dist. Efficiency Improvements	U.S.	Distribution voltage upgrade
Public Service Company of New Mexico	1605	Palo Verde Generation Increase	U.S.	Availability improvement
		Heat Rate Improvements at San Juan Generating Station	U.S.	Heat rate or other efficiency improvement
		Natural Gas Leak Surveying and Replacement	U.S.	Natural gas distribution
		CNG Vehicles	U.S.	Operation of alternative fuel vehicles (AFVs)
		New Mexico Wind Energy	U.S.	Zero/Low Emission Power Purchases
Public Service Enterprise Group	1605	Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Resource Recovery Coal Ash Management Program	U.S.	Coal ash reuse
		WasteWise	U.S.	Materials recycling/reuse
		WasteWise	U.S.	waste/source reduction
		WasteWise	U.S.	Education and training programs
		Employee Trip Reduction	U.S.	Demand Modification: Carpooling/Vanpooling
		Employee Trip Reduction	U.S.	Demand Modification: Use of mass transit
		Demand Side Management	U.S.	Equipment and appliances improvement or replacement
		Demand Side Management	U.S.	Lighting and lighting control
		Demand Side Management	U.S.	Load control
		Demand Side Management	U.S.	Heating, ventilation, and air conditioning
		Demand Side Management	U.S.	Motor and motor drive
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		Hydro Projects - United States	U.S.	Zero/Low Emission Power Purchases
		Municipal Solid Waste Generators	U.S.	Landfill
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		Electric Generation from Landfill Gas	U.S.	Zero/Low Emission Power Purchases
		St. Francis River Carbon Offset Project	U.S.	Afforestation
Public Utility District No. 1 of Snohomish County	1605	Transmission Networking and Reconductoring	U.S.	Reconductoring
		Transmission Networking and Reconductoring	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Conservation Voltage Reduction	U.S.	Other transmission & distribution improvements
		Demand Side Management	U.S.	Equipment and appliances improvement or replacement
		Demand Side Management	U.S.	Lighting and lighting control
		Demand Side Management	U.S.	Heating, ventilation, and air conditioning
		Demand Side Management	U.S.	Building shell improvement
		Demand Side Management	U.S.	Motor and motor drive
		Commute Reduction Program	U.S.	Demand Modification: Carpooling/Vanpooling
		Commute Reduction Program	U.S.	Demand Modification: Use of mass transit
		Commute Reduction Program	U.S.	Demand Modification: Telecommuting
		Commute Reduction Program	U.S.	Demand Modification: Other
		Bicycles for Meter Readers	U.S.	Demand Modification: Other
		We-cycle Office Wastepaper (WOW) Program	U.S.	Materials recycling/reuse
		Scrap Metals Recycling	U.S.	Materials recycling/reuse
		Electric Car Race	U.S.	Other transportation and off-road vehicle projects/activities
		Battery and Solar Powered Boat Races	U.S.	Marketing/manufacturing of alternative fuel vehicles (AFVs)
Rappahannock Electric Cooperative	1605	System Line Conversions and Reconductoring	U.S.	High-efficiency transformers
		System Line Conversions and Reconductoring	U.S.	Reconductoring
		System Line Conversions and Reconductoring	U.S.	Distribution voltage upgrade
		System Line Conversions and Reconductoring	U.S.	Other transmission & distribution improvements
		Tree Planting	U.S.	Urban Forestry (sequestration only)

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
		Demand-Side Management Load Control Programs	U.S.	Equipment and appliances improvement or replacement
		Demand-Side Management Load Control Programs	U.S.	Load control
Rolls-Royce Corporation	1605	Boiler Conversion from Coal to Landfill/Natural Gas	U.S.	Fuel switching
		Peak Saving Project	U.S.	Load control
		Use of Landfill Gas	U.S.	Landfill
Sacramento Municipal Utility District	1605	Energy Efficiency Programs	U.S.	Equipment and appliances improvement or replacement
		Energy Efficiency Programs	U.S.	Lighting and lighting control
		Energy Efficiency Programs	U.S.	Heating, ventilation, and air conditioning
		Energy Efficiency Programs	U.S.	Building shell improvement
		Energy Efficiency Programs	U.S.	Motor and motor drive
		Shade Tree Program	U.S.	Urban Forestry (sequestration only)
		Employee Commute Program	U.S.	Demand Modification: Carpooling/Vanpooling
		Employee Commute Program	U.S.	Demand Modification: Use of mass transit
		Employee Commute Program	U.S.	Demand Modification: Other
		Meter Reading - Bicycles	U.S.	Demand Modification: Other
		Ride Electric	U.S.	Operation of alternative fuel vehicles (AFVs)
		PV Pioneer	U.S.	Increase in low-emitting capacity
		Sulfur Hexaflouride Inventory	U.S.	Emission avoidance
Salt River Project	1605EZ	Fly Ash Sales	U.S.	Coal ash reuse
		Recycling (CO2 Reduction)	U.S.	Materials recycling/reuse
		Recycling (CH4 Reductions)	U.S.	Materials recycling/reuse
		Cooperative Photovoltaic Power Plants	U.S.	Increase in low-emitting capacity
		Heat Rate Improvements	U.S.	Heat rate or other efficiency improvement
		Palo Verde Nuclear Station Capacity Increases	U.S.	Increase in low-emitting capacity
		Palo Verde Nuclear Station Capacity Factor Increase	U.S.	Increase in low-emitting capacity
		AZ Falls Generation Facility	U.S.	Increase in low-emitting capacity
		Replace Gasoline Lawnmowers with Electric Lawnmowers	U.S.	Fuel switching
		Home with PV System for Demonstration (Chandler House)	U.S.	Fuel switching
		South Mountain CC Solar	U.S.	Fuel switching
		Cesar Chavez HS Photovoltaic System	U.S.	Fuel switching
		Scottsdale CC PV System	U.S.	Fuel switching
		Phoenix Park and Ride PV System	U.S.	Fuel switching
		Carpooling/Vapooling	U.S.	Demand Modification: Carpooling/Vanpooling
		Telecommuting	U.S.	Demand Modification: Telecommuting
		Alternate Work Week Schedule	U.S.	Demand Modification: Other
		Bike/Bus/Walk	U.S.	General trip reduction (demand modification)
		Electric Vehicles Demonstration and Business Use	U.S.	Operation of alternative fuel vehicles (AFVs)
		Tri-Cities Landfill Gas Generation Facility	U.S.	Landfills: Landfill gas recovery for energy use
		Landfill Gas Flaring (CO2 Increase)	U.S.	Landfills: Landfill gas recovery for flaring
		Landfill Gas Flaring (CH4 Avoided)	U.S.	Landfills: Landfill gas recovery for flaring
Santee Cooper	1605	Cross Unit 2 Retrofit	U.S.	Heat rate or other efficiency improvement
		Demand Side Management Programs	U.S.	Equipment and appliances improvement or replacement
		Demand Side Management Programs	U.S.	Load control
		Demand Side Management Programs	U.S.	Heating, ventilation, and air conditioning
		Demand Side Management Programs	U.S.	Building shell improvement
		Afforestation/Reforestation	U.S.	Afforestation
		Afforestation/Reforestation	U.S.	Reforestation
		Fly Ash Used in Concrete Manufacture	U.S.	Coal ash reuse
		Winyah Unit 1 Turbine Retrofit	U.S.	Heat rate or other efficiency improvement
		Summer Nuclear Upgrade	U.S.	Heat rate or other efficiency improvement
		Winyah Unit 2 Turbine Retrofit	U.S.	Heat rate or other efficiency improvement
		Winyah Unit 3 Turbine Retrofit	U.S.	Heat rate or other efficiency improvement
		Cross Unit 1 Turbine Retrofit	U.S.	Heat rate or other efficiency improvement
		Winyah Unit 4 Turbine Retrofit	U.S.	Heat rate or other efficiency improvement
		Santee Cooper - Horry County Landfill Site	U.S.	Landfill
		Recycling Program	U.S.	Materials recycling/reuse
Seattle City Light	1605	Gorge Dam turbine runner replacement	U.S.	Heat rate or other efficiency improvement
		Diablo Dam turbine runner replacement	U.S.	Heat rate or other efficiency improvement
		Ross Dam turbine runner replacement	U.S.	Heat rate or other efficiency improvement
		Cedar Falls turbine runner replacement	U.S.	Heat rate or other efficiency improvement
		4kV to 26kV Distribution System Conversion	U.S.	Distribution voltage upgrade
		Home Water Savers Program	U.S.	Equipment and appliances improvement or replacement
		Multifamily Common Area Lighting Program	U.S.	Lighting and lighting control
		Neighborhood Power Lighting,Weatherization,Warm Home Program	U.S.	Equipment and appliances improvement or replacement
		Neighborhood Power Lighting,Weatherization,Warm Home Program	U.S.	Lighting and lighting control
		Neighborhood Power Lighting,Weatherization,Warm Home Program	U.S.	Building shell improvement
		Built Smart/Long-Term Super Good Cents Program	U.S.	Equipment and appliances improvement or replacement
		Built Smart/Long-Term Super Good Cents Program	U.S.	Lighting and lighting control
		Built Smart/Long-Term Super Good Cents Program	U.S.	Building shell improvement
		Energy Efficient Water Heater Rebate Program	U.S.	Equipment and appliances improvement or replacement
		Energy Smart Design	U.S.	Equipment and appliances improvement or replacement
		Energy Smart Design	U.S.	Lighting and lighting control
		Energy Smart Design	U.S.	Heating, ventilation, and air conditioning
		Energy Smart Design	U.S.	Building shell improvement
		Energy Smart Design	U.S.	Motor and motor drive
		Energy $avings Plan	U.S.	Equipment and appliances improvement or replacement
		Energy $avings Plan	U.S.	Lighting and lighting control
		Energy $avings Plan	U.S.	Motor and motor drive
		Energy $avings Plan	U.S.	Other energy efficiency project
		Multifamily Conservation Program: Standard-Income	U.S.	Equipment and appliances improvement or replacement
		Multifamily Conservation Program: Standard-Income	U.S.	Lighting and lighting control
		Multifamily Conservation Program: Standard-Income	U.S.	Building shell improvement
		Multifamily Conservation Program: Low-Income	U.S.	Equipment and appliances improvement or replacement
		Multifamily Conservation Program: Low-Income	U.S.	Lighting and lighting control
		Multifamily Conservation Program: Low-Income	U.S.	Building shell improvement
		Low-Income Electric Program	U.S.	Building shell improvement
		Urban Tree Replacement Program	U.S.	Urban Forestry (sequestration only)
		South Fork Tolt River hydroelectric project	U.S.	Increase in low-emitting capacity
		Smart Business Rebates	U.S.	Lighting and lighting control
		Retail-Wise Lighting and Appliances	U.S.	Equipment and appliances improvement or replacement
		Retail-Wise Lighting and Appliances	U.S.	Lighting and lighting control
		Energy Smart Services	U.S.	Equipment and appliances improvement or replacement
		Energy Smart Services	U.S.	Lighting and lighting control
		Energy Smart Services	U.S.	Heating, ventilation, and air conditioning

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
		Energy Smart Services	U.S.	Building shell improvement
		Energy Smart Services	U.S.	Motor and motor drive
		Energy Smart Services	U.S.	Other energy efficiency project
SeaWest WindPower, Inc.	1605	Altech Energy III	U.S.	Increase in low-emitting capacity
		Foote Creek I, LLC	U.S.	Increase in low-emitting capacity
		San Gorgonio Westwinds II, LLC	U.S.	Increase in low-emitting capacity
		Foote Creek III, LLC	U.S.	Increase in low-emitting capacity
		Foote Creek II, LLC	U.S.	Increase in low-emitting capacity
		Foote Creek IV, LLC	U.S.	Increase in low-emitting capacity
		Mountain View Power Partners, LLC	U.S.	Increase in low-emitting capacity
		Mountain View Power Partners II, LLC	U.S.	Increase in low-emitting capacity
		Rock River I, LLC	U.S.	Increase in low-emitting capacity
		Condon Wind Power, LLC	U.S.	Increase in low-emitting capacity
Seminole Electric Cooperative, Inc.	1605EZ	Fly Ash & Bottom Ash Reuse	U.S.	Coal ash reuse
		Synthetic Gypsum Production	U.S.	Materials recycling/reuse
		Heat Rate Improvement	U.S.	Heat rate or other efficiency improvement
		Transmission Conductor Optimization	U.S.	Other transmission & distribution improvements
		Lighting Replacement	U.S.	Lighting and lighting control
Seneca Energy II, LLC	1605	Seneca Energy - Stage I	U.S.	Landfill
		Seneca Energy - Stage II	U.S.	Landfill
Shenandoah Valley Electric Cooperative	1605	System Line Conversions and Reconductoring	U.S.	High-efficiency transformers
		System Line Conversions and Reconductoring	U.S.	Reconductoring
		System Line Conversions and Reconductoring	U.S.	Distribution voltage upgrade
		Demand-Side Management Load Control Programs	U.S.	Heating, ventilation, and air conditioning
		Visual Screening-Tree Planting	U.S.	Urban Forestry (sequestration only)
Sikorsky Aircraft Corporation	1605	Lighting Efficiency Improvements	U.S.	Lighting and lighting control
		Compressed Air Energy Efficiency Improvements	U.S.	Equipment and appliances improvement or replacement
		Compressed Air Energy Efficiency Improvements	U.S.	Load control
		Air Conditioning efficiency improvements	U.S.	Heating, ventilation, and air conditioning
		Process improvement - Vacuum Pump Consolidation	U.S.	Equipment and appliances improvement or replacement
		Composite trim Dust Collector Improvement.	U.S.	Equipment and appliances improvement or replacement
South Carolina Electric & Gas Company	1605	Summer Nuclear Upgrade	U.S.	Increase in low-emitting capacity
		Wateree Station heat rate improvement	U.S.	Heat rate or other efficiency improvement
		Williams Station improvements	U.S.	Heat rate or other efficiency improvement
		Misc. Plant efficiency improvements	U.S.	Heat rate or other efficiency improvement
		Demand Side Management Technologies	U.S.	Lighting and lighting control
		Demand Side Management Technologies	U.S.	Load control
		Demand Side Management Technologies	U.S.	Heating, ventilation, and air conditioning
		Demand Side Management Technologies	U.S.	Building shell improvement
		Forest Management Plan	U.S.	Afforestation
		Forest Management Plan	U.S.	Reforestation
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Coal Ash Utilization Program	U.S.	Coal ash reuse
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		Urquhart Repowering Project	U.S.	Fuel switching
		SCANA Participation in STAR program	U.S.	Natural gas transmission
		SCANA Participation in STAR program	U.S.	Natural gas distribution
		St. Francis River Carbon Offset Project	U.S.	Afforestation
Southeastern Biomass Partners, LP	1605EZ	Biomass Waste to Energy	U.S.	Fuel switching
Southern California Edison Co.	1605	Renewable Energy Purchases - Wind	U.S.	Zero/Low Emission Power Purchases
		Renewable Energy Purchases - Geothermal	U.S.	Zero/Low Emission Power Purchases
		Renewable Energy Purchases - Biomass	U.S.	Zero/Low Emission Power Purchases
		Demand Side Management	U.S.	Equipment and appliances improvement or replacement
		Demand Side Management	U.S.	Lighting and lighting control
		Demand Side Management	U.S.	Load control
		Demand Side Management	U.S.	Heating, ventilation, and air conditioning
		Demand Side Management	U.S.	Building shell improvement
		Demand Side Management	U.S.	Motor and motor drive
		Demand Side Management	U.S.	Fuel switching
		Demand Side Management	U.S.	Urban forestry (energy effects only)
		ENVEST SCE	U.S.	Equipment and appliances improvement or replacement
		ENVEST SCE	U.S.	Lighting and lighting control
		ENVEST SCE	U.S.	Heating, ventilation, and air conditioning
		ENVEST SCE	U.S.	Building shell improvement
		ENVEST SCE	U.S.	Motor and motor drive
		Mohave Power Project Heat Rate Improvement Program	U.S.	Heat rate or other efficiency improvement
		Internal Combustion Engine Replacement Program	U.S.	Motor and motor drive
		Internal Combustion Engine Replacement Program	U.S.	Fuel switching
		Fly Ash Sales for Concrete Production	U.S.	Coal ash reuse
		Electric Vehicle Program	U.S.	Operation of alternative fuel vehicles (AFVs)
		Repowering of Hydro Generation Units	U.S.	Availability improvement
		San Onofre Availability Improvements	U.S.	Availability improvement
		Palo Verde Availability Improvement	U.S.	Availability improvement
		Renewable Energy Purchases - Small Hydro	U.S.	Dispatching changes only
		SF6 Gas Management Program	U.S.	Emission avoidance
		SCE Waste-Not Program	U.S.	Materials recycling/reuse
		Forestation at Shaver Lake	U.S.	Modified forest management
		Urban Donation of tree seedlings from Shaver Lake nursery	U.S.	Urban Forestry (sequestration only)
		Net Growth of Timber at Shaver Lake	U.S.	Modified forest management
		Harvesting Timber at Shaver Lake	U.S.	Modified forest management

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
Southern Company	1605	Carbon Sequestration on Company Lands	U.S.	Reforestation
		Carbon Sequestration on Noncompany Lands	U.S.	Afforestation
		Carbon Sequestration on Noncompany Lands	U.S.	Reforestation
		Biomass	U.S.	Fuel switching
		Hatch Nuclear Plant Capacity Uprate	U.S.	Increase in low-emitting capacity
		Vogtle Electric Generating Plant Availability Improvements	U.S.	Availability improvement
		Vogtle Electric Generating Plant (Nuclear) Capacity Uprate	U.S.	Increase in low-emitting capacity
		Hatch Nuclear Plant Availability Improvements	U.S.	Availability improvement
		New Combustion Turbines	U.S.	Fuel switching
		New Combustion Turbines	U.S.	Increase in low-emitting capacity
		Heat Rate Improvement on Coal-Fired Capacity	U.S.	Heat rate or other efficiency improvement
		Bulk Power Transmission Improvements	U.S.	High-efficiency transformers
		Bulk Power Transmission Improvements	U.S.	Distribution voltage upgrade
		Bulk Power Transmission Improvements	U.S.	Other transmission & distribution improvements
		Transportation Research	U.S.	Operation of alternative fuel vehicles (AFVs)
		Farley Nuclear Plant Availability Improvements	U.S.	Availability improvement
		Demand-Side Management	U.S.	Equipment and appliances improvement or replacement
		Demand-Side Management	U.S.	Lighting and lighting control
		Demand-Side Management	U.S.	Building shell improvement
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Farley Nuclear Plant Uprate	U.S.	Increase in low-emitting capacity
		Gas Capability at Watson 4 and 5	U.S.	Fuel switching
		Sulfur Hexafluoride (SF6) Emissions Reductions	U.S.	Emission avoidance
		Gas Capability at Plant Yates	U.S.	Fuel switching
		Gas Capability at Plant McDonough	U.S.	Fuel switching
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		Combined-Cycle Units	U.S.	Increase in low-emitting capacity
		EnviroTech Investments	U.S.	Research and development programs
		Switchgrass	U.S.	Fuel switching
		Carpooling and Mass Transit	U.S.	Demand Modification: Carpooling/Vanpooling
		Carpooling and Mass Transit	U.S.	Demand Modification: Use of mass transit
		Carpooling and Mass Transit	U.S.	Demand Modification: Other
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		St. Francis River Carbon Offset Project	U.S.	Afforestation
Southside Electric Cooperative	1605	System Line Conversion and Reconductoring	U.S.	High-efficiency transformers
		System Line Conversion and Reconductoring	U.S.	Reconductoring
		System Line Conversion and Reconductoring	U.S.	Distribution voltage upgrade
Springs Industries, Inc.	1605EZ	Recycling - CO2	U.S.	Materials recycling/reuse
		Recycling - Methane	U.S.	Materials recycling/reuse
		Recycling - Perfluoromethane	U.S.	Materials recycling/reuse
		Lighting Retrofit	U.S.	Lighting and lighting control
		Compressed Air System Optimization	U.S.	Other energy efficiency project
		HVAC Economizer Optimization	U.S.	Heating, ventilation, and air conditioning
Steuben Rural Electric Co-op	1605EZ	1994 Distribution Line Replacement	U.S.	Other transmission & distribution improvements
		1995 Distribution Line Replacement	U.S.	Other transmission & distribution improvements
		1996 Conductor Replacement	U.S.	Reconductoring
		1997 Conductor Replacement	U.S.	Reconductoring
		2002 Substation Efficiency Improvement	U.S.	Heat rate or other efficiency improvement
		2003 Substation Upgrade	U.S.	General transmission and distribution
		1994 Water Heater Control Program	U.S.	Load control
		1995 Water Heater Control Program	U.S.	Load control
		1996 Water Heater Control Program	U.S.	Load control
		1996 Farm Energy Efficiency	U.S.	General energy use
		1997 Water Heater Control Program	U.S.	Load control
		1997 Farm Energy Efficiency	U.S.	General energy use
Tacoma Power	1605EZ	Generator Improvement (Wynoochee)	U.S.	General generator Improvements
		Generator Improvement (Cushman/Nisqually)	U.S.	General generator Improvements
		Energy Conservation	U.S.	General energy use
		Alternative Transportation	U.S.	General transportation projects
		Forest Preservation	U.S.	Forest preservation
		Afforestation	U.S.	Afforestation
Tampa Electric Company	1605	Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Fly Ash Reuse	U.S.	Coal ash reuse
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		St. Francis River Carbon Offset Project	U.S.	Afforestation
Tennessee Valley Authority	1605	Return Browns Ferry Nuclear Units 2 and 3 to Service	U.S.	Increase in low-emitting capacity
		Heat Rate Improvements At TVA Coal Fired Generating Units	U.S.	Heat rate or other efficiency improvement
		Hydro Unit Modernization	U.S.	Heat rate or other efficiency improvement
		Hydro Unit Modernization	U.S.	Increase in low-emitting capacity
		Wood Waste Cofiring At Coal Fired Generating Plants	U.S.	Fuel switching
		Transmission System Efficiency Improvements	U.S.	Reconductoring
		Transmission System Efficiency Improvements	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Residential Marketing Program	U.S.	Load control
		Outdoor Lighting Replacements By Memphis Light, Gas and Wate	U.S.	Lighting and lighting control
		Comfort Plus Homes	U.S.	Building shell improvement
		Transportation Fleet Fuel Efficiency Improvement	U.S.	Operation of efficient vehicles
		Alternate Fuel Vehicles	U.S.	Operation of alternative fuel vehicles (AFVs)
		Landfill Methane Recovery and Power Generation	U.S.	Landfill

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
		Afforestation On TVA Lands	U.S.	Afforestation
		CFC Management	U.S.	Reclamation: Recycling
		Paper Recycling	U.S.	Materials recycling/reuse
		Flyash Sales To Concrete Industry	U.S.	Coal ash reuse
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Start Watts Bar Nuclear Unit 1	U.S.	Increase in low-emitting capacity
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		Green Power Switch	U.S.	Fuel switching
		St. Francis River Carbon Offset Project	U.S.	Afforestation
The Burlington Northern and Santa Fe Railway Co	1605	Locomotive GHG reduction	U.S.	Operation of efficient vehicles
		Locomotive GHG reduction	U.S.	Use of more efficient vehicle components (e.g. tires)
		Locomotive GHG reduction	U.S.	Service efficiency improvements
		Locomotive GHG reduction	U.S.	Driver/operator training
		Locomotive GHG reduction	U.S.	Infrastructure improvement
The Empire District Electric Co.	1605	Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Francis River Carbon Offset Project	U.S.	Afforestation
The Estee Lauder Companies	1605	Melville DC - Octron Lighting Project	U.S.	Lighting and lighting control
		187 Melville Manufacturing Octron Lighting	U.S.	Lighting and lighting control
		Whitman 4 Octron Lighting Project	U.S.	Lighting and lighting control
		229 Trevose Octron Lighting Project	U.S.	Lighting and lighting control
		1381 Research Park Lighting Control Sensors	U.S.	Lighting and lighting control
		1569 Melville Motor Upgrades	U.S.	Motor and motor drive
		1522 Melville Occupancy Sensors Offices	U.S.	Lighting and lighting control
		Melville Steam Trap System Survey and Remediation	U.S.	Heating, ventilation, and air conditioning
		1392 Octron Lighting JHL	U.S.	Lighting and lighting control
		209 Oakland Octron Lighting Upgrade	U.S.	Lighting and lighting control
		Research Park Octron Lighting Project	U.S.	Lighting and lighting control
		3643 Oakland Warehouse Sensor Installation	U.S.	Lighting and lighting control
		284 Melville Energy Conservation	U.S.	Lighting and lighting control
		459 Whitman 3 Octron Lighting	U.S.	Lighting and lighting control
		3597c Bristol Energy Conservation Project	U.S.	Lighting and lighting control
		Aveda Solar Wall	U.S.	Heating, ventilation, and air conditioning
		Aveda Octron Lighting Upgrades 1994 - 1999	U.S.	Lighting and lighting control
		Aveda Air to Air Heat Exchangers	U.S.	Load control
		Aveda Night Setback for make-up air heat pumps	U.S.	Heating, ventilation, and air conditioning
		Aveda Night Setback for Exhaust Fans	U.S.	Load control
		Aveda Cooling Tower Core Water Savings	U.S.	Load control
		Aveda Boiler and Burner Replacement	U.S.	Heating, ventilation, and air conditioning
		Aveda Metal Halide Upgrades	U.S.	Lighting and lighting control
		Aveda White Roof Upgrade	U.S.	Building shell improvement
		Aveda Heatex Unit Compounding Line Air to Air Heat Recovery	U.S.	Heating, ventilation, and air conditioning
		Aveda Venmar Unit Pre-Weigh VAV heat exchanger	U.S.	Heating, ventilation, and air conditioning
Tucson Electric Power Company	1605	Commercial DSM Programs	U.S.	Equipment and appliances improvement or replacement
		Commercial DSM Programs	U.S.	Lighting and lighting control
		Commercial DSM Programs	U.S.	Heating, ventilation, and air conditioning
		Commercial DSM Programs	U.S.	Motor and motor drive
		Residential DSM Programs	U.S.	Equipment and appliances improvement or replacement
		Residential DSM Programs	U.S.	Heating, ventilation, and air conditioning
		Residential DSM Programs	U.S.	Building shell improvement
		Trees for Tucson	U.S.	Urban Forestry (sequestration only)
		R-22 Recycling	U.S.	Reclamation: Recycling
		R-22 Recycling	U.S.	Emission avoidance
		R-11 Recycling	U.S.	Emission avoidance
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		SF6 Recycling	U.S.	Reclamation: Recycling
		SF6 Recycling	U.S.	Emission avoidance
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		R-12 Emission Avoidance	U.S.	Emission avoidance
		Landfill Gas (Fuel Switching) Project	U.S.	Fuel switching
		Solar Electric - Photovoltaic	U.S.	Increase in low-emitting capacity
		Travel Reduction Program	U.S.	Demand Modification: Use of mass transit
		Travel Reduction Program	U.S.	Demand Modification: Telecommuting
		Travel Reduction Program	U.S.	Demand Modification: Other
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		Coal Ash Reuse	U.S.	Coal ash reuse
		St. Francis River Carbon Offset Project	U.S.	Afforestation
TXU	1605	Operation of Nuclear Generation Units	U.S.	Availability improvement
		Operation of Nuclear Generation Units	U.S.	Decrease in high-emitting capacity
		Power Plant Heat Rate Improvement Projects	U.S.	Heat rate or other efficiency improvement
		Renewable Energy Development Projects	U.S.	Increase in low-emitting capacity

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
		Renewable Energy Development Projects	U.S.	Zero/Low Emission Power Purchases
		Demand-Side Management Program	U.S.	Equipment and appliances improvement or replacement
		Demand-Side Management Program	U.S.	Lighting and lighting control
		Demand-Side Management Program	U.S.	Load control
		Demand-Side Management Program	U.S.	Heating, ventilation, and air conditioning
		Demand-Side Management Program	U.S.	Building shell improvement
		Demand-Side Management Program	U.S.	Motor and motor drive
		Vehicle Use Reductions	U.S.	Service efficiency improvements
		TXU's Participation in the Texas Reforestation Foundation	U.S.	Afforestation
		TXU's Participation in the Texas Reforestation Foundation	U.S.	Reforestation
		Coal Ash Byproduct Use	U.S.	Coal ash reuse
		Texas Reforestation Foundation	U.S.	Reforestation
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Employee Carpool Program	U.S.	Demand Modification: Carpooling/Vanpooling
		Employee Bus Pass Program	U.S.	Demand Modification: Use of mass transit
		Landfill Methane	U.S.	Landfill
		Paper and Aluminum Recycling	U.S.	Materials recycling/reuse
		SF6 Reductions	U.S.	Emission avoidance
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Lignite and Western Coal Blending	U.S.	Fuel switching
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		Alternative Fuel Vehicle Program	U.S.	Operation of alternative fuel vehicles (AFVs)
		Ranger Exhaust Gas Project	U.S.	Carbon dioxide injection into the ground
		St. Francis River Carbon Offset Project	U.S.	Afforestation
US Energy Biogas Corp.	1605EZ	Burlington	U.S.	Landfills: Landfill gas recovery for energy use
		Onondaga	U.S.	Landfills: Landfill gas recovery for energy use
		Manchester	U.S.	Landfills: Landfill gas recovery for energy use
		Manchester Flare	U.S.	Landfills: Landfill gas recovery for flaring
		Barre	U.S.	Landfills: Landfill gas recovery for energy use
		Romeoville	U.S.	Landfills: Landfill gas recovery for energy use
		Romeoville Flare	U.S.	Landfills: Landfill gas recovery for flaring
		Dolton	U.S.	Landfills: Landfill gas recovery for energy use
		Dolton Flare	U.S.	Landfills: Landfill gas recovery for flaring
		SPSA	U.S.	Landfills: Landfill gas recovery for energy use
		SPSA Flare	U.S.	Landfills: Landfill gas recovery for flaring
		Streator	U.S.	Landfills: Landfill gas recovery for energy use
		Brickyard	U.S.	Landfills: Landfill gas recovery for energy use
		Cape May School	U.S.	Landfills: Landfill gas recovery for energy use
		Cape May Flare	U.S.	Landfills: Landfill gas recovery for flaring
		122nd Street	U.S.	Landfills: Landfill gas recovery for energy use
		Oceanside	U.S.	Landfills: Landfill gas recovery for energy use
		Smithtown	U.S.	Landfills: Landfill gas recovery for energy use
		Smithtown Flare	U.S.	Landfills: Landfill gas recovery for flaring
		Roxanna	U.S.	Landfills: Landfill gas recovery for energy use
		Upper Rock	U.S.	Landfills: Landfill gas recovery for energy use
		Tucson	U.S.	Landfills: Landfill gas recovery for energy use
		Tucson Flare	U.S.	Landfills: Landfill gas recovery for flaring
		Dixon	U.S.	Landfills: Landfill gas recovery for energy use
		Garland Flare	U.S.	Landfills: Landfill gas recovery for flaring
		Amity	U.S.	Landfills: Landfill gas recovery for energy use
		SPSA/CIBA	U.S.	Landfills: Landfill gas recovery for energy use
		Hamm/Sussex	U.S.	Landfills: Landfill gas recovery for energy use
		Brickyard Flare	U.S.	Landfills: Landfill gas recovery for flaring
		Upper Rock Flare	U.S.	Landfills: Landfill gas recovery for flaring
		Streator Flare	U.S.	Landfills: Landfill gas recovery for flaring
		Countryside	U.S.	Landfills: Landfill gas recovery for energy use
		Countryside Flare	U.S.	Landfills: Landfill gas recovery for flaring
		Morris	U.S.	Landfills: Landfill gas recovery for energy use
		Morris Flare	U.S.	Landfills: Landfill gas recovery for flaring
		Brookhaven	U.S.	Landfills: Landfill gas recovery for energy use
Vermont Public Power Supply Authority	1605	Swanton Village Hydro Expansion	U.S.	Increase in low-emitting capacity
		Transmission and Distribution System Efficiency Improvements	U.S.	High-efficiency transformers
		Transmission and Distribution System Efficiency Improvements	U.S.	Reconductoring
		Transmission and Distribution System Efficiency Improvements	U.S.	Distribution voltage upgrade
		Transmission and Distribution System Efficiency Improvements	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Residential Water Heating and Lighting Efficiency Program	U.S.	Equipment and appliances improvement or replacement
		Residential Water Heating and Lighting Efficiency Program	U.S.	Lighting and lighting control
		Residential Appliance Disposal Program	U.S.	Equipment and appliances improvement or replacement
		Residential Low Income Weatherization Piggyback Program	U.S.	Equipment and appliances improvement or replacement
		Residential Low Income Weatherization Piggyback Program	U.S.	Lighting and lighting control
		Residential Mail Order Lighting Program	U.S.	Lighting and lighting control
		Farm Efficiency Program	U.S.	Equipment and appliances improvement or replacement
		Farm Efficiency Program	U.S.	Lighting and lighting control
		Farm Efficiency Program	U.S.	Heating, ventilation, and air conditioning
		Farm Efficiency Program	U.S.	Motor and motor drive
		Small Commercial Retrofit Program	U.S.	Equipment and appliances improvement or replacement
		Small Commercial Retrofit Program	U.S.	Lighting and lighting control
		Small Commercial Retrofit Program	U.S.	Heating, ventilation, and air conditioning
		Small Commercial Retrofit Program	U.S.	Motor and motor drive
		Large Commercial and Industrial Audit Program	U.S.	Equipment and appliances improvement or replacement
		Large Commercial and Industrial Audit Program	U.S.	Lighting and lighting control
		Large Commercial and Industrial Audit Program	U.S.	Load control
		Large Commercial and Industrial Audit Program	U.S.	Heating, ventilation, and air conditioning
		Large Commercial and Industrial Audit Program	U.S.	Building shell improvement
		Large Commercial and Industrial Audit Program	U.S.	Motor and motor drive
		Equipment Replacement and Remodeling Program	U.S.	Lighting and lighting control
		Equipment Replacement and Remodeling Program	U.S.	Motor and motor drive
		Street and Area Lighting Efficiency Program	U.S.	Lighting and lighting control
		Act 250 New Construction Program	U.S.	Equipment and appliances improvement or replacement
		Act 250 New Construction Program	U.S.	Lighting and lighting control
		Act 250 New Construction Program	U.S.	Heating, ventilation, and air conditioning

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
		Act 250 New Construction Program	U.S.	Building shell improvement
		Act 250 New Construction Program	U.S.	Motor and motor drive
		Residential Top Ten	U.S.	Equipment and appliances improvement or replacement
		Residential Top Ten	U.S.	Fuel switching
Waste Management, Inc.	1605	Metro MSW Landfill-2742	U.S.	Landfill
		CID Areas 1, 2 and 3 (Power) MSW Landfill - 2030	U.S.	Landfill
		Kankakee (Power) MSW Landfill - 2319	U.S.	Landfill
		Milam MSW Landfill (Power) - 2056	U.S.	Landfill
		Settler's Hill (Power) MSW Landfill - 2041	U.S.	Landfill
		Tazewell (Power) MSW Landfill - 2899	U.S.	Landfill
		Woodland (Power) MSW Landfill - 2043	U.S.	Landfill
		Deercroft (Power) MSW Landfill - 318	U.S.	Landfill
		Prairie View (Power) MSW Landfill - 316	U.S.	Landfill
		Twin Bridges (Power) MSW Landfill - 317	U.S.	Landfill
		Venice Park (Power) MSW Landfill - 2616	U.S.	Landfill
		Pheasant Run (Power) MSW Landfill - 2290	U.S.	Landfill
		Tazewell MSW Landfill (flare) - 2899	U.S.	Landfill
		Woodland (flare) MSW Landfill - 2043	U.S.	Landfill
		Deercroft (flare) MSW Landfill - 318	U.S.	Landfill
		Prairie View (flare) MSW Landfill - 316	U.S.	Landfill
		Twin Bridges (flare) MSW Landfill - 317	U.S.	Landfill
		Pheasant Run (flare) MSW Landfill - 2290	U.S.	Landfill
		Envirofil of III MSW Landfill - 53	U.S.	Landfill
		Jay County MSW Landfill - 228	U.S.	Landfill
		Oak Ridge RDF MSW Landfill - 319	U.S.	Landfill
		Countryside MSW Landfill - 6	U.S.	Landfill
		DeKalb County RDF MSW Landfill - 2269	U.S.	Landfill
		Rolling Meadows RDF MSW Landfill - 2040	U.S.	Landfill
		Eagle Valley RDF MSW Landfill - 2336	U.S.	Landfill
		Hastings MSW Landfill - 1749	U.S.	Landfill
		Westside MSW Landfill - 2894	U.S.	Landfill
		Spruce Ridge MSW Landfill - 1702	U.S.	Landfill
		Chain of Rocks MSW Landfill - 2450	U.S.	Landfill
		Earthmovers MSW Landfill - 17	U.S.	Landfill
		Liberty MSW Landfill - 22	U.S.	Landfill
		Peoples MSW Landfill - 1736	U.S.	Landfill
		Woodland Meadows RDF MSW Landfill - 2337	U.S.	Landfill
		Pine Tree Acres MSW Landfill - 1733	U.S.	Landfill
		Des Moines MSW Landfill - 2066	U.S.	Landfill
		Five Oaks RDF MSW Landfill - 2271	U.S.	Landfill
		Burnsville Sanitary MSW Landfill - 291	U.S.	Landfill
		Douglas County MSW Landfil - 2809	U.S.	Landfill
		Deer Track Park MSW Landfill - 1704	U.S.	Landfill
		Orchard Ridge/Omega Hills/ Parkview MSW Landfill - 2286	U.S.	Landfill
		Ridgeview (Flare) MSW Landfill - 2289	U.S.	Landfill
		Valley Trail MSW Landfill - 2293	U.S.	Landfill
		Elk River MSW Landfill - 1706	U.S.	Landfill
		Outer Loop MSW Landfill - 2482	U.S.	Landfill
		Akron (Hardy Road) MSW Landfill - 1367	U.S.	Landfill
		American MSW Landfill - 136	U.S.	Landfill
		Pinnacle Road MSW Landfill	U.S.	Landfill
		Stony Hollow MSW Landfill - 2672	U.S.	Landfill
		Suburban MSW Landfill - 2363	U.S.	Landfill
		Arden MSW Landfill - 70	U.S.	Landfill
		Evergreen MSW Landfill - 1314	U.S.	Landfill
		Dauphin Meadows MSW Landfill - 63	U.S.	Landfill
		Kelly Run MSW Landfill - 841	U.S.	Landfill
		Lake View MSW Landfill (Flare) - 2387	U.S.	Landfill
		Laurel Highlands MSW Landfill - 65	U.S.	Landfill
		Monroeville MSW Landfill - 69	U.S.	Landfill
		Mountain View MSW Landfill - 2086	U.S.	Landfill
		Northwest MSW Landfill - 2636	U.S.	Landfill
		Pine Grove MSW Landfill - 835	U.S.	Landfill
		Pottstown MSW Landfill (Flare) - 2393	U.S.	Landfill
		Shade (RCC) MSW Landfill - 231	U.S.	Landfill
		Southern Alleghenies MSW Landfill - 64	U.S.	Landfill
		South Hills (Arnoni) MSW Landfill - 185	U.S.	Landfill
		Tullytown MSW Landfill - 2382	U.S.	Landfill
		Valley MSW Landfill - 232	U.S.	Landfill
		New Milford (flare) MSW Landfill	U.S.	Landfill
		Fitchburg MSW Landfill - 439	U.S.	Landfill
		Granby (Holyoke) MSW Landfill - 445	U.S.	Landfill
		Martone (Barre) MSW Landfill - 1760	U.S.	Landfill
		Turnkey (flare) MSW Landfill - 2159	U.S.	Landfill
		Alliance MSW Landfill - 154	U.S.	Landfill
		GROWS MSW Landfill - 2382	U.S.	Landfill
		Bradley MSW Landfill - 2502	U.S.	Landfill
		El Sobrante MSW Landfill - 0166	U.S.	Landfill
		Redwood MSW Landfill - 1507	U.S.	Landfill
		Columbia Ridge MSW Landfill - 2588	U.S.	Landfill
		Riverbend MSW Landfill - 1509	U.S.	Landfill
		Butterfield MSW Landfill - 2384	U.S.	Landfill
		Altamont (Power) MSW Landfill - 2554	U.S.	Landfill
		Guadalupe MSW Landfill - 1543	U.S.	Landfill
		John Smith MSW Landfill - 0293	U.S.	Landfill
		Kirby Canyon MSW Landfill - 1046	U.S.	Landfill
		Lancaster MSW Landfill - 2508	U.S.	Landfill
		Simi Valley MSW Landfill - 2510	U.S.	Landfill
		Tri Cities MSW Landfill - 1045	U.S.	Landfill
		Hillsboro MSW Landfill -1515	U.S.	Landfill
		Kennewick/Wenatchee MSW Landfill - 1048	U.S.	Landfill
		Olympic View MSW Landfill - 0030	U.S.	Landfill
		New Milford (Power) MSW Landfill	U.S.	Landfill
		Chicopee MSW Landfill - 444	U.S.	Landfill
		Turnkey (Power) MSW Landfill - 2159	U.S.	Landfill
		High Acres (Power) MSW Landfill - 2277	U.S.	Landfill
		Mohawk Valley MSW Landfill - 2167	U.S.	Landfill
		Monroe-Livingston (Power) MSW Landfill - 2403	U.S.	Landfill
		Cuyahoga MSW Landfill - 216	U.S.	Landfill

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
		Lake View (Power) MSW Landfill - 2387	U.S.	Landfill
		Pottstown MSW Landfill (Power) - 2393	U.S.	Landfill
		Monroe-Livingston (flare) MSW Landfill - 2403	U.S.	Landfill
		Statewide MSW Landfill	U.S.	Landfill
		Parklands MSW Landfill	U.S.	Landfill
		Akron (Hazel Street) MSW Landfill	U.S.	Landfill
		Lake County MSW Landfill	U.S.	Landfill
		Land & Development (L&D) Company (Power)	U.S.	Landfill
		Cinnaminson MSW Landfill	U.S.	Landfill
		BJ (flare) MSW Landfill	U.S.	Landfill
		BJ (Power) MSW Landfill	U.S.	Landfill
		Boundary Road MSW Landfill	U.S.	Landfill
		Button Gwinnett MSW Landfill	U.S.	Landfill
		Cereal City MSW Landfill	U.S.	Landfill
		City Sand MSW Landfill	U.S.	Landfill
		Elizabethtown MSW Landfill	U.S.	Landfill
		Greene Valley (Power) MSW Landfill	U.S.	Landfill
		Hunt Road MSW Landfill	U.S.	Landfill
		Lake (Power) MSW Landfill	U.S.	Landfill
		Powell Road MSW Landfill	U.S.	Landfill
		Rolling Hills MSW Landfill	U.S.	Landfill
		Serif Road MSW Landfill	U.S.	Landfill
		Valley View MSW Landfill	U.S.	Landfill
		Wheeler RDF MSW Landfill (Power)	U.S.	Landfill
		White Lake MSW Landfill	U.S.	Landfill
		Chastang MSW Landfill - 1143	U.S.	Landfill
		Two Pine MSW Landfill - 2181	U.S.	Landfill
		Okeechobee MSW Landfill - 46	U.S.	Landfill
		Springhill MSW Landfill North - 2248	U.S.	Landfill
		Bolton Road/SSL MSW Landfill - 76	U.S.	Landfill
		Live Oak MSW Landfill - 2138	U.S.	Landfill
		Pine Bluff MSW Landfill - 1308	U.S.	Landfill
		Superior MSW Landfill - 2117	U.S.	Landfill
		Magnolia MSW Landfill - 151	U.S.	Landfill
		Pecan Grove MSW Landfill - 2135	U.S.	Landfill
		Piedmont MSW Landfill - 2120	U.S.	Landfill
		East Oak MSW Landfill	U.S.	Landfill
		Quarry MSW Landfill - 2185	U.S.	Landfill
		Oakridge MSW Landfill - 49	U.S.	Landfill
		Palmetto MSW Landfill - 2106	U.S.	Landfill
		Richland MSW Landfill - 82	U.S.	Landfill
		Chestnut Ridge (Power) MSW Landfill - 2115	U.S.	Landfill
		DFW (Power) MSW Landfill - 399	U.S.	Landfill
		Westside (Ft. Worth) MSW Landfill - 1004	U.S.	Landfill
		Security MSW Landfill - 1017	U.S.	Landfill
		Skyline MSW Landfill - 1003	U.S.	Landfill
		Iris Glen MSW Landfill - 2570	U.S.	Landfill
		Quail Hollow MSW Landfill - 1305	U.S.	Landfill
		West Camden MSW Landfill - 2087	U.S.	Landfill
		Atascocita MSW Landfill - 2158	U.S.	Landfill
		Austin Community MSW Landfill - 2162	U.S.	Landfill
		Baytown MSW Landfill - 1129	U.S.	Landfill
		Bluebonnet MSW Landfill - 1074	U.S.	Landfill
		Coastal Plains MSW Landfill - 1073	U.S.	Landfill
		Covel Gardens MSW Landfill - 2177	U.S.	Landfill
		Grand Central MSW Landfill - 204	U.S.	Landfill
		Amelia MSW Landfill - 41	U.S.	Landfill
		Atlantic Waste Disposal MSW Landfill - 858	U.S.	Landfill
		Bethel MSW Landfill - 1306	U.S.	Landfill
		Charles City - 42	U.S.	Landfill
		King George County MSW Landfill - 1323	U.S.	Landfill
		MIddle Pennisula MSW Landfill - 2497	U.S.	Landfill
		DRPI Landfill - 1307	U.S.	Landfill
		Brookfield Sanitary Landfill	U.S.	Landfill
		ELDA RDF Landfill	U.S.	Landfill
		Greene Valley (Flare) MSW Landfill	U.S.	Landfill
		HOD Landfill	U.S.	Landfill
		Lake (Flare) MSW Landfill	U.S.	Landfill
		Rumble Landfill 1	U.S.	Landfill
		Rumble Landfill 2	U.S.	Landfill
		Stone Ridge Landfill	U.S.	Landfill
		Sandy Hill	U.S.	Landfill
		Chaffee	U.S.	Landfill
		High Acres (Flare)	U.S.	Landfill
		Geneva	U.S.	Landfill
		Dads Landfill	U.S.	Landfill
		Kankakee (Flare)	U.S.	Landfill
		Laraway	U.S.	Landfill
		Wheatland Prairie RDF	U.S.	Landfill
		Autumn Hills RDF	U.S.	Landfill
		Tri-City RDF	U.S.	Landfill
		Timberline	U.S.	Landfill
		Evergreen MSW Landfill	U.S.	Landfill
		Chestnut Ridge (Flare) MSW Landfill-2115	U.S.	Landfill
		DFW (Flare) MSW Landfill	U.S.	Landfill
		Conroe 6 MSW Landfill - 0127	U.S.	Landfill
		Tonitown MSW Landfill - 0087	U.S.	Landfill
		Altamont (Flare) MSW Landfill - 2554	U.S.	Landfill
		Crossroads	U.S.	Landfill
		Mill Seat Landfill	U.S.	Landfill
		CID Areas 1, 2 and 3 (Flare)	U.S.	Landfill
		Venice Park (Flare) MSW Landfill	U.S.	Landfill
		Ridgeview (Power) MSW Landfill	U.S.	Landfill
		Settler's Hill (Flare) Landfill - 2384	U.S.	Landfill
		Land and Development (L&D) Company (Flare)	U.S.	Landfill
		Wheeler RDF MSW Landfill (Flare)	U.S.	Landfill
		Central Sanitary Landfill (Power)	U.S.	Landfill
		Central Sanitary Landfill (Flare)	U.S.	Landfill
		Gulf Coast Landfill (Flare)	U.S.	Landfill
		Medley Landfill & Recycling Center (Flare)	U.S.	Landfill

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
		Naples Sanitary Landfill	U.S.	Landfill
		R & B Landfill (Flare)	U.S.	Landfill
		Comal County Landfill	U.S.	Landfill
		Hillside Landfill	U.S.	Landfill
		New Boston	U.S.	Landfill
		Oyster Bay Regional Park Landfill	U.S.	Landfill
		East Side	U.S.	Landfill
		Bradley MSW Landfill (Power) - 2502	U.S.	Landfill
		Laurel Ridge Landfill (Flare/Sold)	U.S.	Landfill
		Southern Sanitation Landfill	U.S.	Landfill
		Mahoning Landfill	U.S.	Landfill
		Northern Oaks Landfill - 2867	U.S.	Landfill
		Waters Landfill - 1722	U.S.	Landfill
		LCS Services	U.S.	Landfill
		Milam MSW Landfill (Flare) 2056	U.S.	Landfill
		Salem - 2573	U.S.	Landfill
		Chesser Island Landfill	U.S.	Landfill
		Springhill MSW Landfill South - 2248	U.S.	Landfill
		Prarie Bluff Landfill - 2513	U.S.	Landfill
		Cedar Ridge Landfill - 1304	U.S.	Landfill
		Central Disposal Landfill - 496	U.S.	Landfill
		Woodside Landfill - 2169	U.S.	Landfill
		Paris - 1562	U.S.	Landfill
Waverly Light & Power Company	1605	Wind Turbine (Project 1)	U.S.	Increase in low-emitting capacity
		Hydro (Project 2)	U.S.	Increase in low-emitting capacity
		Distribution System Upgrade (Project 3)	U.S.	Distribution voltage upgrade
		Low-Loss Transformers (Project 4)	U.S.	High-efficiency transformers
		Energy End-Use Programs (Project 3.1)	U.S.	Equipment and appliances improvement or replacement
		Energy End-Use Programs (Project 3.1)	U.S.	Lighting and lighting control
		Energy End-Use Programs (Project 3.1)	U.S.	Load control
		Energy End-Use Programs (Project 3.1)	U.S.	Heating, ventilation, and air conditioning
		High-Pressure Sodium Lights (Project 3.2)	U.S.	Lighting and lighting control
		Energy Savings Due to Trees Forever (Project 3.3)	U.S.	Urban forestry (energy effects only)
		Electric Vehicle (Project 4.1)	U.S.	Operation of alternative fuel vehicles (AFVs)
		Trees Forever (Project 8.1)	U.S.	Urban Forestry (sequestration only)
We Energies	1605	Fossil plant heat rate improvements	U.S.	Heat rate or other efficiency improvement
		Hydro plant improvements and additions	U.S.	Increase in low-emitting capacity
		Transmission & distribution system loss reductions	U.S.	High-efficiency transformers
		Transmission & distribution system loss reductions	U.S.	Distribution voltage upgrade
		Transmission & distribution system loss reductions	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Demand-side management energy efficiency programs	U.S.	Equipment and appliances improvement or replacement
		Demand-side management energy efficiency programs	U.S.	Lighting and lighting control
		Demand-side management energy efficiency programs	U.S.	Heating, ventilation, and air conditioning
		Demand-side management energy efficiency programs	U.S.	Building shell improvement
		Demand-side management energy efficiency programs	U.S.	Motor and motor drive
		Vehicle conversion to dual fuel capability	U.S.	Operation of alternative fuel vehicles (AFVs)
		Vehicle conversion to dual fuel capability	U.S.	Other transportation and off-road vehicle projects/activities
		Beneficial use of landfill methane	U.S.	Landfill
		CFC-12 Recovery from Appliance Turn-In Program	U.S.	Reclamation: Recycling
		Fly ash substitution program	U.S.	Coal ash reuse
		Rio Bravo Carbon Sequestration Pilot Project	Foreign	Forest preservation
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Western Oregon Carbon Sequestration Project	U.S.	Afforestation
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign	Modified forest management
		Energy for Tomorrow(TM) Renewable Energy Program	U.S.	Increase in low-emitting capacity
		Energy for Tomorrow(TM) Renewable Energy Program	U.S.	Zero/Low Emission Power Purchases
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.	Afforestation
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.	Afforestation
		Increased Nuclear Capacity at Point Beach Nuclear Plant	U.S.	Increase in low-emitting capacity
		Rio Bravo Carbon Sequestration Pilot Project Expansion	Foreign	Forest preservation
		Rio Bravo Carbon Sequestration Pilot Project (Full Share)	Foreign	Forest preservation
		Badger Windpower Purchases	U.S.	Zero/Low Emission Power Purchases
		St. Catherine-NFWF	U.S.	Afforestation
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.	Afforestation
		St. Catherine-ESI	U.S.	Afforestation
		Ag Biomass Generation	U.S.	Zero/Low Emission Power Purchases
		St. Francis River Carbon Offset Project	U.S.	Afforestation
Wisconsin Public Power Inc.	1605EZ	Appliance Turn-In Reward	U.S.	Equipment and appliances improvement or replacement
		Appliance & Weatherization Rebates (outside of Energy Star P	U.S.	Equipment and appliances improvement or replacement
		Conservation Product Giveaways (11 - 30 W CFLs)	U.S.	Lighting and lighting control
		Conservation Product Giveaways (Torchiere)	U.S.	Lighting and lighting control
		Conservation Product Giveaways (Miscellaneous)	U.S.	Equipment and appliances improvement or replacement
		Central AC Tune-Up Discount	U.S.	Equipment and appliances improvement or replacement
		Efficiency Improvement Incentive Program	U.S.	General energy use
		Efficient Heating & Cooling Initiative	U.S.	Heating, ventilation, and air conditioning
		Energy Star Bulb Giveaway (15, 20, & 23 w)	U.S.	Lighting and lighting control
		Energy Star Homes	U.S.	General energy use
		Energy Star Partners (CFLS)	U.S.	Lighting and lighting control
		Energy Star Partners (Torchieres)	U.S.	Lighting and lighting control
		Energy Star Partners (Halogen Torchiere Turn-in)	U.S.	Lighting and lighting control
		Energy Star Partners (Fixtures)	U.S.	Lighting and lighting control
		Energy Star Partners (Clothes Washers)	U.S.	Equipment and appliances improvement or replacement
		Energy Star Partners (Refrigerators)	U.S.	Equipment and appliances improvement or replacement
		Energy Star Partners (Dishwashers)	U.S.	Equipment and appliances improvement or replacement
		Energy Star Partners (Dehumidifiers)	U.S.	Equipment and appliances improvement or replacement
		Energy Star Partners (Room Air Conditioners)	U.S.	Heating, ventilation, and air conditioning
		Geothermal Heat Pump Incentive	U.S.	Heating, ventilation, and air conditioning
		Home Energy Check-Up (20 - 40 w CFL)	U.S.	Lighting and lighting control
		Home Energy Check-Up (Torchiere)	U.S.	Lighting and lighting control
		Home Energy Check-Up (Miscellaneous)	U.S.	Equipment and appliances improvement or replacement
		LED Exit Signs	U.S.	Lighting and lighting control
		Photovoltaic Demonstration	U.S.	Other electricity generation, transmission, and distribution projects/activities
		VendingMiser Installations	U.S.	Equipment and appliances improvement or replacement
		Refrigerator Replacement - Low Income	U.S.	Equipment and appliances improvement or replacement
		Tree Power (1991 - 2003 Plantings)	U.S.	General Tree Planting
		Carry Over from 2002 Programs	U.S.	All other projects not included in the above categories
		Program carry over from 2001 and beyond	U.S.	All other projects not included in the above categories

Table B9. Emission Reduction Projects by Entity, Data Year 2003 (Continued)

Reporter	Form Type	Project	Location	Project Type
Wyeth Vaccines	1605EZ	Boiler Replacement	U.S.	Equipment and appliances improvement or replacement
		Commuter reduction	U.S.	Demand Modification: Carpooling/Vanpooling
Xcel Energy	1605	Wind power--NSP	U.S.	Increase in low-emitting capacity
		Nuclear capacity increase--NMC	U.S.	Heat rate or other efficiency improvement
		Nuclear capacity increase--NMC	U.S.	Increase in low-emitting capacity
		Demand side management (electric)--NSP	U.S.	Equipment and appliances improvement or replacement
		Demand side management (electric)--NSP	U.S.	Lighting and lighting control
		Demand side management (electric)--NSP	U.S.	Load control
		Demand side management (electric)--NSP	U.S.	Heating, ventilation, and air conditioning
		Demand side management (electric)--NSP	U.S.	Building shell improvement
		Demand side management (electric)--NSP	U.S.	Motor and motor drive
		Green Lights	U.S.	Lighting and lighting control
		Appliance Recycling	U.S.	Reclamation: Recycling
		Coal ash utilization-NSP	U.S.	Coal ash reuse
		Transmission Upgrade for hydro capacity--NSP	U.S.	Zero/Low Emission Power Purchases
		Nuclear capacity increase 2--NMC	U.S.	Heat rate or other efficiency improvement
		Nuclear capacity increase 2--NMC	U.S.	Increase in low-emitting capacity
		Nuclear capacity restoration--NMC	U.S.	Heat rate or other efficiency improvement
		Chippewa Falls Hydro expansion--NSP-WI	U.S.	Increase in low-emitting capacity
		Low Income Refrigerator Replacement	U.S.	Reclamation: Recycling
		Transmission upgrade--NSP	U.S.	Distribution voltage upgrade
		Transmission upgrade 2--NSP	U.S.	Distribution voltage upgrade
		Wheaton Plant conversion--NSP-WI	U.S.	Fuel switching
		Recycling program-NSP	U.S.	Materials recycling/reuse
		Nuclear Capacity Increase - Rerated--NMC	U.S.	Increase in low-emitting capacity
		Nuclear Capacity Increase 3--NMC	U.S.	Heat rate or other efficiency improvement
		Nuclear Capacity Increase 3--NMC	U.S.	Increase in low-emitting capacity
		Sioux Falls area transmission upgrades--NSP	U.S.	Distribution voltage upgrade
		Refuse-derived fuel-NSP	U.S.	Other waste facility
		Landfill Gas Purchase--NSP	U.S.	Zero/Low Emission Power Purchases
		Recycling Program--SPS	U.S.	Materials recycling/reuse
		Coal Ash Utilization-SPS	U.S.	Coal ash reuse
		Coal Ash Utilization-PSCo	U.S.	Coal ash reuse
		Recycling Program--PSCo	U.S.	Materials recycling/reuse
		Demand Side Management (electric)--PSCo	U.S.	Equipment and appliances improvement or replacement
		Demand Side Management (electric)--PSCo	U.S.	Lighting and lighting control
		Demand Side Management (electric)--PSCo	U.S.	Heating, ventilation, and air conditioning
		Demand Side Management (electric)--PSCo	U.S.	Building shell improvement
		Demand Side Management (electric)--PSCo	U.S.	Industrial power systems
		Buffalo Ridge 1--NSP	U.S.	Increase in low-emitting capacity
		Buffalo Ridge 2--NSP	U.S.	Increase in low-emitting capacity
		Buffalo Ridge 3--NSP	U.S.	Increase in low-emitting capacity
		Lakota Ridge (Wind Power)-- NSP	U.S.	Increase in low-emitting capacity
		Shaokatan Hills (Wind Power)--NSP	U.S.	Increase in low-emitting capacity
		Woodstock Windfarms (Wind Power)--NSP	U.S.	Increase in low-emitting capacity
		Ponnequin (Wind Power)--PSCo	U.S.	Increase in low-emitting capacity
		New Mexico (Wind Power)--SPS	U.S.	Increase in low-emitting capacity
		Foote Creek (Wind Power)--PSCo	U.S.	Increase in low-emitting capacity
		Texas - Whitedeer (wind power)--SPS	U.S.	Zero/Low Emission Power Purchases
		Remaining Wind Projects--NSP	U.S.	Zero/Low Emission Power Purchases
		Peetz Wind Farm (Wind Power)--PSCo	U.S.	Increase in low-emitting capacity
		Demand Side Management - Xcel Energy (SPS)	U.S.	Equipment and appliances improvement or replacement
		Lamar Wind Farm (Colorado Green) -- PSCo	U.S.	Increase in low-emitting capacity
		Retirement of Arapahoe Units #1 and 2	U.S.	Decrease in high-emitting capacity
		Transformer Changeout --- Denver Terminal Substation	U.S.	High-efficiency transformers
		Ft. Lupton 230 kV Transmission System Tie-In Project	U.S.	Other transmission & distribution improvements
		Sid Richardson Co-Generation	U.S.	Other electricity generation, transmission, and distribution projects/activities
		Chanarambie Windfarm (NSP)	U.S.	Zero/Low Emission Power Purchases
		Jack River Wind Farm	U.S.	Zero/Low Emission Power Purchases
		White River Dome Compressor Station Closure	U.S.	Natural gas transmission
Xenon Specialty Gas	1605	SF6 Recovery & Reclamation	U.S.	Reclamation: Recycling
Zeeland Board of Public Works	1605EZ	Other Trans and Dist Improvements	U.S.	Other transmission & distribution improvements
		General Trans & Dist	U.S.	General transmission and distribution
		Urban Forestry	U.S.	Urban Forestry (sequestration only)

Notes: This table excludes data reported as confidential.

Source: Energy Information Administration, Forms 1605 and 1605EZ

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003

Project Section & Reporter Name	Form Type	Project	Location
Electricity Generation, Transmission, and Distribution			
A&N Electric Cooperative	1605	Transmission and Distribution Efficiency Improvements	U.S.
Alabama Biomass Partners, Ltd	1605EZ	Biomass Waste to Energy	U.S.
Allegheny Energy, Inc.	1605	Adjustable Speed Drives for PA Fans - Hatfield's Ferry P.S.	U.S.
		Application of Capacitors	U.S.
		Armstrong Boiler No. 1 Emissions Reduction Project	U.S.
		Armstrong Boiler No. 2 Emissions Reduction Project	U.S.
		Armstrong Unit 1 - Boiler Controls Replacement	U.S.
		Armstrong Unit 2 - Boiler Controls Replacement	U.S.
		Auxiliary Fuel Switching	U.S.
		Conversion to Higher Voltage Distribution	U.S.
		Economic Conductor Selection	U.S.
		Efficient Distribution Transformers	U.S.
		Energy Star Transformer Program	U.S.
		Harrison Unit #2 Boiler Controls Replacement	U.S.
		Harrison Unit #3 Boiler Controls Replacement	U.S.
		Harrison Unit #3 HP Turbine Rotor Replacement	U.S.
		Hatfield's Ferry Unit 1 - HP/IP Turbine Rotor Replacement	U.S.
		Hatfield's Ferry Unit 1 - LP Turbine Rotor Replacement	U.S.
		Hatfield's Ferry Unit 2 - HP/IP Turbine Rotor Replacement	U.S.
		Hatfield's Ferry Unit 2 LP Turbine Rotor Replacement	U.S.
		Hatfield's Ferry Unit 3 - LP Turbine Rotor Replacement	U.S.
		Lake Lynn Hydro Electric Station Relicensing	U.S.
		Performance Monitoring Systems	U.S.
		Pleasants Unit 2 - Boiler Controls Replacement	U.S.
		Potomac Edison 138/500 kV System Split	U.S.
		R. P. Smith Unit 4 - Boiler Controls Replacement	U.S.
		Replace Small Primary Conductors	U.S.
		Rivesville Unit 6 - High Pressure Turbine Rotor Replacement	U.S.
		Rivesville Unit No. 6 - Boiler Controls Replacement	U.S.
		Small Hydroelectric Station Relicensing	U.S.
		Willow Island Unit 1- Low Pressure Turbine Rotor Replacement	U.S.
		Willow Island Unit 2 Boiler Controls Replacement	U.S.
		Wire Replacement on Transmission Lines	U.S.
Alliant Energy	1605	Berlin Landfill	U.S.
		Biomass - IA	U.S.
		Cedar Rapids Landfill (IES)	U.S.
		Columbia 1&2 Turbine Efficiency	U.S.
		Hydro - IA	U.S.
		Hydro - WI	U.S.
		Mallard Ridge Landfill	U.S.
		Minergy Waste Generation	U.S.
		Onyx Glacier Ridge Landfill	U.S.
		Sauk County Landfill	U.S.
		SFDL Fuel Switching	U.S.
		Switchgrass Cofiring	U.S.
		Tire Derived Fuel Generation	U.S.
		Transmission line improvements	U.S.
		Verona Landfill	U.S.
		Wind Power-Iowa	U.S.
		Wind Power-Wisconsin	U.S.
Ameren Corporation (formerly UE, CIPS, and CILCO)	1605	Conversion to a dry flyash handling system.	U.S.
		Grand Tower Repowering	U.S.
		Increased Nuclear generation	U.S.
		Install adjustible speed fan drives replacing fixed speed	U.S.
		Meramec Power Plant Control Upgrade	U.S.
		Replaced motor-generator exciters with static exciter system	U.S.
		Sioux Plant Control Upgrade	U.S.
		Subtransmission Reconductoring	U.S.
		Tire Burning	U.S.
		Transformer Replacement	U.S.
		Waste Oil Heat Recovery	U.S.
American Electric Power, Inc.	1605	ClearChoice(sm) Green Pricing Initiative: AEP-West	U.S.
		Distribution System Equipment Improvements	U.S.
		Fuel Switch Coal to Natural Gas (Conesville Unit 1-3)	U.S.
		Heat Rate Improvement (Due to improved load optimization)	U.S.
		Heat Rate Improvement Projects (Oper. and Equip. Changes)	U.S.
		Hydroelectric Facility Improvements: AEP-East	U.S.
		Nuclear Plant Improved Utilization	U.S.
		Open-Loop Transmission Groundwire Resistive Loss Reduction	U.S.
		Renewable Generation - Solar	U.S.
		Renewable Generation - Wind: AEP-East	U.S.
		Renewable Generation - Wind: AEP-West	U.S.
		Southwest Mesa Wind Farm	U.S.
		Transmission Efficiency Improvements: AEP-West	U.S.
		Transmission System Reinforcements	U.S.
		Watts on Schools	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
Arizona Electric Power Cooperative, Inc.	1605EZ	Condensate pump upgrade	U.S.
		Distributive Control System Installed on Steam Unit 2 (coal-	U.S.
		Distributive Control System installed on Steam Unit 3 (coal-	U.S.
BARC Electric Cooperative	1605	System Line Conversions and Reconductoring	U.S.
Berkshire Power LLC	1605	Natural gas fired electric generation	U.S.
Biomass Partners, LP	1605EZ	Biomass Waste to Energy	U.S.
Bountiful City Light & Power	1605	Air fuel ratio controller installed in dual fuel engine	U.S.
		Capacitor bank installation - increasing system efficiency	U.S.
		Hydroelectric plant operations	U.S.
BP America	1605	Petroleum Marketing Power Generation	U.S.
Carolina Power & Light Company	1605	Nuclear Capacity Improvement	U.S.
Choptank Electric Cooperative	1605	System Line Conversions and Reconductoring	U.S.
Cinergy Corp.	1605	Cayuga Heat Rate Improvements	U.S.
Cinergy Corp.	1605	Gibson Performance Maximization Program	U.S.
Cinergy Corp.	1605	Merger Dispatch Savings	U.S.
Cinergy Corp.	1605	Noblesville repowering	U.S.
Cinergy Corp.	1605	Wabash River Heat Rate Improvement	U.S.
City of Austin Electric Utility (Austin Energy)	1605EZ	Hydro Power Purchase	U.S.
		SF-6 Leak Reduction Project	U.S.
		South Texas Project	U.S.
		Transmission Improvement Project	U.S.
		West Texas Wind Power Purchase	U.S.
City of Edmond, Oklahoma, Electric Department	1605EZ	High Efficiency Transformers	U.S.
City of Klamath Falls- Cogen	1605	FOSSIL FUEL DISPLACEMENT THROUGH COALBED METHANE UTILIZATION	U.S.
		SOLAR RURAL ELECTRIFICATION WITH PHOTOVOLTAICS IN ASIA	Foreign
City of Palo Alto Utilities	1605EZ	PV Partners Program	U.S.
City Public Service	1605	Desert Sky Wind Turbine Power Purchase	U.S.
		South Texas Project Nuclear Operating Company	U.S.
City Utilities of Springfield	1605	HEAT RATE IMPROVEMENTS - SWPS	U.S.
		LOW SULFUR FUEL SWITCH - SWPS	U.S.
		Wind Energy offering	U.S.
Community Electric Cooperative	1605	System Line Conversion and Reconductoring	U.S.
Conectiv Atlantic Generation (CAG)	1605	Deepwater Natural Gas Usage	U.S.
		Peach Bottom Nuclear Units #2 & 3 Uprate Program	U.S.
Conectiv Delmarva Generation	1605	Edge Moor Fuel Substitution	U.S.
		Hay Road Combined Cycle	U.S.
		Peach Bottom Nuclear Units #2 & #3 Uprate Program	U.S.
		T&D Loss Reduction	U.S.
Consolidated Edison Company of New York, Inc.	1605	Arthur Kill - Fuel Switching to Natural Gas	U.S.
Constellation Energy	1605	Baltimore RESCO Waste-to-Energy MWh Purchases	U.S.
		Brandon Shores Generating Station Heat Rate Improvement	U.S.
		C.P. Crane Generating Station Heat Rate Improvements	U.S.
		Calvert Cliffs Nuclear Power Plant Generation Increases	U.S.
		H.A. Wagner Generating Station Heat Rate Improvements	U.S.
		Hydroelectric Generation Improvements	U.S.
		Nine Mile Pt Nuclear Generating Improvements	U.S.
		Transmission / Distribution Improvements	U.S.
Delaware Electric Cooperative	1605	System Line Conversions & Reconductoring	U.S.
Dominion Generation	1605	Increased Nuclear Generation at North Anna Nuclear Power St.	U.S.
		Increased Nuclear Generation at Surry Power Station	U.S.
DTE Energy/ Detroit Edison	1605	Distribution Improvements	U.S.
		Greenwood Energy Center Fuel Switching	U.S.
		Increased Nuclear Utilization	U.S.
		Plant Efficiency Improvements	U.S.
		Solar Power - California	U.S.
		Solar Power - Michigan	U.S.
Duke Energy Corporation	1605	Improved Efficiency an Nantahala Hydro	U.S.
		Improved Efficiency at Cedar Creek Hydro	U.S.
		Improved Hydro Efficiency at Dearborn Hydro	U.S.
		Improved Hydro efficiency at Fishing Creek Hydro	U.S.
		Improved Hydro Efficiency at Lookout Shoals Hydro	U.S.
		Improved Hydro Efficiency at Oxford Hydro	U.S.
		Improved Hydro Efficiency at Wylie Hydro	U.S.
		Improved Hydro Eficiency at Wateree Hydro	U.S.
		Increased Nuclear Generation at Catawba Nuclear Station	U.S.
		Increased Nuclear Generation at McGuire Nuclear Station	U.S.
		Increased Nuclear Generation at Oconee Nuclear Station	U.S.
Dynegy, Inc.	1605	Add Turbine Shell Heaters on Wood River 4	U.S.
		Baldwin 2 Turbine H.E.L.P. Blades Installation	U.S.
		Baldwin 3 Heat Rate Improvement	U.S.
		Burn Waste Oil at Baldwin 3	U.S.
		Cofire Plastic at Baldwin	U.S.
		Combustion of used lubricating oil	U.S.
		Convert Vermilion Units 1 And 2 To Natural Gas	U.S.
		Fuel Switch To Natural Gas at Hennepin	U.S.
		Fuel Switch To Natural Gas at Wood River	U.S.
		Havana 6 Cooling Tower Upgrade	U.S.
		Hennepin Boiler Optimizer	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
		Hennepin Feedwater Heater Orifice Replacements	U.S.
		Hennepin Gas Reburn Project	U.S.
		Hennepin I Turbine Steam Path Upgrade	U.S.
		Hennepin Orimulsion Reburn	U.S.
		Install Natural Gas Fired Aux. Boiler at Havana	U.S.
		New Boiler Controls at Hennepin	U.S.
		Reduce Number of Plant Start-ups	U.S.
		Tire-Derived Fuel Cofiring at Baldwin	U.S.
		Vermilion 1 Heat Rate Improvements	U.S.
		Vermilion 2 Heat Rate Improvements	U.S.
		Wood River 4 Turbine Rotor Replacement	U.S.
Energy Developments, Inc.	1605	Carbon-Limestone Power Station	U.S.
		Lorain Power Station	U.S.
		Middle Point Power Station	U.S.
		Ottawa County Power Station	U.S.
		Roberts Road Power Station	U.S.
		Taylor County Power Station	U.S.
		Tessman Road Power Station	U.S.
		Zion Power Station	U.S.
Energy Management Partners, LP	1605EZ	Biomass Waste to Energy	U.S.
Entergy Services, Inc.	1605	Baxter WIlson 1 - Condenser Vacuum Pump Replacement	U.S.
		Baxter Wilson 1- Air Preheater & By Pass Seal Replacement	U.S.
		Baxter Wilson 2 - Air Preheater Seal Replacement	U.S.
		Baxter Wilson 2 - Burner Management System	U.S.
		Grand Gulf Nuclear Station Turbine Upgrade	U.S.
		Independence 1 Burner Tilt Upgrade	U.S.
		Independence 2 APH Basket & Turbine Refurbish	U.S.
		Independence Unit 1 Feedwater Heater Replacement	U.S.
		Lake Catherine Unit 4 Efficiency Improvement Project	U.S.
		Lewis Creek 1 - Minimum Load Reduction	U.S.
		Lewis Creek 2 - Lower Minimum Load	U.S.
		Lewis Creek Combustion Control	U.S.
		Little Gypsy 2 - Minimum Load Reduction	U.S.
		Little Gypsy 3 - Optimized Temperature Control	U.S.
		Little Gypsy Unit 3 #6LP Feedwater Heater Replacement	U.S.
		Louisiana Station 1 Repowering and Unit Upgrade	U.S.
		Michoud 3 - Boiler Feedwater Control System	U.S.
		Michoud Unit 3 Efficiency Improvement Project	U.S.
		Nelson 6 - Neural Net Installation and Analog Boiler Control	U.S.
		Nelson 6 - Preheat Basket Replacement	U.S.
		Ninemile 4 - Cold End Pre-Heater Basket Replacement	U.S.
		Ninemile 4 - RheoVac Air In-Leakage Monitoring	U.S.
		Ninemile 5 - Cold End Pre-heater Basket Replacement	U.S.
		Ninemile 5 - Neural Network Installation	U.S.
		Ninemile 5 - RheoVac Air In-Leakage Monitoring	U.S.
		Ninemile Turbine Retrofit	U.S.
		Raise Nuclear Unit Targets on Annual Capacity Factor	U.S.
		Ritchie 1, No. 1 Condenser Retubing	U.S.
		Sabine 1 - Install New Design Condenser Tube Plugs	U.S.
		Sabine 1 - Install New Drip Pump & Bypass Line	U.S.
		Sabine 2 - Install New Design Condenser Tube Plugs	U.S.
		Sabine 2 - Install New Drip Pump & Bypass Line	U.S.
		Sabine 2 Furnace Membrane	U.S.
		Sabine 3 - Control Valve Repair and Replacement	U.S.
		Sabine 3 - Install New Design Condenser Tube Plugs	U.S.
		Sabine 3 - Install RheoVac Air In-Leakage Monitor	U.S.
		Sabine 4 - 4C & 4D Condneser Retubing	U.S.
		Sabine 4 - Control Valve Repair and Replacement	U.S.
		Sabine 4 - Install New Air Preheater Seals	U.S.
		Sabine 4 - Install New Design Condenser Tube Plugs	U.S.
		Sabine 4 - Install New Reheat Spray Valves	U.S.
		Sabine 4 - Install RheoVac Air In-Leakage Monitor	U.S.
		Sabine 5 - Install Condensate Filtration System	U.S.
		Sabine 5 - Install New Design Condenser Tube Plugs	U.S.
		Sabine 5 - Install RheoVac Air In-Leakage Monitor	U.S.
		Sabine Unit 2 Feedwater Heater Replacement	U.S.
		Transmission and Distribution Efficiency	U.S.
		Vidalia Hydroelectric Station	U.S.
		White Bluff 1 - Install RheoVac Air In-Leakage Monitor	U.S.
		White Bluff 1 - Install the Control Values ASV-4 & ASV-6	U.S.
		White Bluff 1 - Replacement of Perimeter Fill in Cooling	U.S.
		White Bluff 2 - Install Rheo Vac Air In-Leakage Monitor	U.S.
		White Bluff 2 - Install the Control Valves ASV-4 & ASV-6	U.S.
		White Bluff 2 - Replacement of Perimeter Fill in Cooling	U.S.
		White Bluff 2 Aux Fuel Air Dampers	U.S.
		White Bluff Unit 1 Feedwater Heater Replacement	U.S.
		White Bluff Unit 2 Feedwater Heaters Replacement	U.S.
		Willow Glen Unit 3 #2B Feedwater Heater Replacment	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
		Willow Glen Unit 5 Air Heater Replacement Project	U.S.
		Willow Glen Unit 5 Kidney Trap Replacement	U.S.
Exelon Corporation	1605	Chicago Photovoltaic Initiative	U.S.
		Chicago Public School Solar Partnership	U.S.
		ComEd North Commercial Center - Solar Panels	U.S.
		ComEd Solar Schools Program	U.S.
		ComEd South Commercial Center - Solar Panels	U.S.
		High Efficiency Transformers	U.S.
		International Brotherhood of Electrical Workers Solar Panels	U.S.
		Overhaul of Conowingo Unit 10	U.S.
		Overhaul of Conowingo Unit 5	U.S.
		Overhaul of Conowingo Unit 8	U.S.
		Overhaul of Conowingo Unit 9	U.S.
		Overhaul of Muddy Run Units 5-8	U.S.
		Rerate of Peach Bottom Unit 2	U.S.
		Rerate of Braidwood Unit 1	U.S.
		Rerate of Braidwood Unit 2	U.S.
		Rerate of Byron Unit 1	U.S.
		Rerate of Byron Unit 2	U.S.
		Rerate of Lasalle Unit 1	U.S.
		Rerate of Lasalle Unit 2	U.S.
		Rerate of Limerick Unit 1	U.S.
		Rerate of Limerick Unit 2	U.S.
		Rerate of Peach Bottom Unit 3	U.S.
		Rerate of Quad Cities Unit 2	U.S.
		Wind and Photovoltaic Generation Pricing Experiment	U.S.
		Wind Power Marketing in Pennsylvania	U.S.
		Zion Power House Windmill	U.S.
FirstEnergy Corporation	1605	Fuel Switching	U.S.
		Heat Rate Improvement	U.S.
		Increased Generation at Beaver Valley Nuclear Power Station	U.S.
		Increased Generation at Davis-Besse Nuclear Power Station	U.S.
		Increased Generation at Perry Nuclear Power Plant	U.S.
		Shunt Capacitor Program	U.S.
		T & D System Improvements	U.S.
		Transformer Loss Evaluation Program	U.S.
		Yards Creek Pumped Storage Upgrade	U.S.
FPL Group	1605	Cape Canaveral Boiler Enhansements and Controls Upgrades	U.S.
		Fort Myers LP Turbine Improvements	U.S.
		FPL Energy Renewable Projects - Hydro	U.S.
		FPLE East Mesa Geothermal Projects	U.S.
		FPLE Renewable Projects - Wind	U.S.
		Gas Expansion Project	U.S.
		Manatee Plant Low NOx Burners	U.S.
		Martin Plant LP turbine Improvements	U.S.
		Nuclear Generation Improvement	U.S.
		Port Everglades Unit 4 Efficiency Improvement Project	U.S.
		Putnam Plant Unit 1-2 HRSG replacement	U.S.
		Radio Controlled Capacitor System (RCCS)	U.S.
		Riviera Plant Boiler Enhancements, Controls Upgrade, LP Turb	U.S.
		Sanford Plant Blr & Controls Upgrades, LP Turbine	U.S.
		Sanford Power Plant Fuel Switching	U.S.
		SEGS VIII & IX - solar	U.S.
		Turkey Point Fossil Power Plt Blr, Controls, Turbine Improve	U.S.
Golden Valley Electric Association, Inc	1605EZ	Use of Hydropower	U.S.
JEA	1605EZ	Fuel Swiching	U.S.
		Fuel Switching	U.S.
		Photovoltaic Systems	U.S.
Johnson & Johnson	1605	On-site Renewable Energy - Solar	U.S.
		Zero/low emitting power purchase (Green Power)	U.S.
Kansas City Power & Light Company	1605	Improve heat rate	U.S.
		New Transmission Line & Reconductoring	U.S.
		Nuclear Unit Uprate	U.S.
Los Angeles Department of Water and Power	1605	Energy Efficient Transformers	U.S.
		Fuel Switching (Fuel Oil #6 to Natural Gas)	U.S.
		Solar Power	U.S.
Lower Colorado River Authority	1605	Hydroelectric Dam Modernization	U.S.
		Neural-Network Technology	U.S.
		Supply-Side Efficiency Improvements	U.S.
		Wind Power Project	U.S.
McMinnville Electric System	1605	McMinnville Generation Project	U.S.
Mecklenburg Electric Cooperative	1605	System Line Conversion and Reconductoring	U.S.
Minnesota Power	1605	Expanded Generation from Existing Hydro Electric Resources	U.S.
		Heat Rate Improvements, Boswell Energy Center	U.S.
		Mud Lake Substation - Reduced Transmission Losses	U.S.
		Wind Sense Wind Energy Program	U.S.
Municipal Electric Auth of Georgia (MEAG Power)	1605	Nuclear Generation Utilization	U.S.
Mystic Development, LLC	1605	Gas-fired electric generation	U.S.
Nashville Electric Service	1605EZ	Distribution Voltage Upgrade	U.S.
		High-efficiency Transformers	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
National Grid USA	1605	Amorphous Metal Core Transformers	U.S.
		Cowley Ridge Windplant	Foreign
		Distribution Reconductoring	U.S.
		Distribution Voltage Upgrade	U.S.
		Installation & Operation of Photovoltaic Energy Systems - NY	U.S.
		Installation and Operation of Wind Turbines	U.S.
		Nuclear Generation Capacity Improvements	U.S.
		Nuclear Generation Performance Improvements	U.S.
		Partial Conversion of Oil-Fired Plant to Natural Gas	U.S.
		Photovoltaic - New England	U.S.
		Transmission Reconductoring	U.S.
Nebraska Public Power District	1605EZ	1994-1996 Distribution Improvements	U.S.
		1994-1997 Transformer Changeouts	U.S.
		Nuclear Plant Improved Utilization	U.S.
		Plant Efficiency Improvements	U.S.
		Wind Turbines	U.S.
NEGT	1605	Brayton Point Station Unit No. 4 Gas Conversion	U.S.
		Brayton Point Station Units No. 1, 2, 3 Natural Gas Usage	U.S.
		Madison Windpower	U.S.
		Manchester Street Repowering	U.S.
		Power Purchases from Natural Gas Generation	U.S.
		Wind Turbines in Mountain View, CA	U.S.
NiSource/NIPSCO	1605	Biomass Initiative	U.S.
		Capacitor Additions	U.S.
		Low Loss Transformers	U.S.
North Carolina Biomass Partners	1605EZ	Biomass Waste to Energy	U.S.
North Carolina Electric Membership Corporation	1605EZ	Switch Away from Fossil Fuel Generated Power Purchases	U.S.
Northern Neck Electric Cooperative	1605	System Line Conversion and Reconductoring	U.S.
Northern Virginia Electric Cooperative	1605	System Line Conversions and Reconductoring	U.S.
Omaha Public Power District	1605EZ	Coal Heat Rate Improvement	U.S.
		Nuclear Capacity Factor Improvement	U.S.
		T&D Capacitor Installations	U.S.
Orlando Utilities Commission (OUC)	1605EZ	Landfill Gas to Energy	U.S.
Pfizer Pharmaceuticals LLC - Arecibo Site	1605EZ	Electrical Power Monitoring System Upgrade	U.S.
PG&E Corporation	1605	Natural Gas Substitution for Residual Oil	U.S.
Platte River Power Authority & 4 Owner Cities	1605	Estes Park Low-Loss Transformers	U.S.
		Fort Collins Distribution System Improvements	U.S.
		Longmont Distribution System Improvements	U.S.
		Longmont Hydro Project Upgrades	U.S.
		Loveland Hydroelectric Plant	U.S.
		PRPA Heat Rate Improvements at Craig Powerplant	U.S.
		PRPA Photovoltaic Project	U.S.
		PRPA Wind Power Project	U.S.
Portland General Electric Co.	1605	1995 Colstrip Units 3&4 Ruggedizing	U.S.
		Beaver Efficiency Improvements	U.S.
		Beaver Efficiency Improvements 2003	U.S.
		Boardman Efficiency Improvements	U.S.
		Building Rooftop Photovoltaic Systems	U.S.
		Bull Run Turbine Runner Replacements	U.S.
		Cal-Gon Farms Biogas Pilot	U.S.
		Coyote Springs Efficiency Improvements	U.S.
		Coyote Springs Improvements 2003	U.S.
		Faraday Efficiency Improvements 2002	U.S.
		Faraday Units 4&5 1994	U.S.
		North Fork Hydro Improvements	U.S.
		Oak Grove Turbine Runner Replacements - 1991 - Units 1&2	U.S.
		River Mill Efficiency Improvements	U.S.
		Round Butte	U.S.
		Sullivan turbine rebuilds	U.S.
		T&D: Power Factor Correction Capacitors	U.S.
		Transformer Efficiency Improvements	U.S.
		Vansycle Ridge Wind Generation	U.S.
Prince George Electric Cooperative	1605	Transmission and Dist. Efficiency Improvements	U.S.
Public Service Company of New Mexico	1605	Heat Rate Improvements at San Juan Generating Station	U.S.
		New Mexico Wind Energy	U.S.
		Palo Verde Generation Increase	U.S.
Public Service Enterprise Group	1605	Electric Generation from Landfill Gas	U.S.
		Hydro Projects - United States	U.S.
Public Utility District No. 1 of Snohomish County	1605	Conservation Voltage Reduction	U.S.
		Transmission Networking and Reconductoring	U.S.
Rappahannock Electric Cooperative	1605	System Line Conversions and Reconductoring	U.S.
Sacramento Municipal Utility District	1605	PV Pioneer	U.S.
Salt River Project	1605EZ	AZ Falls Generation Facility	U.S.
		Cooperative Photovoltaic Power Plants	U.S.
		Heat Rate Improvements	U.S.
		Palo Verde Nuclear Station Capacity Factor Increase	U.S.
		Palo Verde Nuclear Station Capacity Increases	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
Santee Cooper	1605	Cross Unit 1 Turbine Retrofit	U.S.
		Cross Unit 2 Retrofit	U.S.
		Summer Nuclear Upgrade	U.S.
		Winyah Unit 1 Turbine Retrofit	U.S.
		Winyah Unit 2 Turbine Retrofit	U.S.
		Winyah Unit 3 Turbine Retrofit	U.S.
		Winyah Unit 4 Turbine Retrofit	U.S.
Seattle City Light	1605	4kV to 26kV Distribution System Conversion	U.S.
		Cedar Falls turbine runner replacement	U.S.
		Diablo Dam turbine runner replacement	U.S.
		Gorge Dam turbine runner replacement	U.S.
		Ross Dam turbine runner replacement	U.S.
		South Fork Tolt River hydroelectric project	U.S.
SeaWest WindPower, Inc.	1605	Altech Energy III	U.S.
		Condon Wind Power, LLC	U.S.
		Foote Creek I, LLC	U.S.
		Foote Creek II, LLC	U.S.
		Foote Creek III, LLC	U.S.
		Foote Creek IV, LLC	U.S.
		Mountain View Power Partners II, LLC	U.S.
		Mountain View Power Partners, LLC	U.S.
		Rock River I, LLC	U.S.
		San Gorgonio Westwinds II, LLC	U.S.
Seminole Electric Cooperative, Inc.	1605EZ	Heat Rate Improvement	U.S.
		Transmission Conductor Optimization	U.S.
Shenandoah Valley Electric Cooperative	1605	System Line Conversions and Reconductoring	U.S.
South Carolina Electric & Gas Company	1605	Misc. Plant efficiency improvements	U.S.
		Summer Nuclear Upgrade	U.S.
		Urquhart Repowering Project	U.S.
		Wateree Station heat rate improvement	U.S.
		Williams Station improvements	U.S.
Southeastern Biomass Partners, LP	1605EZ	Biomass Waste to Energy	U.S.
Southern California Edison Co.	1605	Renewable Energy Purchases - Small Hydro	U.S.
		Mohave Power Project Heat Rate Improvement Program	U.S.
		Palo Verde Availability Improvement	U.S.
		Renewable Energy Purchases - Biomass	U.S.
		Renewable Energy Purchases - Geothermal	U.S.
		Renewable Energy Purchases - Wind	U.S.
		Repowering of Hydro Generation Units	U.S.
		San Onofre Availability Improvements	U.S.
Southern Company	1605	Biomass	U.S.
		Bulk Power Transmission Improvements	U.S.
		Combined-Cycle Units	U.S.
		Farley Nuclear Plant Availability Improvements	U.S.
		Farley Nuclear Plant Uprate	U.S.
		Gas Capability at Watson 4 and 5	U.S.
		Gas Capability at Plant McDonough	U.S.
		Gas Capability at Plant Yates	U.S.
		Hatch Nuclear Plant Availability Improvements	U.S.
		Hatch Nuclear Plant Capacity Uprate	U.S.
		Heat Rate Improvement on Coal-Fired Capacity	U.S.
		New Combustion Turbines	U.S.
		Switchgrass	U.S.
		Vogtle Electric Generating Plant (Nuclear) Capacity Uprate	U.S.
		Vogtle Electric Generating Plant Availability Improvements	U.S.
Southside Electric Cooperative	1605	System Line Conversion and Reconductoring	U.S.
Steuben Rural Electric Co-op	1605EZ	1994 Distribution Line Replacement	U.S.
		1995 Distribution Line Replacement	U.S.
		1996 Conductor Replacement	U.S.
		1997 Conductor Replacement	U.S.
		2002 Substation Efficiency Improvement	U.S.
		2003 Substation Upgrade	U.S.
Tacoma Power	1605EZ	Generator Improvement (Cushman/Nisqually)	U.S.
		Generator Improvement (Wynoochee)	U.S.
Tennessee Valley Authority	1605	Green Power Switch	U.S.
		Heat Rate Improvements At TVA Coal Fired Generating Units	U.S.
		Hydro Unit Modernization	U.S.
		Return Browns Ferry Nuclear Units 2 and 3 to Service	U.S.
		Start Watts Bar Nuclear Unit 1	U.S.
		Transmission System Efficiency Improvements	U.S.
		Wood Waste Cofiring At Coal Fired Generating Plants	U.S.
Tucson Electric Power Company	1605	Landfill Gas (Fuel Switching) Project	U.S.
		Solar Electric - Photovoltaic	U.S.
TXU	1605	Lignite and Western Coal Blending	U.S.
		Operation of Nuclear Generation Units	U.S.
		Power Plant Heat Rate Improvement Projects	U.S.
		Renewable Energy Development Projects	U.S.
Vermont Public Power Supply Authority	1605	Swanton Village Hydro Expansion	U.S.
		Transmission and Distribution System Efficiency Improvements	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
Waverly Light & Power Company	1605	Distribution System Upgrade (Project 3)	U.S.
		Hydro (Project 2)	U.S.
		Low-Loss Transformers (Project 4)	U.S.
		Wind Turbine (Project 1)	U.S.
We Energies	1605	Ag Biomass Generation	U.S.
		Badger Windpower Purchases	U.S.
		Energy for Tomorrow(TM) Renewable Energy Program	U.S.
		Fossil plant heat rate improvements	U.S.
		Hydro plant improvements and additions	U.S.
		Increased Nuclear Capacity at Point Beach Nuclear Plant	U.S.
		Transmission & distribution system loss reductions	U.S.
Wisconsin Public Power Inc.	1605EZ	Photovoltaic Demonstration	U.S.
Xcel Energy	1605	Buffalo Ridge 1--NSP	U.S.
		Buffalo Ridge 2--NSP	U.S.
		Buffalo Ridge 3--NSP	U.S.
		Chanarambie Windfarm (NSP)	U.S.
		Chippewa Falls Hydro expansion--NSP-WI	U.S.
		Foote Creek (Wind Power)--PSCo	U.S.
		Ft. Lupton 230 kV Transmission System Tie-In Project	U.S.
		Jack River Wind Farm	U.S.
		Lakota Ridge (Wind Power)-- NSP	U.S.
		Lamar Wind Farm (Colorado Green) -- PSCo	U.S.
		Landfill Gas Purchase--NSP	U.S.
		New Mexico (Wind Power)--SPS	U.S.
		Nuclear Capacity Increase - Rerated--NMC	U.S.
		Nuclear capacity increase 2--NMC	U.S.
		Nuclear Capacity Increase 3--NMC	U.S.
		Nuclear capacity increase--NMC	U.S.
		Nuclear capacity restoration--NMC	U.S.
		Peetz Wind Farm (Wind Power)--PSCo	U.S.
		Ponnequin (Wind Power)--PSCo	U.S.
		Remaining Wind Projects--NSP	U.S.
		Retirement of Arapahoe Units #1 and 2	U.S.
		Shaokatan Hills (Wind Power)--NSP	U.S.
		Sid Richardson Co-Generation	U.S.
		Sioux Falls area transmission upgrades--NSP	U.S.
		Texas - Whitedeer (wind power)--SPS	U.S.
		Transformer Changeout --- Denver Terminal Substation	U.S.
		Transmission upgrade 2--NSP	U.S.
		Transmission Upgrade for hydro capacity--NSP	U.S.
		Transmission upgrade--NSP	U.S.
		Wheaton Plant conversion--NSP-WI	U.S.
		Wind power--NSP	U.S.
		Woodstock Windfarms (Wind Power)--NSP	U.S.
Zeeland Board of Public Works	1605EZ	General Trans & Dist	U.S.
		Other Trans and Dist Improvements	U.S.
Cogeneration and Waste Heat Recovery			
Allergan, Inc.	1605	Irvine Microturbine/Waste Heat Recovery Project	U.S.
Bountiful City Light & Power	1605	District heating	U.S.
BP America	1605	Thermal Process Efficiency Improvements	U.S.
City of Klamath Falls- Cogen	1605	Cogeneration Steam Sales	U.S.
Conectiv Atlantic Generation (CAG)	1605	AGI - Pedricktown Cogeneration Limited Partnership	U.S.
		AGI - Vineland Cogeneration Facility	U.S.
Exelon Corporation	1605	Fuel Switching at Bynov Plant in Decin, Czech Republic	Foreign
Johnson & Johnson	1605	Fuel Cell	U.S.
Minnesota Power	1605	Cloquet Energy Center Turbine Generation 5 (Sappi Ltd)	U.S.
NiSource/NIPSCO	1605	Fuel Switching at Bynov Plant in Decin, Czech Republic	Foreign
		Inland Steel -Northlake Energy	U.S.
		Ispat/Inland - Cokenergy	U.S.
		National Steel- Portside Energy	U.S.
		US Steel - Lakeside Energy	U.S.
		Whiting Clean Energy	U.S.
PEI Power Corp	1605	PEI Power Corp	U.S.
Rolls-Royce Corporation	1605	Co-Gen	U.S.
Southern Company	1605	Chevron Cogenerating Plant - Unit 5	U.S.
		Theodore Cogeneration Facility	U.S.
		Washington County Cogeneration Plant	U.S.
We Energies	1605	Fuel switching at Bynov Plant in Decin, Czech Republic	Foreign
Energy End Use			
A&N Electric Cooperative	1605	Demand-Side Management Load Control Program	U.S.
Advanced Micro Devices, Inc.	1605EZ	Ballast and Bulb Replacement	U.S.
		Change Coffee System from Heated Pots to Insulated Carafes	U.S.
		Gas Cabinet Exhaust Reduction	U.S.
		Installation of Lighting Control	U.S.
		Installation of Reflective Roof Insulation	U.S.
		Replacement of Chiller with New Efficient Chiller	U.S.
		Temperature Setpoint Adjusted in Electrical Rooms	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
Allegheny Energy, Inc.	1605	Adjustable Speed Drives-Plastic Injection Molding Machines	U.S.
		Demand-Side Management Programs	U.S.
		Green Lights Utility Ally Program	U.S.
		High Pressure Sodium Vapor Streetlight Replacement Program	U.S.
Allergan, Inc.	1605	Acetone Catalytic Oxidizer Improvement	Foreign
		Add Variable Frequency Drive to Existing Chiller	U.S.
		Air Compressor System Upgrade	U.S.
		Air Compressor System Upgrade	Foreign
		Allergan America Facility Closure	U.S.
		Allergan Brazil Building Management System Installation	Foreign
		Allergan Facility Divestiture	U.S.
		Allergan Italy Facility Closure	Foreign
		Allergan LOK Brazil Operation Consolidation	Foreign
		Allergan Medical Plastics Energy Managment System Upgrade	U.S.
		AMO Facility Closure	U.S.
		Chilled Water Decouple Loop	U.S.
		Chiller Replacement	U.S.
		Classified Area Lighting Upgrade	Foreign
		Compressed Air Leak Repair	Foreign
		Compressor Replacement	U.S.
		Curtail Weekend Energy Usage	Foreign
		Direct Expansion Cooler Unit Redesign	U.S.
		Downsize Boiler to Meet Requirements	Foreign
		Elimination of Catalytic Thermal Oxidizer	U.S.
		Floor Fan Elimination	U.S.
		HID Lighting Upgrade	Foreign
		Install Bi-Level Lighting Controls on HID Lighting	U.S.
		Install High Efficiency T8 Fixtures in Office Areas	U.S.
		Install Higher Efficiency Chiller	U.S.
		Install Higher Efficiency Motors	U.S.
		Install Occupancy Sensors	U.S.
		Install On/Off Controller on Hot/Cold Water Pumps	U.S.
		Install Photoelectric Sensor on Grinder and Blowers	U.S.
		Install VSD Air Handler Fan #20	U.S.
		Install VSD on 40 HP Cooling Water Pump	U.S.
		Install VSD on 50 HP Water Pump	U.S.
		Install VSDs on Hot Water Pumps	U.S.
		Install Wattman Controller in parking structure	U.S.
		Insulate Process Lines	Foreign
		Lighting Retrofits and Upgrades	U.S.
		Lighting Upgrade at Allergan Irvine	U.S.
		Motor Replacement Project	Foreign
		Reduce Air Compressor Discharge Pressure	U.S.
		Reduction in Operating Time for Blowmolding Equipment	Foreign
		Replace Existing Hot Water Boiler with Heat Exchanger	U.S.
		Replace Mercury Vapor Lamps with Fluorescent Lamps	Foreign
Alliant Energy	1605	Energy End Use - Electric IES	U.S.
		Energy End Use - Electric IPC	U.S.
		Energy End Use - Gas IES	U.S.
		Energy End Use - Gas IPC	U.S.
		Energy end use-Electric WP&L	U.S.
		Energy end use-Gas WP&L	U.S.
		Urban Forestry IES	U.S.
		Urban Forestry IPC	U.S.
		WP&L Green Lights Projects	U.S.
Ameren Corporation (formerly UE, CIPS, and CILCO)	1605	CILCO Demand Side Management	U.S.
		Demand Side Management Projects	U.S.
		EnviroTech Fund - Foreign	Foreign
		EnviroTech Fund - US	U.S.
		Meramec Power Plant Lighting Upgrade	U.S.
		Street Light Conversion	U.S.
American Electric Power, Inc.	1605	Commercial/Industrial DSM Programs: AEP-East	U.S.
		Demand Side Management Activities: AEP-West	U.S.
		Green Lights	U.S.
		Residential Demand Side Management Programs: AEP-East	U.S.
Anoka Municipal Utility	1605EZ	Central A/C Replacement	U.S.
		Demand Management	U.S.
		Lighting Replacement	U.S.
Arizona Electric Power Cooperative, Inc.	1605EZ	Lighting & Exit Sign Replacement	U.S.
Arizona Portland Cement Co.	1605	Bulk Load Bin Filling	U.S.
		CM7 High Efficiency Separator	U.S.
		D2 Finish Mill Conversion with High Efficiency Separator	U.S.
		D3 Finish Grind System Improvements	U.S.
		Lighting Program	U.S.
		New Vertical Roller Mill	U.S.
		Optimize AC Raw Mill Systems DISCONTUNED in 2001	U.S.
		Optimize Compressed Air System	U.S.
		PGNA Analyzer	U.S.
		Rimod 3000	U.S.
		Upgrade the D2 Raw Mill System DISCONTINUED	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
AT&T	1605	Electricity Use Reduction Program	U.S.
BARC Electric Cooperative	1605	Demand-Side Management Load Control Programs	U.S.
Blue Source, LLC	1605	Energy Conservation Management	U.S.
BMW US Holding Corp.	1605	BMW Landfill Gas Project	U.S.
Bountiful City Light & Power	1605	Residential compact fluorescent lighting program	U.S.
		Street lighting replacement	U.S.
BP America	1605	Crude production and exploration process improvements	U.S.
		Petroleum Refining and Chemicals process modifications	U.S.
Branson Ultrasonics Corporation	1605	Electrical Energy Consumption	U.S.
California Portland Cement Co. - Colton Plant	1605	Energy Conservation in Office, Lab, Garage and Shop Areas	U.S.
		Finish Mill System Optimization	U.S.
		Install New Gravity Blend Homogenizing Silo	U.S.
		Install New Raw Material Transport System	U.S.
		Kiln Systems Optimization	U.S.
		Optimize High Pressure Air System	U.S.
		Raw Grinding System Improvements	U.S.
		Reduce Plant Water Consumption	U.S.
California Portland Cement Co. - Mojave Plant	1605	New D3-1/FM6 Finish Mill System	U.S.
		Optimize the D3-1 Finish Mill System DISCONTINUED in 1996	U.S.
		Plant High Pressure Air System Improvements	U.S.
		Pyro System Optimization	U.S.
		Raw Mill Energy Efficiency Improvements	U.S.
Cinergy Corp.	1605	Commercial Audit/Incentive Program	U.S.
		Commercial Direct Lighting	U.S.
		Commercial/Industrial Adjustable Speed Drive Plan	U.S.
		Commercial/Industrial High Efficiency Motors Plan	U.S.
		Commercial/Industrial Lighting Rebate Program	U.S.
		Commercial/Industrial Peak Reduction Program	U.S.
		Green Lights Program	U.S.
		Home Energy House Call	U.S.
		Industrial Efficiency Improvement & Energy Awareness Program	U.S.
		Photovoltaic systems	U.S.
		Planergy	U.S.
		Residential Energy Efficient Lighting Program	U.S.
		Residential Seal-Up & Low-Income Efficiency Program	U.S.
		Residential Smart $aver & Heat Pump Savings Programs	U.S.
		Residential Wrap-Up Program	U.S.
		Thermal Energy (Cool) Storage Program	U.S.
City of Austin Electric Utility (Austin Energy)	1605EZ	Demand Side Management	U.S.
City of Edmond, Oklahoma, Electric Department	1605EZ	General Energy Use	U.S.
		High Efficiency Heat Pumps	U.S.
		Lighting and lighting control	U.S.
City of Palo Alto Utilities	1605EZ	Commercial Energy Efficiency Program	U.S.
		Palo Alto Green	U.S.
		Residential Energy Efficiency Program	U.S.
City Public Service	1605	Mow Down Smog	U.S.
		Streetlight Replacements	U.S.
		Wash Right Rebates	U.S.
CLE Resources	1605	Active Power	U.S.
		Electronic Lighting (OK Industries)	U.S.
		Industrial Devices Corporation (IDC)	U.S.
		Lightware	U.S.
		Revolve Technologies - Magnetic Bearings	U.S.
Conectiv Delmarva Generation	1605	Demand Side Management	U.S.
		DP&L Facility Energy Saving	U.S.
Constellation Energy	1605	Brandon Shores Station Auxiliary-Load Reductions	U.S.
		Demand Side Management Programs	U.S.
		Energy Star Buildings/Green Lights Program Participation	U.S.
DaimlerChrysler Corporation	1605	Facility Energy Reduction Projects	U.S.
		Powerhouse Conversion Projects	U.S.
DeBourgh Manufacturing Company	1605EZ	Electrical Mgmt. System	U.S.
		Make Up Air Unit	U.S.
DTE Energy/ Detroit Edison	1605	Energy Partnerships	U.S.
		Geothermal Projects	U.S.
Entergy Services, Inc.	1605	Energy Efficiency Programs at Entergy Gulf States, Inc.	U.S.
		Entergy Integrated Solutions, Inc. (Entergy SASI Lighting)	U.S.
		Tennessee Gas Compressor Replacement	U.S.
Exelon Corporation	1605	Low Income Usage Reduction Program - Solar hot water	U.S.
		Change the Light Change the World	U.S.
		Clothes Washer Rebate Program	U.S.
		Energy Cooperative & Demand Side Management Activities	U.S.
FirstEnergy Corporation	1605	Audit/Infiltration Single and Multi-Family	U.S.
		Compressed Air Solution	U.S.
		Efficient Lighting (Industrial and Commercial)	U.S.
		Efficient Lighting (Residential)	U.S.
		Efficient Motors	U.S.
		Energy Efficient Geothermal System	U.S.
		Energy Star	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
		Food Service Conservation	U.S.
		Good Cents New Home Program	U.S.
		GPU Service Lighting & Building Energy Efficiency Project	U.S.
		Heat Pump Maintenance Check	U.S.
		High Efficiency Heat Pump Rebates	U.S.
		Hot Water Conservation	U.S.
		Information Services - Green Computers	U.S.
		JCP&L DSM, Efficiency & Electrotechnology Program	U.S.
		Met-Ed Lighting & Building Energy Consumption Reduction Prog	U.S.
		Met-Ed/Penelec DSM, Efficiency & Electrotechnology Program	U.S.
		Refrigerator Recycling Program	U.S.
		Thermal Energy Storage - Cooling	U.S.
		Water Heater Efficiency Improvements	U.S.
		Water Heating - Conservation	U.S.
Ford Motor Company	1605	1998 - 2003 Performance Projects	U.S.
		1998 - 2003 Plant Energy Efficiency Programs	U.S.
		Process Upgrades	U.S.
General Motors Corporation	1605	1991-2003 GM Annual Energy Competition & Projects	U.S.
		1991-2003 Powerhouse Conversions	U.S.
		1993 - 1997 Mich. Demand Side Mgt and Energy Partner Program	U.S.
Golden Valley Electric Association, Inc	1605EZ	Energy Sense DSM Program	U.S.
Green Mountain Energy Company	1605	All Other GMEC Customers	U.S.
		GMEC energy purchases for corporate offices	U.S.
		Kinko's	U.S.
Hawaiian Electric Company, Inc.	1605	Commercial & Industrial Custom Rebate Program	U.S.
		Commercial & Industrial Energy Efficiency Program	U.S.
		Commercial & Industrial New Construction Program	U.S.
		Residential Eff. Water Heating Program (Existing Customers)	U.S.
		Residential Efficient Water Heating (New Construction)	U.S.
		Showerhead Distribution	U.S.
Hollomon Family	1605EZ	High Efficiency Air-Conditioner Replacement	U.S.
JEA	1605EZ	Variable Speed Fan Drives	U.S.
Johnson & Johnson	1605	Building Shell	U.S.
		Equipment & Appliances	U.S.
		Fuel Switching	U.S.
		HVAC	U.S.
		Installation of Energy Efficient Systems	U.S.
		Installation of Timer Controls and Shutdowns	U.S.
		Lighting & Lighting Controls	U.S.
		Load Control	U.S.
		Motor & Motor Drives	U.S.
		Process Improvements	U.S.
Kansas City Power & Light Company	1605	DSM - AC upgrade	U.S.
		EPA's Green Lights	U.S.
		Street Light Upgrade	U.S.
Lehigh Cement Co. (fmrly Lehigh Portland Cement Co	1605	Project 1: Plant Shutdown	U.S.
		Project 2: Waste Tire Burning	U.S.
		Project 3: Waste Tire Burning	U.S.
		Project 4: Plant Modernization	U.S.
		Project 5: Lighting retrofit	U.S.
		Project 6: Motor retrofit	U.S.
		Project 7. Waste Oil Burning	U.S.
		Project 8. Waste Tire Burning	U.S.
		Project 9: Kiln Modernization	U.S.
Lehigh Cement Co. (formerly Calaveras Cement Co.)	1605	Project 1. Plant Modernization	U.S.
		Project 2. Waste Tire & Rice Hull Burning	U.S.
Los Angeles Department of Water and Power	1605	Chiller Replacement / Efficiency Program	U.S.
		Commercial Lighting Program	U.S.
		Consumer Rebate Program	U.S.
		Cool Roofs Program	U.S.
		Cool Schools Urban Forestry - Energy Efficiency Effects	U.S.
		Energy Star Office Equipment	U.S.
		High Efficiency Clothes Washers	U.S.
		HVAC Replacement Program	U.S.
		HVAC Tune-up	U.S.
		JFB Lighting Retrofit	U.S.
		NBRS ("Neighborhood Bill Reduction Service") Program	U.S.
		Reflective Window Film Rebate Program	U.S.
		Refrigeration Tune-Up Program	U.S.
		Refrigerator Replacement Program	U.S.
		Trees For a Green LA Urban Forestry - Energy Efficiency	U.S.
		Water Conservation Program	U.S.
Lower Colorado River Authority	1605	Residential & Commercial DSM Program	U.S.
Lucent Technologies Inc.	1605	LRE #1	U.S.
		ME - #1	U.S.
		ME - #2	U.S.
		ME - #3	U.S.
		ME - #4	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
		ME - #5	U.S.
		ME - #6	U.S.
		ME - #7	U.S.
		ME - #8	U.S.
		OFS - #1	U.S.
		OFS - #2	U.S.
		OFS - #3	U.S.
		OFS - #4	U.S.
		OFS - Addition of VDFs	U.S.
		OFS - Eliminate fan	U.S.
		OFS - Light Switch	U.S.
		OFS - Light Timer	U.S.
		ONG - #1	U.S.
		ONG - #2	U.S.
		WNG - #1	U.S.
		WNG - #2	U.S.
		WNG - #3	U.S.
Mead Johnson Nutls./Bristol-Myers Squibb	1605	Coal-Fired Boilers Replaced with Nat Gas/Oil Fired Boilers	U.S.
		Compressed Air System Renovation & Leak Survey/Repair	U.S.
Minnesota Power	1605	Demand Side Mgmt., Conservation and Efficiency Improvements	U.S.
		Expanded Use of Renewable Biomass (wood waste)	U.S.
National Grid USA	1605	Demand-Side Management (DSM) Programs - New England	U.S.
		Energy Efficiency and Conservation Programs (DSM) - NY	U.S.
Nebraska Public Power District	1605EZ	Electric Heat Pump Program, 1998-2003	U.S.
Northern Neck Electric Cooperative	1605	Demand-Side Management Programs	U.S.
Northern Virginia Electric Cooperative	1605	Demand-side Management Load Control Programs	U.S.
Old Dominion Electric Cooperative	1605	Green Lights	U.S.
Omaha Public Power District	1605EZ	Commercial & Industrial Audits	U.S.
		Heat Pump Program (RECP)	U.S.
		Right Lights	U.S.
		Street Light Replacement	U.S.
PacifiCorp	1605	CFL Bulbs	U.S.
		Commercial Competitive Bid - EUA/Onsite	U.S.
		Competitive Bid - CES/Way	U.S.
		Energy FinAnswer	U.S.
		Energy FinAnswer Prescriptive	U.S.
		Energy FinAnswer Retrofit	U.S.
		H_PRO: High Efficiency Heat Pumps	U.S.
		Hassle-Free Program	U.S.
		Home Comfort	U.S.
		Industrial Energy FinAnswer	U.S.
		Irrigation FinAnswer Program	U.S.
		Low Income Weatherization and Conservation Programs	U.S.
		Major Accounts Program	U.S.
		Manufactured Housing Acquisition Program (MAP)	U.S.
		Northwest Energy Efficiency Alliance (NEEA)	U.S.
		PacifiCorp Facility DSM	U.S.
		Residential Competitive Bid - ECONS	U.S.
		Residential Weatherization Programs	U.S.
		Salt Lake City Urban Forestry Project	U.S.
		Showerhead Program	U.S.
		Small Commercial Retrofit	U.S.
		Super Efficiency Refrigerator Program (SERP)	U.S.
		Super Good Cents	U.S.
		Utah Water Smart Kits (Schedule 5)	U.S.
		Water Heater / Solar	U.S.
Pfizer Pharmaceuticals LLC - Arecibo Site	1605EZ	Independent Control System on Steam Header	U.S.
		Process Water Improvement	U.S.
		Replacement of Chilled Water Pumps	U.S.
		Ultrasonic Levels on Five Lift Stations	U.S.
PG&E Corporation	1605	Electrical Energy Conservation Savings	U.S.
		Natural Gas Energy Conservation Savings	U.S.
Platte River Power Authority & 4 Owner Cities	1605	Estes Park Streetlight Conversions	U.S.
		Fort Collins Building Codes	U.S.
		Fort Collins City Lighting Upgrades	U.S.
		Fort Collins Design Assistance	U.S.
		Fort Collins LED Traffic Lights	U.S.
		Fort Collins Zero Interest Loan for Conservation Help	U.S.
		Longmont Efficient Lighting Projects	U.S.
		Longmont LED Traffic Lights	U.S.
		Loveland Area Lighting Project	U.S.
		Loveland Thrifty Light Project	U.S.
		Platte River Cooling Rebate Program	U.S.
		Platte River Electric Efficiency Program	U.S.
Portland General Electric Co.	1605	Demand-Side Management Projects	U.S.
		Energy Management Systems	U.S.
		Gas Lawnmower Turn In Rebate	U.S.
		Green Lights Programs	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
		Heat Pump Rebate	U.S.
		Photoelectric Streetlight Controls	U.S.
Public Service Enterprise Group	1605	Demand Side Management	U.S.
Public Utility District No. 1 of Snohomish County	1605	Demand Side Management	U.S.
Rappahannock Electric Cooperative	1605	Demand-Side Management Load Control Programs	U.S.
Rolls-Royce Corporation	1605	Boiler Conversion from Coal to Landfill/Natural Gas	U.S.
		Peak Saving Project	U.S.
Sacramento Municipal Utility District	1605	Energy Efficiency Programs	U.S.
Salt River Project	1605EZ	Cesar Chavez HS Photovoltaic System	U.S.
		Home with PV System for Demonstration (Chandler House)	U.S.
		Phoenix Park and Ride PV System	U.S.
		Replace Gasoline Lawnmowers with Electric Lawnmowers	U.S.
		Scottsdale CC PV System	U.S.
		South Mountain CC Solar	U.S.
Santee Cooper	1605	Demand Side Management Programs	U.S.
Seattle City Light	1605	Built Smart/Long-Term Super Good Cents Program	U.S.
		Energy $avings Plan	U.S.
		Energy Efficient Water Heater Rebate Program	U.S.
		Energy Smart Design	U.S.
		Energy Smart Services	U.S.
		Home Water Savers Program	U.S.
		Low-Income Electric Program	U.S.
		Multifamily Common Area Lighting Program	U.S.
		Multifamily Conservation Program: Low-Income	U.S.
		Multifamily Conservation Program: Standard-Income	U.S.
		Neighborhood Power Lighting,Weatherization,Warm Home Program	U.S.
		Retail-Wise Lighting and Appliances	U.S.
		Smart Business Rebates	U.S.
Seminole Electric Cooperative, Inc.	1605EZ	Lighting Replacement	U.S.
Shenandoah Valley Electric Cooperative	1605	Demand-Side Management Load Control Programs	U.S.
Sikorsky Aircraft Corporation	1605	Air Conditioning efficiency improvements	U.S.
		Composite trim Dust Collector Improvement.	U.S.
		Compressed Air Energy Efficiency Improvements	U.S.
		Lighting Efficiency Improvements	U.S.
		Process improvement - Vacuum Pump Consolidation	U.S.
South Carolina Electric & Gas Company	1605	Demand Side Management Technologies	U.S.
Southern California Edison Co.	1605	Demand Side Management	U.S.
		ENVEST SCE	U.S.
		Internal Combustion Engine Replacement Program	U.S.
Southern Company	1605	Demand-Side Management	U.S.
Springs Industries, Inc.	1605EZ	Compressed Air System Optimization	U.S.
		HVAC Economizer Optimization	U.S.
		Lighting Retrofit	U.S.
Steuben Rural Electric Co-op	1605EZ	1994 Water Heater Control Program	U.S.
		1995 Water Heater Control Program	U.S.
		1996 Farm Energy Efficiency	U.S.
		1996 Water Heater Control Program	U.S.
		1997 Farm Energy Efficiency	U.S.
		1997 Water Heater Control Program	U.S.
Tacoma Power	1605EZ	Energy Conservation	U.S.
Tennessee Valley Authority	1605	Comfort Plus Homes	U.S.
		Outdoor Lighting Replacements By Memphis Light, Gas and Wate	U.S.
		Residential Marketing Program	U.S.
The Estee Lauder Companies	1605	1381 Research Park Lighting Control Sensors	U.S.
		1392 Octron Lighting JHL	U.S.
		1522 Melville Occupancy Sensors Offices	U.S.
		1569 Melville Motor Upgrades	U.S.
		187 Melville Manufacturing Octron Lighting	U.S.
		209 Oakland Octron Lighting Upgrade	U.S.
		229 Trevose Octron Lighting Project	U.S.
		284 Melville Energy Conservation	U.S.
		3597c Bristol Energy Conservation Project	U.S.
		3643 Oakland Warehouse Sensor Installation	U.S.
		459 Whitman 3 Octron Lighting	U.S.
		Aveda Air to Air Heat Exchangers	U.S.
		Aveda Boiler and Burner Replacement	U.S.
		Aveda Cooling Tower Core Water Savings	U.S.
		Aveda Heatex Unit Compounding Line Air to Air Heat Recovery	U.S.
		Aveda Metal Halide Upgrades	U.S.
		Aveda Night Setback for Exhaust Fans	U.S.
		Aveda Night Setback for make-up air heat pumps	U.S.
		Aveda Octron Lighting Upgrades 1994 - 1999	U.S.
		Aveda Solar Wall	U.S.
		Aveda Venmar Unit Pre-Weigh VAV heat exchanger	U.S.
		Aveda White Roof Upgrade	U.S.
		Melville DC - Octron Lighting Project	U.S.
		Melville Steam Trap System Survey and Remediation	U.S.
		Research Park Octron Lighting Project	U.S.
		Whitman 4 Octron Lighting Project	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
Tucson Electric Power Company	1605	Commercial DSM Programs	U.S.
		Residential DSM Programs	U.S.
TXU	1605	Demand-Side Management Program	U.S.
Vermont Public Power Supply Authority	1605	Act 250 New Construction Program	U.S.
		Equipment Replacement and Remodeling Program	U.S.
		Farm Efficiency Program	U.S.
		Large Commercial and Industrial Audit Program	U.S.
		Residential Appliance Disposal Program	U.S.
		Residential Low Income Weatherization Piggyback Program	U.S.
		Residential Mail Order Lighting Program	U.S.
		Residential Top Ten	U.S.
		Residential Water Heating and Lighting Efficiency Program	U.S.
		Small Commercial Retrofit Program	U.S.
		Street and Area Lighting Efficiency Program	U.S.
Waverly Light & Power Company	1605	Energy End-Use Programs (Project 3.1)	U.S.
		Energy Savings Due to Trees Forever (Project 3.3)	U.S.
		High-Pressure Sodium Lights (Project 3.2)	U.S.
We Energies	1605	Demand-side management energy efficiency programs	U.S.
Wisconsin Public Power Inc.	1605EZ	Appliance & Weatherization Rebates (outside of Energy Star P	U.S.
		Appliance Turn-In Reward	U.S.
		Central AC Tune-Up Discount	U.S.
		Conservation Product Giveaways (11 - 30 W CFLs)	U.S.
		Conservation Product Giveaways (Miscellaneous)	U.S.
		Conservation Product Giveaways (Torchiere)	U.S.
		Efficiency Improvement Incentive Program	U.S.
		Efficient Heating & Cooling Initiative	U.S.
		Energy Star Bulb Giveaway (15, 20, & 23 w)	U.S.
		Energy Star Homes	U.S.
		Energy Star Partners (CFLS)	U.S.
		Energy Star Partners (Clothes Washers)	U.S.
		Energy Star Partners (Dehumidifiers)	U.S.
		Energy Star Partners (Dishwashers)	U.S.
		Energy Star Partners (Fixtures)	U.S.
		Energy Star Partners (Halogen Torchiere Turn-in)	U.S.
		Energy Star Partners (Refrigerators)	U.S.
		Energy Star Partners (Room Air Conditioners)	U.S.
		Energy Star Partners (Torchieres)	U.S.
		Geothermal Heat Pump Incentive	U.S.
		Home Energy Check-Up (20 - 40 w CFL)	U.S.
		Home Energy Check-Up (Miscellaneous)	U.S.
		Home Energy Check-Up (Torchiere)	U.S.
		LED Exit Signs	U.S.
		Refrigerator Replacement - Low Income	U.S.
		VendingMiser Installations	U.S.
Wyeth Vaccines	1605EZ	Boiler Replacement	U.S.
Xcel Energy	1605	Demand Side Management - Xcel Energy (SPS)	U.S.
		Demand side management (electric)--NSP	U.S.
		Demand Side Management (electric)--PSCo	U.S.
		Green Lights	U.S.
Transportation and Off-Road Vehicles			
Allegheny Energy, Inc.	1605	Carryall Vehicle Program	U.S.
Ameren Corporation (formerly UE, CIPS, and CILCO)	1605	Carpooling	U.S.
		Purchase of Light Weight Rail Cars	U.S.
Arizona Electric Power Cooperative, Inc.	1605EZ	Carpool	U.S.
Arizona Portland Cement Co.	1605	100 Ton Haul Trucks	U.S.
AT&T	1605	Fleet Cost Reduction Program	U.S.
		Telecommuting	U.S.
Blue Source, LLC	1605	Empty Mile Reduction Project	U.S.
		Idling Reduction Bonus Program Project	U.S.
		Intermodal Transport Project	U.S.
Cinergy Corp.	1605	Fleet Alternative Fuels	U.S.
City Utilities of Springfield	1605	Natural Gas Fleet	U.S.
CLE Resources	1605	Cycloid	U.S.
		McHugh Software	U.S.
		McHugh Software - Foreign	Foreign
Conectiv Atlantic Generation (CAG)	1605	Employee Telecommuting	U.S.
		Employee Van Pooling	U.S.
Conectiv Delmarva Generation	1605	CNG Vehicles	U.S.
		Mass Transit to DC	U.S.
		Soy Vehicles	U.S.
Consolidated Edison Company of New York, Inc.	1605	Alternative Fuel Vehicles - Bio diesel	U.S.
		Alternative Fuel Vehicles - CNG	U.S.
Constellation Energy	1605	Alternatively Fueled Vehicles	U.S.
		Employee Commute Options	U.S.
DTE Energy/ Detroit Edison	1605	Electric Vehicle Demonstration Project	U.S.
Entergy Services, Inc.	1605	Natural Gas Vehicle Program	U.S.
Exelon Corporation	1605	Alternative Fuel Vehicles - ComEd Fleet	U.S.
		Operation of CNG Vehicles - PECO Fleet	U.S.
FirstEnergy Corporation	1605	Electric Vehicles and Employee Trip Reduction Program	U.S.
		Video-Conferencing	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
JEA	1605EZ	Biodiesel in vehicles	U.S.
Kansas City Power & Light Company	1605	Aluminum Coal Cars	U.S.
Los Angeles Department of Water and Power	1605	Electric Vehicles	U.S.
		LADWP Rideshare Program	U.S.
National Grid USA	1605	Alternative Fuel Vehicles	U.S.
		Carpool	U.S.
		Electric Vehicles	U.S.
Nebraska Public Power District	1605EZ	Video Conferencing	U.S.
NiSource/NIPSCO	1605	Electric Vehicles	U.S.
		Employee Commute Options	U.S.
		Natural Gas Vehicles	U.S.
PG&E Corporation	1605	Electric Vehicles	U.S.
		Natural Gas Vehicles	U.S.
Platte River Power Authority & 4 Owner Cities	1605	Fort Collins Transportation Demand Management	U.S.
Portland General Electric Co.	1605	Electric Fleet Vehicles	U.S.
		Hunt Turtle Technology	U.S.
		Natural Gas Fleet Vehicles	U.S.
Public Service Company of New Mexico	1605	CNG Vehicles	U.S.
Public Service Enterprise Group	1605	Employee Trip Reduction	U.S.
Public Utility District No. 1 of Snohomish County	1605	Battery and Solar Powered Boat Races	U.S.
		Bicycles for Meter Readers	U.S.
		Commute Reduction Program	U.S.
		Electric Car Race	U.S.
Sacramento Municipal Utility District	1605	Employee Commute Program	U.S.
		Meter Reading - Bicycles	U.S.
		Ride Electric	U.S.
Salt River Project	1605EZ	Alternate Work Week Schedule	U.S.
		Bike/Bus/Walk	U.S.
		Carpooling/Vapooling	U.S.
		Electric Vehicles Demonstration and Business Use	U.S.
		Telecommuting	U.S.
Southern California Edison Co.	1605	Electric Vehicle Program	U.S.
Southern Company	1605	Carpooling and Mass Transit	U.S.
		Transportation Research	U.S.
Tacoma Power	1605EZ	Alternative Transportation	U.S.
Tennessee Valley Authority	1605	Alternate Fuel Vehicles	U.S.
		Transportation Fleet Fuel Efficiency Improvement	U.S.
The Burlington Northern and Santa Fe Railway Co	1605	Locomotive GHG reduction	U.S.
Tucson Electric Power Company	1605	Travel Reduction Program	U.S.
TXU	1605	Alternative Fuel Vehicle Program	U.S.
		Employee Bus Pass Program	U.S.
		Employee Carpool Program	U.S.
		Vehicle Use Reductions	U.S.
Waverly Light & Power Company	1605	Electric Vehicle (Project 4.1)	U.S.
We Energies	1605	Vehicle conversion to dual fuel capability	U.S.
Wyeth Vaccines	1605EZ	Commuter reduction	U.S.
Waste Treatment and Disposal--Methane			
Ameren Corporation (formerly UE, CIPS, and CILCO)	1605	CILCO Landfill Gas Purchase	U.S.
		Milam Landfill Methane Recovery	U.S.
Asheville Landfill Gas, LLC	1605	Buncombe County Landfill	U.S.
Blue Source, LLC	1605	Methane Capture and Flare at Wastewater Treatment Facilities	U.S.
Burlington County Board of Chosen Freeholders	1605	Demonstration Greenhouse Boiler (Gas to Heat Conversion)	U.S.
		Landfill Gas Flaring	U.S.
Catawba Landfill Gas, LLC	1605	Blackburn Landfill	U.S.
Cinergy Corp.	1605	Danville, IN Electric Generation	U.S.
		Rumpke Landfill Gas Recovery	U.S.
City of Austin Electric Utility (Austin Energy)	1605EZ	Landfill Gas Generation	U.S.
City of Springfield	1605	Springfield Sanitary Landfill	U.S.
CommonWealth Bethlehem Energy, LLC	1605	North Country Landfill Gas Utilization Facility	U.S.
Conectiv Delmarva Generation	1605	Edge Moor Landfill Gas Use	U.S.
County Sanitation Districts of Los Angeles County	1605	Solid Waste Management	U.S.
		Wastewater Treatment Plants	U.S.
DADS Landfill	1605	Landfill Methane Flaring	U.S.
DeBourgh Manufacturing Company	1605EZ	Powder Reclaimers	U.S.
Delaware Solid Waste Authority	1605	Central Solid Waste Management Center (CSWMC)	U.S.
		Cherry Island Landfill (CIL)	U.S.
		Pigeon Point Landfill (PPLF)	U.S.
		Southern Solid Waste Management Center (SSWMC)	U.S.
DTE Energy/ Detroit Edison	1605	Landfill Energy Purchases, non-DTE Projects	U.S.
		Landfill Gas Recovery Projects	U.S.
		LFG Recovery & Energy Gen - DTE Proj outside Service Area	U.S.
		LFG Recovery & Energy Gen - DTE Projects in Service Area	U.S.
Duke Energy Corporation	1605	White Street Landfill Gas Recovery Project	U.S.
Exelon Corporation	1605	Fairless Hills LFG to Energy Operation	U.S.
		Landfill Gas Power Purchases	U.S.
		Pennsbury LFG to Energy Operation	U.S.
FirstEnergy Corporation	1605	Corry	U.S.
		Hamm's Landfill NUG	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
		Lake View Landfill	U.S.
		Manchester Renewable	U.S.
		Modern Landfill NUG	U.S.
		Monmouth County Reclamation Center NUG	U.S.
FPL Group	1605	Aroostook Valley Electric Company	U.S.
		Montenay Power Plant	U.S.
		Multitrade Power Plant	U.S.
Gas Recovery Systems	1605	Arbor Hills Electric	U.S.
		C&C Electric	U.S.
		Charlotte Motor Speedway	U.S.
		Chicopee Electric	U.S.
		East Bridgewater	U.S.
		Fall River	U.S.
		GRS American Canyon Landfill	U.S.
		GRS Coyote Canyon	U.S.
		Guadalupe	U.S.
		Halifax	U.S.
		Kapaa	U.S.
		LGP Orange County, New York	U.S.
		Lyon Electric	U.S.
		Mallard Lake	U.S.
		Menlo Park	U.S.
		Newby Island 3	U.S.
		Newby Island Landfill	U.S.
		Pine Bend	U.S.
		Quad Cities Electric	U.S.
		Randolph	U.S.
		Richmond Electric	U.S.
		Rockford Electric	U.S.
		Sacramento	U.S.
		San Marcos	U.S.
		Santa Cruz	U.S.
		South Barrington	U.S.
		Sunset Farms	U.S.
		Sycamore	U.S.
		Vienna Junction	U.S.
Granger Electric Company	1605	Brent Run Landfill Generating Station	U.S.
		Grand Blanc Landfill Generating Station	U.S.
		Granger #1 Generating Station - Wood Road Landfill	U.S.
		Granger #2 Generating Station - Grand River Avenue Landfill	U.S.
		Granger MotorWheel Facility	U.S.
		Ottawa County Farms Landfill Generating Station	U.S.
		Seymour Road Landfill Generating Station	U.S.
Granger Energy, LLC	1605	Indianapolis/South Side Landfill Gas Project	U.S.
		Lake County Landfill Gas Project	U.S.
Greater New Bedford Regional Refuse Mgt District	1605	Crapo Hill Landfill Gas Control Project	U.S.
Integrated Waste Services Association	1605	Waste-to-Energy - Waste Diversion	U.S.
Iredell Landfill Gas, LLC	1605	Iredell County Landfil	U.S.
Klickitat County Public Utility District No. 1	1605	H.W. Hill Landfill Gas Power Plant	U.S.
Landfill Energy Systems	1605	Adrian	U.S.
		Ann Arbor	U.S.
		Carleton Farms	U.S.
		I-95 Phase I	U.S.
		I-95 Phase II	U.S.
		MRPC	U.S.
		MRPC Flare	U.S.
		Pine Tree	U.S.
		Riverview	U.S.
		Salem	U.S.
		Salem Flare	U.S.
		Sumpter	U.S.
		Sunshine Canyon	U.S.
		Wichita	U.S.
LFG Energy, Inc.	1605	LFG Energy - Phases I & II	U.S.
		LFG Energy Upgrade Facility	U.S.
Los Angeles Department of Water and Power	1605	Lopez Canyon Microturbines - Landfill Gas-to-Energy Project	U.S.
		Scattergood - Digester Gas Displacement of Natural Gas	U.S.
Lucent Technologies Inc.	1605	WNG - #4	U.S.
Lynchburg Gas Producers, LLC	1605	Lynchburg Landfill	U.S.
Michigan CAT	1605	Lower Potomac	U.S.
		Sacramento	U.S.
Middlesex Generating Company, LLC	1605	MCUA Landfill Gas Utilization Project - Edison Landfill	U.S.
		MCUA Landfill Gas Utilization Project - ILR Landfill	U.S.
		MCUA Landfill Gas Utilization Project - MCUA Landfill	U.S.
Minnesota Resource Recovery Association (MRRA)	1605EZ	MSW Incineration	U.S.
Model City Energy, LLC	1605	Model City Energy Facility	U.S.
Montauk Energy Capital	1605	Attleboro (MASS Energy, LLC)	U.S.
		Bowerman Landfill Gas Recovery Plant	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
		Chautauqua (COP, LLC)	U.S.
		Colebrookdale (COP, LLC)	U.S.
		Dade County (Monteco)	U.S.
		Davis Street Landfill Gas Recovery Plant	U.S.
		Edison (COP, LLC)	U.S.
		El Dorado (COP, LLC)	U.S.
		Fresh Kills Landfill Gas Recovery Plant	U.S.
		Glacier Ridge (Glacier Ridge LFG, LLC)	U.S.
		ILR (COP, LLC)	U.S.
		Kearny Landfill Gas Recovery Plant	U.S.
		McCarty Road Landfill Gas Recovery Plant	U.S.
		McCommas Bluff (Monteco)	U.S.
		MCUA (COP, LLC)	U.S.
		Monmouth Landfill Gas Recovery Plant	U.S.
		Mountaingate Landfill Gas Recovery Plant	U.S.
		Nelson Gardens (Monteco)	U.S.
		North Country (CRMC Bethlehem, LLC)	U.S.
		Oaks (COP, LLC)	U.S.
		Olinda Landfill Gas Recovery Plant	U.S.
		Pigeon Point LFG, Inc (COP, LLC)	U.S.
		Roosevelt (Roosevelt Landfill Gas Recovery, LLC)	U.S.
		Rosenberg (Monteco)	U.S.
		Rumpke Landfill Gas Recovery Plant	U.S.
		Virginia Beach (VB LFG, LLC)	U.S.
		Zion (Zion LFG, LLC)	U.S.
National By-Products Inc	1605	Landfill gas-boiler fuel	U.S.
Natural Power, Inc.	1605	Wilder's Grove Landfill Gas Project	U.S.
NC Muni Landfill Gas Partners, LLC	1605	Henderson County Landfill	U.S.
NEGT	1605	Barre Landfill Gas to Electricity Project	U.S.
		Johnston Landfill Gas to Electricity Project	U.S.
		Millennium Power Partners	U.S.
		Nashua Landfill Gas To Electricity Project	U.S.
		Turnkey Landfill Gas to Electricity Project	U.S.
NEO Corporation	1605	Acme Landfill Gas Utilization Project	U.S.
		Albany Landfill Gas Utilization Project	U.S.
		Balefill Landfill Gas Utilization Project	U.S.
		Bordeaux Landfill Gas Utilization Project	U.S.
		Corona Landfill Gas Utilization Project	U.S.
		Cuyahoga Landfill Gas Utilization Project	U.S.
		Denver Landfill Gas Utilization Project	U.S.
		Edgeboro Landfill Gas Utilization Project	U.S.
		Fitchburg Landfill Gas Utilization Project	U.S.
		Flying Cloud Landfill Gas Utilization Project	U.S.
		Fort Smith Landfill Gas Utilization Project	U.S.
		Four Hills Landfill Gas Utilization Project	U.S.
		Hartford Landfill Gas Utilization Project	U.S.
		Kingsland Landfill Gas Utilization Project	U.S.
		Kraemer Landfill Gas Utilization Project	U.S.
		Lopez Landfill Gas Utilization Project	U.S.
		Lowell Landfill Gas Utilization Project	U.S.
		Mazzaro Landfill Gas Utilization Project	U.S.
		Phoenix Landfill Gas Utilization Project	U.S.
		Prima Deshecha Landfill Gas Utilization Project	U.S.
		Prince William Landfill Gas Utilization Project	U.S.
		Riverside Landfill Gas Utilization Project	U.S.
		San Bernadino Landfill Gas Utilization Project	U.S.
		San Diego Landfill Gas Utilization Project	U.S.
		SKB Landfill Gas Utilization Project	U.S.
		Spokane Landfill Gas Utilization Project	U.S.
		Tacoma Landfill Gas Utilization Project	U.S.
		Tajiguas Landfill Gas Utilization Project	U.S.
		Taunton Landfill Gas Utilization Project	U.S.
		Visalia Landfill Gas Utilization Project	U.S.
		Volusia Landfill Gas Utilization Project	U.S.
		West Covina Landfill Gas Utilization Project	U.S.
		Woodville Landfill Gas Utilization Project	U.S.
		Yolo Landfill Gas Utilization Project	U.S.
New Jersey Meadowlands Commission	1605	Kingsland Landfill	U.S.
		MSLA 1-D Landfill	U.S.
		NJMC 1-A Landfill	U.S.
		NJMC 1-C Landfill	U.S.
		NJMC Balefill	U.S.
Newton Landfill Gas, LLC	1605	Newton Landfill	U.S.
		Landfill Methane Recovery - Deercroft	U.S.
		Landfill Methane Recovery - Wheeler	U.S.
		Landfill Methane Recovery-Prairie View	U.S.
Ocean County Landfill Corporation	1605	Flare Control of Landfill Gas	U.S.
		Supplying Landfill Gas for Energy Recovery	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
Palmer Capital Corporation	1605	Brookhaven Landfill Gas Limited Partnership	U.S.
		Central Gas Limited Partnership	U.S.
		Janes LFG Corporation	U.S.
		Lancaster Landfill Gas Corporation	U.S.
		Lebanon Landfill Gas Corporation	U.S.
		LKD Los Angeles L.P.	U.S.
		Portland LFG Joint Venture	U.S.
		Raleigh Landfill Gas Corporation	U.S.
		Scholl Canyon LFG Limited Partnership	U.S.
		Sun LFG Corporation	U.S.
Pitt Landfill Gas, LLC	1605	Pitt County Landfill	U.S.
Platte River Power Authority & 4 Owner Cities	1605	Fort Collins Wastewater Methane Flare	U.S.
		Longmont Wastewater Plant Waste Gas Flare	U.S.
		Loveland Digester Gas Production and Use	U.S.
Public Service Enterprise Group	1605	Municipal Solid Waste Generators	U.S.
Rolls-Royce Corporation	1605	Use of Landfill Gas	U.S.
Salt River Project	1605EZ	Landfill Gas Flaring (CH4 Avoided)	U.S.
		Landfill Gas Flaring (CO2 Increase)	U.S.
		Tri-Cities Landfill Gas Generation Facility	U.S.
Santee Cooper	1605	Santee Cooper - Horry County Landfill Site	U.S.
Seneca Energy II, LLC	1605	Seneca Energy - Stage I	U.S.
		Seneca Energy - Stage II	U.S.
Tennessee Valley Authority	1605	Landfill Methane Recovery and Power Generation	U.S.
TXU	1605	Landfill Methane	U.S.
US Energy Biogas Corp.	1605EZ	122nd Street	U.S.
		Amity	U.S.
		Barre	U.S.
		Brickyard	U.S.
		Brickyard Flare	U.S.
		Brookhaven	U.S.
		Burlington	U.S.
		Cape May Flare	U.S.
		Cape May School	U.S.
		Countryside	U.S.
		Countryside Flare	U.S.
		Dixon	U.S.
		Dolton	U.S.
		Dolton Flare	U.S.
		Garland Flare	U.S.
		Hamm/Sussex	U.S.
		Manchester	U.S.
		Manchester Flare	U.S.
		Morris	U.S.
		Morris Flare	U.S.
		Oceanside	U.S.
		Onondaga	U.S.
		Romeoville	U.S.
		Romeoville Flare	U.S.
		Roxanna	U.S.
		Smithtown	U.S.
		Smithtown Flare	U.S.
		SPSA	U.S.
		SPSA Flare	U.S.
		SPSA/CIBA	U.S.
		Streator	U.S.
		Streator Flare	U.S.
		Tucson	U.S.
		Tucson Flare	U.S.
		Upper Rock	U.S.
		Upper Rock Flare	U.S.
Waste Management, Inc.	1605	Akron (Hardy Road) MSW Landfill - 1367	U.S.
		Akron (Hazel Street) MSW Landfill	U.S.
		Alliance MSW Landfill - 154	U.S.
		Altamont (Flare) MSW Landfill - 2554	U.S.
		Altamont (Power) MSW Landfill - 2554	U.S.
		Amelia MSW Landfill - 41	U.S.
		American MSW Landfill - 136	U.S.
		Arden MSW Landfill - 70	U.S.
		Atascocita MSW Landfill - 2158	U.S.
		Atlantic Waste Disposal MSW Landfill - 858	U.S.
		Austin Community MSW Landfill - 2162	U.S.
		Autumn Hills RDF	U.S.
		Baytown MSW Landfill - 1129	U.S.
		Bethel MSW Landfill - 1306	U.S.
		BJ (flare) MSW Landfill	U.S.
		BJ (Power) MSW Landfill	U.S.
		Bluebonnet MSW Landfill - 1074	U.S.
		Bolton Road/SSL MSW Landfill - 76	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
		Boundary Road MSW Landfill	U.S.
		Bradley MSW Landfill - 2502	U.S.
		Bradley MSW Landfill (Power) - 2502	U.S.
		Brookfield Sanitary Landfill	U.S.
		Burnsville Sanitary MSW Landfill - 291	U.S.
		Butterfield MSW Landfill - 2384	U.S.
		Button Gwinnett MSW Landfill	U.S.
		Cedar Ridge Landfill - 1304	U.S.
		Central Disposal Landfill - 496	U.S.
		Central Sanitary Landfill (Flare)	U.S.
		Central Sanitary Landfill (Power)	U.S.
		Cereal City MSW Landfill	U.S.
		Chaffee	U.S.
		Chain of Rocks MSW Landfill - 2450	U.S.
		Charles City - 42	U.S.
		Chastang MSW Landfill - 1143	U.S.
		Chesser Island Landfill	U.S.
		Chestnut Ridge (Flare) MSW Landfill-2115	U.S.
		Chestnut Ridge (Power) MSW Landfill - 2115	U.S.
		Chicopee MSW Landfill - 444	U.S.
		CID Areas 1, 2 and 3 (Flare)	U.S.
		CID Areas 1, 2 and 3 (Power) MSW Landfill - 2030	U.S.
		Cinnaminson MSW Landfill	U.S.
		City Sand MSW Landfill	U.S.
		Coastal Plains MSW Landfill - 1073	U.S.
		Columbia Ridge MSW Landfill - 2588	U.S.
		Comal County Landfill	U.S.
		Conroe 6 MSW Landfill - 0127	U.S.
		Countryside MSW Landfill - 6	U.S.
		Covel Gardens MSW Landfill - 2177	U.S.
		Crossroads	U.S.
		Cuyahoga MSW Landfill - 216	U.S.
		Dads Landfill	U.S.
		Dauphin Meadows MSW Landfill - 63	U.S.
		Deer Track Park MSW Landfill - 1704	U.S.
		Deercroft (flare) MSW Landfill - 318	U.S.
		Deercroft (Power) MSW Landfill - 318	U.S.
		DeKalb County RDF MSW Landfill - 2269	U.S.
		Des Moines MSW Landfill - 2066	U.S.
		DFW (Flare) MSW Landfill	U.S.
		DFW (Power) MSW Landfill - 399	U.S.
		Douglas County MSW Landfil - 2809	U.S.
		DRPI Landfill - 1307	U.S.
		Eagle Valley RDF MSW Landfill - 2336	U.S.
		Earthmovers MSW Landfill - 17	U.S.
		East Oak MSW Landfill	U.S.
		East Side	U.S.
		El Sobrante MSW Landfill - 0166	U.S.
		ELDA RDF Landfill	U.S.
		Elizabethtown MSW Landfill	U.S.
		Elk River MSW Landfill - 1706	U.S.
		Envirofil of III MSW Landfill - 53	U.S.
		Evergreen MSW Landfill	U.S.
		Evergreen MSW Landfill - 1314	U.S.
		Fitchburg MSW Landfill - 439	U.S.
		Five Oaks RDF MSW Landfill - 2271	U.S.
		Geneva	U.S.
		Granby (Holyoke) MSW Landfill - 445	U.S.
		Grand Central MSW Landfill - 204	U.S.
		Greene Valley (Flare) MSW Landfill	U.S.
		Greene Valley (Power) MSW Landfill	U.S.
		GROWS MSW Landfill - 2382	U.S.
		Guadalupe MSW Landfill - 1543	U.S.
		Gulf Coast Landfill (Flare)	U.S.
		Hastings MSW Landfill - 1749	U.S.
		High Acres (Flare)	U.S.
		High Acres (Power) MSW Landfill - 2277	U.S.
		Hillsboro MSW Landfill -1515	U.S.
		Hillside Landfill	U.S.
		HOD Landfill	U.S.
		Hunt Road MSW Landfill	U.S.
		Iris Glen MSW Landfill - 2570	U.S.
		Jay County MSW Landfill - 228	U.S.
		John Smith MSW Landfill - 0293	U.S.
		Kankakee (Flare)	U.S.
		Kankakee (Power) MSW Landfill - 2319	U.S.
		Kelly Run MSW Landfill - 841	U.S.
		Kennewick/Wenatchee MSW Landfill - 1048	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
		King George County MSW Landfill - 1323	U.S.
		Kirby Canyon MSW Landfill - 1046	U.S.
		Lake (Flare) MSW Landfill	U.S.
		Lake (Power) MSW Landfill	U.S.
		Lake County MSW Landfill	U.S.
		Lake View (Power) MSW Landfill - 2387	U.S.
		Lake View MSW Landfill (Flare) - 2387	U.S.
		Lancaster MSW Landfill - 2508	U.S.
		Land & Development (L&D) Company (Power)	U.S.
		Land and Development (L&D) Company (Flare)	U.S.
		Laraway	U.S.
		Laurel Highlands MSW Landfill - 65	U.S.
		Laurel Ridge Landfill (Flare/Sold)	U.S.
		LCS Services	U.S.
		Liberty MSW Landfill - 22	U.S.
		Live Oak MSW Landfill - 2138	U.S.
		Magnolia MSW Landfill - 151	U.S.
		Mahoning Landfill	U.S.
		Martone (Barre) MSW Landfill - 1760	U.S.
		Medley Landfill & Recycling Center (Flare)	U.S.
		Metro MSW Landfill-2742	U.S.
		MIddle Pennisula MSW Landfill - 2497	U.S.
		Milam MSW Landfill (Flare) 2056	U.S.
		Milam MSW Landfill (Power) - 2056	U.S.
		Mill Seat Landfill	U.S.
		Mohawk Valley MSW Landfill - 2167	U.S.
		Monroe-Livingston (flare) MSW Landfill - 2403	U.S.
		Monroe-Livingston (Power) MSW Landfill - 2403	U.S.
		Monroeville MSW Landfill - 69	U.S.
		Mountain View MSW Landfill - 2086	U.S.
		Naples Sanitary Landfill	U.S.
		New Boston	U.S.
		New Milford (flare) MSW Landfill	U.S.
		New Milford (Power) MSW Landfill	U.S.
		Northern Oaks Landfill - 2867	U.S.
		Northwest MSW Landfill - 2636	U.S.
		Oak Ridge RDF MSW Landfill - 319	U.S.
		Oakridge MSW Landfill - 49	U.S.
		Okeechobee MSW Landfill - 46	U.S.
		Olympic View MSW Landfill - 0030	U.S.
		Orchard Ridge/Omega Hills/ Parkview MSW Landfill - 2286	U.S.
		Outer Loop MSW Landfill - 2482	U.S.
		Oyster Bay Regional Park Landfill	U.S.
		Palmetto MSW Landfill - 2106	U.S.
		Paris - 1562	U.S.
		Parklands MSW Landfill	U.S.
		Pecan Grove MSW Landfill - 2135	U.S.
		Peoples MSW Landfill - 1736	U.S.
		Pheasant Run (flare) MSW Landfill - 2290	U.S.
		Pheasant Run (Power) MSW Landfill - 2290	U.S.
		Piedmont MSW Landfill - 2120	U.S.
		Pine Bluff MSW Landfill - 1308	U.S.
		Pine Grove MSW Landfill - 835	U.S.
		Pine Tree Acres MSW Landfill - 1733	U.S.
		Pinnacle Road MSW Landfill	U.S.
		Pottstown MSW Landfill (Flare) - 2393	U.S.
		Pottstown MSW Landfill (Power) - 2393	U.S.
		Powell Road MSW Landfill	U.S.
		Prairie View (flare) MSW Landfill - 316	U.S.
		Prairie View (Power) MSW Landfill - 316	U.S.
		Prarie Bluff Landfill - 2513	U.S.
		Quail Hollow MSW Landfill - 1305	U.S.
		Quarry MSW Landfill - 2185	U.S.
		R & B Landfill (Flare)	U.S.
		Redwood MSW Landfill - 1507	U.S.
		Richland MSW Landfill - 82	U.S.
		Ridgeview (Flare) MSW Landfill - 2289	U.S.
		Ridgeview (Power) MSW Landfill	U.S.
		Riverbend MSW Landfill - 1509	U.S.
		Rolling Hills MSW Landfill	U.S.
		Rolling Meadows RDF MSW Landfill - 2040	U.S.
		Rumble Landfill 1	U.S.
		Rumble Landfill 2	U.S.
		Salem - 2573	U.S.
		Sandy Hill	U.S.
		Security MSW Landfill - 1017	U.S.
		Serif Road MSW Landfill	U.S.
		Settler's Hill (Flare) Landfill - 2384	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
		Settler's Hill (Power) MSW Landfill - 2041	U.S.
		Shade (RCC) MSW Landfill - 231	U.S.
		Simi Valley MSW Landfill - 2510	U.S.
		Skyline MSW Landfill - 1003	U.S.
		South Hills (Arnoni) MSW Landfill - 185	U.S.
		Southern Alleghenies MSW Landfill - 64	U.S.
		Southern Sanitation Landfill	U.S.
		Springhill MSW Landfill North - 2248	U.S.
		Springhill MSW Landfill South - 2248	U.S.
		Spruce Ridge MSW Landfill - 1702	U.S.
		Statewide MSW Landfill	U.S.
		Stone Ridge Landfill	U.S.
		Stony Hollow MSW Landfill - 2672	U.S.
		Suburban MSW Landfill - 2363	U.S.
		Superior MSW Landfill - 2117	U.S.
		Tazewell (Power) MSW Landfill - 2899	U.S.
		Tazewell MSW Landfill (flare) - 2899	U.S.
		Timberline	U.S.
		Tonitown MSW Landfill - 0087	U.S.
		Tri Cities MSW Landfill - 1045	U.S.
		Tri-City RDF	U.S.
		Tullytown MSW Landfill - 2382	U.S.
		Turnkey (flare) MSW Landfill - 2159	U.S.
		Turnkey (Power) MSW Landfill - 2159	U.S.
		Twin Bridges (flare) MSW Landfill - 317	U.S.
		Twin Bridges (Power) MSW Landfill - 317	U.S.
		Two Pine MSW Landfill - 2181	U.S.
		Valley MSW Landfill - 232	U.S.
		Valley Trail MSW Landfill - 2293	U.S.
		Valley View MSW Landfill	U.S.
		Venice Park (Flare) MSW Landfill	U.S.
		Venice Park (Power) MSW Landfill - 2616	U.S.
		Waters Landfill - 1722	U.S.
		West Camden MSW Landfill - 2087	U.S.
		Westside (Ft. Worth) MSW Landfill - 1004	U.S.
		Westside MSW Landfill - 2894	U.S.
		Wheatland Prairie RDF	U.S.
		Wheeler RDF MSW Landfill (Flare)	U.S.
		Wheeler RDF MSW Landfill (Power)	U.S.
		White Lake MSW Landfill	U.S.
		Woodland (flare) MSW Landfill - 2043	U.S.
		Woodland (Power) MSW Landfill - 2043	U.S.
		Woodland Meadows RDF MSW Landfill - 2337	U.S.
		Woodside Landfill - 2169	U.S.
We Energies	1605	Beneficial use of landfill methane	U.S.
Xcel Energy	1605	Refuse-derived fuel-NSP	U.S.
Agriculture--Methane and Nitrous Oxide			
AES Warrior Run, LLC	1605	Indian Dairy Poject	Foreign
Alliant Energy	1605	Deer Ridge Dairy	U.S.
		Double S Dairy	U.S.
FirstEnergy Corporation	1605	Mason Dixon Farms, Inc.	U.S.
Oil and Natural Gas Systems and Coal Mining--Methane			
Ameren Corporation (formerly UE, CIPS, and CILCO)	1605	CIPS Mine Gas to Energy	U.S.
BP America	1605	Oil and Gas Methane Reduction-from Equipment Upgrade	U.S.
		Oil and Gas Methane Reduction-Reduced Vent with Flaring	U.S.
		Oil and Gas Methane Reductions-Reduced Venting with Recovery	U.S.
CDX Gas, LLC	1605	Arkoma Mine Coalbed Methane Recovery	U.S.
		Pinnacle Mine Coalbed Methane Recovery	U.S.
Cinergy Corp.	1605	Natural Gas Star Program	U.S.
CLE Resources	1605	Revolve Technologies - Dry Gas Seals	U.S.
CMV Joint Venture	1605	Oak Grove Coalbed Methane Recovery Project	U.S.
		White Oak Creek Coalbed Methane Recovery	U.S.
Consolidated Edison Company of New York, Inc.	1605	Natural Gas STAR Best Management Practices	U.S.
Constellation Energy	1605	Gas Systems O & M (Natural Gas Star Partnership)	U.S.
DeBourgh Manufacturing Company	1605EZ	Computerized Temp Controller	U.S.
Duke Energy Corporation	1605	Natural Gas Star - Emergency Shutdowm Practices	U.S.
		Natural Gas Star - Pipeline Pull Downs	U.S.
		Natural Gas Star - Sleeve Repairs	U.S.
		Natural Gas Star - Use of Hot Taps for New Connections	U.S.
El Paso Production Company	1605	White Oak Creek Coalbed Methane Recovery	U.S.
Entergy Services, Inc.	1605	Natural Gas Pipeline Leak Repairs	U.S.
Exelon Corporation	1605	Natural Gas STAR Best Management Practices	U.S.
Greene Energy, LLC	1605EZ	Methane Recovery	U.S.
Jim Walter Resources, Inc.	1605	Gobwell Degasification Program	U.S.
		Horizontal Degasification Program	U.S.
		Nitrogen Rejection Plant Program (LQG)	U.S.
		Standard Degasification Well Program	U.S.
National Grid USA	1605	Identify & Rehabilitate Leaky Gas Distribution Pipe	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
NEGT	1605	Natural Gas Star Program - NEGT	U.S.
NiSource/NIPSCO	1605	NG Star - Columbia Gas of Kentucky	U.S.
		NG Star - Columbia Gas of Ohio	U.S.
		NG Star - Columbia Gas of Pennsylvania and Maryland	U.S.
		NG Star - Columbia Gas of Virginia	U.S.
		NG Star - Columbia Gas Transmission Company	U.S.
		NG Star - Columbia Gulf Transmission Company	U.S.
		NG Star - NIPSCO	U.S.
		NG Star Bay State Gas	U.S.
		North Trenton Pipeline Replacement	U.S.
PacifiCorp	1605	Northwest Fuels Methane Recovery From Coal Mines	U.S.
Peabody Energy	1605	Coal Bed Methane Utilization	U.S.
		Coal Mine Methane Utilization	U.S.
PG&E Corporation	1605	Natural Gas Star Program - PG&E California	U.S.
Public Service Company of New Mexico	1605	Natural Gas Leak Surveying and Replacement	U.S.
South Carolina Electric & Gas Company	1605	SCANA Participation in STAR program	U.S.
Xcel Energy	1605	White River Dome Compressor Station Closure	U.S.
Carbon Sequestration			
AES Hawaii, Inc.	1605	Mbaracayu Conservation	Foreign
AES Shady Point, LLC	1605	OXFAM America Amazon	Foreign
AES Thames, LLC	1605	CARE Agroforestry	Foreign
Allegheny Energy, Inc.	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
Alliant Energy	1605	Afforestation	U.S.
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Conservation tillage	U.S.
		Forest preservation	U.S.
		Habitat Restoration	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Urban Forestry IP&L	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
Ameren Corporation (formerly UE, CIPS, and CILCO)	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Green Leaf Project	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
American Electric Power, Inc.	1605	AEP-AGCROP-2002	U.S.
		AEP-AGSPOIL-1992	U.S.
		AEP-AGSPOIL-1993	U.S.
		AEP-AGSPOIL-1994	U.S.
		AEP-AGSPOIL-1995	U.S.
		AEP-AGSPOIL-1996	U.S.
		AEP-AGSPOIL-1997	U.S.
		AEP-AGSPOIL-1998	U.S.
		AEP-AGSPOIL-1999	U.S.
		AEP-AGSPOIL-2000	U.S.
		AEP-AGSPOIL-2001	U.S.
		AEP-AGSPOIL-2002	U.S.
		AEP-AGSPOIL-2003	U.S.
		AEP-Fernwood-2001	U.S.
		AEP-FM-1991	U.S.
		AEP-FM-1992	U.S.
		AEP-FM-1993	U.S.
		AEP-FM-1994	U.S.
		AEP-FM-1995	U.S.
		AEP-FM-1996	U.S.
		AEP-FM-1997	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
		AEP-FM-1998	U.S.
		AEP-FM-1999	U.S.
		AEP-FM-2000	U.S.
		AEP-FM-2001	U.S.
		AEP-FM-2002	U.S.
		AEP-FM-2003	U.S.
		AEP-MARAG- 1992	U.S.
		AEP-MARAG-1991	U.S.
		AEP-MARAG-1993	U.S.
		AEP-MARAG-1993-2	U.S.
		AEP-MARAG-1994	U.S.
		AEP-MARAG-1994-2	U.S.
		AEP-MARAG-1995	U.S.
		AEP-MARAG-1996	U.S.
		AEP-MARAG-1997	U.S.
		AEP-MARAG-1998	U.S.
		AEP-MARAG-1999	U.S.
		AEP-MARAG-2000	U.S.
		AEP-Private lands-2001	U.S.
		AEP-Private Lands-2002	U.S.
		AEP-Private Lands-2003	U.S.
		AEP-West Land Management	U.S.
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Catahoula Reforestation Project-2001	U.S.
		Catahoula-Reforestation Project-2002	U.S.
		DUNDAS-AGSPOIL-1998	U.S.
		DUNDAS-MARAG-1998	U.S.
		ECCF-AGSPOIL-1995	U.S.
		ECCF-AGSPOIL-1997	U.S.
		ECCF-AGSPOIL-1998	U.S.
		ECCF-AGSPOIL-2000	U.S.
		ECCF-MARAG-1991	U.S.
		ECCF-MARAG-1992	U.S.
		ECCF-MARAG-1993	U.S.
		ECCF-MARAG-1995	U.S.
		ECCF-MARAG-1996	U.S.
		ECCF-MARAG-1997	U.S.
		ECCF-MARAG-1998	U.S.
		ECCF-MARAG-1999	U.S.
		ECCF-MARAG-2000	U.S.
		Guaraquecaba Climate Action Project	Foreign
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Noel Kempff Mercado Climate Action Project	Foreign
		Ohio Central Station Site-MARAG-1996	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		USFWS Catahoula Reforestation Project-2002	U.S.
		WCFGPL-MARAG-1996	U.S.
		WCFGPL-MARAG-2000	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
		WILDS PROJECT-MARAG-1998	U.S.
Anoka Municipal Utility	1605EZ	Urban Foresttry	U.S.
Arizona Portland Cement Co.	1605	Tree Planting	U.S.
Bountiful City Light & Power	1605	Tree planting	U.S.
BP America	1605	Noel Kempff Mercado Climate Action Project	Foreign
ChevronTexaco Corporation	1605EZ	ChevronTexaco Lower Mississippi River Valley Reforestation	U.S.
Cinergy Corp.	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Cinergy Corp. Ducks Unlimited Bottomland Hardwood Reforest.	U.S.
		Cinergy Corp. The Nature Conservancy Reforestation and Bio.	U.S.
		Cinergy Corp. Wild Turkey Federation Operation Big Sky.	U.S.
		Facility Tree Planting Program	U.S.
		Hendricks County McCloud Park Project	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		NICHES project	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		Rio Bravo Carbon Sequestration Pilot Project (Full Share)	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Sycamore Land Trust	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
		WRP Tree Planting Program	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
City of Edmond, Oklahoma, Electric Department	1605EZ	Trees/Shrubs Planting	U.S.
City of Klamath Falls- Cogen	1605	Oregon Forest Resources Trust Reforestation Program	U.S.
City Public Service	1605	Tree Planting	U.S.
City Utilities of Springfield	1605	Urban Forestry	U.S.
Cleco Corporation	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Bayou Jean de Jean Reforestation	U.S.
		Maknockanut Lake Plantation Carbon Unit #1	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
Common Purpose Institute	1605EZ	Energy Crop Tree Farm	U.S.
Conectiv Atlantic Generation (CAG)	1605	Urban Tree Planting	U.S.
		Wetlands Reclamation Project	U.S.
Conectiv Delmarva Generation	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine NFWF Project	U.S.
		St. Catherine-ESI	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Urban Tree Planting	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
Constellation Energy	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
DTE Energy/ Detroit Edison	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Forest Land Management	U.S.
		Miscellaneous Tree Plantings - 1999	U.S.
		Miscellaneous Tree Plantings - 1995	U.S.
		Miscellaneous Tree Plantings - 1996	U.S.
		Miscellaneous Tree Plantings - 1997	U.S.
		Miscellaneous Tree Plantings - 1998	U.S.
		Miscellaneous Tree Plantings - 2000	U.S.
		Miscellaneous Tree Plantings - 2001	U.S.
		Miscellaneous Tree Plantings - 2002	U.S.
		Miscellaneous Tree Plantings - 2003	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		Rio Bravo Carbon Sequestration Pilot Project (Full Share)	Foreign
		Six Lakes - 2002	U.S.
		Southeast Michigan Afforestation - 1996	U.S.
		Southeast Michigan Afforestation - 1997	U.S.
		Southeastern Michigan Afforestation - 1995	U.S.
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		State Forest Land Afforestation - 1996	U.S.
		State Forest Land Afforestation - 1997	U.S.
		State Forest Land Afforestation - 1998	U.S.
		State Forest Land Afforestation - 1999	U.S.
		State Forest Land Afforestation - 2000	U.S.
		State Forest Land Afforestation - 2001	U.S.
		State Forest Land Afforestation - 2002	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
Duke Energy Corporation	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
Dynegy, Inc.	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Dynegy Mississippi River Valley Reforestation Project	U.S.
		IDNR Tree Planting Partnership	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
Entergy Services, Inc.	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Entergy Forestry Projects	U.S.
		Little Gypsy Plant Reforestation	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
		Wetlands and Carbon Sequestration - Southeast LA & TX	U.S.
		Willow Glen Plant - Reforestation	U.S.
Environmental Synergy, Inc.	1605	ESI Bottomland Hardwood Restoration Project	U.S.
		ESI Florida Longleaf Pine Restoration	U.S.
Exelon Corporation	1605	Afforestation	U.S.
		Illinois Prairie Grass Plantings	U.S.
		Urban Tree Planting	U.S.
		Utility Pole Reuse	U.S.
FirstEnergy Corporation	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Municipal Tree Replacement	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Tree Source	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
FPL Group	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
Golden Valley Electric Association, Inc	1605EZ	Tree Give-Away for planting under power lines	U.S.
Hawaiian Electric Company, Inc.	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offsett Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
JEA	1605EZ	Urban Forestry	U.S.
Kansas City Power & Light Company	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
Los Angeles Department of Water and Power	1605	Cool Schools Urban Forestry Project	U.S.
		Mountain Reforestation Project	U.S.
		Trees for a Green LA	U.S.
Minnesota Power	1605	Short Rotation Woody Crop Establishment	U.S.
Nashville Electric Service	1605EZ	Ongoing Urban Forestry (tree planting)	U.S.
Nebraska Public Power District	1605EZ	Tree planting	U.S.
		Tree planting	U.S.
NEGT	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Reduced Impact Logging Project (NEP Pilot Project)	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
NiSource/NIPSCO	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		Rural Tree Planting	U.S.
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Urban Tree Planting	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
Old Dominion Electric Cooperative	1605	Clover Power Station - Visual Screening	U.S.
Omaha Public Power District	1605EZ	Tree Planting	U.S.
PacifiCorp	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Noel Kempff Mercado Climate Action Project	Foreign
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Reforestation in Eastern Washington	U.S.
		Reforestation of Private Lands in Oregon - Site Class II	U.S.
		Reforestation of Private Lands in Oregon - Site Class III	U.S.
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		Rio Bravo Carbon Sequestration Pilot Project (Full Share)	Foreign
		Salt Lake City Urban Forestry Project	U.S.
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
Portland General Electric Co.	1605	Friends of Trees	U.S.
Public Service Enterprise Group	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
Rappahannock Electric Cooperative	1605	Tree Planting	U.S.
Sacramento Municipal Utility District	1605	Shade Tree Program	U.S.
Santee Cooper	1605	Afforestation/Reforestation	U.S.
Seattle City Light	1605	Urban Tree Replacement Program	U.S.
Shenandoah Valley Electric Cooperative	1605	Visual Screening-Tree Planting	U.S.
South Carolina Electric & Gas Company	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Forest Management Plan	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
Southern California Edison Co.	1605	Forestation at Shaver Lake	U.S.
		Harvesting Timber at Shaver Lake	U.S.
		Net Growth of Timber at Shaver Lake	U.S.
		Urban Donation of tree seedlings from Shaver Lake nursery	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
Southern Company	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Carbon Sequestration on Company Lands	U.S.
		Carbon Sequestration on Noncompany Lands	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
Tacoma Power	1605EZ	Afforestation	U.S.
		Forest Preservation	U.S.
Tampa Electric Company	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
Tennessee Valley Authority	1605	Afforestation On TVA Lands	U.S.
		Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
The Empire District Electric Co.	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
Tucson Electric Power Company	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Trees for Tucson	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
TXU	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.
		St. Francis River Carbon Offset Project	U.S.
		Texas Reforestation Foundation	U.S.
		TXU's Participation in the Texas Reforestation Foundation	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
Waverly Light & Power Company	1605	Trees Forever (Project 8.1)	U.S.
We Energies	1605	Bayou Cocodrie Bottomland Hardwood Forest Restoration	U.S.
		Mississippi River Valley Bottomland Hardwood Restoration	U.S.
		Overflow Bottomland Hardwood Forest Restoration Project	U.S.
		Reduced Impact Logging of Natural Forest in Malaysia	Foreign
		Rio Bravo Carbon Sequestration Pilot Project	Foreign
		Rio Bravo Carbon Sequestration Pilot Project (Full Share)	Foreign
		Rio Bravo Carbon Sequestration Pilot Project Expansion	Foreign
		St. Catherine-ESI	U.S.
		St. Catherine-NFWF	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
		St. Francis River Carbon Offset Project	U.S.
		Upper Ouachita River Valley Bottomland Hardwood Restoration	U.S.
		Western Oregon Carbon Sequestration Project	U.S.
Wisconsin Public Power Inc.	1605EZ	Tree Power (1991 - 2003 Plantings)	U.S.
Zeeland Board of Public Works	1605EZ	Urban Forestry	U.S.
Halogenated Substances			
Alcan Primary Products Corporation, Sebree Works	1605	PFC Reduction Project	U.S.
Allergan, Inc.	1605	CFC Substitution with Chiller Replacement	U.S.
		Elimination of CFCs at Farnborough, UK	Foreign
		Elimination of CFCs at U.S. Plants	U.S.
American Electric Power, Inc.	1605	Sulfur Hexafluoride Gas Reduction	U.S.
Cinergy Corp.	1605	SF6 Emission Reduction Partnership	U.S.
City Public Service	1605	SF6 Inventory	U.S.
City Utilities of Springfield	1605	SF6 Recovery	U.S.
CLE Resources	1605	Valdor	U.S.
Consolidated Edison Company of New York, Inc.	1605	SF6 Best Management Practices	U.S.
Constellation Energy	1605	Refrigerant/Solvent Recycling and Reduction	U.S.
		SF6 Handling Procedures in Electric Distribution	U.S.
Duke Energy Corporation	1605	Tranmission Breaker Repairs	U.S.
Entergy Services, Inc.	1605	ANO - SF6 Breaker Replacement	U.S.
		SF6 Reductions	U.S.
FirstEnergy Corporation	1605	Refrigerator Recycling	U.S.
		SF6 Emissions Reduction	U.S.
		Various CFC Replacements	U.S.
FPL Group	1605	SF6 Reductions	U.S.
Lucent Technologies Inc.	1605	Replacement of TCE in Circuit Board Cleaning Operation	U.S.
Minnesota Power	1605	Electricity Substation, SF6 Breaker Replacement	U.S.
National Grid USA	1605	Appliance Removal Program, Residential DSM Programs	U.S.
		Refrigerator Roundup	U.S.
		SF6 Emission Reductions - New England	U.S.
		SF6 Emission Reductions - New York	U.S.
Nebraska Public Power District	1605EZ	SF6 Gas Circuit Breaker Leak Detection and Repair	U.S.
NiSource/NIPSCO	1605	Ozone Depleting Chemicals	U.S.
		SF6 Reductions	U.S.
Noranda Aluminum Inc.	1605	PFC Emission Reduction via Reductions in Anode Effects	U.S.
PG&E Corporation	1605	SF6 Emission Reduction Partnership	U.S.
Polar Refrigerant Technology, LLC	1605	Recycle / Reclaim Operation	U.S.
Sacramento Municipal Utility District	1605	Sulfur Hexaflouride Inventory	U.S.
Southern California Edison Co.	1605	SF6 Gas Management Program	U.S.
Southern Company	1605	Sulfur Hexafluoride (SF6) Emissions Reductions	U.S.
Tennessee Valley Authority	1605	CFC Management	U.S.
Tucson Electric Power Company	1605	R-11 Recycling	U.S.
		R-12 Emission Avoidance	U.S.
		R-22 Recycling	U.S.
		SF6 Recycling	U.S.
TXU	1605	SF6 Reductions	U.S.
We Energies	1605	CFC-12 Recovery from Appliance Turn-In Program	U.S.
Xcel Energy	1605	Appliance Recycling	U.S.
		Low Income Refrigerator Replacement	U.S.
Xenon Specialty Gas	1605	SF6 Recovery & Reclamation	U.S.
Other Emission Reduction Projects			
AES Warrior Run, LLC	1605	Carbon Dioxide Plant	U.S.
Allegheny Energy, Inc.	1605	EnviroTech Fund - Domestic Activities	U.S.
		EnviroTech Fund - Foreign Activities	Foreign
		Fly Ash use as replacement for cement	U.S.
Alliant Energy	1605	Fly Ash Utilization	U.S.
		Recycling Activities	U.S.
Ameren Corporation (formerly UE, CIPS, and CILCO)	1605	Flyash substitution for cement	U.S.
American Electric Power, Inc.	1605	Enviro Tech Investment Fund I Limited Partnership - US	U.S.
		Enviro Tech Investment Funds - Foreign	Foreign
		Fly Ash Utilization Program (Cement Replacement)	U.S.
Arizona Electric Power Cooperative, Inc.	1605EZ	Fly Ash Sales	U.S.
AT&T	1605	Recycling/Takeback/Reuse Projects	U.S.
Blue Source, LLC	1605	Mississippi EOR	U.S.
		West Texas CO2 Pipeline-EOR	U.S.
		West Texas EOR-A	U.S.
		Wyoming EOR	U.S.
BP America	1605	Crude Production Emission Reduction	U.S.
		Non-VOCs for Upstream	U.S.
		Petroleum refining + Chemical plant emission control project	U.S.
		Petroleum refining and Chemical Plant VOC control projects	U.S.
Burlington County Board of Chosen Freeholders	1605	Burlington County Regional Recycling Program	U.S.
California Portland Cement Co. - Mojave Plant	1605	Finish Grinding Process Addition	U.S.
Cinergy Corp.	1605	Benificial Use of Coal Fly Ash	U.S.
		Recycling Programs	U.S.
City of Austin Electric Utility (Austin Energy)	1605EZ	Coal Combustion Byproduct Reutilization	U.S.
		NOx Reduction at Coal Fired Power Plant	U.S.
City Public Service	1605	All Other Recycling	U.S.
		Flyash Sales	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
Conectiv Delmarva Generation	1605	Ash Reuse	U.S.
Constellation Energy	1605	Coal Ash Substitution for Portland Cement	U.S.
		Solid Waste Recycling and Source Reduction	U.S.
DTE Energy/ Detroit Edison	1605	Coal Ash Reuse - Canada	Foreign
		Coal Ash Reuse - U.S.	U.S.
Duke Energy Corporation	1605	Recycling Flyash	U.S.
Dynegy, Inc.	1605	Flyash Sales	U.S.
		Flyash Sales (Baldwin, Havana, Hennepin, Vermilion, Wd Rvr)	U.S.
Entergy Services, Inc.	1605	Fly Ash use as replacement for cement	U.S.
Exelon Corporation	1605	Investment Recovery/Life Cycle Management/Recycling	U.S.
FirstEnergy Corporation	1605	Recycling Program	U.S.
		Substitution of Fly Ash for Portland Cement in Concrete	U.S.
FPL Group	1605	FPL Corporate Recycling	U.S.
General Motors Corporation	1605	Resource Management Programs i.e. EPA WasteWise	U.S.
Johnson & Johnson	1605	Green Tag Purchase	U.S.
Kansas City Power & Light Company	1605	Coal Fly Ash Recycling	U.S.
		ENVIROTECH Fund	U.S.
Los Angeles Department of Water and Power	1605	LADWP Recycling Program	U.S.
Lower Colorado River Authority	1605	Coal Combustion By-Product Recycling	U.S.
Lucent Technologies Inc.	1605	LU - #1 (US only)	U.S.
		LU - #2 (International)	Foreign
Minnesota Power	1605	Waste Paper Recycling Development	U.S.
Minnesota Resource Recovery Association (MRRA)	1605EZ	Paper Recycling- Carbon Dioxide	U.S.
		Paper Recycling-Methane	U.S.
National Grid USA	1605	Coal Ash Utilization	U.S.
		Investment Recovery Program (Recycling)	U.S.
Nebraska Public Power District	1605EZ	CH4 Reductions from Material Recycling	U.S.
		Coal Ash Reuse	U.S.
		Materials Recycling	U.S.
NEGT	1605	Coal Ash Recycling as Cement Replacement	U.S.
NiSource/NIPSCO	1605	Coal Combustion Byproduct Utilization	U.S.
		Employee Training	U.S.
		Recycling program	U.S.
Omaha Public Power District	1605EZ	Recycling Fly Ash	U.S.
Omaha Public Power District	1605EZ	Recycling Programs	U.S.
PacifiCorp	1605	Coal Ash Recycling	U.S.
		Ethanol Production Carbon Offset Project	U.S.
Pfizer Pharmaceuticals LLC - Arecibo Site	1605EZ	Collection/Reuse of HVAC Condensates from ADP3	U.S.
		Decrease of Pressure in Steam Main Header	U.S.
		Partial Shutdown of ADP-4 Operations	U.S.
		Process Waste Improvement	U.S.
Platte River Power Authority & 4 Owner Cities	1605	Estes Park Recycling Program	U.S.
		Fort Collins Recycling Program	U.S.
		Loveland Recycling Program	U.S.
		PRPA Paper Recycling Program	U.S.
Portland General Electric Co.	1605	Fly Ash Reuse Program	U.S.
		PGE Corporate Recycling Program	U.S.
Public Service Enterprise Group	1605	Resource Recovery Coal Ash Management Program	U.S.
		WasteWise	U.S.
Public Utility District No. 1 of Snohomish County	1605	Scrap Metals Recycling	U.S.
		We-cycle Office Wastepaper (WOW) Program	U.S.
Salt River Project	1605EZ	Fly Ash Sales	U.S.
		Recycling (CH4 Reductions)	U.S.
		Recycling (CO2 Reduction)	U.S.
Santee Cooper	1605	Fly Ash Used in Concrete Manufacture	U.S.
		Recycling Program	U.S.
Seminole Electric Cooperative, Inc.	1605EZ	Fly Ash & Bottom Ash Reuse	U.S.
		Synthetic Gypsum Production	U.S.
South Carolina Electric & Gas Company	1605	Coal Ash Utilization Program	U.S.
Southern California Edison Co.	1605	Fly Ash Sales for Concrete Production	U.S.
		SCE Waste-Not Program	U.S.
Southern Company	1605	EnviroTech Investments	U.S.
Springs Industries, Inc.	1605EZ	Recycling - CO2	U.S.
		Recycling - Methane	U.S.
		Recycling - Perfluoromethane	U.S.
Tampa Electric Company	1605	Fly Ash Reuse	U.S.
Tennessee Valley Authority	1605	Flyash Sales To Concrete Industry	U.S.
		Paper Recycling	U.S.
Tucson Electric Power Company	1605	Coal Ash Reuse	U.S.
TXU	1605	Coal Ash Byproduct Use	U.S.
		Paper and Aluminum Recycling	U.S.
		Ranger Exhaust Gas Project	U.S.
We Energies	1605	Fly ash substitution program	U.S.
Wisconsin Public Power Inc.	1605EZ	Carry Over from 2002 Programs	U.S.
		Program carry over from 2001 and beyond	U.S.

Table B10. Emission Reduction Projects Reported by Project Type, Data Year 2003 (Continued)

Project Section & Reporter Name	Form Type	Project	Location
Xcel Energy	1605	Coal ash utilization-NSP	U.S.
		Coal Ash Utilization-PSCo	U.S.
		Coal Ash Utilization-SPS	U.S.
		Recycling program-NSP	U.S.
		Recycling Program--PSCo	U.S.
		Recycling Program--SPS	U.S.

Note: The total number of reporters is smaller than the sum of the number of reporters for each project type because most reporters provided information on projects of more than one type. This table excludes data reported as confidential.

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

Table B11. Reporting Entities and Sectors, Years Reported and Form Type, Data Years 1994-2003

Reporter	Sector	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
8309 Tujunga Avenue Corporation	Alternative Energy							1605	1605		
A&N Electric Cooperative	Electric Providers		1605	1605	1605	1605	1605	1605	1605	1605	1605
Abe Krasne Home Furnishings, Inc.	Services and Retail					1605	1605	1605		1605	1605
Advanced Micro Devices, Inc.	Industrial				1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
ADVANE Heli-Welders	Industrial					1605EZ					
AES Hawaii, Inc.	Electric Providers			1605	1605	1605	1605	1605	1605	1605	1605
AES Shady Point, LLC	Electric Providers			1605	1605	1605	1605	1605	1605	1605	1605
AES Thames, LLC	Electric Providers			1605	1605	1605	1605	1605	1605	1605	1605
AES Warrior Run, LLC	Electric Providers							1605	1605	1605	1605
Agilent Technologies	Industrial								1605		
Air Exchange, Inc.	Services and Retail					1605					
Ajinomoto Aminoscience LLC	Industrial							1605	1605	1605	1605
Alabama Biomass Partners, Ltd	Alternative Energy					1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Alcan Primary Products Corporation, Sebree Works	Industrial	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Allegheny Energy, Inc.	Electric Providers	1605	1605	1605	1605	1605	1605	1605		1605	1605
Allergan, Inc.	Industrial					1605	1605	1605	1605	1605	1605
Alliant Energy	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Ameren Corporation (formerly UE, CIPS, and CILCO)	Electric Providers					1605	1605	1605	1605	1605	1605
AmerenCIPS	Electric Providers	1605	1605	1605	1605						
American Electric Power, Inc.	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
American Forests	Agricultural		1605	1605	1605	1605	1605	1605			
American Municipal Power - Ohio	Electric Providers			1605	1605	1605	1605	1605	1605		
AMERICAN SOILS	Industrial					1605EZ					
Anoka Municipal Utility	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Arizona Electric Power Cooperative, Inc.	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Arizona Portland Cement Co.	Industrial				1605	1605	1605	1605	1605	1605	1605
Arizona Public Service Company	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Arthur Rypinski & Jacquelyn Porth	Other (Households)	1605	1605	1605	1605	1605	1605	1605	1605		
Asheville Landfill Gas, LLC	Alternative Energy				1605	1605	1605	1605	1605	1605	1605
AT&T	Industrial						1605			1605	1605
Atlas Paper Mills	Industrial						1605	1605			
Audros Corporation	Industrial					1605EZ					
Austin Parks & Rec. Dept.- Urban Forestry Program	Other (Households)							1605			
Austin Quality Foods, Inc.	Industrial							1605			
Avista Utilities	Electric Providers						1605	1605			
Azdel, Inc	Industrial							1605	1605	1605	1605
BARC Electric Cooperative	Electric Providers		1605	1605	1605	1605	1605	1605	1605	1605	1605
Baxter Healthcare Inc.	Industrial							1605	1605	1605	1605
BAYER Corporation	Industrial					1605					
Berkeley Electric Cooperative	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ						
Berkshire Power LLC	Electric Providers								1605	1605	1605
Bethlehem Steel Corporation	Industrial					1605	1605	1605	1605	1605	
Biomass Partners, LP	Alternative Energy					1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Black Beauty Coal Company, c/o Peabody Energy	Alternative Energy									1605	
Blue Earth Light & Water	Electric Providers		1605								
Blue Source, LLC	Industrial									1605	1605
BMW US Holding Corp.	Industrial									1605	1605
Bountiful City Light & Power	Electric Providers	1605EZ	1605	1605	1605	1605	1605		1605	1605	1605
BP America	Industrial				1605	1605		1605			1605
Branson Ultrasonics Corporation	Industrial							1605		1605	1605
Bristol-Myers Squibb Company	Industrial										1605
Brooklyn Union	Industrial	1605EZ	1605EZ	1605EZ							
Buckeye Power Incorporated	Electric Providers	1605	1605EZ		1605						
Burlington County Board of Chosen Freeholders	Services and Retail				1605	1605	1605	1605	1605	1605	1605
California Portland Cement Co. - Colton Plant	Industrial				1605	1605	1605	1605	1605	1605	1605
California Portland Cement Co. - Mojave Plant	Industrial				1605	1605	1605	1605	1605	1605	1605
Cargill, Inc. - Oil Seeds Division	Industrial							1605	1605	1605	1605
Carolina Power & Light Company	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Carter H. Lewis, III	Other (Households)	1605EZ									
Catawba Landfill Gas, LLC	Alternative Energy					1605	1605	1605	1605	1605	1605
CDX Gas, LLC	Alternative Energy					1605	1605	1605	1605	1605	1605
Cedar Falls Utilities	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605		
Centerior Energy Corporation	Electric Providers	1605	1605	1605	1605						

Table B11. Reporting Entities and Sectors, Years Reported and Form Type, Data Years 1994-2003 (Continued)

Reporter	Sector	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Central and South West Corporation	Electric Providers				1605	1605	1605				
Central Hudson Gas & Electric Corporation	Electric Providers	1605	1605	1605	1605	1605	1605	1605			
Central Illinois Light Company	Electric Providers	1605	1605	1605	1605						
Cereza Energy, Inc.	Alternative Energy					1605					
ChevronTexaco Corporation	Industrial							1605EZ	1605EZ	1605EZ	1605EZ
Choptank Electric Cooperative	Electric Providers		1605	1605	1605	1605	1605	1605	1605	1605	1605
Cinergy Corp.	Electric Providers	1605	1605	1605	1605	1605		1605	1605	1605	1605
City of Austin Electric Utility (Austin Energy)	Electric Providers	1605	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
City of Edmond, Oklahoma, Electric Department	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
City of Fairfield Wastewater Division	Services and Retail				1605EZ	1605EZ					
City of Klamath Falls- Cogen	Electric Providers								1605	1605	1605
City of Palo Alto Utilities	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
City of Sherrill Power & Light	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ						
City of Springfield	Services and Retail										1605
City of Wayne	Electric Providers	1605EZ	1605EZ								
City Public Service	Electric Providers								1605	1605	1605
City Utilities of Springfield	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Clairol	Industrial						1605				
CLE Resources	Industrial			1605	1605	1605	1605	1605	1605	1605	1605
Cleco Corporation	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
CMS Energy	Electric Providers						1605	1605	1605		
CMV Joint Venture	Alternative Energy					1605	1605		1605	1605	1605
Columbia Falls Aluminum Company, LLC	Industrial			1605	1605	1605	1605	1605	1605		
COM/Electric	Electric Providers		1605EZ	1605EZ	1605EZ	1605EZ					
Common Purpose Institute	Agricultural										1605EZ
CommonWealth Bethlehem Energy, LLC	Alternative Energy					1605	1605	1605			1605
Commonwealth Edison Company (ComEd)	Electric Providers	1605	1605	1605	1605	1605	1605	1605			
COMMSCOPE CATAWBA PLANT	Industrial							1605	1605	1605	1605
COMMSCOPE CLAREMONT PLANT	Industrial								1605	1605	1605
COMMSCOPE CONOVER REEL RECYCLING	Industrial								1605	1605	1605
COMMSCOPE Headquarters- Hickory	Industrial									1605	1605
COMMSCOPE NEWTON PLANT	Industrial								1605	1605	1605
COMMSCOPE SCOTTSBORO PLANT	Industrial								1605	1605	1605
COMMSCOPE SPARKS PLANT	Industrial								1605	1605	1605
COMMSCOPE STATESVILLE PLANT	Industrial								1605	1605	1605
Community Electric Cooperative	Electric Providers		1605	1605	1605	1605	1605	1605	1605	1605	1605
Conectiv Atlantic Generation (CAG)	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Conectiv Delmarva Generation	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
CONNECTIVITY SOLUTONS MANUFACTURING Inc.	Industrial										1605
Consol Coal Group	Industrial		1605	1605		1605	1605	1605	1605	1605	1605
Consolidated Edison Company of New York, Inc.	Electric Providers							1605	1605	1605	1605
Constellation Energy	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Cooperative Power Association	Electric Providers	1605	1605	1605	1605	1605					
County Sanitation Districts of Los Angeles County	Alternative Energy					1605	1605	1605	1605	1605	1605
Dade Behring, Inc.	Industrial					1605					
DADS Landfill	Alternative Energy										1605
DaimlerChrysler Corporation	Industrial								1605	1605	1605
Dakota Gasification Company	Industrial									1605	1605
Danaher Controls	Industrial							1605	1605	1605	1605
DeBourgh Manufacturing Company	Industrial		1605	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Delaware Electric Cooperative	Electric Providers		1605	1605	1605	1605	1605	1605	1605	1605	1605
Delaware Solid Waste Authority	Alternative Energy						1605	1605	1605	1605	1605
Delta Electric Power Association	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ			
Deptford Electric Company, LLC	Alternative Energy							1605			
Dominion Energy, L.P.	Alternative Energy					1605					
Dominion Generation	Electric Providers							1605	1605	1605	1605
Doxey Furniture Corporation	Industrial							1605	1605	1605	
Dragon Products Company, Inc.	Industrial			1605		1605					
Drummond Company, Inc.	Industrial							1605	1605	1605	
DTE Energy/ Detroit Edison	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Duke Energy Corporation	Electric Providers					1605	1605	1605	1605	1605	1605
Duke Engineering and Services	Alternative Energy			1605EZ	1605EZ						
Duke Power Company	Electric Providers	1605	1605	1605	1605						

Table B11. Reporting Entities and Sectors, Years Reported and Form Type, Data Years 1994-2003 (Continued)

Reporter	Sector	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
DuPont Company	Industrial		1605		1605	1605		1605		1605	
Duquesne Light Company	Electric Providers		1605	1605	1605	1605					
Dynegy, Inc.	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
East River Electric Power Cooperative, Inc.	Electric Providers	1605EZ	1605EZ	1605EZ							
Eaton Corporation - Vehicle Controls Business Unit	Industrial							1605	1605		1605
Ecogas Corporation	Alternative Energy					1605	1605				
El Paso Production Company	Alternative Energy						1605	1605	1605	1605	1605
Energy Developments, Inc.	Alternative Energy										1605
Energy Management Partners, LP	Alternative Energy					1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Energy Northwest	Electric Providers							1605EZ			
Engelhard	Industrial					1605					
Enron Renewable Energy Corporation	Alternative Energy			1605EZ							
Entergy Services, Inc.	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
EnviroGas Limited Partnership	Alternative Energy		1605								
Environmental Synergy, Inc.	Agricultural						1605EZ	1605EZ		1605	1605
Environmentally Correct Concepts, Inc.	Agricultural				1605						
Essential Foods, Inc.	Industrial					1605	1605				
Essroc Cement Corp. -- Bessemer, Pa Plant	Industrial					1605	1605				
Essroc Cement Corp. -- Essexville, MI Plant	Industrial					1605	1605				
Essroc Cement Corp. -- Frederick, MD Plant	Industrial					1605	1605				
Essroc Cement Corp. -- Logansport, IN Plant	Industrial					1605	1605				
Essroc Cement Corp. -- PA Operations	Industrial					1605	1605				
Essroc Cement Corp. -- San Juan, PR Plant	Industrial					1605	1605				
Essroc Cement Corp. - Speed, IN Plant	Industrial					1605	1605				
Exelon Corporation	Electric Providers								1605	1605	1605
Fayetteville Gas Company, LLC.	Alternative Energy			1605	1605						
Fidelity Exploration & Production Company	Alternative Energy							1605	1605		
FirstEnergy Corporation	Electric Providers					1605	1605	1605	1605	1605	1605
Fisher Scientific Company L.L.C	Industrial									1605	1605
Flint Electric Membership Corporation	Electric Providers	1605EZ	1605EZ								
Florida Power Corporation	Electric Providers		1605	1605	1605	1605	1605	1605	1605	1605	1605
Florida Transport 82	Industrial						1605	1605			
Ford Motor Company	Industrial								1605	1605	1605
FPL Group	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Fred Weber, Inc.	Alternative Energy					1605EZ	1605EZ				
Gas Recovery Systems	Alternative Energy						1605		1605	1605	1605
General Electric Company	Industrial										1605
General Motors Corporation	Industrial	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Generating Resource Recovery Partners, L.P.	Electric Providers							1605	1605		
GeoMet Inc.	Alternative Energy					1605	1605	1605	1605	1605	
Gilead Sciences	Industrial				1605EZ	1605EZ	1605EZ				
Golden Valley Electric Association, Inc	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
GPU, Inc.	Electric Providers	1605	1605	1605	1605	1605	1605	1605			
Granger Electric Company	Alternative Energy			1605	1605	1605	1605	1605	1605	1605	1605
Granger Energy, LLC	Alternative Energy								1605	1605	1605
Grayson Hill Farms	Agricultural					1605EZ					
Greater Caribbean Energy & Environment Foundation	Agricultural						1605EZ	1605EZ			
Greater New Bedford Regional Refuse Mgt District	Alternative Energy							1605	1605	1605	1605
Green Mountain Energy Company	Electric Providers									1605	1605
Greene Energy, LLC	Alternative Energy								1605EZ	1605EZ	1605EZ
GSF Energy, LLC	Alternative Energy			1605	1605	1605					
Hanes Dye and Finishing, Butner Plant	Industrial									1605	1605
Hanes Dye and Finishing, Winston-Salem Plant	Industrial							1605	1605	1605	1605
Hawaiian Electric Company, Inc.	Electric Providers					1605	1605	1605	1605	1605	1605
Highland Industries, Inc.Kernersville Finishing Pt	Industrial							1605	1605	1605	1605
Hollomon Family	Other (Households)									1605EZ	1605EZ
Hopkinsville Electric System	Electric Providers	1605EZ	1605EZ		1605EZ						
IBM	Industrial	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Imperial Plating	Industrial					1605					
Indiana Association of SWCDs	Agricultural								1605		
Industrial Equipment and Supplies	Industrial					1605					
Integrated Waste Services Association	Alternative Energy		1605	1605	1605	1605	1605	1605	1605	1605	1605
International Truck and Engine Corporation	Industrial					1605	1605	1605	1605	1605	1605

Table B11. Reporting Entities and Sectors, Years Reported and Form Type, Data Years 1994-2003 (Continued)

Reporter	Sector	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Iredell Landfill Gas, LLC	Alternative Energy				1605	1605	1605	1605	1605	1605	1605
J.M. Gilmer and Company, Inc.	Agricultural		1605	1605	1605	1605	1605	1605	1605	1605	
JEA	Electric Providers		1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Jim Walter Resources, Inc.	Alternative Energy					1605	1605	1605	1605	1605	1605
Johnson & Johnson	Industrial	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Kansas City Power & Light Company	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
KeySpan Energy Corporation	Electric Providers						1605	1605	1605	1605	1605
Klickitat County Public Utility District No. 1	Electric Providers								1605	1605	1605
L`OREAL USA - Florence Manufacturing	Industrial							1605			
Lafarge U.S. Cementitious	Industrial							1605			
LAHD Energy, Inc.	Alternative Energy			1605EZ	1605EZ	1605EZ	1605EZ				
Landfill Energy Systems	Alternative Energy							1605	1605	1605	1605
Lehigh Cement Co. (fmrly Lehigh Portland Cement Co	Industrial						1605	1605	1605	1605	1605
Lehigh Cement Co. (formerly Calaveras Cement Co.)	Industrial						1605	1605	1605	1605	1605
LFG Energy, Inc.	Alternative Energy		1605EZ	1605EZ		1605	1605	1605	1605	1605	1605
Lockheed Martin	Industrial		1605								
Long Island Lighting Company	Electric Providers	1605	1605	1605	1605						
Long Island Power Authority & KeySpan Energy	Electric Providers					1605					
Los Angeles Department of Water and Power	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Lower Colorado River Authority	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Lucent Technologies Inc.	Industrial			1605	1605	1605	1605	1605	1605	1605	1605
Lynchburg Gas Producers, LLC	Alternative Energy							1605	1605	1605	1605
M. J. SOFFE COMPANY - Maxton	Industrial								1605	1605	1605
M. J. SOFFE COMPANY - Bladenboro	Industrial								1605	1605	1605
M. J. SOFFE COMPANY Fayettville	Industrial							1605	1605	1605	1605
M. J. SOFFE COMPANY Rowland	Industrial								1605	1605	1605
Madison County Depart. of Solid Waste & Sanitation	Alternative Energy						1605	1605	1605	1605	
Majestic Metals, Inc.	Industrial		1605EZ					1605EZ			
Mallinckrodt, Inc.	Industrial							1605	1605	1605	1605
Maple Springs Laundry	Services and Retail							1605	1605	1605	1605
McMinnville Electric System	Electric Providers	1605EZ	1605EZ								1605
McNeil Generating Station	Electric Providers					1605	1605	1605	1605	1605	1605
MCNIC Oil & Gas Co.	Alternative Energy			1605	1605	1605					
Mead Johnson Nutls./Bristol-Myers Squibb	Industrial							1605	1605	1605	1605
Mecklenburg Electric Cooperative	Electric Providers		1605	1605	1605	1605	1605	1605	1605	1605	1605
Michigan CAT	Industrial							1605	1605	1605	1605
Middlesex Generating Company, LLC	Alternative Energy							1605		1605	1605
Miller Brewing Company	Industrial							1605	1605	1605	1605
Minnesota Power	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Minnesota Resource Recovery Association (MRRA)	Other (Households)			1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Missouri River Energy Services	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ				
Mitsubishi Motors North America, Inc.	Industrial										1605
Model City Energy, LLC	Alternative Energy								1605	1605	1605
Montana Power Company	Electric Providers	1605	1605	1605	1605	1605					
Montauk Energy Capital	Alternative Energy									1605	1605
Monteco Gas, LLC	Alternative Energy			1605EZ	1605EZ	1605					
Moorhead Public Service	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605		
Mora Municipal Utilities	Electric Providers	1605EZ	1605EZ								
Motorola Austin	Industrial				1605	1605	1605	1605	1605	1605	
Municipal Electric Auth of Georgia (MEAG Power)	Electric Providers	1605	1605	1605	1605	1605			1605	1605	1605
Mystic Development, LLC	Alternative Energy										1605
N.W. Electric Power Cooperative, Inc.	Electric Providers		1605EZ								
Nashville Electric Service	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
National By-Products Inc	Industrial							1605	1605	1605	1605
National Grid USA	Electric Providers						1605	1605	1605	1605	1605
National Spinning Co. Alamance Yarn Plant	Industrial										1605
National Spinning Co. Alamance Dye Plant	Industrial										1605
National Spinning Co., Inc. Washington	Industrial							1605	1605	1605	1605
National Spinning Inc. Beulaville	Industrial								1605	1605	1605
National Spinning Inc. Warsaw	Industrial								1605	1605	1605
National Spinning Inc. Whiteville	Industrial								1605	1605	1605
Natural Power, Inc.	Alternative Energy						1605	1605	1605	1605	1605
Naval Air Engineering Station Lakehurst	Industrial							1605			
NC Muni Landfill Gas Partners, LLC	Alternative Energy			1605	1605	1605	1605	1605	1605	1605	1605

Table B11. Reporting Entities and Sectors, Years Reported and Form Type, Data Years 1994-2003 (Continued)

Reporter	Sector	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Nebraska Public Power District	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
NEGT	Electric Providers										1605
NEO Corporation	Alternative Energy						1605	1605	1605	1605	1605
Nevada Power Company	Electric Providers				1605EZ	1605EZ					
New England Electric System (NEES) Company	Electric Providers	1605	1605	1605	1605						
New Jersey Meadowlands Commission	Alternative Energy							1605	1605	1605	1605
New York Power Authority	Electric Providers	1605	1605		1605	1605		1605	1605	1605	1605
Newton Landfill Gas, LLC	Alternative Energy			1605	1605	1605	1605	1605	1605	1605	1605
Niagara Mohawk Power Corporation	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605		
NiSource/NIPSCO	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Nissan North America, Inc.	Industrial									1605	1605
Noranda Aluminum Inc.	Industrial	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
North American Carbon, Inc.	Alternative Energy			1605	1605	1605	1605	1605	1605	1605	
North Carolina Biomass Partners	Alternative Energy					1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
North Carolina Electric Membership Corporation	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Northeast Utilities	Electric Providers	1605	1605	1605	1605	1605	1605				
Northern Neck Electric Cooperative	Electric Providers		1605	1605	1605	1605	1605	1605	1605	1605	1605
Northern Virginia Electric Cooperative	Electric Providers		1605	1605	1605	1605	1605	1605	1605	1605	1605
Northrop Grumman Poly-Scientific	Industrial							1605	1605	1605	
Northwest Fuel Development, Inc.	Alternative Energy	1605	1605	1605	1605	1605	1605	1605	1605	1605	
NRG Energy Inc	Electric Providers							1605			
Oak Creek Energy Systems Inc.	Alternative Energy						1605	1605	1605		
Ocean County Landfill Corporation	Alternative Energy							1605	1605	1605	1605
Ohio Edison Company	Electric Providers	1605	1605	1605	1605						
Old Dominion Electric Cooperative	Electric Providers		1605	1605	1605	1605	1605	1605	1605	1605	1605
Omaha Public Power District	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Oregon State University (State of Oregon)	Services and Retail	1605	1605	1605	1605		1605				
Orlando Utilities Commission (OUC)	Alternative Energy									1605EZ	1605EZ
Osage Municipal Utilities	Electric Providers	1605	1605	1605							
Pacific Energy Operating Group, LLP	Electric Providers							1605	1605		
Pacific Gas and Electric Company	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ					
Pacific Natural Energy, LLC	Alternative Energy							1605	1605		
Pacific Recovery Corporation	Alternative Energy							1605	1605		
PacifiCorp	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Pak-Lite, Inc. - Mebane Plant	Industrial							1605	1605	1605	1605
Palmer Capital Corporation	Alternative Energy						1605	1605	1605	1605	1605
Pan American Hospital	Services and Retail					1605					
Peabody Energy	Industrial	1605	1605	1605	1605	1605			1605	1605	1605
PECO Energy Company	Electric Providers					1605EZ	1605	1605			
PEI Power Corp	Alternative Energy						1605	1605	1605	1605	1605
Penn Compression Moulding, Inc.	Industrial							1605	1605	1605	1605
Pfizer Pharmaceuticals LLC - Arecibo Site	Industrial						1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
PG&E Corporation	Electric Providers						1605	1605	1605	1605	1605
Pine Mountain Oil and Gas, Inc.	Alternative Energy						1605EZ				
Pintexs	Industrial					1605					
Pitt Landfill Gas, LLC	Alternative Energy					1605	1605	1605	1605	1605	1605
Platte River Power Authority & 4 Owner Cities	Electric Providers				1605	1605	1605	1605		1605	1605
Polar Refrigerant Technology, LLC	Industrial										1605
Portland General Electric Co.	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Potomac Electric Power Company	Electric Providers	1605	1605	1605	1605						
PPL CORPORATION	Electric Providers	1605	1605	1605	1605	1605	1605	1605			
Pratt & Whitney North Berwick	Industrial						1605	1605			
Pratt & Whitney, Middletown	Industrial							1605	1605		
Prince George Electric Cooperative	Electric Providers		1605	1605	1605	1605	1605	1605	1605	1605	1605
Public Service Company of New Mexico	Electric Providers			1605	1605	1605	1605	1605	1605	1605	1605
Public Service Enterprise Group	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Public Utility District No. 1 of Snohomish County	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Puget Sound Energy, Inc.	Electric Providers	1605	1605	1605EZ							
Quad/Graphics, Inc.	Industrial		1605		1605		1605	1605			
Rangely Weber Sand Unit	Industrial						1605	1605		1605	
Rappahannock Electric Cooperative	Electric Providers		1605	1605	1605	1605	1605	1605	1605	1605	1605
Redstone Gas Partners LLC	Alternative Energy						1605				
Republic Metals Corporation	Industrial						1605	1605	1605	1605	1605

Table B11. Reporting Entities and Sectors, Years Reported and Form Type, Data Years 1994-2003 (Continued)

Reporter	Sector	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Rochester Gas and Electric Corporation	Electric Providers							1605	1605	1605	1605
Rochester Institute of Technology	Services and Retail		1605	1605	1605		1605				
Rolls-Royce Corporation	Industrial						1605	1605	1605	1605	1605
Rosewood Resources, Inc.	Alternative Energy						1605				
Sacramento Municipal Utility District	Electric Providers			1605	1605	1605	1605	1605	1605	1605	1605
Salt River Project	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Santee Cooper	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Science Applications International Corporation	Services and Retail			1605EZ							
Seattle City Light	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
SeaWest WindPower, Inc.	Alternative Energy					1605	1605	1605	1605	1605	1605
Seminole Electric Cooperative, Inc.	Electric Providers	1605EZ	1605EZ		1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Seneca Energy II, LLC	Alternative Energy		1605EZ	1605EZ		1605	1605	1605	1605	1605	1605
Seneca Meadows, Inc.	Alternative Energy		1605EZ								
Separation Technologies, Inc	Industrial			1605EZ	1605EZ	1605EZ	1605EZ	1605EZ			
Shenandoah Valley Electric Cooperative	Electric Providers		1605	1605	1605	1605	1605	1605	1605	1605	1605
Sherry Manufacturing	Industrial						1605	1605			
Shih Family	Other (Households)									1605EZ	
Shrewsbury Electric Light Plant	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	
Siemens Power Transmission & Distribution, Inc.	Industrial							1605	1605	1605	
Sierra Pacific Power Company	Electric Providers	1605	1605	1605							
Sikorsky Aircraft Corporation	Industrial							1605	1605	1605	1605
SONAT Exploration Company	Alternative Energy					1605					
South Carolina Electric & Gas Company	Electric Providers				1605	1605	1605	1605	1605	1605	1605
Southeastern Biomass Partners, LP	Alternative Energy					1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Southern California Edison Co.	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Southern Company	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Southside Electric Cooperative	Electric Providers		1605	1605	1605	1605	1605	1605	1605	1605	1605
Springs Industries, Inc.	Industrial								1605EZ	1605EZ	1605EZ
State Farm Mutual Automobile Insurance Co.	Services and Retail										1605
Steuben Rural Electric Co-op	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Sunoco, Inc.	Industrial						1605	1605	1605	1605	1605
SWEENEY Furniture	Services and Retail					1605EZ					
Tacoma Power	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Tampa Electric Company	Electric Providers		1605	1605	1605	1605	1605	1605	1605	1605	1605
Taunton Municipal Lighting Plant	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ					
Tennessee Valley Authority	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Texas Genco, LP	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	
The Bentech Group of Delaware, Inc.	Alternative Energy						1605	1605	1605		
The Burlington Northern and Santa Fe Railway Co	Services and Retail										1605
The Dow Chemical Company	Industrial		1605	1605	1605	1605	1605	1605	1605	1605	1605
The Empire District Electric Co.	Electric Providers							1605	1605	1605	1605
The Estee Lauder Companies	Industrial					1605	1605			1605	1605
The Forest Bird Society	Other (Households)									1605	
The Gillette Company	Industrial					1605	1605				
The Pacific Forest Trust, Inc.	Agricultural						1605EZ				
The Virkler Company	Industrial							1605	1605		
Town of Colonie Solid Waste Management Facility	Alternative Energy						1605				
Toyota Motor North America, Inc.	Industrial									1605	1605
Trees for the Future	Agricultural	1605	1605								
TS Designs, Inc.	Industrial									1605	1605
Tucson Electric Power Company	Electric Providers		1605		1605	1605		1605	1605	1605	1605
TXU	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
U. S. Steel Mining Company, LLC	Alternative Energy					1605	1605	1605	1605	1605	
U.S. Department of Energy - Energy Management	Services and Retail						1605		1605	1605	1605
U.S. Department of Energy- Office of Solar	Services and Retail					1605	1605	1605	1605		
Union Electric Company	Electric Providers	1605	1605	1605	1605						
United Power Association	Electric Providers	1605	1605	1605	1605	1605					
Unocal Corporation	Industrial							1605	1605		
Urban Forestry Alliance	Agricultural					1605EZ					
US Energy Biogas Corp.	Alternative Energy	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
USGen New England, Inc.	Electric Providers					1605					
USX Corporation	Alternative Energy					1605	1605				
Utah Municipal Power Agency	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	

Table B11. Reporting Entities and Sectors, Years Reported and Form Type, Data Years 1994-2003 (Continued)

Reporter	Sector	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Utility Board of Key West, FL	Electric Providers	1605EZ									
Valdese Manufacturing Company	Industrial							1605	1605	1605	1605
VANALCO, INC. - (Primary Aluminum Reduction Plant)	Industrial			1605	1605	1605	1605				
Vermont Public Power Supply Authority	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Vermont Yankee Nuclear Power Corp.	Electric Providers							1605	1605		
Volvo Cars of North America, Inc.	Industrial			1605EZ	1605EZ	1605EZ	1605EZ				
Waste Management, Inc.	Alternative Energy							1605	1605	1605	1605
Waverly Light & Power Company	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
We Energies	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Western Resources, Inc.	Electric Providers	1605	1605	1605	1605	1605	1605	1605			
Whatcom Land Trust	Agricultural					1605	1605				
Wisconsin Public Power Inc.	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ
Wisconsin Public Service Corporation	Electric Providers	1605	1605	1605	1605	1605	1605				
World Parks Endowment	Agricultural					1605	1605				
World Wood Co.	Industrial							1605	1605		
Wyeth Vaccines	Industrial							1605	1605	1605	1605EZ
Xcel Energy	Electric Providers	1605	1605	1605	1605	1605	1605	1605	1605	1605	1605
Xenon Specialty Gas	Industrial										1605
Zeeland Board of Public Works	Electric Providers	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ	1605EZ

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

Table B12. Project-Level Reductions by Entity Sector, Data Years 1994-2003

(Metric Tons Carbon Dioxide Equivalent)

Sector and Reduction Type	1994	1995	1996	1997	1998	1999	2000	2001	2002 (R)	2003
Agriculture & Forestry										
Direct	--	--	--	-0.6	--	--	--	--	--	--
Indirect	--	6.8	6.8	--	--	--	--	--	--	--
Sequestration	356,558.8	234,702.2	35,198.7	39,527.2	2,046,934.5	431,291.1	112,746.8	2,749.9	7,398.1	3,031.8
Unspecified (EZ)	--	--	--	--	36,222.2	68,195.8	0.5	--	--	3,760.0
Alternative Energy										
Direct	261,496.0	25,769.5	-14,859,969.8	-15,366,381.4	22,577,221.3	26,000,314.4	47,805,594.6	49,931,904.0	59,208,508.1	54,279,212.4
Indirect	1,270.1	43,859,155.5	39,754,203.2	22,580,777.7	20,789,485.1	23,609,470.2	23,310,071.1	25,847,099.0	27,467,706.6	29,593,297.5
Sequestration	--	--	--	--	--	--	--	--	--	--
Unspecified (EZ)	560,913.9	1,146,892.6	1,273,056.8	1,343,821.2	2,499,685.6	3,051,879.0	2,913,611.0	3,768,992.9	7,277,366.7	7,262,100.9
Electric Providers										
Direct	59,004,436.5	85,222,962.8	100,982,856.3	105,172,388.1	118,256,785.1	124,424,203.4	155,776,659.5	191,759,783.9	198,759,086.8	192,894,001.7
Indirect	5,092,842.9	8,450,945.3	13,518,927.8	14,619,760.1	20,210,012.2	30,681,524.2	32,175,606.4	41,022,811.7	44,152,322.1	42,662,878.7
Sequestration	389,701.8	955,767.6	8,640,540.8	9,736,746.8	10,341,012.6	9,184,547.0	8,795,381.3	7,954,073.4	7,289,115.7	7,627,036.1
Unspecified (EZ)	3,721,044.1	4,969,791.4	4,332,595.8	6,568,087.6	15,472,773.5	8,247,572.5	7,829,631.3	9,729,782.1	8,394,708.6	7,616,126.5
Industrial										
Direct	3,347,075.1	3,074,795.4	3,756,581.1	5,013,299.1	6,882,518.5	4,819,723.6	7,013,834.7	5,600,719.2	6,898,137.5	19,696,074.8
Indirect	263,267.7	167,400.2	161,265.7	382,016.8	1,197,425.5	2,195,718.9	6,553,197.9	4,737,824.9	8,486,507.8	8,756,406.2
Sequestration	--	--	--	68,707.8	102,980.2	--	102,980.0	--	2.0	102,982.6
Unspecified (EZ)	3,107.7	5,433.4	61,265.9	234,112.7	235,606.2	261,546.5	337,981.3	38,666.9	219,473.7	39,478.6
Other										
Direct	4.5	4.5	4.4	4.5	4.4	4.4	4.4	4.4	--	--
Indirect	0.7	150.4	0.5	0.7	0.7	1.0	1.1	0.9	--	--
Sequestration	--	--	--	--	--	--	8.6	--	--	--
Unspecified (EZ)	3.3	--	2.5	490,150.5	1,173,295.7	1,256,894.9	1,192,787.5	1,302,259.2	1,365,015.7	1,439,271.8
Services and Retail										
Direct	188.9	378.0	567.0	77,514.2	279,796.2	197,735.2	201,092.5	199,531.7	202,986.9	1,434,602.7
Indirect	284.1	1,259.0	1,494.1	2,985.4	1,036,350.8	51,157.3	30,495.9	53,357.2	61,574.4	66,019.9
Sequestration	--	284.0	851.9	4,825.2	--	7,760.5	--	--	--	--
Unspecified (EZ)	--	--	1,776.3	435.8	661.7	--	--	--	--	--

(R) = Revised

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

This table excludes data reported as confidential; a negative reduction represents an increase in emissions.

Table B13. Project-Level Reductions by Location of Project, Data Years 1994-2003

(Metric Tons Carbon Dioxide Equivalent)

Geographic Scope and Reduction Type	1994	1995	1996	1997	1998	1999	2000	2001	2002 (R)	2003
Foreign										
Direct	189	378	803	6,169	1,994	49,795	-208,275	-32,443	4,399	2,22
Indirect	23,127	48,734	61,562	403,367	59,106	339,397	4,035,671	3,730,587	139,099	4,60
Sequestration	356,843	758,944	8,426,200	9,472,230	11,352,314	8,958,450	8,284,743	7,279,384	6,500,172	6,898,65
Unspecified (EZ)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/
U.S.										
Direct	62,613,012	88,323,532	89,879,236	94,890,655	147,994,331	155,392,186	211,005,460	247,524,387	265,064,320	268,301,67
Indirect	5,334,255	52,430,183	53,374,336	37,182,173	43,174,169	56,198,475	58,033,701	67,930,507	80,029,012	81,073,99
Sequestration	389,702	431,810	250,391	377,577	1,138,613	665,148	726,373	677,440	796,344	834,39
Unspecified (EZ)	4,285,069	6,122,117	5,668,697	8,636,608	19,418,245	12,886,089	12,274,012	14,839,701	17,256,565	16,360,73

Note: (R) = Revised

Note: Form EIA-1604EZ does not allow for reporting on foreign projects; This table excludes data reported as confidential; a negative reduction represents an increase in emissions.

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

Table B14. Reporting Entities by Type of Form and Organization, Data Years 1994-2003

Type of Reporting Entity	Reports Received									
	1994	1995	1996	1997	1998	1999	2000	2001	2002(R)	2003
	Form EIA-1605									
Individual or Family	**1**	**1**	**1**	**1**	**1**	**1**	**2**	**2**	**0**	**0**
Partnership	**--**	**1**	**1**	**2**	**3**	**2**	**2**	**2**	**1**	**0**
Corporation	**56**	**67**	**74**	**83**	**112**	**114**	**142**	**139**	**139**	**134**
Non-Profit	5	4	5	6	5	3	1	2	2	1
Privately Held	4	9	11	14	35	38	48	56	52	41
Publicly Traded	41	48	44	49	59	60	67	63	67	75
Subsidary	6	6	14	14	21	21	27	19	19	18
Government	**12**	**13**	**11**	**12**	**13**	**17**	**18**	**21**	**18**	**20**
Federal	1	1	1	1	2	3	3	3	2	2
Local	7	8	8	7	8	10	9	12	10	12
Regional	1	1	--	1	1	1	2	2	2	2
State	3	3	2	3	2	3	4	4	4	4
Joint Venture	**--**	**--**	**--**	**1**	**1**	**2**	**2**	**0**	**2**	**1**
Limited Liability Company	**--**	**--**	**--**	**--**	**5**	**7**	**11**	**13**	**16**	**20**
Other	**4**	**18**	**21**	**22**	**23**	**22**	**21**	**22**	**22**	**24**
Trade Association		**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Total Form EIA-1605	**73**	**101**	**109**	**122**	**159**	**166**	**199**	**200**	**199**	**200**
	Form EIA-1605EZ									
Individual	1	**--**	**--**	**--**	**--**	**--**	**--**	**--**	1	1
Company	7	14	17	15	26	19	17	14	14	13
Limited Liability Company	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	2
Government	20	18	17	19	16	14	14	13	14	12
Non-Profit Organization	4	6	5	4	4	6	5	4	4	5
Other	3	3	2	2	2	2	1	1	2	1
Total Form EIA-1605EZ	**35**	**41**	**41**	**40**	**48**	**41**	**37**	**32**	**35**	**34**

Type of Reporting Entity	Percent of Total									
	1994	1995	1996	1997	1998	1999	2000	2001	2002(R)	2003
	Form EIA-1605									
Individual or Family	**1.4**	**1.0**	**0.9**	**0.8**	**0.6**	**0.6**	**1.0**	**1.0**	**--**	**--**
Partnership	**--**	**1.0**	**0.9**	**1.6**	**1.9**	**1.2**	**1.0**	**1.0**	**0.5**	**--**
Corporation	**76.7**	**66.3**	**67.9**	**68.0**	**70.4**	**68.7**	**71.4**	**69.5**	**69.8**	**67.0**
Non-Profit	6.8	4.0	4.6	4.9	3.1	1.8	0.5	1.0	1.0	0.5
Privately Held	5.5	8.9	10.1	11.5	22.0	22.9	24.1	28.0	26.1	20.5
Publicly Traded	56.2	47.5	40.4	40.2	37.1	36.1	33.7	31.5	33.7	37.5
Subsidary	8.2	5.9	12.8	11.5	13.2	12.7	13.6	9.5	9.5	9.0
Government	**16.4**	**12.9**	**10.1**	**9.8**	**8.2**	**10.2**	**9.0**	**10.5**	**9.0**	**10.0**
Federal	1.4	1.0	0.9	0.8	1.3	1.8	1.5	1.5	1.0	1.0
Local	9.6	7.9	7.3	5.7	5.0	6.0	4.5	6.0	5.0	6.0
Regional	1.4	1.0	--	0.8	0.6	0.6	1.0	1.0	1.0	1.0
State	4.1	3.0	1.8	2.5	1.3	1.8	2.0	2.0	2.0	2.0
Joint Venture	--	--	--	0.8	0.6	1.2	1.0	--	1.0	0.5
Limited Liability Company	--	--	--	--	3.1	4.2	5.5	6.5	8.0	10.0
Other	5.5	17.8	19.3	18.0	14.5	13.3	10.6	11.0	11.1	12.0
Trade Association	0.0	1.0	0.9	0.8	0.6	0.6	0.5	0.5	0.5	0.5
Total Form EIA-1605	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
	Form EIA-1605EZ									
Individual	2.9	--	--	--	--	--	--	--	2.9	2.9
Company	20.0	34.1	41.5	37.5	54.2	46.3	45.9	43.8	40.0	38.2
Limited Liability Company	--	--	--	--	--	--	--	--	--	5.9
Government	57.1	43.9	41.5	47.5	33.3	34.1	37.8	40.6	40.0	35.3
Non-Profit Organization	11.4	14.6	12.2	10.0	8.3	14.6	13.5	12.5	11.4	14.7
Other	8.6	7.3	4.9	5.0	4.2	4.9	2.7	3.1	5.7	2.9
Total Form EIA-1605EZ	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(R) = Revised

Notes: The total number of corporations is less than the sum of the subtypes for some years, because one entity is listed both as publicly traded and as a subsidary, and because each of the seven Essroc Cement Corp. plants is listed both as privately held and as a subsidary.

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

Table B15. Summary of Reports Received by Schedule, Data Years 1994-2003

Form and Year	Number of Reports: With Emission Reduction Projects (Schedule II)	WIth Entity-Wide Emissions or Reductions (Schedule III)	With Commitments to Reduce Future Emissions (Schedule IV)	Total
Form EIA-1605				
1994	63	39	44	**73**
1995	88	50	61	**101**
1996	99	55	64	**109**
1997	110	60	72	**122**
1998	144	76	72	**159**
1999	148	83	66	**166**
2000	158	109	70	**199**
2001	150	109	85	**200**
2002(R)	140	119	49	**199**
2003	143	126	89	**200**
Form EIA-1605EZ				
1994	35	--	--	**35**
1995	41	--	--	**41**
1996	41	--	--	**41**
1997	40	--	--	**40**
1998	48	--	--	**48**
1999	41	--	--	**41**
2000	37	--	--	**37**
2001	32	--	--	**32**
2002(R)	35	--	--	**35**
2003	34	--	--	**34**
Total				
1994	98	39	44	**108**
1995	129	50	61	**142**
1996	140	55	64	**150**
1997	150	60	72	**162**
1998	192	76	72	**207**
1999	189	83	66	**207**
2000	195	109	70	**236**
2001	182	114	85	**232**
2002(R)	175	119	49	**234**
2003	177	126	89	**234**

(R) = Revised
Notes Excludes Form EIA-1605 Schedule data for reports classified as confidential
Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ

Table B16. Distribution of Projects Reported by Form and Project Type, Data Years 1994-2003

Project Type	Number of Reporters										Number of Projects									
	1994	1995	1996	1997	1998	1999	2000	2001	2002(R)	2003	1994	1995	1996	1997	1998	1999	2000	2001	2002(R)	2003
Form EIA-1605																				
Electricity Generation, Transmission and Distribution	47	62	67	71	69	68	72	72	65	68	186	248	281	323	369	382	416	373	398	464
Cogeneration	4	7	8	12	11	10	12	11	11	13	4	10	11	18	17	17	18	18	19	21
Energy End Use	51	63	62	67	79	80	77	68	65	67	160	221	214	249	308	330	382	338	339	374
Transportation	21	28	31	34	39	39	40	31	33	35	26	40	47	55	58	62	64	53	61	66
Waste Treatment and Disposal - Methane	11	16	22	25	36	43	57	55	52	54	17	23	44	53	90	153	350	391	403	425
Agriculture (Methane and Nitrous Oxide)	2	2	2	2	3	3	4	3	3	3	3	3	3	3	4	4	5	3	3	4
Oil and Natural Gas Systems and Coal Mining (Methane)	7	9	11	13	20	20	20	20	20	22	8	11	13	15	28	28	28	35	39	41
Carbon Sequestration	23	44	51	56	57	53	53	51	51	51	58	175	175	279	321	401	468	369	413	446
Halogenated Substances	12	17	17	20	23	27	28	27	29	29	13	21	22	29	35	36	43	39	42	43
Other Emission Reductions	29	35	36	42	45	46	50	40	46	45	34	44	51	63	67	71	86	68	84	85
All Project Types	**63**	**88**	**99**	**110**	**144**	**148**	**158**	**150**	**140**	**143**	**509**	**796**	**861**	**1,087**	**1,297**	**1,484**	**1,860**	**1,687**	**1,801**	**1,969**
Did Not Report Projects	8	12	9	12	15	18	41	49	59	57	--	--	--	--	--	--	--	--	--	--
Total, All 1605 Reporters	**71**	**100**	**108**	**122**	**159**	**166**	**199**	**199**	**199**	**200**	**509**	**796**	**861**	**1,087**	**1,297**	**1,484**	**1,860**	**1,687**	**1,801**	**1,969**
Form EIA-1605EZ																				
Electricity Generation, Transmission and Distribution	22	24	21	21	27	24	25	23	25	23	35	44	44	46	59	53	55	50	58	50
Cogeneration	--	1	2	2	2	--	--	--	1	--	--	1	2	2	2	--	--	--	1	--
Energy End Use	24	27	23	25	28	20	20	18	20	20	44	50	53	60	66	56	61	64	97	76
Transportation	4	5	6	5	6	4	5	6	5	6	5	8	11	9	14	11	12	13	9	10
Waste Treatment and Disposal - Methane	1	4	7	6	8	5	4	4	5	5	10	16	21	28	39	42	43	45	49	42
Agriculture (Methane and Nitrous Oxide)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil and Natural Gas Systems and Coal Mining (Methane)	1	1	3	2	2	1	1	2	2	2	5	5	9	4	2	3	1	2	2	2
Carbon Sequestration	17	18	16	19	16	17	16	12	11	12	20	24	23	30	34	41	35	14	14	14
Halogenated Substances	1	1	1	1	--	--	2	2	2	1	2	1	1	1	--	--	2	3	2	1
Other Emission Reductions	4	10	11	12	16	11	9	9	10	10	4	15	15	21	36	31	20	19	21	24
All Project Types	**34**	**40**	**41**	**40**	**47**	**39**	**36**	**32**	**35**	**34**	**125**	**164**	**179**	**201**	**252**	**237**	**229**	**210**	**253**	**219**
Did Not Report Projects	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	--	--	--	--	--	--	--	--	--	--
Total, All 1605EZ Reporters	**34**	**40**	**41**	**40**	**47**	**39**	**36**	**32**	**35**	**34**	**125**	**164**	**179**	**201**	**252**	**237**	**229**	**210**	**253**	**219**
Totals																				
Electricity Generation, Transmission and Distribution	69	86	88	92	96	92	97	95	90	91	221	292	325	369	428	435	471	423	456	514
Cogeneration	4	8	10	14	13	10	12	11	12	13	4	11	13	20	19	17	18	18	20	21
Energy End Use	75	90	85	92	107	100	97	86	85	87	204	271	267	309	374	386	443	402	436	450
Transportation	25	33	37	39	45	43	45	37	38	41	31	48	58	64	72	73	76	66	70	76
Waste Treatment and Disposal - Methane	12	20	29	31	44	48	61	59	57	59	27	39	65	81	129	195	393	436	452	467
Agriculture (Methane and Nitrous Oxide)	2	2	2	2	3	3	4	3	3	3	3	3	3	3	4	4	5	3	3	4
Oil and Natural Gas Systems and Coal Mining (Methane)	8	10	14	15	22	21	21	22	22	24	13	16	22	19	30	31	29	37	41	43
Carbon Sequestration	40	62	67	75	73	70	69	63	62	63	78	199	198	309	355	442	503	383	427	460
Halogenated Substances	13	18	18	21	23	27	30	29	31	30	15	22	23	30	35	36	45	42	44	44
Other Emission Reductions	33	45	47	54	61	57	59	49	56	55	38	59	66	84	103	102	106	87	105	109
All Project Types	**97**	**128**	**140**	**150**	**191**	**187**	**194**	**182**	**175**	**177**	**634**	**960**	**1,040**	**1,288**	**1,549**	**1,721**	**2,089**	**1,897**	**2,054**	**2,188**
Did Not Report Projects	8	12	9	12	15	18	41	49	59	57	--	--	--	--	--	--	--	--	--	--
Total, All Reporters	**108**	**142**	**150**	**162**	**207**	**207**	**236**	**231**	**234**	**234**	**634**	**960**	**1,040**	**1,288**	**1,549**	**1,721**	**2,089**	**1,897**	**2,054**	**2,188**

(R) = Revised

Notes: The total numbers of reporters are smaller than the sums of the numbers of reporters for each project type because most reporters provide information on projects of more than one type. Excludes data for reports classified as confidential.

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

Table B17. Affiliation of Reporting Entities with Voluntary Programs, Data Years 1994-2003

Voluntary Program	Number of Reporters									
	1994	1995	1996	1997	1998	1999	2000	2001	2002(R)	2003
AgSTAR	--	3	1	1	--	--	--	--	--	--
Compressed Air Challenge	--	--	--	--	--	1	2	3	3	3
Climate Challenge	85	106	100	109	103	91	88	85	79	76
Cool Communities Program	1	3	2	2	2	1	2	1	1	1
Coalbed Methane Outreach Program	1	1	2	2	8	8	6	7	6	4
Climate Wise Recognition Program	--	7	5	16	35	33	30	17	8	8
Energy Analysis and Diagnostic Centers	--	1	--	--	--	--	1	--	--	--
Energy Efficiency and Renewable Energy Information and Training	--	--	--	--	--	--	--	--	1	--
Energy Star Building Program	1	1	1	3	3	6	5	6	8	9
Energy Star Computers Program	2	1	1	1	1	1	2	2	1	1
Other Energy Star Programs	--	--	2	2	--	2	3	2	7	7
Energy Star Transformers	2	5	6	6	7	7	7	6	7	7
Green Lights Program	15	20	20	20	20	18	18	15	15	14
Landfill Methane Outreach Program	5	6	12	13	23	25	39	38	35	39
Motor Challenge Program	--	3	2	4	3	5	4	4	4	4
Methane Recovery Systems Landfills	--	3	--	--	--	--	--	--	--	--
Not applicable	2	1	7	7	9	16	14	21	19	26
Natural Gas STAR	3	5	5	4	4	7	7	7	8	11
Other Federal, state and local programs	9	7	8	7	5	9	10	8	8	10
Partnerships for Technology Introduction	--	--	--	--	--	--	--	--	1	--
Rebuild America	--	--	--	--	--	1	1	1	1	1
Steam Challenge	--	--	--	--	--	--	--	1	--	--
Sulfur Hexafluoride Emissions Reduction Partnership	--	--	--	--	--	1	6	9	9	10
United States Initiative on Joint Implementation	3	17	23	29	29	25	33	28	29	30
Voluntary Aluminum Industrial Partnership	2	2	3	3	3	3	2	2	2	2
Waste Wise Program	1	4	3	3	3	4	5	5	6	7

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