

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 gases⁶⁷ (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

⁶⁷Energy 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/ggrrpt.

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.

⁶⁸Negative 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), Dynegey 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

CO₂ = carbon dioxide. CH₄ = methane. CF₄ = 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.