

7. Entity-Level Reporting and Future Commitments

Overview

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

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

Chapters 2 through 6 of this report cover project-level emissions. This chapter covers entity-level emissions, emission reductions, and commitments to reduce emissions in the future. Entity reporting and project reporting are not mutually exclusive. They correspond to different views of the appropriate answer to the question, “What is a reduction?” Most (183, or 82 percent) of the 222 participants in the program reported project-level information on emissions and/or reductions, and 100 (45 percent) reported entity-level information. Sixty-two (28 percent) of all the participants in the program reported both entity-level information and project-level information. Thus, 62 percent of the entity-level reporters also chose to report project-level information on emissions and/or emission reductions. Thirty-eight firms (17 percent of the total) reported entity-level information only, whereas 121 (55 percent) submitted only project-level information. In addition, 43 percent of the 100 entity-level reporters, or 19 percent of all participants in the program, provided information on commitments to reduce greenhouse gas emissions in the future.

Entity-Level Reporting

Who Reported

Electric power producers accounted for 41 of the 100 entity-level reporters. They included Allegheny Energy Incorporated, the Southern Company, the Tennessee Valley Authority (TVA), and most of the other largest electric utilities in the United States. In addition, three subsidiaries of the AES Corporation (an independent

power producer) reported on domestic power plants with emissions offset by international forestry projects. The remaining 59 entity-level reporters included aluminum smelters (Alcan Ingot’s Sebree Aluminum Plant and Noranda Aluminum, Inc.), two semiconductor manufacturers (Lucent and Motorola Austin), and several large manufacturers (GM, IBM, and Johnson & Johnson). Also reporting at the entity level were cement manufacturers (including three plants of the California Portland Cement Company, as well as Calaveras Cement Company and Lehigh Portland Cement Company), four oil companies (BP, Sunoco, Inc., Texaco, Inc., and Unocal Corporation), a trade association (Integrated Waste Services Association [IWSA]), the Miller Brewing Company, and one household.

Reported Emissions

Total 2000 entity-level direct emissions of greenhouse gases reported to the Voluntary Reporting Program were 1,036.1 million metric tons carbon dioxide equivalent or 15 percent of total estimated U.S. emissions of greenhouse gases.⁶² Total 2000 entity-level indirect emissions reported to the program were 107.1 million metric tons carbon dioxide equivalent, or 2 percent of total estimated U.S. emission of greenhouse gases. Reported entity-level direct carbon dioxide emissions for 2000 were 1,008 million metric tons, which represented 97 percent of reported direct emissions—weighted by global warming potential (GWP).

The single largest category of direct emissions reported was the 995.8 million metric tons carbon dioxide emitted by stationary combustion sources, mostly electric utilities, which represented 99 percent of the total direct carbon dioxide emissions reported for 2000 (Table 25). Reported direct emissions of carbon dioxide for 2000 were moderately concentrated. The largest direct emissions reported were from the Southern Company, with emissions of 105.6 million metric tons carbon dioxide (Table 26). The second largest direct emissions reported were from Tennessee Valley Authority, with emissions of 78.2 million metric tons carbon dioxide, followed by Cinergy Corporation (62.9 million metric tons), Duke Energy Corporation (53.9 million metric tons), and FPL Group (51.8 million metric tons). In addition, Allegheny Energy, Inc., DTE Energy/Detroit Edison, FirstEnergy Corporation, PacifiCorp, Entergy Services, BP, and

⁶²Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2000*, DOE/EIA-0573(2000) (Washington, DC, November 2001), web site <http://www.eia.gov/oiaf/1605/1605a.html>.

Reliant Energy-HLP each reported direct emissions of carbon dioxide in the range of 37.1 to 48.4 million metric tons for 2000.

Carbon dioxide also accounted for 95 percent of reported indirect emissions of greenhouse gases weighted by GWP. The single largest category of reported indirect emissions for 2000 was 99.4 million metric tons carbon dioxide resulting from the reporting entities' purchased power transactions, which represented 93 percent of total indirect emissions of greenhouse gases reported. This represents a change over 1999, when the reported emissions of indirect carbon dioxide from other sources (343.5 million metric tons) exceeded the indirect carbon dioxide emissions from

purchased power (111.5 million metric tons). Ninety-nine percent (340.6 million metric tons) of the reported indirect carbon dioxide from other sources for 1999 was reported by General Motors Corporation (GM) on behalf of the entire U.S. fleet of GM-built vehicles. GM did not report data on the emissions of this fleet for 2000, which resulted in the decline in total reported indirect carbon dioxide emissions from 343.5 million metric tons in 1999 to 2.5 million metric tons in 2000.

Manufacturers that purchase electricity usually view themselves as responsible for the electricity they consume and, consequently, for any reductions in the quantity of electricity consumed. Utilities, however, have adopted more diverse views. Most electric utilities view

Table 25. Total Reported Entity-Level Carbon Dioxide Emissions by Type and Source, Data Year 2000
(Million Metric Tons Carbon Dioxide Equivalent)

Emissions Source	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Direct Emissions											
Stationary Combustion	859.5	652.2	755.5	782.3	818.2	833.2	839.6	893.8	997.1	985.0	995.8
Transportation	0.7	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.7	0.6	0.5
Other Direct Sources	7.0	5.8	7.4	7.8	8.1	11.0	11.2	11.5	11.5	11.8	11.6
Total Direct	867.2	658.2	763.1	790.3	826.4	844.3	851.0	905.5	1,009.3	997.4	1,008.0
Indirect Emissions											
Purchased Power	64.4	64.4	64.1	70.0	69.5	77.5	101.9	114.7	118.4	111.5	99.4
Other Indirect Emissions	377.3	368.6	371.9	372.0	373.2	367.7	360.6	354.3	348.1	343.5	2.5
Total Indirect	441.7	433.0	436.0	442.1	442.7	445.2	462.5	469.0	466.5	455.1	101.9
Electricity Wholesaling	7.6	13.4	8.2	7.1	4.2	5.8	-3.6	-44.2	-26.8	-20.6	-9.6

Note: The General Motors Corporation (GM) reported emissions from other indirect sources but did not provide quantitative data on those emissions for 2000.

Source: Energy Information Administration, Form EIA-1605.

Table 26. Largest Reported Entity-Level Direct Carbon Dioxide Emissions by Reporter and Source, Data Year 2000

Reporter	Emissions Source	Reported Direct Emissions (Million Metric Tons)	Percentage of Total Reported Direct Emissions of All Greenhouse Gases
Southern Company	Stationary Combustion	105.6	10.5
Tennessee Valley Authority	Stationary Combustion	78.2	7.8
Cinergy Corp.	Stationary Combustion	62.9	6.2
Duke Energy Corporation	Stationary Combustion	53.9	5.3
FPL Group	Stationary Combustion	51.8	5.1
PacifiCorp	Stationary Combustion	48.4	4.8
Entergy Services, Inc.	Stationary Combustion	48.3	4.8
Reliant Energy - HL&P	Stationary Combustion	43.9	4.4
Allegheny Energy, Inc.	Stationary Combustion	43.1	4.3
DTE Energy/Detroit Edison	Stationary Combustion	41.3	4.1
First Energy Corporation	Stationary Combustion	38.7	3.8
BP	Stationary Combustion	37.1	3.7
Total		653.2	64.8

Source: Energy Information Administration, Form EIA-1605.

themselves as responsible only for the direct emissions from their stacks. This view is unambiguous, relatively easy to verify, and prevents the same emission from being reported by more than one utility; however, accounting for reductions in emissions caused by substitutions of purchased power for company-generated power adds complexity to the picture.

Some utilities (for example, Hawaiian Electric Company, Portland General Electric, Niagara Mohawk Corporation, and PECO Energy Company) viewed themselves as responsible for their direct emissions plus the indirect emissions from electricity purchases necessary to support their customer base. This approach accounts for the possibility that a decline in generation may be associated with an increase in power purchases, but it may create the appearance of an increase in emissions when a firm is both buying and selling (i.e., trading) increasing volumes of wholesale electricity. Also, double reporting is possible, because both the buyer and seller of the electricity may claim ownership.

A few utilities (for example, Central Hudson Gas & Electric Corporation and DTE Energy/Detroit Edison) report a “net” view, in which they calculate direct generation emissions plus indirect electricity purchase emissions, minus emissions from “wholesale” electricity sales to other utilities. This approach captures net emissions to supply an end-use customer base, but there is

greater potential for double counting, because double reporting is possible for both buying and selling. Further, “generation only” electricity producers, such as independent power producers or generation and transmission cooperatives, would be in the position of defining essentially all their direct emissions as belonging to their customers.

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

Reported direct emissions of gases other than carbon dioxide included 27 million metric tons carbon dioxide equivalent of methane and 0.7 million metric tons carbon dioxide equivalent of sulfur hexafluoride. Reported direct emissions of nitrous oxide were less than 0.5 million metric tons carbon dioxide equivalent (Table 27).

Table 27. Total Reported Entity-Level Emissions of Other Greenhouse Gases by Type of Emissions, Data Year 2000
(Million Metric Tons Carbon Dioxide Equivalent)

Gas and Type of Emissions	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Methane											
Direct	55	14	15	11	29	30	26	30	34	28	27
Indirect	2	2	2	2	2	2	2	3	3	3	1
Nitrous Oxide											
Direct	2	*	*	*	*	*	*	*	*	*	*
Indirect	17	18	19	20	20	20	20	19	19	18	*
Hydrofluorocarbons											
Direct	*	*	*	*	*	*	*	*	*	*	*
Indirect	*	*	*	*	1	1	2	2	3	3	4
Perfluorocarbons											
Direct	1	1	1	1	*	*	*	*	*	*	*
Sulfur Hexafluoride											
Direct	*	1	*	*	2	2	2	1	1	1	1
Total											
Direct	58	15	16	12	31	32	28	32	35	29	28
Indirect	19	20	21	22	23	24	24	24	24	24	5

*Less than 0.5 million metric tons.

Note: The General Motors Corporation (GM) reported indirect emissions of methane and nitrous oxide but did not provide quantitative data on those emissions for 2000.

Source: Energy Information Administration, Form EIA-1605.

Thirteen companies reported entity-level direct emissions of methane for 2000, including Consol Coal Group, Black Warrior Methane Corporation, BP, CMS Energy, and Public Service Enterprise Group. These five entities together accounted for 93 percent of total reported entity-level direct emissions of other greenhouse gases for 2000 (Table 28). Two entities, Pratt & Whitney North Berwick and Allegheny Energy, Inc., did not have data available for 2000. Only three participants in the program, Allegheny Energy, Inc., Dow Chemical Company, and IWSA, reported direct emissions of nitrous oxide for 2000. As was the case for direct emissions of methane, Allegheny Energy did not have nitrous oxide data available for 2000. The direct emissions of nitrous oxide reported by the two other entities together accounted for less than 0.5 percent of total reported entity-level direct emissions of other greenhouse gases for 2000. In addition, one reporter (Alcan Ingot's Sebree Aluminum Plant) accounted for all direct emissions of perfluorocarbon reported, and five companies, including the Southern Company, NiSource/NIPSCO, and Public Service Enterprise Group, reported direct emissions of sulfur hexafluoride. These three companies together accounted for 3 percent of total reported entity-level direct emissions of other greenhouse gases for 2000.

Reported Reductions

Entity-level reductions were, in general, much smaller than the corresponding emissions reported by participants in the Voluntary Reporting of Greenhouse Gases Program. Reported entity-level direct reductions totaled 164.1 million metric tons carbon dioxide equivalent for 2000, or 16 percent of all reported entity-level direct emissions. Reported entity-level indirect reductions

totalled 27.8 million metric tons carbon dioxide equivalent, or 26 percent of all reported entity-level indirect emissions.

Reported entity-level direct emission reductions of carbon dioxide for 2000 totaled 131.9 million metric tons carbon dioxide (Table 29), equal to 8 percent of estimated total U.S. greenhouse gas emissions, and indirect emission reductions of carbon dioxide totaling 19.8 million metric tons. Reported direct reductions in emissions of other greenhouse gases for 2000 totaled 32.2 million metric tons carbon dioxide equivalent, and indirect emissions of other greenhouse gases totaled 8.1 million metric tons (Table 30).

The largest single reported 2000 direct reduction of carbon dioxide emissions was that of the TVA at 27.2 million metric tons (direct reductions from stationary combustion), followed by FPL Group at 16.9 million metric tons, followed by Duke Energy Corporation, which reported a reduction of 14.8 million metric tons (direct reductions from stationary combustion), Niagara Mohawk Corporation at 14.6 million metric tons, and First Energy Corporation at 14.2 million metric tons. These five entity-level claims of carbon dioxide emission reductions combined accounted for 66 percent (87.7 million metric tons) of total reported entity-level claims of direct carbon dioxide emission reductions for 2000 (Table 31).

Most of the emission reductions reported were direct reductions attributable to energy-related carbon dioxide, although the IWSA reported that its members' combustion of municipal solid waste reduced indirect emissions of carbon dioxide by 15.4 million metric tons

Table 28. Largest Reported Entity-Level Direct Emissions of Other Greenhouse Gases by Reporter and Emissions Source, Data Year 2000

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	13,691.8	48.7
Black Warrior Methane Corp.	Methane	Other Direct	6,402.0	22.8
BP	Methane	Other Direct	4,235.6	15.1
CMS Energy.	Methane	Other Direct	1,168.5	4.2
Public Service Enterprise Group	Methane	Other Direct	733.0	2.6
Duke Energy Corporation	Methane	Stationary Combustion	493.4	1.8
Cinergy Corp.	Methane	Other Direct	371.5	1.3
Public Service Enterprise Group	Sulfur Hexafluoride	Other Direct	354.7	1.3
Southern Company	Sulfur Hexafluoride	Other Direct	266.4	1.0
Alcan Ingot - Sebree Aluminum Plant	Perfluoromethane	Other Direct	131.3	0.5
NiSource/NIPSCO	Sulfur Hexafluoride	Other Direct	85.2	0.3
Total			27,933.4	99.4

Source: Energy Information Administration, Form EIA-1605.

and indirect emissions of methane by 5.3 million metric tons carbon dioxide equivalent, and both Southern Company and Public Service Enterprise reported indirect reductions of carbon dioxide emissions at 2.1 million metric tons each (Table 32). These reductions combined to account for 25.0 million metric tons carbon dioxide equivalent or 90 percent of total reported indirect emission reductions at the entity level for 2000.

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 2000 would have been if it had used the set of generating units operational in 1990 at

Table 29. Total Reported Entity-Level Carbon Dioxide Emission Reductions by Type and Source, Data Year 2000
(Million Metric Tons Carbon Dioxide)

Type of Reduction and Emissions Source	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Direct Reductions										
Stationary Combustion . . .	25	47	47	61	82	97	102	114	124	131
Transportation	*	*	*	*	*	*	*	*	*	*
Other Direct Sources	*	-1	-1	-1	-1	*	*	1	1	1
Total Direct	25	46	46	60	81	96	102	115	125	132
Indirect Reductions										
Purchased Power	3	-1	-3	-9	-10	-8	-7	-4	-5	-6
Other Indirect Sources . . .	13	14	15	18	22	24	23	25	26	26
Total Indirect	16	13	12	9	12	17	16	22	21	20
Carbon Sequestered	1	2	6	6	7	7	8	8	8	7

*Less than 0.5 million metric tons.
Note: Negative numbers indicate increases in emissions.
Source: Energy Information Administration, Form EIA-1605.

Table 30. Total Reported Entity-Level Reductions in Emissions of Other Greenhouse Gases by Gas and Source, Data Year 2000
(Thousand Metric Tons Carbon Dioxide Equivalent)

Gas and Type of Reduction	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Methane										
Direct	6,029	8,245	14,194	19,578	18,874	21,545	23,638	26,060	31,434	31,529
Indirect	1,752	2,783	3,286	3,707	4,204	4,994	5,727	6,084	6,876	7,985
Nitrous Oxide										
Direct	-3	-3	-3	-3	-4	-3	-5	-6	-5	-19
Indirect	71	76	76	76	96	100	97	98	104	94
Hydrofluorocarbons										
Direct	—	—	*	*	2	12	-9	-28	-53	59
Perfluorocarbons										
Direct	-2	55	-8	473	64	40	-88	208	144	-24
Indirect	—	—	*	6	6	10	9	23	5	7
Sulfur Hexafluoride										
Direct	-9	114	111	-48	-201	-300	309	510	1,312	621
Indirect	—	—	—	—	—	—	*	*	*	*
Total										
Direct	6,015	8,410	14,294	20,000	18,734	21,293	23,845	26,744	32,831	32,166
Indirect	1,823	2,859	3,362	3,790	4,306	5,105	5,833	6,205	6,985	8,086

*Less than 0.5 thousand metric tons.
Note: Negative numbers indicate increases in emissions.
Source: Energy Information Administration, Form EIA-1605.

their 1990 capacity factors and heat rates. Since 1990, TVA has greatly expanded nuclear generation. Browns Ferry Unit 2 returned to service in 1991, Browns Ferry Unit 3 returned to service in 1995, and Watts Bar Unit 1 started commercial operation in 1996. TVA's reported carbon dioxide emissions from stationary combustion sources for 2000 were 3.2 million metric tons above 1990 levels but 27.2 million metric tons below what they would have been if its 1990 generation mix and heat rates had been used.

IWSA reported two sources of 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.

Thirty-three companies reported emission reductions at the entity level using a "basic" reference case. A basic reference case is defined as total emissions in some baseline year—usually, but not always, 1990. In these cases, reductions were calculated as the difference between actual emissions in the data year and emissions in the baseline year. Of these 33 companies, 20 were electric power producers, including Consolidated Edison of New York, Inc., DTE Energy/Detroit Edison, Duke Energy Corporation, First Energy Corporation, Florida Power Corporation, Niagara Mohawk Corporation, and TVA. Also reporting entity-level emission reductions using a "basic" reference case were 12 reporters that were not electricity producers, including Allergan, Inc., Republic Metals Group, Sunoco, Inc., International Truck and Engine Corporation, Lucent Technologies,

Table 31. Largest Individual Reported Entity-Level Direct Emission Reductions by Gas, Source, and Type of Reference Case Employed, Data Year 2000

Reporter	Gas	Source	Reference Case	Reported Direct Emission Reduction (Million Metric Tons Carbon Dioxide Equivalent)	Percent of Total Reported Direct Reductions
Tennessee Valley Authority	CO ₂	Stationary Combustion	M	27.2	16.7
Consol Coal Group	CH ₄	Other Direct	B	17.7	10.8
FPL Group	CO ₂	Stationary Combustion	M	16.9	10.3
Duke Energy Corporation	CO ₂	Stationary Combustion	M	14.8	9.1
Niagara Mohawk Power Corporation . .	CO ₂	Stationary Combustion	B	14.6	8.9
First Energy Corporation	CO ₂	Stationary Combustion	M	14.2	8.7
Palmer Capital Corporation	CH ₄	Other Direct	B	6.0	3.7
Southern Company	CO ₂	Stationary Combustion	M	6.0	3.7
Entergy Services, Inc.	CO ₂	Stationary Combustion	M	5.9	3.6
Baltimore Gas & Electric Company . . .	CO ₂	Stationary Combustion	M	5.5	3.4
Black Warrior Methane Corp.	CH ₄	Other Direct	M	5.2	3.2
Reliant Energy - HL&P	CO ₂	Stationary Combustion	M	4.8	2.9
Florida Power Corporation	CO ₂	Stationary Combustion	M	4.8	2.9
Bethlehem Steel Corporation	CO ₂	Stationary Combustion	M	3.5	2.2
Keyspan Energy Corporation	CO ₂	Stationary Combustion	B	2.7	1.7
CMS Energy	CO ₂	Stationary Combustion	M	2.6	1.7
PG&E Corporation	CO ₂	Stationary Combustion	M	2.6	1.6
BP	CO ₂	Stationary Combustion	M	2.1	1.3
Alliant Energy	CO ₂	Stationary Combustion	M	1.7	1.1
NiSource/NIPSCO	CO ₂	Stationary Combustion	M	1.6	1.0
Sunoco, Inc.	CO ₂	Stationary Combustion	B	1.6	1.0
Cinergy Corp.	CO ₂	Stationary Combustion	M	1.6	1.0
General Motors Corporation	CO ₂	Stationary Combustion	B	1.5	0.9
Total				165.5	100.8

B = Basic. M = Modified.

Note: Seventeen participants in the Voluntary Reporting Program reported negative entity-level direct emissions reductions.

Source: Energy Information Administration, Form EIA-1605.

Rolls-Royce Corporation, and the General Motors Corporation.

For 2000, the Consol Coal Group reported the largest individual entity-level direct emissions reduction calculated with a basic reference case, at 17.7 million metric tons carbon dioxide, accounting for 11 percent of total reported carbon dioxide equivalent direct reductions during 2000. This direct reduction was from Consol's other direct source activities. In addition, the Niagara Mohawk Power Corporation, another entity-level reporter that relied on the use of a basic reference case to calculate emission reductions, reported the fifth largest single direct emissions reduction at 14.6 million metric tons carbon dioxide, representing 9 percent of total reported carbon dioxide equivalent direct reductions for 2000.

Future Commitments To Reduce Emissions

The Voluntary Reporting Program also permits entities to report commitments to reduce emissions or to take action to reduce emissions in the future. In previous

years, virtually all companies reporting future commitments were electric utility participants in the Climate Challenge voluntary program. However, 24 (37 percent) of the 65 future commitment reporters in 2000 were not utilities. They included the Dow Chemical Company, Sunoco, Inc., Noranda Aluminum, Inc., and Lucent Technologies. All 24 of these nonutility reporters indicated that they were participants in other voluntary programs, such as Climate Wise for manufacturers and the Voluntary Aluminum Industrial Partnership.

There are three types of future commitments in the Voluntary Reporting Program: entity commitments, financial commitments, and project commitments. Entity and project commitments roughly parallel the entity and project aspects of emissions reporting; an entity commitment is a commitment to reduce the emissions of an entire organization; a project commitment is a commitment to take a particular action that will have the effect of reducing the reporter's future emissions. A financial commitment has no emissions reporting counterpart: it is a commitment to spend a particular sum of money on emission reduction activities, without a specific promise on the emissions consequences of the expenditure. Most firms reported more than a single commitment, and

Table 32. Largest Individual Reported Entity-Level Indirect Emission Reductions by Gas, Source, and Type of Reference Case Employed, Data Year 2000

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	M	15.4	55.4
Integrated Waste Services Association	CH ₄	Other Indirect	M	5.3	19.0
Southern Company	CO ₂	Other Indirect	M	2.1	7.7
Public Service Enterprise Group	CO ₂	Power Purchases (Indirect)	M	2.1	7.6
Sacramento Municipal Utility District	CO ₂	Power Purchases (Indirect)	B	1.8	6.4
Central Hudson Gas & Electric Corporation.	CO ₂	Other Indirect	B	1.4	5.2
Los Angeles Department of Water and Power.	CO ₂	Power Purchases (Indirect)	B	1.1	3.8
Alliant Energy	CO ₂	Other Indirect	M	1.0	3.6
PPL CORPORATION.	CO ₂	Other Indirect	B	1.0	3.5
Portland General Electric Co.	CO ₂	Power Purchases (Indirect)	M	0.9	3.4
PG&E Corporation	CH ₄	Other Indirect	M	0.8	3.0
Cinergy Corp.	CH ₄	Other Indirect	M	0.7	2.5
PG&E Corporation	CO ₂	Other Indirect	M	0.7	2.4
Reliant Energy - HL&P.	CO ₂	Other Indirect	M	0.7	2.4
PacifiCorp.	CO ₂	Other Indirect	M	0.5	1.8
FPL Group	CO ₂	Other Indirect	M	0.5	1.7
Total				36.0	129.4

B = Basic. M = Modified.

Note: Eleven participants in the Voluntary Reporting Program reported negative entity-level indirect emission reductions.

Source: Energy Information Administration, Form EIA-1605.

many reported more than one type of commitment. Entity commitments are usually to make emissions lower than some level in a target year. Project commitments are usually to reduce emissions by a particular amount over a period of years. Because project commitments can cover a range of years, they are sometimes difficult to compare directly with project-level data for a single year of “achieved reductions.”

Entity-level Commitments

Twenty-eight participants in the Voluntary Reporting Program reported entity-level commitments to reduce greenhouse gas emissions. Data on the quantities of reductions expected were provided by 24 firms for 30 of the commitments. 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 by comparison with a baseline emissions growth trend. Participants reporting entity-level commitments to reduce greenhouse gas emissions in the future included the Hawaiian Electric Company, First Energy Corporation, IBM, Allegheny Power Service Corporation, TVA, Niagara Mohawk Corporation, Los Angeles Department of Water and Power, and Florida Power & Light Company.

Twenty-two (51 percent) of the 43 entity commitments to reduce future emissions involved reducing emissions by the 2000-2005 period. In their reports for 2000, reporters of entity-level commitments pledged to reduce emissions in the future by 98.4 million metric tons carbon dioxide equivalent (Table 33), with 23 percent of the total coming from the TVA (22.6 million metric tons carbon dioxide equivalent), followed by the Los Angeles Department of Water and Power at 17 percent (16.4 million metric tons carbon dioxide equivalent), Niagara Mohawk Power at 15 percent (15.1 million metric tons carbon dioxide equivalent), Florida Power & Light at 10 percent (10.0 million metric tons carbon dioxide equivalent), and Middlesex Generating Company, LLC at 10 percent (9.3 million metric tons carbon dioxide equivalent). These five commitments combined accounted for 75 percent (73.4 million metric tons carbon dioxide equivalent) of the total reported entity-level commitments to reduce greenhouse gases. TVA, Florida Power & Light, and Middlesex Generating Company measured their reduction commitments using modified reference cases. Niagara Mohawk Corporation and the Los Angeles Department of Water and Power used basic reference cases.

Project-Level Commitments

Thirty-three companies reported on commitments to undertake 211 individual emission reduction projects.

Table 33. Largest Reported Individual Entity-Level Commitments To Reduce Greenhouse Gases by Gas and Type of Reference Case, Data Year 2000

Company	Gas	Reference Case	Carbon Dioxide Equivalent (Million Metric Tons)	Percent of Total Reported Reduction Commitments
Tennessee Valley Authority	CO ₂	M	22.6	22.9
Los Angeles Department of Water and Power	CO ₂	B	16.4	16.7
Niagara Mohawk Power Corporation	CO ₂	B	15.1	15.4
Florida Power & Light Company	CO ₂	M	10.0	10.1
Middlesex Generating Company, LLC	CH ₄	M	9.3	9.5
PECO Energy Company	CO ₂	B	4.5	4.6
First Energy Corporation	CO ₂	M	2.9	2.9
Alliant Energy	CO ₂	M	2.4	2.4
Pacific Natural Energy, LLC	CH ₄	M	2.1	2.1
Greater New Bedford Regional Refuse Mgt District . .	CH ₄	M	1.9	1.9
Allegheny Power Service Corporation.	CO ₂	B	1.8	1.8
South Carolina Electric & Gas Company	CO ₂	B	1.8	1.8
Noranda Aluminum, Inc.	PFM	B	1.8	1.8
Alliant Energy	CO ₂	M	1.8	1.8
Public Service Company of New Mexico.	CO ₂	B	1.5	1.5
Alliant Energy	CO ₂	M	1.0	1.0
Total			96.8	98.3

B = Basic. M = Modified. PFM = perfluoromethane.

Note: Reporters are not asked to indicate whether future reductions will be direct or indirect.

Source: Energy Information Administration, Form EIA-1605.

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 28 firms for 145 projects.

Reporters indicated that projects were expected to reduce future emissions by 160.4 million metric tons carbon dioxide equivalent. Of this amount, 66 percent (105.7 million metric tons) would be methane and 32 percent (51.3 million metric tons) would be carbon dioxide.

The single largest project-level commitment was made by Fidelity Exploration & Production Company (87.1 million metric tons carbon dioxide equivalent of methane), followed by the TVA (17.6 million metric tons carbon dioxide) and Middlesex Generating Company, LLC (9.3 million metric tons carbon dioxide equivalent of methane). These three project-level commitments account for 71 percent of total reported project-level commitments (Table 34).

Fidelity's commitment is related to its Tongue River project, which involves pre-mining degasification of coal deposits in the Powder River Basin of Wyoming and Montana. According to Fidelity, extraction of the methane, which is being sold to natural gas customers in large volumes, began in 2000. This project was reported as a commitment because the avoided methane emissions will not occur unless coal extraction begins sometime in

the future. In the case of TVA, the project was described as "an increase in low emitting capacity," most likely a result of TVA's nuclear program. The Middlesex commitment was described as "landfill methane gas control and energy recovery to produce electric power."

Financial Commitments

Twenty-two companies, 18 of which were electric utilities, made a total of 35 financial commitments to reduce greenhouse gas emissions in the future. The total amount of funds promised was \$20.6 million, of which \$5.6 million was reported to have been expended in 2000. The single largest reported financial commitment to reduce greenhouse gas emissions was that of Noranda Aluminum, Inc., which committed to spend \$5.5 million on a "carbon burnout plant" to make fly ash suitable for sale to cement companies, followed by the Ameren Corporation (\$5.0 million), Minnesota Power (\$3.0 million), and First Energy Corporation (\$2.0 million). These four companies reported financial commitments combined accounted for 76 percent of the reported total for 2000 (Table 35). The single largest reported expenditure during 2000 was made by CLE Resources (\$2.0 million), followed by Minnesota Power (\$1.1 million), Noranda Aluminum, Inc. (\$0.6 million), L'ORÉAL USA (\$0.6 million), Ameren Corporation (\$0.5 million), and Dynegy Midwest Generation, Inc. (\$0.4 million). These six expenditures combined accounted for 93 percent of the total reported expenditures in 2000 to reduce greenhouse gas emissions (Table 36).

Table 34. Largest Reported Individual Project-Level Commitments To Reduce Greenhouse Gas Emissions, Data Year 2000

Reporter	Project Description	Carbon Dioxide Equivalent (Million Metric Tons)	Percent of Total Reported Project Commitments
Fidelity Exploration & Production Company	Tongue River Project: pre-mining degasification of coal deposits	87.1	54.3
Tennessee Valley Authority	Increase in low emitting capacity	17.6	11.0
Middlesex Generating Company, LLC	Landfill gas control and energy recovery to produce electric power	9.3	5.8
Commonwealth Edison Company.	Landfill methane gas recovery	6.3	3.9
First Energy Corporation	Undertake supply side efficiency improvements	4.4	2.7
First Energy Corporation	Nuclear generation operation improvement	2.5	1.6
Alliant Energy	Modified forest management	2.4	1.5
New York Power Authority	NYPA customer energy services programs	2.3	1.4
Tennessee Valley Authority	Fuel switching	2.2	1.4
CMS Energy.	Atlantic Methanol Production Company	2.0	1.2
Hawaiian Electric Company, Inc.	Annually purchase at least 500,000 MWh of renewable energy	2.0	1.2
Greater New Bedford Regional Refuse Mgt.	Landfill gas control and future utilization	1.9	1.2
Noranda Aluminum, Inc..	Reduction of PFC through anode effect reduction program	1.8	1.1
Alliant Energy	Other energy end-use projects/activities-electric	1.7	1.0
PacifiCorp	Other energy end-use projects/activities	1.3	0.8
North American Carbon, Inc.	Saint Felicien cogeneration project in Quebec, Canada	1.2	0.7
Santee Cooper	Cross Unit 2 retrofit	1.1	0.7
Total		147.1	91.7

Source: Energy Information Administration, Form EIA-1605.

Table 35. Largest Reported Individual Entity-Level Financial Commitments To Reduce Greenhouse Gas Emissions, Data Year 2000

Reporter	Industry	Financial Commitment (Dollars)	Voluntary Program Affiliation	Percent of Total Reported Financial Commitments
Noranda Aluminum Inc.	Primary Metals	5,500,000	Voluntary Aluminum Industrial Partnership	26.7
Ameren Corporation (formerly UE and CIPS)	Electric, Gas, and Sanitary Services	5,000,000	Climate Challenge	24.3
Minnesota Power	Electric, Gas, and Sanitary Services	3,039,000	Climate Challenge	14.8
CLE Resources	Holding and Other Investment	2,000,000	None	9.7
First Energy Corporation	Electric, Gas, and Sanitary Services	2,000,000	Climate Challenge	9.7
L'ORÉAL USA - Florence Manufacturing	Chemicals and Allied Products	600,000	Climate Wise Recognition Program	2.9
Dynegy Midwest Generation Inc.	Electric, Gas, and Sanitary Services	450,000	Climate Challenge	2.2
First Energy Corporation	Electric, Gas, and Sanitary Services	400,000	Climate Challenge	1.9
Conectiv Atlantic Generation (CAG).	Electric, Gas, and Sanitary Services	200,000	Climate Challenge	1.0
First Energy Corporation	Electric, Gas, and Sanitary Services	200,000	Climate Challenge	1.0
NiSource/NIPSCO.	Electric, Gas, and Sanitary Services	200,000	Climate Challenge	1.0
L'ORÉAL USA - Florence Manufacturing	Chemicals and Allied Products	150,000	Climate Wise Recognition Program	0.7
Dynegy Midwest Generation Inc.	Electric, Gas, and Sanitary Services	105,000	Climate Challenge	0.5
TXU	Electric, Gas, and Sanitary Services	105,000	Climate Challenge	0.5
Baltimore Gas & Electric Company	Electric, Gas, and Sanitary Services	100,000	Climate Challenge	0.5
Entergy Services, Inc.	Electric, Gas, and Sanitary Services	100,000	Climate Challenge	0.5
Total.		20,149,000		97.9

Source: Energy Information Administration, Form EIA-1605.

Table 36. Reported Entity-Level Financial Expenditures To Reduce Greenhouse Gas Emissions, Data Year 2000

Reporter	Industry	2000 Financial Expenditure (Dollars)	Voluntary Program Affiliation	Percent of Total Reported Financial Expenditures
CLE Resources	Holding and Other Investment	2,000,000	None	35.7
Minnesota Power	Electric, Gas, and Sanitary Services	1,122,000	Climate Challenge	20.0
Noranda Aluminum, Inc.	Primary Metals	601,843	Voluntary Aluminum Industrial Partnership	10.7
L'ORÉAL USA - Florence Manufacturing	Chemicals and Allied Products	600,000	Climate Wise Recognition Program	10.7
Ameren Corporation	Electric, Gas, and Sanitary Services	500,000	Climate Challenge	8.9
Dynegy Midwest Generation, Inc.	Electric, Gas, and Sanitary Services	400,000	Climate Challenge	7.1
NiSource/NIPSCO.	Electric, Gas, and Sanitary Services	200,000	Climate Challenge	3.6
Central Hudson Gas & Electric Corporation	Electric, Gas, and Sanitary Services	50,000	Other Federal, State, and local programs	0.9
L'ORÉAL USA - Florence Manufacturing	Chemicals and Allied Products	50,000	Climate Wise Recognition Program	0.9
Entergy Services, Inc.	Electric, Gas, and Sanitary Services	20,000	Climate Challenge	0.4
TXU	Electric, Gas, and Sanitary Services	20,000	Climate Challenge	0.4
Duke Energy Corporation	Electric, Gas, and Sanitary Services	10,000	Climate Challenge	0.2
Dynegy Midwest Generation, Inc.	Electric, Gas, and Sanitary Services	10,000	Climate Challenge	0.2
Cleco Corporation	Electric, Gas, and Sanitary Services	5,000	Climate Challenge	0.1
NiSource/NIPSCO.	Electric, Gas, and Sanitary Services	5,000	Climate Challenge	0.1
Xcel Energy	Electric, Gas, and Sanitary Services	5,000	Climate Challenge	0.1
Total.		5,598,843		100.0

Source: Energy Information Administration, Form EIA-1605.