

# 7. Entity-Level Reporting

## Overview

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

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

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

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

The single largest category of reported emissions was 938.6 million metric tons carbon dioxide equivalent

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

## Entity-Level Reporting

### Who Reported

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

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

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

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

## Reported Emissions

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

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

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

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

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

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

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

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

Source: Energy Information Administration, Form EIA-1605.

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

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

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

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

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

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

## Reported Reductions

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

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

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

\*Less than 0.05 million metric tons.

NR = no emissions reported.

Source: Energy Information Administration, Form EIA-1605.

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

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

\*Less than 0.05 million metric tons carbon dioxide.

NR = no emissions reported.

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

Source: Energy Information Administration, Form EIA-1605.

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

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

Most of the emission reductions reported were attributable to energy-related carbon dioxide, although the IWSA reported that its members' combustion of municipal solid waste reduced emissions of methane by 4.1 million metric tons carbon dioxide equivalent, and Black Warrior Methane Corporation reported methane emission reductions, mostly from landfill gas capture operations, of 5.1 million metric tons carbon dioxide

equivalent. These reductions combined to account for 9.2 million metric tons carbon dioxide equivalent or 5.7 percent of total reported emission reductions at the entity level for 1999.

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

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

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

Reporter	Gas	Source	Reference Case	Reported Emission Reduction (Million Metric Tons)	Percent of Total Reported Reductions
Tennessee Valley Authority . . . . .	CO <sub>2</sub>	Stationary combustion	M	25.8	14.4
IWSA . . . . .	CO <sub>2</sub>	Other indirect sources	M	17.1	9.6
FPL Group . . . . .	CO <sub>2</sub>	Stationary combustion	M	16.6	9.3
Duke Energy Corporation . . . . .	CO <sub>2</sub>	Stationary combustion	M	13.1	7.3
FPL Group . . . . .	CO <sub>2</sub>	Indirect power purchases	B	11.4	6.3
First Energy Corporation . . . . .	CO <sub>2</sub>	Stationary combustion	M	10.5	5.8
Niagara Mohawk Corporation . . . . .	CO <sub>2</sub>	Stationary combustion	B	9.7	5.4
Black Warrior Methane Corporation	CH <sub>4</sub>	Other direct sources	M	5.1	2.9
Baltimore Gas & Electric . . . . .	CO <sub>2</sub>	Stationary combustion	M	5.1	2.8
Florida Power Corporation . . . . .	CO <sub>2</sub>	Stationary combustion	M	5.0	2.8
Southern Company . . . . .	CO <sub>2</sub>	Stationary combustion	M	5.0	2.8
PG&E Corporation . . . . .	CO <sub>2</sub>	Stationary combustion	M	4.3	2.4
AES-Shady Point . . . . .	CO <sub>2</sub>	Sequestration	M	4.2	2.3
IWSA . . . . .	CH <sub>4</sub>	Other indirect sources	M	4.1	2.3
Entergy Services, Inc. . . . .	CO <sub>2</sub>	Stationary combustion	M	3.8	2.1
Keyspan Energy Corporation . . . . .	CO <sub>2</sub>	Stationary combustion	B	3.7	2.1
Reliant Energy-HL&P . . . . .	CO <sub>2</sub>	Stationary combustion	M	3.5	2.0
Bethlehem Steel . . . . .	CO <sub>2</sub>	Stationary combustion	M	3.5	1.9
<b>Total . . . . .</b>				<b>151.3</b>	<b>84.4</b>

B = Basic. M = Modified.

Source: Energy Information Administration, Form EIA-1605.

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

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

For 1999, the FPL Group reported the largest individual entity-level emissions reduction calculated with a basic reference case, at 11.4 million metric tons carbon dioxide, accounting for 6 percent of total reported carbon dioxide equivalent reductions during 1999. This indirect reduction was associated with the FPL Group’s power purchases. In addition, the Niagara Mohawk

Corporation, another entity-level reporter that relied on the use of a basic reference case to calculate emission reductions, reported the seventh largest single emissions reduction at 9.7 million metric tons carbon dioxide, representing 5 percent of total reported carbon dioxide equivalent reductions for 1999.

## Future Commitments To Reduce Emissions

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

<sup>55</sup>One of the 14 reporters, CLE Resources, is the unregulated subsidiary of an investor-owned electric utility, Cleco Corporation.

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

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

Source: Energy Information Administration, Form EIA-1605.

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

### Entity-level Commitments

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

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

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

Company	Gas	Reference Case	Carbon Dioxide Equivalent (Million Metric Tons)	Percent of Total Reported Reduction Commitments
Tennessee Valley Authority . . . . .	CO <sub>2</sub>	M	22.6	24.5
Los Angeles Dept. of Water & Light . . . . .	CO <sub>2</sub>	B	16.4	17.8
Niagara Mohawk Corporation . . . . .	CO <sub>2</sub>	B	15.1	16.4
Florida Power & Light . . . . .	CO <sub>2</sub>	M	10.0	10.8
PECO Energy Company . . . . .	CO <sub>2</sub>	B	4.5	4.9
Wisconsin Public Service . . . . .	CO <sub>2</sub>	M	3.2	3.4
First Energy Corporation . . . . .	CO <sub>2</sub>	M	2.9	3.1
Alliant Energy . . . . .	CO <sub>2</sub>	M	2.4	2.6
Noranda Aluminum, Inc. . . . .	PFM	B	2.1	2.2
Commonwealth Bethlehem Energy, LLC . . . . .	CH <sub>4</sub>	M	2.0	2.2
Allegheny Energy, Inc. . . . .	CO <sub>2</sub>	B	1.8	2.0
South Carolina Electric & Gas Company . . . . .	CO <sub>2</sub>	B	1.8	2.0
Alliant Energy . . . . .	CO <sub>2</sub>	M	1.8	1.9
Public Service of New Mexico . . . . .	CO <sub>2</sub>	B	1.5	1.6
<b>Total . . . . .</b>			<b>88.0</b>	<b>95.5</b>

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

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

### Project-level Commitments

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

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

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

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

### Financial Commitments

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

made by the Central and South West Corporation (\$2.5 million), followed by CLE Resources (\$2.0 million), and the South Carolina Electric & Gas Company

(\$1.5 million). These three expenditures combined accounted for 56.4 percent of the total reported expenditures in 1999 to reduce greenhouse gas emissions.