U.S. Energy Information Administration

Voluntary Reporting of Greenhouse Gases 2009: Summary

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For more information

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

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Information about the Program is available on the Program's website at www.eia.doe.gov/oiaf/1605/index.html. Nonconfidential reports submitted to the Program in the 2009 reporting cycle and summaries of the information included in those reports are available at www.eia.doe.gov/oiaf/1605/data_reports.html.

Please note that reports included in the Public Use Database were submitted to EIA on the revised version of Form EIA-1605, which reflects the revised General Guidelines and Technical Guidelines that were finalized in 2006 and 2007, respectively. The revised Form EIA-1605 and its accompanying instructions are available on website www.eia.doe.gov/oiaf/1605/1605b_form_and_instructions.htm. The revised General and Technical Guidelines can be accessed at website www.eia.doe.gov/oiaf/1605/gdlins.html.

Reports submitted to the Program between 1994 and 2006 employed either a long form (EIA-1605) or a short form (EIA-1605EZ), based on the Program's original guidelines issued in October 1994. The original forms are available on website www.eia.doe.gov/oiaf/1605/OldForms.html. Reports submitted to EIA from 1994 through 2006, based on the original forms and 1994 Program guidelines, have been compiled into a database that can be downloaded from website www.eia.doe.gov/oiaf/1605/OldDatabases.html.

Preface

Voluntary Reporting of Greenhouse Gases 2009 summarizes greenhouse gas emissions data voluntarily submitted to the U.S Energy Information Administration under its Voluntary Reporting of Greenhouse Gases Program. The publication provides industry decisionmakers, government policymakers, analysts, and the general public with data that can be used in understanding U.S. greenhouse gas emission sources and potential opportunities for greenhouse gas emission reductions. The *Voluntary Reporting of Greenhouse Gases* report is prepared by the Office of Electricity, Renewables, and Uranium Statistics under the Assistant Administrator for Energy Statistics, U.S. Energy Information Administration.

Specific technical information concerning the content of the report may be obtained from Paul McArdle at 202/586-4445 (e-mail, paul.mcardle@eia.gov).

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

The legislation further instructed EIA to create forms for the reporting of greenhouse gas emissions and reductions, and to establish a database of the information voluntarily reported under this subsection of EPACT. Between 1995 and 2006, EIA conducted 12 reporting cycles under the original guidelines released by the U.S. Department of Energy (DOE) in 1994. On February 14, 2002, President Bush directed the Secretary of Energy, in consultation with the Secretary of Commerce, the Secretary of Agriculture, and the Administrator of the Environmental Protection Agency, to propose improvements to the Program to enhance measurement accuracy, reliability, and verifiability, working with and taking into account emerging domestic and international approaches. DOE issued final revised general and technical guidelines in April 2006 and January 2007, respectively, and EIA released the final revised version of Form EIA-1605 in October 2007. An electronic version of the final revised reporting form was made available for use in November 2009. This publication summarizes data reported during the first reporting cycle under the revised guidelines for the Voluntary Reporting of Greenhouse Gases Program.

All nonconfidential reports received by the program are compiled into a Public Use Database that can be downloaded from website www.eia.doe.gov/oiaf/1605/data_reports.html. Printable portable document format (PDF) versions of individual reports also can be downloaded from the same site. Interested parties are encouraged to visit the program's home page at www.eia.gov/oiaf/1605/index.html for more information and background on the program. Copies of this report, paper reporting forms, and technical support information can be downloaded from that website or obtained from the Voluntary Reporting of Greenhouse Gases Communications Center by calling 1-800-803-5182 or 202-586-0688, or by e-mail to infoghg@eia.gov.

Significant contributions to the program and the preparation of this report have been made by Paul McArdle, Dick Richards, Emily Crego, Alexandra Saris, David Catalinotto, Matthew Aberant, Keith Forbes, Kristin Igusky, Erin Beddingfield, Charles L. Smith, and Peggy Wells.

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

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1. Introduction

The Voluntary Reporting of Greenhouse Gases Program, required by Section 1605(b) of the Energy Policy Act of 1992, records the results of voluntary measures to reduce, avoid, or sequester greenhouse gas emissions (see box below on "Evolution of the Voluntary Reporting Program"). For the 2009 reporting year, 30 U.S. companies and other organizations submitted 31 Start Year reports[1] to the U.S. Energy Information Administration (EIA) under the revised General Guidelines and Technical Guidelines finalized in April 2006 and January 2007, respectively. For the 2009 reporting year, EIA accepted only Start Year reports, which include an entity's initial, baseline emissions inventory against which subsequent progress in reducing greenhouse gas emissions and increasing carbon sequestration is measured.[2]

The reported greenhouse gas emissions included 195.8 million metric tons carbon dioxide equivalent (million $MTCO_2e$) of direct emissions and 17.7 million $MTCO_2e$ of indirect emissions (Table 1).[3] To put these numbers in perspective, the 195.8 million $MTCO_2e$ of direct emissions reported is equivalent to about 3.0 percent of total estimated U.S. greenhouse gas emissions in 2009 (6,575.5 million $MTCO_2e$).[4]

Table 1. Direct and indirect base period emissions reported in the 2009 reporting cycle (metric tons carbon dioxide equivalent)

	Direct emissions		Indirect emissions from purchased energy	
Source	Metric tons carbon dioxide equivalent	Percent	Metric tons carbon dioxide equivalent	Percent
U.S. emissions	195,827,905	100.0	17,679,451	99.9
Foreign emissions	635	*	14,084	0.1
Total emissions	**195,828,540**	**100.0**	**17,693,535**	**100.0**

*Less than 0.05 percent.

[1]One entity, General Motors (GM), submitted two Start Year reports covering different time periods. GM submitted a Start Year report for 2000 for "registering" emission reductions for 2001 onwards and a Start Year report for 1990 for "reporting but not registering" emission reductions for 1991-2000.
[2]Carbon sequestration is the fixation of atmospheric carbon dioxide in a carbon sink through biological or physical processes.
[3]Direct emissions are emissions from sources within the organizational boundaries of an entity. Indirect emissions are emissions from stationary or mobile sources outside the organizational boundary that occur as a direct consequence of an entity's activity, including but not necessarily limited to the emissions associated with the generation of electricity, steam and hot/chilled water used by the entity.
[4]U.S. Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2009*, DOE/EIA-0573(2009) (Washington, DC, March 2011), website www.eia.gov/environment/emissions/ghg_report.

Evolution of the Voluntary Reporting of Greenhouse Gases Program

The Voluntary Reporting of Greenhouse Gases ["1605(b)"] Program was established by Section 1605(b) of the Energy Policy Act of 1992 (Public Law 102-486, 42 U.S.C. 13385) in October 1992. The 1605(b) Program provides an opportunity for any interested party to record and highlight specific achievements related to its historic and current greenhouse gas emissions, emission reductions, and carbon sequestration. While reporting entities could report entity-wide emissions and emission reductions, the focus of the original 1605(b) Program was on actions or projects that reduce emissions of greenhouse gases or increase carbon sequestration. Following the release of guidelines in October 1994, EIA conducted 12 annual reporting cycles between 1995 and 2006, receiving reports from 425 distinct entities, including electric utilities, a variety of manufacturers, coal mine operators, landfill operators, furniture retailers, and even individual households.

On February 14, 2002, President Bush announced the Administration's Global Climate Change Initiative, which—in addition to establishing a national goal of reducing the greenhouse gas intensity of the U.S. economy by 18 percent between 2002 and 2012 and incentives for clean technology development—included a framework for improving the 1605(b) Program to enhance measurement accuracy, reliability, and verifiability. The guidelines for the Program were revised through an extensive interagency and multiyear public review process that included workshops, meetings, and other opportunities for stakeholders to provide oral and written comments. The General Guidelines and Technical Guidelines, published in April 2006 and January 2007, respectively, included the following key elements:

- A shift in emphasis from project-level reporting to entity-wide assessments of emissions and emission reductions
- A system for rating the quality of emissions inventories, based on the emissions estimation methods used
- Introduction of the "registration" of emission reductions in data years 2003 and later for entities meeting stricter emissions inventory requirements
- A requirement for large emitters registering emission reductions to conduct comprehensive entity-wide emission inventories
- Less stringent registration requirements for small emitters (entities emitting less than 10,000 metric tons CO_2 equivalent per year)
- Prescribed methods for estimating entity-level emission reductions, based on changes in absolute emissions or emission intensity
- Prescribed methods for estimating emission reductions associated with a limited number of specific actions, including utility demand-side management programs, electricity transmission and distribution system improvements, carbon capture and storage, methane capture and recovery, and terrestrial carbon storage.

The new version of Form EIA-1605, developed by EIA for reporting under the revised guidelines, was approved in July 2007 by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995. Reporting on the new form was delayed until November 2009, to allow for the development of an Internet-based electronic version of the revised form.

2. Who reported?

Table 2 shows the distribution of reporters by primary 3-digit North American Industrial Classification System (NAICS) code.[5] Nearly half (14 entities or 47 percent) of the 30 reporting entities identified themselves as utilities (NAICS 221), which is consistent with reporting under the original 1605(b) Program. They include six investor-owned utilities (Allegheny Energy; Constellation Energy; Exelon Corporation; NiSource, Inc.; Pepco Holdings, Inc.; and Tampa Electric Company) and eight municipal utilities, nonprofit utilities, or independent power producers (Berkshire Power Company; LLC; Boston Generating, LLC; Dakota Gasification Company; Gainesville Regional Utilities (GRU); JEA; Klickitat County Public Utility District No. 1, Washington; McMinnville Electric System; and Public Utility District No. 1 of Snohomish County, Washington).

The remaining entities were distributed among six other 2-digit NAICS sectors, including NAICS 31, 32, and 33 for manufacturing (three CalPortland cement plants; Dynagraf, Inc.; General Motors; IBM Corporation; Meridian Dyed Yarn Group, Inc.; Newsday, Inc.; Polar Technology; and Springs Global US, Inc.), NAICS 48 for transportation (BNSF Railroad and El Paso Corporation), NAICS 52 for finance and insurance (Washington Savings Bank), NAICS 54 for professional, scientific, and technical services (Innovative Energy Systems, LLC), NAICS 62 for health care and social assistance (Montefiore Medical Center), and NAICS 11 for agriculture forestry, fishing, and hunting (USDA Farm Services).

The 30 entities that submitted reports to EIA on Form EIA-1605 in the 2009 reporting cycle are listed in Table 3, which also identifies each reporting entity's Start Year by entity type.

Table 2. Number of entities reporting in the 2009 reporting cycle, by NAICS Code

Primary NAICS code	Description	Number of entities
111	Crop production	1
221	Utilities	14
313	Textile mills	2
323	Printing and related support activities	2
327	Nonmetallic mineral product manufacturing	3
334	Computer and electronic product manufacturing	1
336	Transportation equipment manufacturing	1
339	Miscellaneous manufacturing	1
482	Rail transportation	1
486	Pipeline transportation	1
522	Credit intermediation and related activities	1
541	Professional, scientific, and technical services	1
622	Hospitals	1
	Total	**30**

[5]NAICS is a two- through six-digit hierarchical classification system, offering five levels of detail. Each digit in the code is part of a series of progressively narrower categories, and more digits in the code signify greater classification detail. The first two digits designate the economic sector; the third digit designates the subsector; the fourth digit designates the industry group; the fifth digit designates the NAICS industry; and the sixth digit designates the national industry. The five-digit NAICS code is the level at which there is comparability in codes and definitions for most of the NAICS sectors across the three countries participating in NAICS (United States, Canada, and Mexico). The six-digit level allows for the United States, Canada, and Mexico each to have country-specific detail. A complete and valid NAICS code contains six digits. For more information, see website www.census.gov/eos/www/naics/faqs/faqs.html#q5.

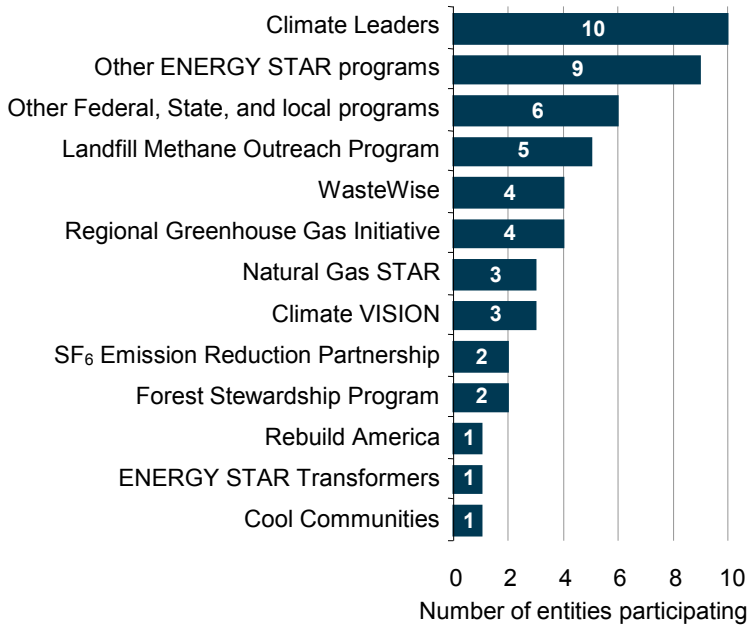
Table 3. Start year by entity type for entities submitting reports in the 2009 reporting cycle

	Start year by entity type		
Entity	Large emitter intending to register emission reductions	Small emitter intending to register emission reductions	Emitter intending to report but not register emission reductions
Allegheny Energy			1999
Berkshire Power Company, LLC			2002
BNSF Railway	2004		
Boston Generating, LLC			1999
CalPortland Company – Colton Cement Plant			1990
CalPortland Company – Mojave Cement Plant			1990
CalPortland Company – Rillito Cement Plant			1991
Constellation Energy	2008		
Dakota Gasification Company			2000
Dynagraf Inc.		2007	
El Paso Corporation			2006
Exelon Corporation	2001		
Gainesville Regional Utilities (GRU)	2006		
General Motors	2000		1990
IBM Corporation			2005
Innovative Energy Systems, LLC			2007
JEA	2006		
Klickitat County Public Utility District No. 1			2009
McMinnville Electric System			2009
Meridian Dyed Yarn Group, Inc.	2002		
Montefiore Medical Center	2009		
Newsday			2004
NiSource, Inc.	2001		
Pepco Holdings, Inc.			2008
Polar Technology, LLC		2008	
Public Utility District No. 1 of Snohomish County			2008
Springs Global US, Inc.			2008
Tampa Electric Company			1998
USDA Farm Services	2009		
Washington Savings Bank			2009

Twenty-three entities submitting reports in the 2009 reporting cycle indicated that they also participated in one or more voluntary programs in addition to EIA's Voluntary Reporting of Greenhouse Gases Program. Participation in such programs is summarized in Figure 1. Ten entities indicated that they participated in the U.S. Environmental Protection Agency (EPA) Climate Leaders Program, and another 10 noted participation in various ENERGY STAR programs. Entity participation in other EPA programs included the Landfill Methane Outreach Program (5), Waste Wise Program (4), Natural Gas STAR (3), and Sulfur Hexafluoride (SF_6) Emissions Reduction Partnership for Electric Power Systems (2). Reporters also participated in programs sponsored by DOE—including Climate VISION (3), Rebuild America (1), ENERGY STAR Transformers (1), and the Cool Communities Program (1)—and the U.S. Department of Agriculture's Forest Stewardship Program (2). Four entities listed participation in the Regional Greenhouse Gas Initiative (although it is not a voluntary program).

Seven entities also reported participation in domestic emission registries or exchanges. Four entities indicated participation in the Chicago Climate Exchange (Tampa Electric Company; Polar Technology, LLC; IBM Corporation; and Allegheny Energy), two in the Climate Registry (Boston Generating, LLC; and USDA Farm Services), and one in the Climate Action Reserve (El Paso Corporation). One entity (USDA Farm Services) reported participation in the World Bank Carbon Fund, which is an international exchange.

Figure 1. Number of entities participating in voluntary programs, 2009 reporting cycle



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3. Characteristics of reports submitted

This chapter summarizes the information reported in the entity statements of the Program respondents.[6] The entity statement describes the nature and scope of a respondent's submission.

Start Year, Registration Status, and Entity Type

Figure 2 shows the distribution of reports submitted, by start year and registration status. The *start year* corresponds to the last year of the *base period*, which is the period against which future emissions performance is measured. The start year can be as early as 1990 for entities intending to "report but not register" emission reductions but no earlier than 2002 for entities intending to "register" emission reductions.[7] Entities that have made a commitment to reduce their entity-wide emissions under EPA's Climate Leaders program or DOE's Climate VISION program may use a start year as early as 2000, provided that it corresponds with the base period chosen by the entity for its emission reduction commitment under those programs. Three entities—Exelon Corporation (2001), General Motors (2000), and NiSource, Inc. (2001)—selected start years earlier than 2002, based on their participation in the programs.

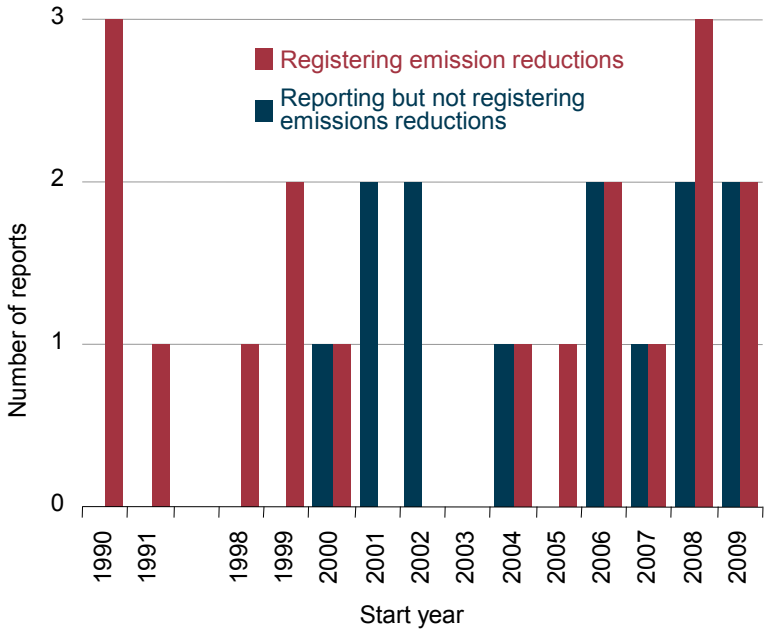
A majority of the reports submitted in the 2009 reporting cycle (24 reports, or 77 percent of the total) employed start years of 2000 or later, with a slight concentration in the last 2 years of the time frame (2008 and 2009). For 7 of the 31 reports received by EIA (23 percent), the start year was 1999 or earlier; and 4 of those 7 reports had start years of 1990 or 1991.

The Voluntary Reporting of Greenhouse Gases Program recognizes three entity types:

- Large emitters (emissions of more than 10,000 metric tons carbon dioxide equivalent per year) intending to register emission reductions
- Small emitters (emissions of 10,000 metric tons carbon dioxide equivalent or less per year) intending to register emission reductions
- Entities intending to report—but not register—emission reductions regardless of their emissions levels.

In 19 of the reports submitted (61 percent of the total), the respondents elected to report but not register emission reductions. In 12 reports (39 percent of the total), the respondents indicated that they intended to register emission reductions; 2 of those 12 reports were submitted by small emitters. One reporter, General Motors, submitted 2 start year reports: one with a start year of 1990, to report but not register emission reductions from 1991 through 2000, and another with a start year of 2000, to register emissions reductions for 2001 and subsequent years.

Figure 2. Number of reports submitted by start year and registration status, 2009 reporting cycle



[6]Schedule I, Section 1 of each 1605(b) report comprises the entity statement.

[7]Entities intending to register emission reductions must meet specific, stringent reporting requirements designed to increase the credibility of reported emissions and emission reductions, as described in §§ 300.6 and 300.7 of 10 CFR Part 300, "Guidelines for Voluntary Greenhouse Gas Reporting." These requirements include meeting minimum quality standards for the methods used to prepare the entity's emission inventory and, for large emitters, submitting comprehensive entity-wide emissions inventories.

Independent verification

Only one submitted report (El Paso Corporation, with 2006 as the start year) received by EIA in the 2009 reporting cycle was independently verified by a third party. Independent verification, per the Program guidelines, allowed El Paso Corporation to aggregate its emissions inventory data by gas rather than report its emissions by source category. Additionally, Exelon Corporation (2001 start year) reported that its emissions inventory had been subjected to an independent third-party verification as part of its participation in EPA's Climate Leaders Program and had been accepted by EPA as meeting the Climate Leaders independent verification requirements. EIA could not classify Exelon's submitted report as an independently verified report, however, because the requirements for independent verification in EIA's Voluntary Reporting of Greenhouse Gases Program are slightly different from the requirements in EPA's Climate Leaders Program.

Inventory scope

Large emitters intending to register emission reductions are required to submit an entity-wide emissions inventory. Small emitters intending to register emission reductions, and any entity intending to report but not register emission reductions, may, at their option, submit a partial emission inventory covering just those activities for which they intend to report reductions.

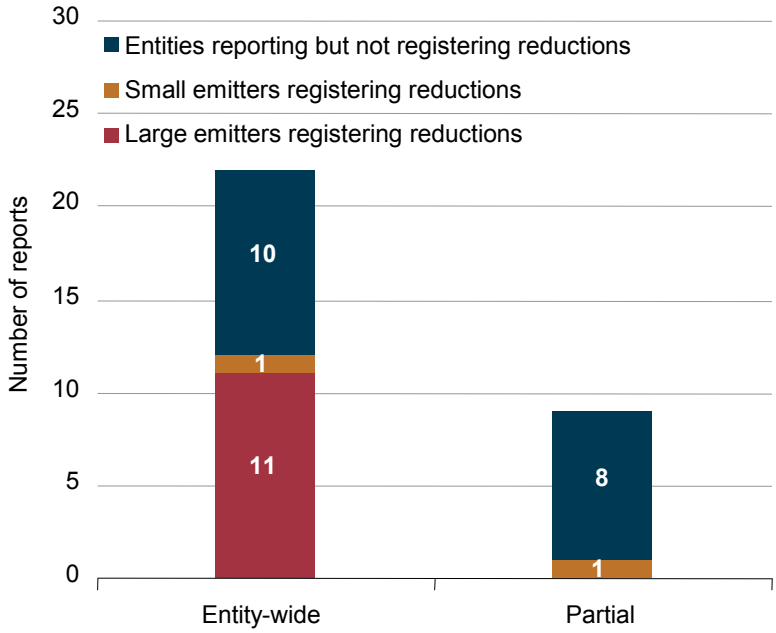
Of the 31 reports submitted in the 2009 reporting cycle, 22 (71 percent) included an entity-wide inventory (Figure 3). Of those 22 reports, 12 were submitted by entities intending to register emission reductions, including one submitted by a small emitter.

The emission source categories identified in the 30 submitted reports for which detailed emissions data were reported are summarized in Figure 4. Stationary combustion emissions were reported in all of those reports. Most also reported indirect emissions from purchased energy (73 percent) and direct emissions from mobile sources (47 percent). Other emission sources identified in nonconfidential reports included industrial, agricultural, and other indirect sources. No reporters included fugitive emissions from geologic reservoirs or carbon stocks in their emissions inventories.

Methods for defining organizational boundaries

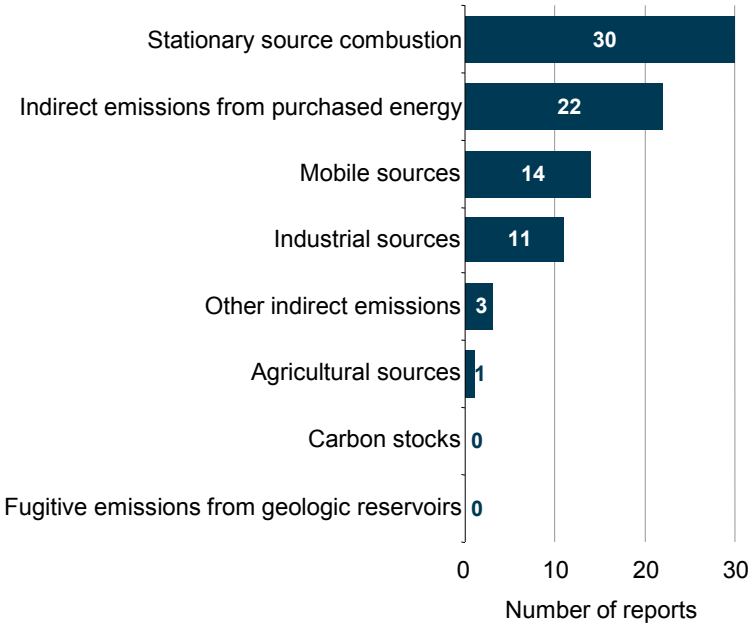
In 18 reports received by EIA (58 percent of the reports submitted), entities indicated that they had used financial control as the criterion to determine the organizational boundaries of their entities.[8] Organizational boundaries are used for the purposes of determining which emission source categories to include in their emissions inventory (Figure 5). Operational control was used for 11 submitted reports (including the two separate reports submitted by General Motors) and equity share was used for two submitted reports.

Figure 3. Number of reports submitted by inventory scope, 2009 reporting cycle



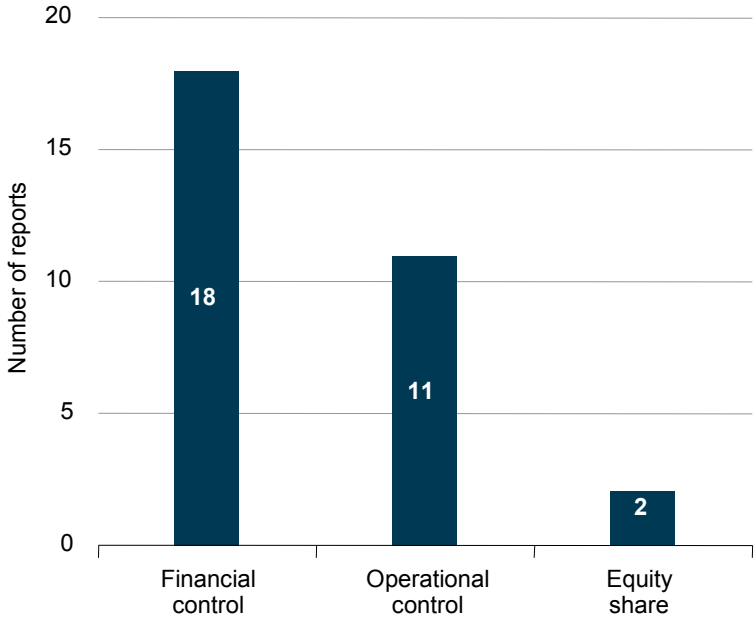
[8]In this context, "boundary" means the actual or virtual line that encompasses all the emissions and carbon stocks that are to be quantified and reported in an entity's greenhouse gas inventory, including *de minimis* emissions. Entities may use financial control, operational control, equity share, or another classification method based on ownership or control as the means of determining which emission sources or carbon stocks fall within their organizational boundaries.

Figure 4. Emission source categories included in emissions inventory for reports submitted in which data reported were not aggregated, 2009 reporting cycle



Note: Excludes reports verified by an independent third party that, per the Program guidelines, aggregated emissions data by gas rather than by source category.

Figure 5. Number of reports submitted by boundary definition method, 2009 reporting cycle



Geographic scope of reports

Thirty of the submitted reports included information on U.S. emissions only (Figure 6). Only Constellation Energy included emissions from both domestic and foreign operations, with the foreign emissions occurring in Canada. The geographic scope of U.S. operations is summarized in Figure 7. For 3 (10 percent) submitted reports, the scope was reported as nationwide, which is defined as having emissions in each of the 9 U.S. Census Divisions. For 11 (35 percent) submitted reports, the geographic scope covered multiple states and the remaining 17 (55 percent) reports, the geographic scope was limited to a single state. For reports where the states included in the geographic scope were identified, 46 States and Puerto Rico were included in the entities' geographic scope.

Figure 6. Number of reports submitted by geographic scope, 2009 reporting cycle

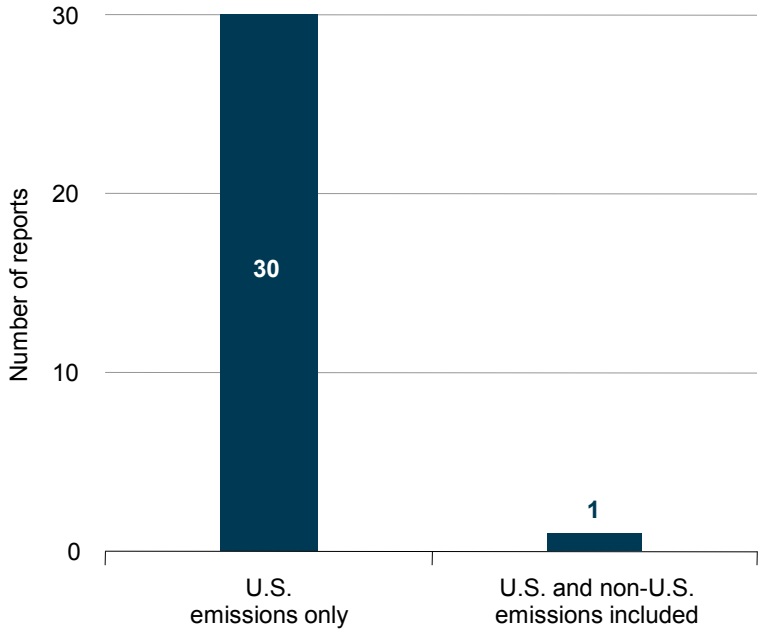
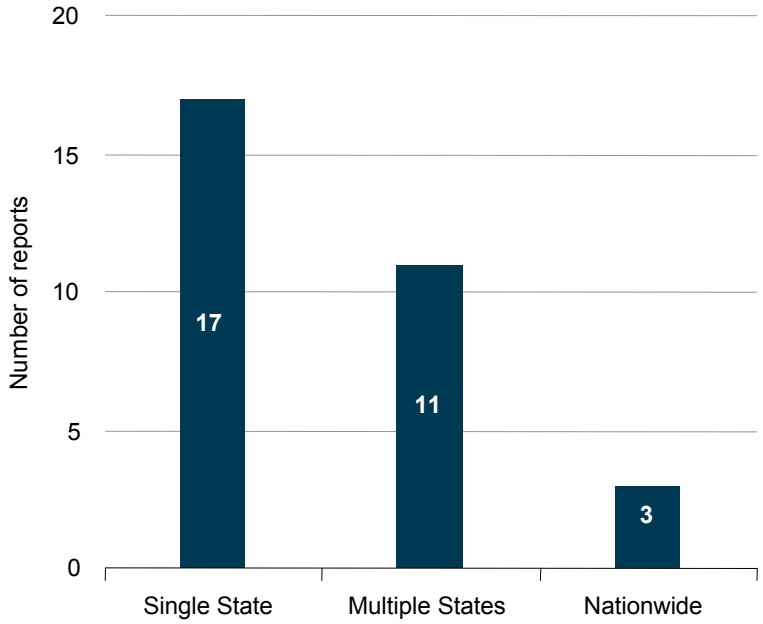


Figure 7. Number of reports submitted by geographic scope of U.S. activities, 2009 reporting cycle



Subentities

Four, or 13 percent, of the 31 reports submitted in the 2009 reporting cycle included subentities.[9] A respondent must identify and report separate emissions inventories for subentities if they intend to use more than one emission reduction method or use different output measures to estimate reductions using the changes in emissions intensity method. Creating subentities allows respondents to estimate emission reductions for different organizational units separately or for specific actions, such as utility demand side management, fly ash reuse, forestry, and carbon capture and storage. For the remaining 27 respondents, emission reductions will be calculated at the entity-level or for part of the entity in the case of respondents intending to report but not register emission reductions. For submitted reports where emissions are estimated at the entity level, one of the four entity-level emission reduction methods must be used: changes in emissions intensity; changes in absolute emissions; changes in avoided emissions; or energy generation and distribution.

Inventory quality ratings

The methods that may be used to estimate emissions for inventories reported to the Voluntary Reporting of Greenhouse Gases Program are assigned a quality rating of A, B, C, or D, where A-rated methods have the highest quality rating. Each letter is assigned a numerical rating that reflects its relative quality, 4 for A, 3 for B, 2 for C, and 1 for D, which allows a quantity-weighted average quality rating to be calculated for each inventory. In order to register emission reductions, the weighted quality rating must be 3.0 or higher. In lieu of calculating this weighted quality rating, respondents may certify that they used all A- and B-rated methods to prepare their emissions inventories.

For 30 of 31 reports submitted, the reporting entities either achieved a weighted quality rating of 3.0 or higher or certified that they used all A- and B-rated methods.

Confidentiality

The following respondents requested confidentiality for information reported in Form EIA-1605:

- CalPortland Company – Colton Cement Plant
- CalPortland Company – Mojave Cement Plant
- CalPortland Company – Rillito Cement Plant
- Dakota Gasification Company
- Newsday
- Tampa Electric Company.

This annual report includes data reported in these entities' summary statements and emissions inventories, to the extent that it is included in summary statistics and not identifiable as having been submitted by the respondents requesting confidentiality.

[9] A "subentity" is defined as a component of any entity—such as a discrete business line, facility, plant, vehicle fleet, or energy-using system—which has associated with it emissions of greenhouse gases that can be distinguished from the emissions of all other components of the same entity and, when summed with the emissions of all other subentities, equal the entity's total emissions.

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4. Emissions inventory data reported

This chapter summarizes the greenhouse gas emissions data submitted to EIA on Form EIA-1605 during the 2009 reporting cycle. The emissions data presented are base period average emissions for the respective respondents. No emission reduction data are included here, because the 2009 reporting cycle—as the initial cycle conducted under the revised program guidelines—included only Start Year reports that by definition include only base period emissions data.

This chapter includes emissions summary data by base period, entity type, source, gas, quality rating, industry, and fuel type. For detailed entity-level information by respondent see the following tables in Appendix A:

- Table A1. Base period, entity type, scope of inventory, quality rating, and base period direct and indirect emissions by reporter, for nonconfidential reports received in the 2009 reporting cycle
- Table A2. Base period and base period direct emissions by reporter and source for nonconfidential reports received in the 2009 reporting cycle
- Table A3. Base period and base period indirect emissions by reporter and source for nonconfidential reports received in the 2009 reporting cycle
- Table A4. Base period and base period average U.S. and foreign direct and indirect emissions by reporter and gas for nonconfidential reports received in the 2009 reporting cycle.

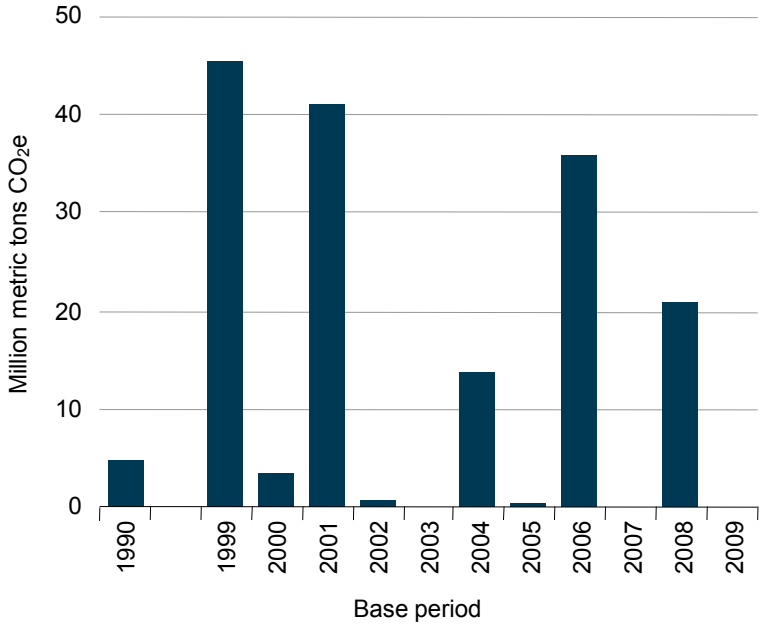
Emissions by base period

Direct emissions and indirect emissions are shown by base period in Figures 8 and 9, respectively. Direct emissions were concentrated in the base periods reported by large electric utilities: 1999 (Allegheny Energy), 2001 (Exelon Corporation, NiSource Inc.), 2006 (JEA), and 2008 (Constellation Energy). Indirect emissions were concentrated in the base periods reported by large manufacturers: 1990 (General Motors), 2000 (General Motors), and 2005 (IBM Corporation).

Emissions by entity type

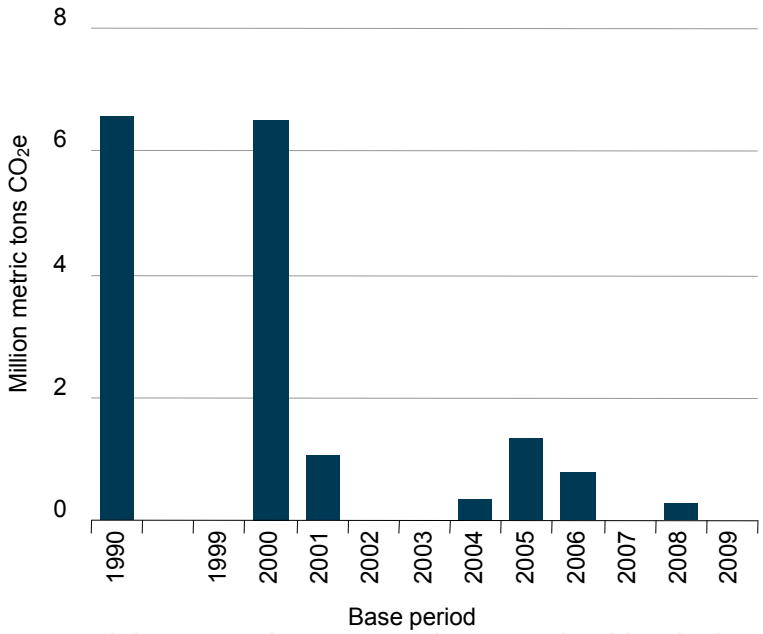
Emissions by entity type are summarized in Table 4. Slightly over half (102.0 $MMTCO_2e$ or 52 percent) of direct emissions were reported by emitters intending to report but not register emission reductions. Almost all the remaining direct emissions (93.8 $MMTCO_2e$ or 48 percent) were reported by emitters intending to report but not register emission reductions. Fifty-five percent (9.7 $MMTCO_2e$) of indirect emissions were reported by large emitters intending to register emission reductions. Emissions reported by the two small emitters intending to register emission reductions were less than 0.05 percent of both direct and indirect emissions.

Figure 8. Direct emissions by base period, 2009 reporting cycle



Note: Excludes emissions from six entities that requested confidentiality for emissions data submitted on Form EIA-1605.

Figure 9. Indirect emissions reported by base period, 2009 reporting cycle



Note: Excludes emissions from six entities that requested confidentiality for emission data submitted on Form EIA-1605.

Table 4. Base period emissions by entity type, 2009 reporting cycle

	Direct emissions		Indirect emissions from purchased energy	
Entity type	Metric tons carbon dioxide equivalent	Percent	Metric tons carbon dioxide equivalent	Percent
	U.S. emissions			
Emitter intending to report but not register emissions and/or emission reductions	102,017,699	52.1	9,699,614	54.8
Large emitter intending to register emission reductions	93,809,763	47.9	7,977,841	45.1
Small emitter intending to register emission reductions	443	*	1,996	*
Subtotal	**195,827,905**	**100.0**	**17,679,451**	**99.9**
	Foreign emissions			
Large emitter intending to register emission reductions	635	*	14,084	0.1
Subtotal	**635**	*	**14,084**	**0.1**
	Total emissions			
Emitter intending to report but not register emissions and/or emission reductions	102,017,699	52.1	9,699,614	54.8
Large emitter intending to register emission reductions	93,810,398	47.9	7,991,925	45.2
Small emitter intending to register emission reductions	443	*	1,996	*
Total	**195,828,540**	**100.0**	**17,693,535**	**100.0**

*Less than 0.05 percent.

Emissions by source

Table 5 shows average direct and indirect emissions in the base period by source category reported in the 2009 reporting cycle. Reported direct emissions, at 195.8 $MMTCO_2e$, were more than 10 times greater than reported indirect emissions (17.7 $MMTCO_2e$). The relative size of total direct emissions is the result primarily of stationary combustion emissions reporting to the program by a number of large electricity generators—Allegheny Energy; Boston Generating, LLC; Constellation Energy; Exelon Corporation; Gainesville Regional Utilities (GRU); JEA; NiSource, Inc.; and Pepco Holdings, Inc.—as well as General Motors, all of which had direct stationary source emission in excess of 1.0 $MMTCO_2e$.

Stationary combustion accounted for 78 percent, or 153.1 $MMTCO_2e$, of reported direct emissions (Figure 10). Other known sources of direct emissions included mobile sources (7.1 percent or 13.9 $MMTCO_2e$), sector-specific industrial processes (4.9 percent or 9.5 $MMTCO_2e$), and agricultural sources (less than 0.05 percent or 35,760 metric tons CO_2e). Emissions from unspecified sources, which represent the emissions included in the independently verified report submitted by El Paso Corporation that were not disaggregated by source, accounted for 9.8 percent (19.2 $MMTCO_2e$) of direct emissions.

Almost all (95.6 percent or 16.9 $MMTCO_2e$) reported indirect emissions from purchased energy resulted from the consumption of electricity. Most of the balance is accounted for by indirect emissions from purchased energy from unspecified sources reported by El Paso Corporation, representing 4.3 percent (0.8 $MMTCO_2e$) of total indirect emissions from purchased energy. Small amounts are accounted for by chilled water and steam purchases (less than 1 percent combined).

Only one respondent, Constellation Energy, included emissions from foreign sources. Constellation's foreign emissions included 14,084 metric tons CO_2e of indirect emissions from purchased energy and 635 metric tons CO_2e of direct emissions from stationary combustion.

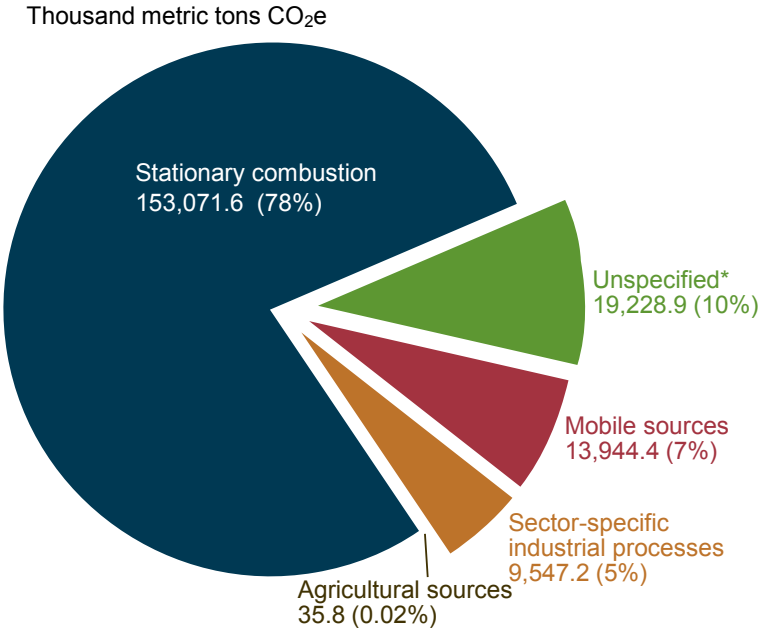
Table 5. Base period emissions by source category, 2009 reporting cycle

	U.S. emissions		Foreign emissions		Total emissions	
Source	Metric tons carbon dioxide equivalent	Percent	Metric tons carbon dioxide equivalent	Percent	Metric tons carbon dioxide equivalent	Percent
Direct emissions						
Stationary combustion	153,071,604	78.2	635	*	153,072,239	78.2
Mobile sources	13,944,440	7.1	--	--	13,944,440	7.1
Sector-specific industrial processes	9,547,241	4.9	--	--	9,547,241	4.9
Agricultural sources	35,760	*	--	--	35,760	*
Unspecified[a]	19,228,861	9.8	--	--	19,228,861	9.8
Total	**195,827,905**	**100.0**	**635**	*	**195,828,540**	**100.0**
Indirect emissions from purchased energy						
Chilled water	14,332	0.1	--	--	14,332	0.1
Electricity	16,895,547	95.5	11,960	0.1	16,907,507	95.6
Hot water	1,977	*	2,124	*	4,100	*
Steam	10,288	0.1	--	--	10,288	0.1
Unspecified[a]	757,308	4.3	--	--	757,308	4.3
Total	**17,679,451**	**99.9**	**14,084**	**0.1**	**17,693,535**	**100.0**

*Less than 0.05 percent.

[a]El Paso Corporation (El Paso) elected to report aggregated emissions by gas only in its independently verified report, thus omitting details on the sources of its emissions.

Figure 10. Direct emissions reported for the base period by source category, 2009 reporting cycle



*El Paso Corporation (El Paso) elected to report aggregated emissions by gas only in its independently verified report, thus omitting details on the sources of its emissions.

Emissions by gas

Carbon dioxide (89.1 percent or 174.4 $MMTCO_2e$) and methane (9.7 percent or 19.0 $MMTCO_2e$) accounted for the vast majority of the direct emissions reported in the 2009 reporting cycle (Table 6). Direct emissions of other gases reported included nitrous oxide, hydroflurocarbons (HFC-134a and HFC-23), perfluorocarbons (perfluorocyclobutane, perfluoroethane, and perfluoromethane), sulfur hexafluoride, and nitrogen trifluoride, which together accounted for about 1 percent of total direct emissions. Carbon dioxide, at 17.7 $MMTCO_2e$, comprised almost all the reported indirect emissions from purchased energy. Reported emissions of other gases were limited to methane and nitrous oxide, which together accounted for about 0.1 percent of the total.

Table 6. Base period average direct and indirect emission by gas reported, 2009 reporting cycle

	Direct emissions		Indirect emissions	
Gas	Metric tons carbon dioxide equivalent	Percent	Metric tons carbon dioxide equivalent	Percent
	U.S. emissions			
Carbon dioxide	174,412,598	89.1	17,666,697	99.8
Methane	18,968,625	9.7	1,132	*
Nitrous oxide	1,274,978	0.7	11,623	0.1
HFC-134a	5,841	*	--	--
HFC-23	4,603	*	--	--
Perfluorocyclobutane (PFC-318)	1,318	*	--	--
Perfluoroethane (PFC-116)	180,011	0.1	--	--
Perfluoromethane (PFC-14)	30,225	*	--	--
Sulfur hexafluoride	948,743	0.5	--	--
Nitrogen trifluoride	963	*	--	--
Subtotal	**195,827,905**	**100.0**	**17,679,451**	**99.9**
	Foreign emissions			
Carbon dioxide	635	*	14,006	0.1
Methane	--	--	9	*
Nitrous oxide	--	--	69	*
Subtotal	**635**	*	**14,084**	**0.1**
	Total emissions			
Carbon dioxide	174,413,233	89.1	17,680,702	99.9
Methane	18,968,625	9.7	1,140	*
Nitrous oxide	1,274,978	0.7	11,692	*
HFC-134a	5,841	*	--	--
HFC-23	4,603	*	--	--
Perfluorocyclobutane (PFC-318)	1,318	*	--	--
Perfluoroethane (PFC-116)	180,011	0.1	--	--
Perfluoromethane (PFC-14)	30,225	*	--	--
Sulfur hexafluoride	948,743	0.5	--	--
Nitrogen trifluoride	963	*	--	--
Total	**195,828,540**	**100.0**	**17,693,535**	**100.0**

*Less than 0.05 percent.

Emissions by inventory estimation method

Table 7 presents reported emissions by estimation method. The rating system for emission estimation methods is an ordinal rating system with four values, A through D. The rating system is ordinal in the sense that A is considered "better" than B, B is "better" than C, and C is "better" than D. Inventory estimation methods were reported for 42.6 percent of direct emissions (83.4 $MMTCO_2e$) and about half of indirect emissions (9.1 $MMTCO_2e$), as summarized in Figure 11. For the majority of the remaining emissions (93.2 $MMTCO_2e$ of direct emissions and 7.8 $MMTCO_2e$ of indirect emissions), reporters, as allowed by program guidelines, indicated that they used all A- or B-rated estimation methods in preparing their emissions inventories, without attaching a specific estimation method to any specific source category. In all, A- or B-rated emissions were used for 86 percent of reported direct emissions and 96 percent of reported indirect emissions from purchased energy. Respondents who have their reports independently verified may, per the program guidelines, report their emissions in the aggregate by gas, rather than by source category, and they may report an aggregated inventory quality rating without specifying specific estimation methods by source category. These emissions, labeled "emissions not rated by source" in Table 7, represent emissions included in El Paso Corporation's independently verified report.

Table 7. Base period average direct and indirect emissions by estimation method, 2009 reporting cycle

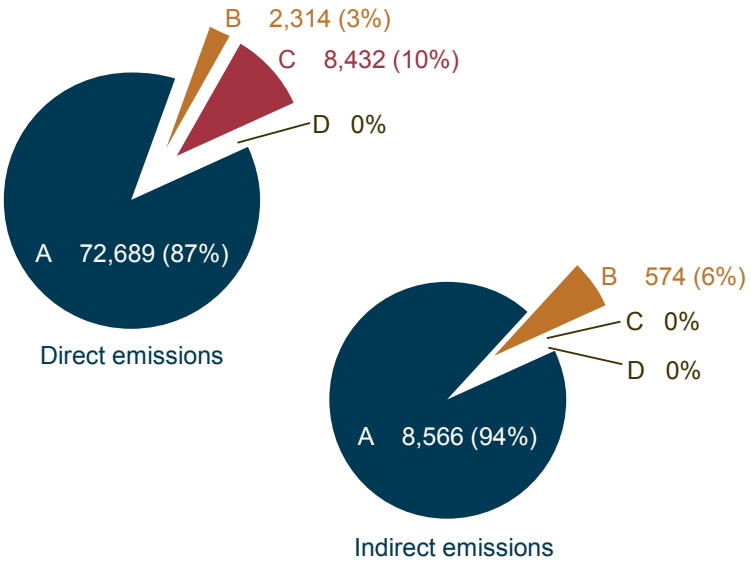
	Direct emissions		Indirect emissions	
Estimation method	Metric tons carbon dioxide equivalent	Percent	Metric tons carbon dioxide equivalent	Percent
	U.S. emissions			
Rated methods				
A	72,689,388	37.1	8,551,949	48.3
B	2,313,802	1.2	573,988	3.2
C	8,432,190	4.3	--	*
D	41	*	--	*
Subtotal	**83,435,421**	**42.6**	**9,125,937**	**51.6**
All A- and B-rated methods	93,163,623	47.6	7,796,206	44.1
Not rated by source[a]	19,228,861	9.8	757,308	4.3
Subtotal	**195,827,905**	**100.0**	**17,679,451**	**99.9**
	Foreign emissions			
Rated methods				
A	--	--	14,084	0.1
B	635	*	--	--
C	--	--	--	--
D	--	--	--	--
Subtotal	**635**	*	**14,084**	**0.1**
All A- and B-rated methods				
Not rated by source[a]				
Subtotal	**635**	*	**14,084**	**0.1**
	Total emissions			
Rated methods				
A	72,689,388	37.1	8,566,032	48.4
B	2,314,437	1.2	573,988	3.2
C	8,432,190	4.3	--	*
D	41	*	--	*
Subtotal	**83,436,056**	**42.6**	**9,140,021**	**51.7**
All A- and B-rated methods	93,163,623	47.6	7,796,206	44.1
Not rated by source[a]	19,228,861	9.8	757,308	4.3
Total	**195,828,540**	**100.0**	**17,693,535**	**100.0**

*Less than 0.05 percent.

[a]El Paso Corporation's independently verified report, as allowed by program guidelines, included emissions aggregated by gas at the entity-level without specifying specific estimation methods by source category.

Figure 11. Estimation method quality ratings for reported direct and indirect emissions for which ratings were reported, 2009 reporting cycle

Thousand metric tons CO_2e



Emissions by industrial classification

EIA received reports from 13 different industries or services as defined by 3-digit NAICS codes (Table 8). The Utilities subsector (NAICS 221), which includes electric utilities and independent power producers, accounted for over three quarters (77.5 percent) of direct emissions. Other significant contributors to direct emissions included Pipeline Transportation (NAICS 486, 9.8 percent), Rail Transportation (NAICS 482, 7.1 percent), and Transportation Equipment Manufacturing (NAICS 336, 4.2 percent).

The Transportation Equipment Manufacturing subsector accounted for just under three-fourths of indirect emissions (73.9 percent). The following categories were also large sources of indirect emissions: Utilities (10.8 percent), Computer and Electronic Product Manufacturing (NAICS 334, 7.6 percent), and Pipeline Transportation (4.3 percent).

Table 8. Base period average emissions reported by NAICS code, 2009 reporting cycle

Primary NAICS code	Estimation method	Direct emissions		Indirect emissions	
		Metric tons carbon dioxide equivalent	Percent	Metric tons carbon dioxide equivalent	Percent
111	Crop production	35,853	*	--	--
221	Utilities	151,734,764	77.5	1,919,345	10.8
	U.S. emissions	*151,734,129*	*77.5*	*1,905,261*	*10.8*
	Foreign emissions	*635*	*	*14,084*	*0.1*
313	Textile mills	31,272	*	85,294	0.5
323	Printing and related support activities	W	W	W	W
327	Nonmetallic mineral product manufacturing	W	W	W	W
334	Computer and electronic product manufacturing	494,686	0.3	1,343,149	7.6
336	Transportation equipment manufacturing[a]	8,218,368	4.2	13,074,096	73.9
339	Miscellaneous manufacturing	48	*	191	*
482	Rail transportation	13,844,247	7.1	312,153	1.8
486	Pipeline transportation	19,228,861	9.8	757,308	4.3
522	Credit intermediation and related activities	16	*	147	*
541	Professional, scientific, and technical services	183	*	--	--
622	Hospitals	55,402	*	22,747	0.1
	Total	**195,828,540**	**100.0**	**17,693,535**	**100.0**

*Less than 0.05 percent.
[a]Includes 1990 and 2000 reports for General Motors.
W = Value withheld to avoid disclosing data for confidential entities. Totals may not equal sum of components due to withheld data.

Emissions by fuel type

For direct emissions from stationary combustion and mobile sources, EIA requests that reporters indicate the fuel type used to produce the emissions. Table 9 summarizes average direct emissions in the base period from these sources. Coal accounted for 79.4 percent of stationary combustion emissions, with natural gas (8.5 percent), petroleum coke (4.1 percent), and liquid petroleum fuels (3.9 percent) being the source for almost all the remainder. Biomass, liquid petroleum gases, municipal solid waste, and petroleum-based waste fuels (such as tires and waste oil) together were the source of less than 1 percent of stationary combustion emissions.

Diesel fuel was the source of 99.3 percent of mobile source emissions, almost all of which were reported by BNSF Railway. Other fuels contributing to direct emissions from mobile sources included gasoline, natural gas, propane, biodiesel, and ethanol.

Table 9. Base period average direct emissions by source and fuel type, 2009 reporting cycle

Fuel type	Base period average emissions	Percent
Stationary source emissions by fuel type		
Biomass	333,733	0.2
Coal	121,527,061	79.4
Liquid petroleum fuels	5,970,105	3.9
Liquid petroleum gases	7,436	*
Municipal solid waste	114,310	0.1
Natural gas	12,956,394	8.5
Petroleum coke	6,248,603	4.1
Petroleum-based waste fuels	36,368	*
Unspecified	5,878,230	3.8
Total	**153,072,239**	**100.0**
Mobile source emissions by fuel type[a]		
Biodiesel	201	*
Diesel	13,848,408	99.3
Ethanol	52	*
Gasoline	41,465	0.3
Natural gas	633	*
Propane	560	*
Unspecified	52,355	0.4
Total	**13,943,673**	**100.0**

Note: This table excludes emissions that were reported aggregated by gas.
*Less than 0.05 percent.
[a]Excludes emissions from use of mobile refrigerants.

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Appendix A

Summary of reports received

Table A1. Base period, entity type, scope of inventory, quality rating, and base period direct and indirect emissions by reporter, for nonconfidential reports received in the 2009 reporting cycle (metric tons carbon dioxide equivalent)

Entity	Base period	Entity type[a]	Scope of inventory	Quality rating[b]	Direct emissions	Indirect emissions
U.S. emissions						
Allegheny Energy	1999	RNR	Partial	≥3.00	42,385,917	0
Berkshire Power Company, LLC	2002	LER	Entity-wide	4.00	534,236	1,354
BNSF Railway	2004	LER	Entity-wide	≥3.00	13,844,247	312,153
Boston Generating, LLC	1999	RNR	Partial	≥3.00	3,317,797	0
Constellation Energy	2008	LER	Entity-wide	3.80	17,953,100	71,054
Dynagraf Inc	2007	SER	Partial	≥3.00	395	1,805
El Paso Corporation (El Paso)	2006	RNR	Entity-wide	2.15	19,228,861	757,308
Exelon Corporation	2001	LER	Entity-wide	3.92	15,285,772	482,184
Gainesville Regional Utilities (GRU)	2006	LER	Entity-wide	3.99	1,744,609	0
General Motors[c]	1990	RNR	Entity-wide	≥3.00	4,737,000	6,563,665
General Motors[c]	2000	LER	Entity-wide	3.96	3,481,368	6,510,431
IBM Corporation	2005	RNR	Entity-wide	3.58	494,686	1,343,149
Innovative Energy Systems, LLC	2007	RNR	Partial	≥3.00	183	0
JEA	2006	LER	Entity-wide	3.99	15,129,517	0
Klickitat County Public Utility District No. 1	2006	RNR	Partial	≥3.00	191	932
McMinnville Electric System	2009	RNR	Partial	≥3.00	472	0
Meridian Dyed Yarn Group	2002	LER	Entity-wide	2.97	16,369	13,582
Montefiore Medical Center	2009	LER	Entity-wide	3.88	55,402	22,747
Nisource, Inc.	2001	LER	Entity-wide	3.49	25,729,290	564,336
Pepco Holdings, Inc.	2008	RNR	Entity-wide	3.87	2,977,642	109,756
Polar Technology, LLC	2008	SER	Entity-wide	3.46	48	191
Public Utility District No. 1 of Snohomish County	2008	RNR	Entity-wide	3.98	4,983	3,024
Springs Global US, Inc.	2008	RNR	Entity-wide	≥3.00	14,903	71,713
USDA (Farm Services)	2009	LER	Entity-wide	3.00	35,853	0
Washington Savings Bank	2009	RNR	Entity-wide	≥3.00	16	147
Subtotal					**166,972,857**	**16,829,530**
Foreign emissions						
Constellation Energy	2008	LER	Entity-wide	3.96	635	14,084
Subtotal					**635**	**14,084**
Total					**166,973,492**	**16,843,614**

[a]LER = Large Emitter (more than 10,000 $mtCO_2e$ annually) intending to register emission reductions, SER = Small Emitter (less than or equal to 10,000 $mtCO_2e$ annually) intending to register emission reductions, RNR = Emitter intending to report but not register emissions or emission reductions. Excludes emissions from six entities that requested confidentiality for data submitted on Form EIA-1605.

[b]For Base Period reports, the weighted rating is calculated based on the Base Period Average and using the following formula:
RW = [(EA × 4) + (EB × 3) + (EC × 2) + (ED × 1)] / (EA + EB + EC + ED)
Where RW = Weighted Rating
EA = Emissions from sources estimated with an A-rated method
EB = Emissions from sources estimated with a B-rated method
EC = Emissions from sources estimated with a C-rated method
ED = Emissions from sources estimated with a D-rated method

[c]General Motors has two Base Periods, one for *reporting but not registering* emissions/emission reductions and one for *registering* emissions/emission reductions.

Table A2. Base period and base period direct emissions by reporter and source for nonconfidential reports received in the 2009 reporting cycle (metric tons carbon dioxide equivalent)

		Direct emissions					
Entity	Base period	Stationary combustion	Mobile sources	Sector-specific industrial process emissions	Agricultural sources	Unspecified[a]	Total
			U.S. emissions				
Allegheny Energy	1999	42,385,917					**42,385,917**
Berkshire Power Company, LLC	2002	534,230	5				**534,236**
BNSF Railway	2004	71,182	13,773,065				**13,844,247**
Boston Generating, LLC	1999	3,317,797					**3,317,797**
Constellation Energy	2008	17,408,833	22,734	521,533			**17,953,100**
Dynagraf Inc	2007	395					**395**
El Paso Corporation (El Paso)	2006					19,228,861	**19,228,861**
Exelon Corporation	2001	14,145,608	47,710	1,092,454			**15,285,772**
Gainesville Regional Utilities (GRU)	2006	1,727,146	16,368	1,095			**1,744,609**
General Motors[b]	1990	4,737,000					**4,737,000**
General Motors[b]	2000	3,481,368					**3,481,368**
IBM Corporation	2005	272,002		222,684			**494,686**
Innovative Energy Systems, LLC	2007	183					**183**
JEA	2006	15,099,283	12,683	17,551			**15,129,517**
Klickitat County Public Utility District No. 1	2006	191					**191**
McMinnville Electric System	2009	472					**472**
Meridian Dyed Yarn Group	2002	16,369					**16,369**
Montefiore Medical Center	2009	55,370	32				**55,402**
Nisource, Inc.	2001	19,678,307	39,301	6,011,682			**25,729,290**
Pepco Holdings, Inc.	2008	2,956,327	21,314				**2,977,642**
Polar Technology, LLC	2008	0	48				**48**
Public Utility District No. 1 of Snohomish County	2008	118	4,154	711			**4,983**
Springs Global US, Inc.	2008	12,869	2,034				**14,903**
USDA (Farm Services)	2009	82	11		35,760		**35,853**
Washington Savings Bank	2009	16					**16**
Subtotal		**125,901,067**	**13,939,459**	**7,867,711**	**35,760**	**19,228,861**	**166,972,857**
			Foreign emissions				
Constellation Energy	2008	635					**635**
Subtotal		**635**	**0**	**0**	**0**	**0**	**635**
Total		**125,901,702**	**13,939,459**	**7,867,711**	**35,760**	**19,228,861**	**166,973,492**

[a]Unspecified emissions represent aggregated emissions reported in independently verified reports.
[b]General Motors has two Base Periods, one for *reporting but not registering* emissions/emission reductions and one for *registering* emissions/emission reductions.

Table A3. Base period and base period indirect emissions by reporter and source for nonconfidential reports received in the 2009 reporting cycle (metric tons carbon dioxide equivalent)

Entity	Base period	Indirect emissions from purchased energy					
		Electricity	Steam	Chilled water	Hot water	Unspecified[a]	Total
U.S. emissions							
Allegheny Energy	1999						**0**
Berkshire Power Company, LLC	2002	1,354					**1,354**
BNSF Railway	2004	312,153					**312,153**
Boston Generating, LLC	1999						**0**
Constellation Energy	2008	54,244	501	1,977	14,332		**71,054**
Dynagraf Inc	2007	1,805					**1,805**
El Paso Corporation (El Paso)	2006					757,308	**757,308**
Exelon Corporation	2001	482,184					**482,184**
Gainesville Regional Utilities (GRU)	2006						**0**
General Motors[b]	1990	6,563,623	41				**6,563,665**
General Motors[b]	2000	6,510,338	93				**6,510,431**
IBM Corporation	2005	1,343,149					**1,343,149**
Innovative Energy Systems, LLC	2007						**0**
JEA	2006						**0**
Klickitat County Public Utility District No. 1	2006	932					**932**
McMinnville Electric System	2009						**0**
Meridian Dyed Yarn Group	2002	13,582					**13,582**
Montefiore Medical Center	2009	13,095	9,652				**22,747**
Nisource, Inc.	2001	564,336					**564,336**
Pepco Holdings, Inc.	2008	109,756					**109,756**
Polar Technology, LLC	2008	191					**191**
Public Utility District No. 1 of Snohomish County	2008	3,024					**3,024**
Springs Global US, Inc.	2008	71,713					**71,713**
USDA (Farm Services)	2009						**0**
Washington Savings Bank	2009	147					**147**
Subtotal		**16,045,626**	**10,288**	**1,977**	**14,332**	**757,308**	**16,829,530**
Foreign emissions							
Constellation Energy	2008	11,960			2,124		**14,084**
Subtotal		**11,960**	**0**	**0**	**2,124**	**0**	**14,084**
Total		**16,057,586**	**10,288**	**1,977**	**16,455**	**757,308**	**16,843,614**

[a]Unspecified emissions represent aggregated emissions reported in independently verified reports.
[b]General Motors has two Base Periods, one for *reporting but not registering* emissions/emission reductions and one for *registering* emissions/emission reductions.

Table A4. Base period and base period average U.S. and foreign direct and indirect emissions by reporter and gas for nonconfidential reports received in the 2009 reporting cycle (metric tons carbon dioxide equivalent)

Entity	Base period	Gas	Base period average direct emissions	Base period average indirect emissions
U.S. emissions				
Allegheny Energy	1999	CO_2	42,172,032	
		CH_4	11,329	
		N_2O	202,557	
Berkshire Power Company, LLC	2002	CO_2	533,693	1,347
		CH_4	247	2
		N_2O	295	5
BNSF Railway	2004	CO_2	13,713,174	310,697
		CH_4	26,918	135
		N_2O	104,155	1,321
Boston Generating, LLC	1999	CO_2	3,317,797	
Constellation Energy	2008	CO_2	17,185,974	70,622
		CH_4	458,580	35
		N_2O	306,098	397
		HFC-134a	246	
		SF_6	2,202	
Dynagraf Inc	2007	CO_2	395	1,795
		CH_4		3
		N_2O		7
El Paso Corporation (El Paso)	2006	CO_2	7,025,937	754,976
		CH_4	12,046,433	100
		N_2O	155,353	2,232
		HFC-134a	1,138	
Exelon Corporation	2001	CO_2	14,067,241	479,650
		CH_4	292,777	234
		N_2O	107,505	2,301
		HFC-134a	3,564	
		SF_6	814,684	
Gainesville Regional Utilities (GRU)	2006	CO_2	1,735,223	
		CH_4	538	
		N_2O	8,722	
		HFC-134a	126	
		SF_6	*	
General Motors[a]	1990	CO_2	4,737,000	6,563,665
General Motors[a]	2000	CO_2	3,481,368	6,510,431
IBM Corporation	2005	CO_2	272,002	1,343,149
		HFC-23	4,603	
		NF_3	963	
		Perfluorocyclobutane	1,318	
		Perfluoroethane	180,011	
		Perfluoromethane	30,225	
		SF_6	5,563	

*Less than 0.5 metric tons carbon dioxide equivalent.
[a]General Motors has two Base Periods, one for *reporting but not registering* emissions/emission reductions and one for *registering* emissions/emission reductions.

Table A4. U.S. and foreign base period average direct and indirect emissions by gas reported for nonconfidential reports received in the 2009 reporting cycle (metric tons carbon dioxide equivalent) (continued)

Entity	Base period	Gas	Base period average direct emissions	Base period average indirect emissions
U.S. emissions				
Innovative Energy Systems, LLC	2007	CH_4	83	
		N_2O	99	
JEA	2006	CO_2	15,042,918	*
		CH_4	5,229	*
		N_2O	81,370	*
		HFC-134a	*	
Klickitat County Public Utility District No. 1	2006	CO_2	147	924
		CH_4	20	2
		N_2O	24	6
McMinnville Electric System	2009	CO_2	472	
Meridian Dyed Yarn Group	2002	CO_2	16,253	13,494
		CH_4	42	12
		N_2O	74	75
Montefiore Medical Center	2009	CO_2	55,113	22,624
		CH_4	23	23
		N_2O	267	100
Nisource, Inc.	2001	CO_2	19,293,543	563,871
		CH_4	6,106,777	45
		N_2O	203,388	420
		SF_6	125,582	
Pepco Holdings, Inc.	2008	CO_2	2,958,233	109,174
		CH_4	2,818	49
		N_2O	15,852	533
		HFC-134a	738	
Polar Technology, LLC	2008	CO_2	48	190
		CH_4	*	*
		N_2O	*	1
Public Utility District No. 1 of Snohomish County	2008	CO_2	4,202	2,997
		CH_4	2	7
		N_2O	39	20
		HFC-134a	29	
		SF_6	711	
Springs Global US, Inc.	2008	CO_2	14,585	71,334
		CH_4	9	48
		N_2O	309	331
USDA (Farm Services)	2009	CO_2	89	
		CH_4	*	
		N_2O	35,763	
Washington Savings Bank	2009	CO_2	16	146
		CH_4	*	*
		N_2O	*	1

*Less than 0.5 metric tons carbon dioxide equivalent.

Table A4. U.S. and foreign base period average direct and indirect emissions by gas reported for nonconfidential reports received in the 2009 reporting cycle (metric tons carbon dioxide equivalent) (continued)

Entity	Base period	Gas	Base period average direct emissions	Base period average indirect emissions
Foreign emissions				
Constellation Energy	2008	CO_2	635	14,006
		CH_4		9
		N_2O		69
Total emissions				
Totals by gas		**CO_2**	**145,628,091**	**16,835,092**
		CH_4	**18,951,826**	**703**
		N_2O	**1,221,871**	**7,819**
		HFC-134a	**5,841**	**0**
		HFC-23	**4,603**	**0**
		Perfluorocyclobutane	**1,318**	**0**
		Perfluoroethane	**180,011**	**0**
		Perfluoromethane	**30,225**	**0**
		SF_6	**948,743**	**0**
		NF_3	**963**	**0**
Total			**166,973,492**	**16,843,614**

*Less than 0.5 metric tons carbon dioxide equivalent.