AT&T 2008 Domestic Greenhouse Gas Emissions Inventory Methodology and Process Detail Document

12/14/09

Overview

The purpose of this document is to provide an overview of the process and activities AT&T used to develop the company's 2008 greenhouse gas (GHG) emissions inventory for domestic operations. The following document provides specific detail on the scope, standards, methodologies and results of AT&T's 2008 inventory efforts.

1. Protocol:

AT&T used the fundamentals of *The Greenhouse Gas Protocol, A Corporate Accounting and Reporting Standard*, *Revised Edition* by the World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD). In addition, the protocol outlined by the EPA Climate Leaders program, which is founded on WRI principles, was applied to select emission sources to determine emissions.

2. Emission Factors:

AT&T has elected to utilize guidance from the EPA Climate Leaders for emissions calculations. The emission factors for each greenhouse gas (CO2, CH4, N2O) were taken from guidance documentation and multiplied by the respective global warming potential (GWP) to derive an emission factor in terms of carbon dioxide equivalents (CO2-e). Detailed references are listed in Appendix B.

3. Organizational Boundary:

AT&T has chosen to utilize the Operational Control approach to consolidate GHG emissions. This approach includes any asset or facility in which AT&T has an operating interest in the inventory. For instance, we included both owned and leased assets in our real estate portfolio and mobile fleet in our inventory. We believe that omitting estimated emissions from leased assets would result in a materially incomplete measurement.

AT&T chose to use this approach because it more accurately reflects all operations. However, because there are no uniform and mandatory standards for data acquisition and reporting at this point, it is important to note that AT&T's emissions data cannot accurately be compared to other entities, as their approach might not be comparable to ours.

4. Emission Sources:

The following sources within AT&T's operating interest were included in the 2008 Inventory:

- Emission Source
    - Scope 1 (Direct):
        - Natural Gas
        - Propane
        - #2 Fuel Oil (Diesel)
        - Ground Fleet
        - Flight Operations
        - Engines (Stationary Generators)
        - Engines (Portable Generators)

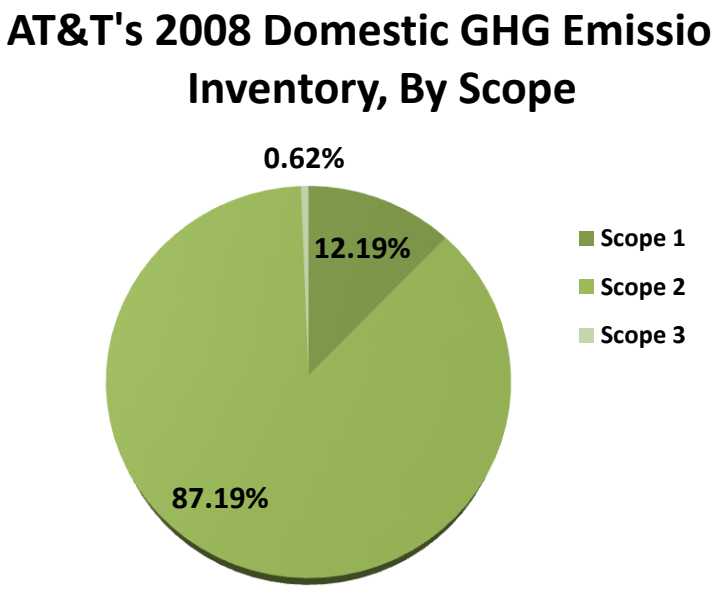
- Scope 2 (Indirect):
  - Purchased Electric Power
  - Purchased Steam
- Scope 3 (Ancillary Indirect):
  - Business Air Travel
  - Business Rental Car Travel

5. Greenhouse Gases

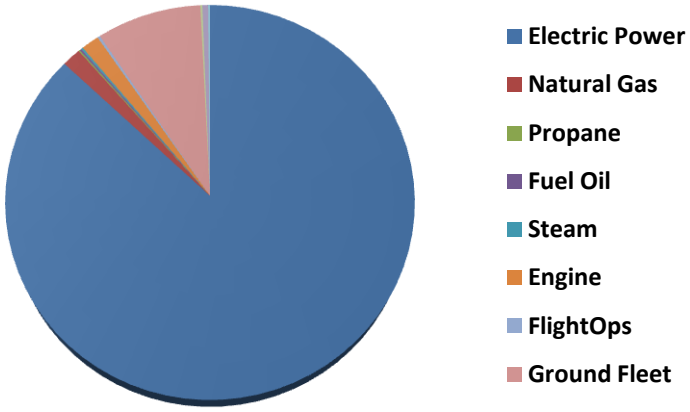
The AT&T 2008 Inventory includes CO2-e measures of carbon dioxide (CO_2), nitrous oxide (N_2O) and methane (CH_4) emissions.

6. AT&T's 2008 Domestic Greenhouse Gas Emissions Inventory, by Scope:

Scope	mtons CO2-e	%
Total	**9,066,626**	**100.00%**
Scope 1	1,105,630	12.19%
Scope 2	7,904,886	87.19%
Scope 3	56,110	0.62%



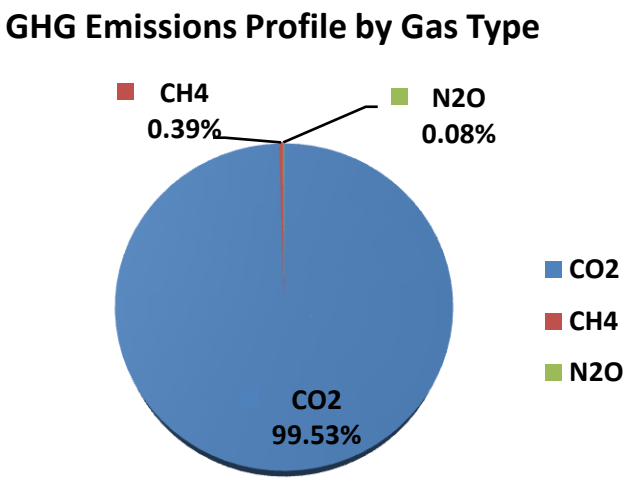
7. AT&T's 2008 Domestic Greenhouse Gas Emissions Inventory, by Source:



Source Name	mtons CO2-e	%	Scope
Total	**9,066,626**	**100.00%**	
Electric Power	7,889,414	87.02%	2
Ground Fleet	776,549	8.56%	1
Natural Gas	140,543	1.55%	1
Engines (Stationary Generators)	132,276	1.46%	1
Air Travel	42,708	0.47%	3*
Flight Operations	19,100	0.21%	1
Steam	15,471	0.17%	2
Engines (Portable Generators)	14,103	0.16%	1
Rental Car	13,402	0.15%	3*
Fuel Oil	12,853	0.14%	1
Propane	10,206	0.11%	1

* Air Travel and Third-Party Rental Car emissions are the only Scope 3 sources included in the 2008 Inventory. We recognize that this does not represent our entire Scope 3 impact, and will continue to refine our ability to report these impacts. WRI is in the process of developing supplemental Scope 3 Accounting and Reporting Standards, including emissions associated with upstream supply chain manufacture of purchased capital equipment (see http://www.ghgprotocol.org/standards/product-and-supply-chain-standard). We are participating in the creation of these standards and will use them to assist us going forward.

8. AT&T's 2008 Domestic Greenhouse Gas Emissions Inventory, by Gas:



	mtons CO2-e	CO2	CH4	N2O
Total	**9,066,626**	**99.53%**	**0.39%**	**0.08%**
Electricity	7,889,414	99.49%	0.44%	0.07%
Ground Fleet	776,549	96.84%	3.03%	0.13%
Natural Gas	140,543	99.90%	0.06%	0.04%
Engines (Stationary Generators)	132,276	99.39%	0.30%	0.31%
Air Travel	42,708	98.63%	0.11%	1.27%
Flight Operations	19,100	99.99%	0.00%	0.00%
Steam	15,471	99.90%	0.06%	0.04%
Engines (Portable Generators)	14,103	99.39%	0.30%	0.31%
Rental Car	13,402	99.63%	0.20%	0.17%
Fuel Oil	12,853	99.39%	0.30%	0.31%
Propane	10,206	99.10%	0.54%	0.36%

9. Data Acquisition:

The majority of AT&T's emission source data is collected via enterprise data systems. For instance, the vast majority of AT&T utility bills are paid by a third-party bill payment service. This results in consolidated data collection and improved data accuracy because of the specialized and focused service of our vendor/partner. In addition, the vast majority of AT&T's mobile fleet fuel purchases are consolidated into a single fuel purchasing card system, enabling accurate data collection for fuel use. Additional data systems, such as real estate portfolio systems, fleet and flight operations management systems, emergency engine inventory systems, and travel management systems were also utilized as needed. However, there were some instances in which data estimations were required. Any estimations or assumptions have been documented in the sections below.

AT&T recognizes that refrigerant fugitive emissions from our facility and fleet cooling requirements represent a piece of our corporate-wide greenhouse gas emissions, but we do not believe that we have enough data at this time to accurately estimate those impacts on a national level, nor that they represent a significant component of our emissions.

AT&T California has been reporting and verifying operational emissions into California via the California Climate Action Registry since 2004, and we have incorporated the lessons learned from those experiences to the effort for our comprehensive domestic operations.

As described throughout this document, AT&T has employed methodologies for acquiring data and reporting results that are intended to yield an accurate, detailed and fair representation of AT&T's domestic emissions. It is important to note, however, that in the absence of uniform and mandatory processes for data acquisition and reporting of emissions, comparing the results reported by AT&T and those reported by other entities may not yield an accurate comparison of emissions and operations. AT&T commits to continue to review and refine the data acquisition and reporting methodologies for future reports as appropriate to address further development of industry standards.

Source Description and Calculation Methodology

A discussion of the emission sources included in AT&T's 2008 inventory is below. Sources are listed in descending order of magnitude.

1. Electric Power

Data Collection:

Electric power is used to energize AT&T facilities and equipment. Actual electricity usage information was obtained from utility invoices, when available. However, for some facilities in which AT&T operates, no discreet utility bill was available (e.g. a full-service leased facility in which utilities are a component of rent). In these instances, electricity consumption was estimated based on the square footage and type of space. AT&T evaluated the use of the U.S. Energy Information Administration's Commercial Buildings Energy Consumption Survey (CBECS) intensity factors to estimate usage. However, because of the greater electricity intensity of some of AT&T's technical spaces (e.g. telephone switching and data center space) we felt strongly that the CBECS estimate understated consumption for our technical spaces. So, we chose to develop specific intensity measures for these types of spaces. To develop these AT&T-specific intensities, we performed a comprehensive review of consumption data by facility type and square footage. We are confident that this exercise provides a more accurate representation of the consumption for those facilities at which consumption estimation was required.

Emission Factor:

AT&T utilized EPA Climate Leaders guidance (EPA430-K-03-006 - June 2008) and eGrid 2007 v1.1 (issued January 2009) to estimate emissions from electricity consumption. For facilities where zip code information was available, we utilized the zip codes' corresponding eGrid Subregion emission factors for CO_2, N_2O, and CH_4. If zip code was not known, we utilized state-based emissions factors. In the rare case where state information was not known, we used the standardized national emission factors for the U.S. for each pollutant. A detailed list of the emissions factors for purchased electric power can be found in Appendix C.

2. Ground Fleet

Data Collection:

AT&T's ground fleet is comprised of an assortment of vehicle types from passenger cars to heavy duty trucks. Fuel consumption is gathered via a consolidated fuel purchase card system that allows AT&T to gather all fuel purchases associated with the vehicles in the fleet. This fuel consumption data was used to estimate CO_2 emissions. In addition to the fuel purchase system, AT&T fleet also gathers mileage data via its enterprise fleet management system. Mileage and vehicle type data were utilized to calculate CH_4 and N_2O emissions. A small subset of AT&T's fleet is leased for which mileage data is not readily available. For that subset, the ratio of CO_2-e emissions to CH_4 and N_2O emissions from the bulk of the fleet was applied to estimate emissions for all pollutants.

Emission Factor:

AT&T utilized EPA Climate Leaders guidance (EPA430K-08-004 - May 2008) for emission factors based on fuel type (primarily unleaded and diesel).

3. Natural Gas

Data Collection:

Natural gas is used within the AT&T portfolio for facility and equipment heating needs. Consumption data for natural gas was collected via utility invoices that were processed, verified and paid by a third-party bill payment vendor. Potential natural gas usage at leased assets where bills are not paid by AT&T and were not estimated.

Emission Factor:

AT&T utilized EPA Climate Leaders guidance (EPA430-K-08-003 - May 2008) to derive emission factors for natural gas.

4. Engines (Stationary and Portable Generators)

Data Collection:

Engines and stationary generators are used to generate power on an emergency basis at AT&T facilities. These engines are engaged whenever the electricity grid is unavailable or whenever requested as part of a Demand Response program to support grid operations and prevent grid failure. Additionally, monthly maintenance runs occur to ensure each engine is operating properly. These maintenance runs account for the majority of emissions associated with these assets. AT&T also uses engines that power portable generators to support its operations for portable backup power, to power truck-mounted equipment and for outside field use, such as pumping out of manholes. At this time, AT&T does not have centralized fuel consumption data for these assets. In order to estimate the fuel usage that would become the basis of our emissions estimate, we used engine runtime data (actual maintenance runtime data where available, and average runtime estimates by state when not available), in conjunction with engine horsepower capacity, to estimate fuel consumption used during maintenance runs. We also incorporated runtime from emergency use and Demand Response into the fuel consumption estimate. To estimate fuel usage based on engine runtime, AT&T utilized the guidance provided in Appendix 2 of the Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines, developed by the California Environmental Protection Agency Air Resources Board. http://www.arb.ca.gov/diesel/documents/rmgFinal.pdf

Emission Factor:
AT&T utilized EPA Climate Leaders guidance (EPA430-K-08-003 - May 2008) to derive emission factors.

5. Business Air Travel
Data Collection:
Business travel on commercial airline carriers is considered a Scope 3 emissions stream. AT&T's travel system captures the mileage flown by AT&T passengers on commercial airline jets.

Emission Factor:
Flight legs were categorized into short, medium, long hauls and the specific emission factors for CO_2, N_2O, and CH_4 were applied to each flight leg according to EPA Climate Leaders' guidance (EPA430-R-08-006 May 2008) (see below).

Table 1. Air Travel Emission Factors

Climate Leaders: Optional Emissions from Commuting, Business Travel, and Product Transport			
Airline Travel Distance	**kg CO2/passenger-mile**	**g CH4/passenger-mile**	**g N2O/passenger-mile**
Long Haul (>>_ 700 miles)	0.185	0.0104	0.0085
Medium Haul (>>_ 300 and < 700 miles)	0.229	0.0104	0.0085
Short Haul (< 300 miles)	0.277	0.0104	0.0085
Distance Not Known	0.271	0.0104	0.0085

6. Flight Operations
Data Collection:
AT&T uses several corporate jets to transport AT&T passengers for business travel and for network support operations in remote areas such as Alaska. The travel data, including flight leg miles flown and fuel consumption, are managed by a specific flight management system.

Emission Factor:
AT&T utilized EPA Climate Leaders guidance (EPA430-K-08-004 - May 2008), Table B-2 for CO_2 and Table A-6 for N_2O, and CH_4 to estimate emissions for Jet Fuel.

7. Purchased Steam
Data Collection:
Steam is primarily used within the AT&T portfolio for facility and equipment heating needs. Consumption data for steam was collected via utility invoices that were processed, verified and paid by a third-party bill payment vendor.

Emission Factor:
AT&T utilized EPA Climate Leaders guidance (EPA430-K-03-006 - June 2008) and the average heat input of saturated steam (150# psig) and standard boiler efficiency (80%) to derive emission factors.

8. Business Rental Car Travel
Data Collection:
Business rental car travel via commercial vendors is considered a Scope 3 emissions stream. To estimate this emission source, AT&T engaged its primary rental car vendors to gather mileage

driven by car class for AT&T passengers. These primary vendors were estimated to represent 90 percent of the total; the remaining balance was extrapolated based on available data.

Emission Factor:
AT&T utilized EPA Climate Leaders guidance (EPA430-K-08-004, Table B-1) to derive the CO_2 emission factor. In order to calculate N_2O and CH_4 emissions, vehicle miles were assigned car or light-duty truck classifications, and the appropriate emission factors were applied based on EPA Climate Leaders guidance in EPA430-R-08-006, Table 1.

Table 2. Ground Fleet CO2 Emission Factor

EPA CL (EPA430-K-08-004) Table B-1				
Fuel	**CO2**	**Units**	**CO2**	**Units**
UNLEADED	19.42	lbs CO2-e/gal	8.81	kg CO2/gal

Table 3. Ground Fleet CH4 & N2O Emission Factors

May 2008 EPA CL (EPA430-R-08-006) Table 1 Commuting, Business Travel and Product Transport		
	EF	**UOM**
Car	0.031	g CH4/vehicle-mile
	0.032	g N2O/vehicle-mile
Light-duty Truck	0.036	g CH4/vehicle-mile
	0.047	g N2O/vehicle-mile

9. No. 2 Fuel Oil (Diesel)
Data Collection:
No. 2 Fuel Oil (also called stationary "Diesel") is primarily used within the AT&T portfolio for facility and equipment heating needs as a stationary fuel. Diesel is also used in engines and ground fleet, but these sources are documented in other sections of this document. Consumption data for Fuel Oil was collected via utility invoices that were processed, verified and paid by a third-party bill payment vendor.

Emission Factor:
AT&T utilized EPA Climate Leaders guidance (EPA430-K-08-003 - May 2008) to derive emission factors for Fuel Oil.

10. Propane
Data Collection:
Propane is primarily used within the AT&T portfolio for facility and equipment heating needs and for on-site fork trucks. In addition, handheld propane is used in the field for operational needs. The bulk of propane usage information was obtained from utility invoices from AT&T's third-party bill payment service provider. In addition, propane consumption used for field operations was estimated based on average consumption per technician, based on a sampling of usage data from several locations across the country.

Emission Factor:
AT&T utilized EPA Climate Leaders guidance (EPA430-K-08-003 - May 2008) to derive emission factors for propane.

11. Converted Volatile Organic Compounds (VOC)

Data Collection:

AT&T's emissions portfolio includes measurable emissions from the VOCs that are created during the directory printing processes at AT&T's Stevens Graphics' printing facilities. AT&T measures the VOC emissions at the facilities in accordance with permitting requirements. Conversion of solvent VOC emissions to CO_2 in the atmosphere may occur. However, the atmospheric residence time is short and associated emissions were estimated to represent less than 0.0005 percent of the inventory. As such, these emissions were not included in the inventory.

12. Refrigerants

Data Collection:

AT&T recognizes that refrigerant fugitive emissions from our facility and fleet cooling requirements represent a piece of our corporate-wide greenhouse gas emissions, but we do not believe we have enough data at this time to accurately estimate those impacts on a national level. Based on our reported and verified estimated fugitive emissions from California operations in our 2008 report to the California Climate Action Registry (CCAR), we believe these emissions to be *de minimis*. We are working to refine those data collection capabilities and report these emissions impacts in future reports.

Appendix A: Emission Factor Summary

Scope	Source	CO2	Units	N2O	Units	CH4	Units
2	Electric Power	See Appendix C for Electric Power Emission Factors					
1	Natural Gas	116.969788	lbs CO2-e/MMBtu	0.068342	lbs CO2-e/MMBtu	0.0462963	lbs CO2-e/MMBtu
1	LPG (Propane)	12.653130	lbs CO2-e/gallon	0.068343	lbs CO2-e/gallon	0.0462970	lbs CO2-e/gallon
2	Steam	0.174870	lbs CO2-e/lbs steam	0.000102	lbs CO2-e/lbs steam	0.0000692	lbs CO2-e/lbs steam
1	Fuel Oil	22.416245	lbs CO2-e/gallon	0.068343	lbs CO2-e/gallon	0.0694455	lbs CO2-e/gallon
1	Engines (Stationary Generators)	22.416245	lbs CO2-e/gallon	0.068343	lbs CO2-e/gallon	0.0694455	lbs CO2-e/gallon
1	Engines (Portable Generators)	22.416245	lbs CO2-e/gallon	0.068343	lbs CO2-e/gallon	0.0694455	lbs CO2-e/gallon
1	Flight Ops	21.098213	lbs CO2-e/gallon	0.211861	lbs CO2-e/gallon	0.0125000	lbs CO2-e/gallon
1	Ground Fleet	See Methodology Discussion for Emission Factor details.					
3	3rdTravel(Air)	See Methodology Discussion for Emission Factor details.					
3	3rdTravel(Car)	See Methodology Discussion for Emission Factor details.					

Appendix B: Summary of Methodology Sources

Scope	Source	Reporting Protocol	Source File	File Name	Page #	Table #	Link to Document
1	Natural Gas	EPA Climate Leaders	EPA430-K-08-003 May 2008	Direct Emissions from Stationary Combustion Sources	27	Table B-3; Table A-1 adjusted for fuel type	http://www.epa.gov/stateply/documents/resources/stationarycombustionguidance.pdf
1	LPG (Propane)	EPA Climate Leaders	EPA430-K-08-003 May 2008	Direct Emissions from Stationary Combustion Sources	27	Table B-3; Table A-1 adjusted for fuel type	http://www.epa.gov/stateply/documents/resources/stationarycombustionguidance.pdf
1	Fuel Oil	EPA Climate Leaders	EPA430-K-08-003 May 2008	Direct Emissions from Stationary Combustion Sources	27	Table B-3; Table A-1 adjusted for fuel type	http://www.epa.gov/stateply/documents/resources/stationarycombustionguidance.pdf
1	Engines (Stationary Generators)	EPA Climate Leaders	EPA430-K-08-003 May 2008	Direct Emissions from Stationary Combustion Sources	27	Table B-3; Table A-1 adjusted for fuel type	http://www.epa.gov/stateply/documents/resources/stationarycombustionguidance.pdf
1	Engines (Portable Generators)	EPA Climate Leaders	EPA430-K-08-003 May 2008	Direct Emissions from Stationary Combustion Sources	27	Table B-3; Table A-1 adjusted for fuel type	http://www.epa.gov/stateply/documents/resources/stationarycombustionguidance.pdf
1	Flight Ops	EPA Climate Leaders	EPA430K-08-004 May 2008	Direct Emissions from Mobile Combustion Sources	27	Table B-2 CO2; Table A-6 N2O & CH4	http://www.epa.gov/climateleaders/documents/resources/mobilesource_guidance.pdf

Appendix B: Summary of Methodology Sources, continued

Scope	Source	Reporting Protocol	Source File	File Name	Page #	Table #	Link to Document
1	Ground Fleet	EPA Climate Leaders	EPA430K-08-004 May 2008	Direct Emissions from Mobile Combustion Sources	26	Table B-1	http://www.epa.gov/climateleaders/documents/resources/mobilesource_guidance.pdf
2	Electricity Purchase	EPA Climate Leaders	EPA430-K-03-006 June 2008	Indirect Emissions from Purchases/Sales of Electricity and Steam	11	-	http://www.epa.gov/stateply/documents/resources/indirect_electricity_guidance.pdf
2	Steam	EPA Climate Leaders	EPA430-K-03-006 June 2008	Indirect Emissions from Purchases/Sales of Electricity and Steam	12	-	http://www.epa.gov/stateply/documents/resources/indirect_electricity_guidance.pdf
3	Business Air Travel	EPA Climate Leaders	EPA430-R-08-006 May 2008	Optional Emissions from Commuting, Business Travel, and Product Transport	7	Table 4	http://www.epa.gov/stateply/documents/resources/commute_travel_product.pdf
3	Business Rental Car Travel	EPA Climate Leaders	EPA430K-08-004 May 2008; EPA430-R-08-006 May 2008	Optional Emissions from Commuting, Business Travel	3	Table B1; Table 1	http://www.epa.gov/stateply/documents/resources/commute_travel_product.pdf

Appendix C: eGRID Emission Factors and Subregions

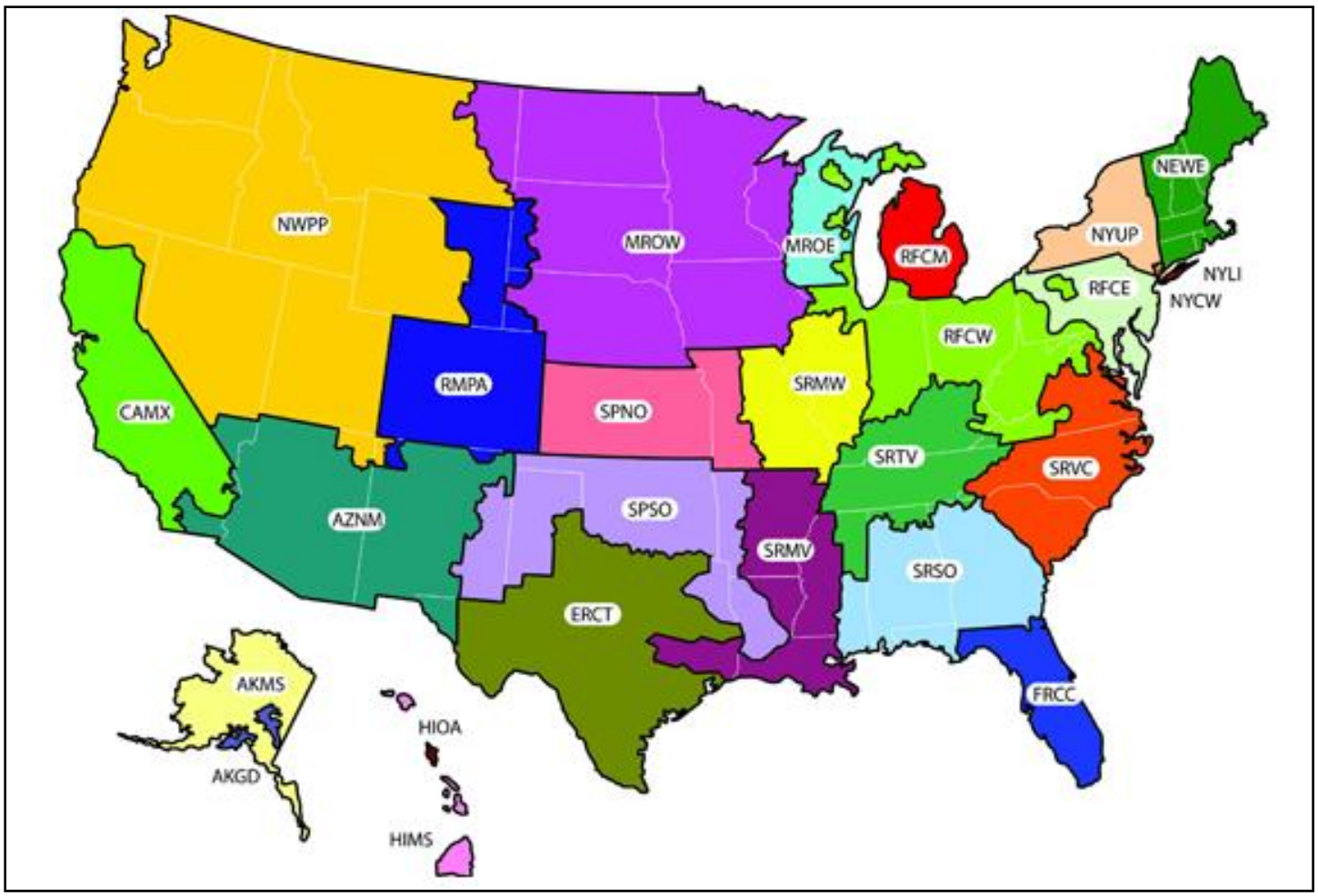
http://cfpub.epa.gov/egridweb/ghg.cfm

eGRID2007 Version 1.1 Year 2005 GHG Annual Output Emission Rates

Annual output emission rates for greenhouse gases (GHGs) can be used as default factors for estimating GHG emissions from electricity use when developing a carbon footprint or emission inventory Annual non-baseload output emission rates should not be used for those purposes, but can be used to estimate GHG emissions reductions from reductions in electricity use.

eGRID subregion acronym	eGRID subregion name	Annual output emission rates			Annual non-baseload output emission rates		
		Carbon dioxide (CO2) (lb/MWh)	Methane (CH4) (lb/GWh)	Nitrous oxide (N2O) (lb/GWh)	Carbon dioxide (CO2) (lb/MWh)	Methane (CH4) (lb/GWh)	Nitrous oxide (N2O) (lb/GWh)
AKGD	ASCC Alaska Grid	1,232.36	25.60	6.51	1,473.43	36.41	8.24
AKMS	ASCC Miscellaneous	498.86	20.75	4.08	1,457.11	60.47	11.87
AZNM	WECC Southwest	1,311.05	17.45	17.94	1,201.44	20.80	8.50
CAMX	WECC California	724.12	30.24	8.08	1,083.02	39.24	5.55
ERCT	ERCOT All	1,324.35	18.65	15.11	1,118.86	20.15	5.68
FRCC	FRCC All	1,318.57	45.92	16.94	1,353.72	48.16	12.95
HIMS	HICC Miscellaneous	1,514.92	314.68	46.88	1,674.15	338.44	51.42
HIOA	HICC Oahu	1,811.98	109.47	23.62	1,855.10	120.11	20.79
MROE	MRO East	1,834.72	27.59	30.36	1,828.63	28.82	25.20
MROW	MRO West	1,821.84	28.00	30.71	2,158.79	45.57	35.22
NEWE	NPCC New England	927.68	86.49	17.01	1,314.53	77.47	16.02
NWPP	WECC Northwest	902.24	19.13	14.90	1,333.64	49.28	18.73
NYCW	NPCC NYC/Westchester	815.45	36.02	5.46	1,525.05	56.80	9.08
NYLI	NPCC Long Island	1,536.80	115.41	18.09	1,509.85	60.32	10.78
NYUP	NPCC Upstate NY	720.80	24.82	11.19	1,514.11	45.30	18.41
RFCE	RFC East	1,139.07	30.27	18.71	1,790.50	41.61	24.36
RFCM	RFC Michigan	1,563.28	33.93	27.17	1,663.15	29.40	26.24
RFCW	RFC West	1,537.82	18.23	25.71	1,992.86	24.49	31.72
RMPA	WECC Rockies	1,883.08	22.88	28.75	1,617.71	22.42	20.14
SPNO	SPP North	1,960.94	23.82	32.09	2,169.74	31.18	31.99
SPSO	SPP South	1,658.14	24.98	22.61	1,379.05	24.40	12.04
SRMV	SERC Mississippi Valley	1,019.74	24.31	11.71	1,257.10	29.50	9.82
SRMW	SERC Midwest	1,830.51	21.15	30.50	2,101.16	25.66	32.92
SRSO	SERC South	1,489.54	26.27	25.47	1,697.22	35.20	26.41
SRTV	SERC Tennessee Valley	1,510.44	20.05	25.64	1,998.36	28.25	32.86
SRVC	SERC Virginia/Carolina	1,134.88	23.77	19.79	1,781.28	40.09	27.46

Map of eGrid Subregions per eGrid2007 v1.1



Year 2005 State Emissions and Emission Rates

State	Nitrogen oxides (NO_x)				Sulfur dioxide (SO_2)		Carbon dioxide (CO_2)		Methane (CH_4)		Nitrous oxide (N_2O)	
	Emissions (tons)	Output emission rate (lb/MWh)	Ozone season emissions (tons)	Ozone season output emission rate (lb/MWh)	Emissions (tons)	Output emission rate (lb/MWh)	Emissions (tons)	Output emission rate (lb/MWh)	Emissions (lbs)	Output emission rate (lb/GWh)	Emissions (lbs)	Output emission rate (lb/GWh)
AK	10,908.68	3.3174	4,473.51	3.4100	3,551.84	1.0801	3,583,598.7	1,089.79	162,166.8	24.66	39,690.3	6.04
AL	138,269.28	2.0138	47,105.68	1.5258	466,164.70	6.7892	92,043,923.1	1,340.53	3,447,073.9	25.10	3,169,994.4	23.08
AR	38,011.21	1.5906	16,918.57	1.4968	71,132.21	2.9766	29,375,197.8	1,229.23	1,528,239.0	31.98	1,065,991.2	22.30
AZ	81,977.08	1.6159	36,631.70	1.5345	53,238.17	1.0494	58,778,193.0	1,158.58	1,576,157.9	15.53	1,616,641.9	15.93
CA	22,302.45	0.2231	10,460.26	0.2211	13,576.65	0.1358	53,985,904.8	540.06	6,117,976.5	30.60	899,178.9	4.50
CO	72,523.23	2.9224	31,180.47	2.9113	62,897.66	2.5346	47,420,655.1	1,910.88	1,165,299.6	23.48	1,452,396.6	29.26
CT	10,086.99	0.6013	4,293.69	0.5862	9,165.89	0.5464	13,485,688.6	803.92	2,274,325.3	67.79	457,295.8	13.63
DC	412.95	3.6538	364.40	3.4464	914.34	8.0900	274,901.1	2,432.30	23,728.7	104.97	4,745.7	21.00
DE	13,546.31	3.3297	6,143.41	3.1073	32,534.86	7.9972	8,209,955.0	2,018.04	296,927.1	36.49	215,766.6	26.52
FL	232,374.96	2.1140	111,431.69	2.1066	427,367.29	3.8879	147,356,227.6	1,340.54	10,052,442.6	45.73	3,886,101.1	17.68
GA	118,496.71	1.7347	38,039.96	1.1683	646,010.65	9.4572	95,805,693.5	1,402.54	3,007,898.5	22.02	3,269,108.9	23.93
HI	22,355.13	3.8802	10,042.06	4.0215	24,009.52	4.1673	9,973,066.3	1,731.01	1,905,878.4	165.40	345,203.5	29.96
IA	75,754.12	3.4444	32,979.97	3.3393	137,912.79	6.2706	41,947,003.5	1,907.24	984,511.8	22.38	1,390,794.3	31.62
ID	757.77	0.1400	310.67	0.1091	949.00	0.1753	723,800.4	133.73	207,424.6	19.16	37,193.7	3.44
IL	133,020.84	1.3702	36,776.61	0.8605	350,703.25	3.6126	109,310,141.6	1,126.00	2,552,683.7	13.15	3,591,868.2	18.50
IN	214,229.26	3.2885	57,740.17	2.0258	876,661.47	13.4570	136,006,998.2	2,087.75	3,197,209.9	24.54	4,529,353.0	34.76
KS	89,973.17	3.9236	41,595.24	4.0563	136,521.99	5.9535	43,453,084.3	1,894.92	1,066,380.4	23.25	1,435,914.1	31.31
KY	167,571.04	3.4260	37,558.49	1.7481	503,807.18	10.3004	100,632,256.5	2,057.45	2,360,641.2	24.13	3,415,398.9	34.91
LA	75,548.05	1.6303	34,533.52	1.6445	114,467.12	2.4701	54,472,600.4	1,175.49	2,358,929.2	25.45	1,243,498.4	13.42
MA	26,342.18	1.1093	9,904.96	0.9788	83,686.32	3.5240	29,990,704.0	1,262.91	3,249,178.6	68.41	818,561.7	17.23
MD	64,802.53	2.4622	21,144.97	1.8401	287,866.63	10.9375	35,590,672.9	1,352.27	1,820,454.0	34.58	1,196,458.5	22.73
ME	9,024.74	1.0270	3,187.89	0.8969	10,734.92	1.2216	6,499,973.0	739.65	4,024,971.4	229.01	571,043.6	32.49
MI	126,584.90	2.0812	49,344.62	1.8298	390,490.65	6.4202	81,961,230.9	1,347.55	3,606,301.5	29.65	2,877,490.0	23.65
MN	88,480.38	3.3448	36,404.38	3.2585	105,570.95	3.9909	42,183,866.1	1,594.67	2,048,507.3	38.72	1,507,279.7	28.49
MO	128,506.86	2.8288	45,188.35	2.2706	295,031.83	6.4944	83,903,379.0	1,846.93	1,935,821.3	21.31	2,790,190.8	30.71
MS	44,190.09	1.9607	23,209.19	2.0488	77,262.10	3.4281	27,626,151.8	1,225.77	1,194,115.4	26.49	785,181.7	17.42
MT	40,795.63	2.9204	17,023.30	2.6724	21,771.26	1.5585	22,239,943.1	1,592.05	551,190.5	19.73	759,879.5	27.20
NC	115,726.42	1.7841	30,807.83	1.0613	510,453.44	7.8692	79,459,971.8	1,224.97	2,571,438.6	19.82	2,765,521.0	21.32
ND	77,082.25	4.8278	31,582.75	4.7365	138,894.30	8.6992	37,124,155.8	2,325.16	801,563.0	25.10	1,192,829.3	37.35
NE	54,116.87	3.4398	21,949.35	3.2538	74,209.47	4.7169	25,265,169.3	1,605.90	584,468.8	18.58	839,872.9	26.69
NH	11,493.84	0.9416	3,614.40	0.6653	55,228.58	4.5243	9,622,652.3	788.28	1,489,325.3	61.00	366,366.3	15.01
NJ	29,863.52	0.9855	10,678.02	0.7658	58,199.36	1.9205	21,775,912.9	718.57	1,831,535.3	30.22	653,702.4	10.79
NM	76,309.72	4.3437	33,169.92	4.2931	30,669.27	1.7458	34,009,625.1	1,935.90	817,809.9	23.28	1,072,523.1	30.53
NV	45,933.21	2.2450	20,228.28	2.2128	53,553.12	2.6174	29,479,348.3	1,440.79	819,356.5	20.02	730,423.8	17.85
NY	65,647.39	0.8867	29,366.38	0.8842	181,615.48	2.4531	61,325,138.0	828.33	5,472,744.6	36.96	1,540,840.6	10.41
OH	260,352.29	3.3173	53,428.45	1.5639	1,116,299.97	14.2233	139,060,670.8	1,771.84	3,294,991.9	20.99	4,693,870.1	29.90
OK	87,234.01	2.4823	41,141.98	2.3163	108,741.39	3.0944	54,918,161.6	1,562.76	1,522,726.5	21.67	1,436,581.1	20.44
OR	11,003.14	0.4444	4,792.80	0.5116	12,932.42	0.5223	9,939,648.9	401.45	840,128.9	16.97	237,791.9	4.80
PA	184,311.23	1.6909	50,735.83	1.0600	997,192.45	9.1482	135,654,583.9	1,244.50	5,541,258.4	25.42	4,564,949.7	20.94
RI	644.39	0.2129	311.35	0.2089	165.92	0.0548	2,919,853.8	964.72	116,308.2	19.21	11,957.8	1.98
SC	55,594.47	1.0846	17,930.98	0.8004	226,159.35	4.4122	45,817,122.1	893.86	1,529,849.3	14.92	1,555,340.6	15.17
SD	14,800.40	4.5395	5,348.46	3.6268	11,460.63	3.5151	3,851,980.4	1,181.45	91,052.9	13.96	124,118.7	19.03
TN	103,412.56	2.1318	22,468.09	1.0633	268,048.54	5.5257	61,076,912.7	1,259.07	1,592,464.6	16.41	2,103,950.4	21.69
TX	196,031.29	0.9870	86,302.46	0.9044	597,420.87	3.0079	269,204,654.5	1,355.41	7,843,575.9	19.75	6,099,389.7	15.35
UT	70,779.96	3.7098	31,263.89	3.7409	37,007.65	1.9397	40,122,566.9	2,102.97	921,222.2	24.14	1,342,781.2	35.19
VA	70,496.04	1.7890	21,874.59	1.2729	227,114.45	5.7635	47,130,905.6	1,196.05	3,230,331.6	40.99	1,676,006.1	21.27
VT	581.37	0.2034	266.69	0.2220	48.48	0.0170	13,297.8	4.65	506,578.9	88.61	67,621.1	11.83
WA	21,600.13	0.4236	8,332.14	0.3878	4,525.15	0.0887	16,882,589.7	331.11	1,672,301.6	16.40	616,155.6	6.04
WI	74,369.76	2.4052	31,798.10	2.3253	189,960.37	6.1436	53,186,665.6	1,720.13	1,578,126.8	25.52	1,748,801.6	28.28
WV	162,304.81	3.4680	28,802.00	1.4143	472,124.15	10.0881	90,236,388.9	1,928.12	2,049,347.8	21.89	3,062,605.3	32.72
WY	91,392.93	4.0113	37,458.62	3.8958	90,280.78	3.9625	51,296,417.0	2,251.46	1,170,313.5	25.68	1,696,751.6	37.24
U.S.	**3,827,928.62**	**1.9388**	**1,387,841.07**	**1.5182**	**10,688,306.79**	**6.2689**	**2,696,209,203.8**	**1,329.35**	**110,605,258.4**	**27.27**	**83,672,972.9**	**20.60**