



TONGASS NATIONAL FOREST FY2007 Greenhouse Gas Inventory



The inventory was developed using the *Environmental Protection Agency (EPA) Climate Leaders Program Inventory Guidance* documents and technical assistance, and follows the example inventory developed for the National Forests of the Greater Yellowstone Area. It covers emissions from all activities over which the Forest Service has operational control within the Forest's geographical boundaries (with the exception of wildfire suppression). These are referred to as direct emissions or Scope 1 emissions. Indirect emissions or Scope 2 emissions, from purchased electricity, are also included in the inventory. Additionally, optional emissions (Scope 3) from small aircraft business travel are included. Detailed information on each source category is provided below.

Data was collected from key personnel such as the Facilities Manager (Molly Murphy), Fleet Manager (Roy Mitchell) and Aviation Manager (John Krosse). Each District was sent a questionnaire and environmental inventory database and asked to verify the data already received and to fill in missing data. In order to avoid underestimating emissions when usage data was not available, purchase data from the Tongass Transaction Register was converted into estimate usage amounts (e.g. propane) using average FY2007 cost data from the Energy Information Administration.

For questions regarding the inventory or to comment on possible inconsistencies or errors you notice in the data, please contact Michele Parker, Tongass Environmental Engineer, at mmparker@fs.fed.us. Details regarding management of the inventory are in the Inventory Management Plan.

Stationary

- Stationary combustion sources on the Tongass include boilers and water heaters fueled by propane and diesel fuel (fuel oil #2).
- The Facilities Manager provided fuel oil usage data in the form of monthly refill amounts in gallons.
- Fuel oil data can be viewed for each District on separate worksheets, as well as for the Forest as whole.
- Propane usage data was not available, so usage was estimated based on the amount spent on propane recorded in the Transaction Register (\$22,325.64), which was converted based on average FY2007 cost of propane for the region (\$2.01/gal) according to Energy Information Administration data. (<http://tonto.eia.doe.gov/dnav/pet/hist/d900650002m.htm>)

Mobile

- This category includes emissions from all road vehicles in the EMIS inventory provided by Tongass' Fleet Manager.
- Fuel use was not documented for FY2007. For vehicles, this was estimated using odometer readings to determine miles traveled and fuel economy values in miles per gallon (MPG) obtained from www.fueleconomy.gov.
- Vehicle miles traveled (VMT) for the year were calculated by subtracting the odometer reading from end of the previous fiscal year from the odometer readings from the end of the baseline fiscal year.
- Combined MPG was calculated using the following formula: $1 / [(0.55/\text{city mpg}) + (0.45/\text{highway mpg})]$
- Where fuel economy values were not available for particular vehicles, values were obtained from the manufacturer or from the GHG Protocol's guidance

readings from the end of the baseline fiscal year.

- Combined MPG was calculated using the following formula: $1 / [(0.55/\text{city mpg}) + (0.45/\text{highway mpg})]$
- Where fuel economy values were not available for particular vehicles, values were obtained from the manufacturer or from the GHG Protocol's guidance for calculating emissions from mobile sources (e.g. tractor).
- The vast majority of the vehicles and watercraft are fueled by gasoline; a minority are fueled by diesel.
- Most vehicles are light duty trucks or heavy duty trucks. Vehicles are classified as heavy duty trucks according to their exemption from testing based on a gross vehicle weight rating (GVWR) over 8,500 pounds. (The list of these vehicles is available from www.fueleconomy.gov/feg/which_tested.shtml.)
- Note that the Tongass has very few passenger cars and tractors.
- Emissions from watercraft and project vehicles (e.g. snowmobiles, trail bikes and all-terrain vehicles) are not included in this baseline inventory since fuel use was not available, could not be estimate with sufficient accuracy, and this tool does not currently include calculation methodology. It is recommended that these sources are included in the future.
- Data can be viewed for each District on separate worksheets, as well as for the Forest as a whole.

Electricity

- Electricity usage data in kilowatt-hours (kWh) per month was obtained directly from the utility provider.
- The EPA Climate Leaders Program provided the inventory team with the 2005 eGRID tool, which was used to determine the appropriate eGRID subregion to input for each District. All Districts fall into the AKMS (ASCC Miscellaneous) subregion. (Note: Juneau, Ketchikan, Petersburg, Sitka and Wrangell's utility providers are hydroelectric power plants. AKMS (ASCC Miscellaneous) provides regional emissions factors.)
- Craig, Thorne Bay and Yakutat did not have electricity data available for FY2007. Therefore, FY2008 values were used.
- Sitka did not have electricity data available for October through January of FY2007. Therefore, FY2008 values were used.
- Data was not available for the following leased facilities: Juneau Regional Office, Ketchikan Supervisors Office, and Yakutat Office. (According to EPA Climate Leaders protocol, these would be Scope 3 emissions.)
- Data can be viewed for each District on separate worksheets, as well as for the Forest as a whole.

Refrigeration and Air Conditioning

- Emissions from refrigeration and air conditioning are at most de minimis and not worth pursuing at this time. Refrigeration equipment is minimal and regularly maintained on the Tongass, so leakage is extremely unlikely. Air conditioning is used only to cool the computer server during the summer months, and is also regularly maintained, so leakage is extremely unlikely.

Fire Extinguishers

- Emissions from fire extinguishers are at most de minimis and not worth pursuing at this time. Fire extinguishers are regularly maintained on the Tongass, so leakage is extremely unlikely.

Business Travel on Small Aircraft

- Business air travel is an optional source category for the inventory. Tongass staff decided to include this category because their unique geography requires that staff travel between islands and remote locations on small aircraft frequently.
- Small aircraft trips are either chartered or contracted flights on fixed wing aircraft and helicopters.
- The aviation manager provided data on the duration (in minutes) of each trip by aircraft type (Cessna, Beaver, Otter or Helicopter) and by District.
- Fuel usage data was estimated based on trip durations and fuel economy factors. Fuel economy factors (in gallons per hour) for each aircraft type were provided by Ken More Air, which services the aircraft. (Beaver: 23 gal/hr. Cessna: 14 gal/hr. Otter: 42 gal/hr. Helicopter: 32 gal/hr.)
- Flights on large commercial aircraft are not included in the inventory at this time since data was not available. The inventory team assume this would be a



EPA Climate Leaders Simplified GHG Emissions Calculator (SGEC)

Version 2.8

This calculator is designed as a simplified calculation tool to help organizations in estimating their greenhouse gas (GHG) emissions for reporting to the EPA's Climate Leaders program. All methodologies and default values provided are based on the most current Climate Leaders Greenhouse Gas Inventory Protocol guidance. The calculator will determine the direct and indirect emissions from all sources at a company when activity data is entered into the various sections of the workbook.

Tool Instructions:

- (A) Click on the grey boxes below to go to the appropriate Tool Sheet.
- (B) Enter data in Tool Sheet in ORANGE cells only. Final GHG emissions will be provided in CO₂ equivalent emissions in BLUE or GREEN cells. If data is not known or applicable, leave default value (blank, zero or other) in cell.
- (C) Enter data in appropriate units, if needed convert units prior to entering into tool.
- (D) Guidance for each calculation method is provided in the references at bottom of each sheet.

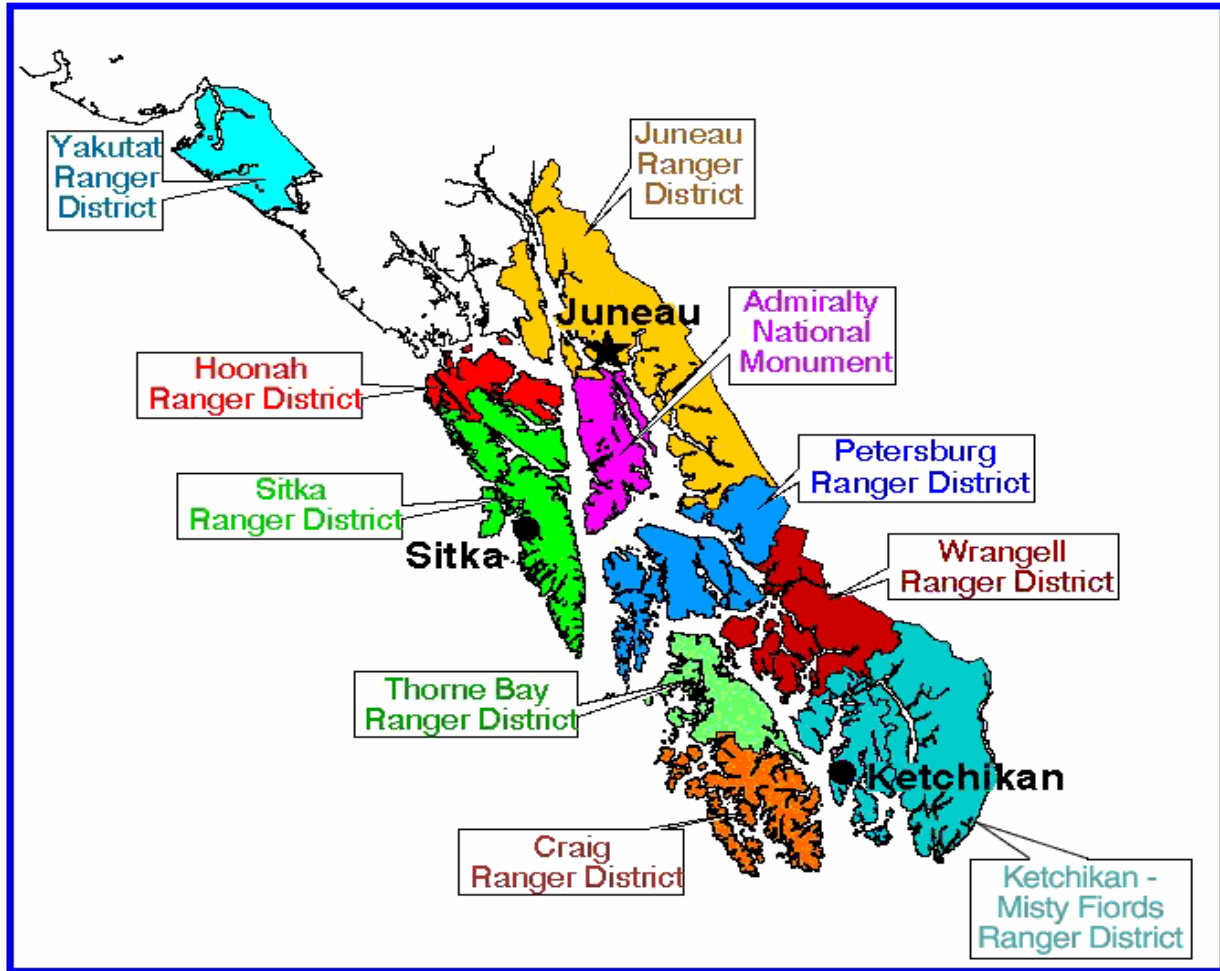
Tool Sheets:

Direct 1.0	Direct Emissions from Stationary Combustion Sources - Traditional Sources
Direct 2.0	Direct Emissions from Mobile Sources
Direct 3.0	Direct Emissions from Refrigeration and Air Conditioning Equipment
Direct 4.0	Direct Emissions from Fire Suppression Equipment
Indirect 1.0	Indirect Emissions from Purchase of Electricity
Indirect 2.0	Indirect Emissions from Purchase of Steam
Optional 1.0	Optional Emissions from Business Travel
Optional 2.0	Optional Emissions from Employee Commuting
Conversion Factors	Useful Conversion Factors

Version Notes:

Tool release date: July 1, 2008

Map of the Tongass National Forest Ranger Districts



Source: Tongass National Forest website at www.fs.fed.us/r10/tongass/maps/districtsmap.html

Summary Page



Instructions:

- (A) Use this summary sheet to fill out the Annual GHG Inventory Summary and Goal Tracking Form.
- (B) The total GHG emissions from each source category are provided below. Enter the data below into the appropriate cell of the Annual GHG Inventory Summary and Goal Tracking Form (page 1 - Corporate Inventory - U.S.)
- (C) If using this tool for a single facility or source, you can save the files under the facility or source name and you must sum all of the emission categories (e.g. Stationary Combustion) for each facility or source to a corporate total which then can be entered into the Annual GHG Inventory Summary and Goal Tracking Form.

Company Information:

Forest Name:	Tongass National Forest
Forest Address:	648 Mission Street Federal Building Ketchikan AK 99901
Name of Preparer:	Michele Parker (Tongass) / Carol Guy (PRIZIM Inc.)
Phone Number of Preparer:	MP: 907-772-5850; CG: 301-840-2222x159
Date Prepared:	November 2009

Summary of Company Emissions:

Direct Emissions

Stationary Combustion	585	CO ₂ -e (metric tons)
Mobile Sources	413	CO ₂ -e (metric tons)
Refrigeration / AC Equip. Use / Fire Suppression	0	CO ₂ -e (metric tons)

Indirect Emissions

Purchased and Consumed Electricity	361	CO ₂ -e (metric tons)
Purchased and Consumed Steam	0	CO ₂ -e (metric tons)

Optional Emissions

Employee Business Travel	476	CO ₂ -e (metric tons)
Employee Commuting	0	CO ₂ -e (metric tons)
Biomass Emissions from Stationary Sources	0	CO ₂ -e (metric tons)
Biomass Emissions from Mobile Sources	0	CO ₂ -e (metric tons)

Total Company Emissions

Total GHG Emissions (not including Optional Emissions)	1,359	CO ₂ -e (metric tons)
Total Optional Emissions	476	CO ₂ -e (metric tons)

1.0. Direct Emissions from Stationary Combustion Sources (Standard)



Instructions:

(A) Enter fuel data for each unit, facility or site in ORANGE cells of Table 1. Company-wide fuel use is reported in Table 2. Company-wide emissions is reported in Table 3, biomass emissions are reported separately.

- Step 1.** Enter the total fuel combusted for each unit, facility or site (by fuel type) in Table 1.
- Select "Fuel Combusted" from drop down box. Enter "Quantity Combusted" in appropriate units.
 - Appropriate units for "Quantity Combusted" is listed under "Units" in Table 1 and also summarized in Table 2.
 - See example entry in first row (RED Italics).

Table 1. Stationary Source Fuel Combustion

Source ID	Source Description	Fuel Combusted	Quantity Combusted	Units
<i>BLR-012</i>	<i>East Power Plant</i>	<i>Bituminous Coal</i>	<i>500</i>	<i>tons</i>
Tongass NF	Tongass NF Transaction Register	Propane	11,115	gallons
504 9th Street	Craig	Distillate Fuel Oil (#1, 2 & 4)	2,093	gallons
430A Airport Rd	Hoonah	Distillate Fuel Oil (#1, 2 & 4)	4,207	gallons
Crew Quarters	Hoonah	Distillate Fuel Oil (#1, 2 & 4)	1,846	gallons
Blue Duplex	Hoonah	Distillate Fuel Oil (#1, 2 & 4)	907	gallons
Warehouse	Hoonah	Distillate Fuel Oil (#1, 2 & 4)	1,121	gallons
Six-plex	Hoonah	Distillate Fuel Oil (#1, 2 & 4)	1,977	gallons
8510 Mendenhall	Juneau	Distillate Fuel Oil (#1, 2 & 4)	7,642	gallons
8461 Dairy Rd	Juneau	Distillate Fuel Oil (#1, 2 & 4)	8,410	gallons
3031 Tongass Av	Ketchikan	Distillate Fuel Oil (#1, 2 & 4)	1,195	gallons
123 Scow Bay Lo	Petersburg	Distillate Fuel Oil (#1, 2 & 4)	2,056	gallons
Scow Bay Wareh	Petersburg	Distillate Fuel Oil (#1, 2 & 4)	1,852	gallons
Nursery	Petersburg	Distillate Fuel Oil (#1, 2 & 4)	1,541	gallons
402B Fram - ISO	Petersburg	Distillate Fuel Oil (#1, 2 & 4)	356	gallons
402C - Old Bunkr	Petersburg	Distillate Fuel Oil (#1, 2 & 4)	732	gallons
402 D/E Fram - D	Petersburg	Distillate Fuel Oil (#1, 2 & 4)	600	gallons
406 Fram - Rang	Petersburg	Distillate Fuel Oil (#1, 2 & 4)	573	gallons
Portage	Petersburg	Distillate Fuel Oil (#1, 2 & 4)	2,970	gallons
Kake	Petersburg	Distillate Fuel Oil (#1, 2 & 4)	7	gallons
Cascade Creek C	Sitka	Distillate Fuel Oil (#1, 2 & 4)	702	gallons
416 Geodetic Wa	Sitka	Distillate Fuel Oil (#1, 2 & 4)	633	gallons
402 Monastery	Sitka	Distillate Fuel Oil (#1, 2 & 4)	268	gallons
501 Sawmill Cree	Sitka	Distillate Fuel Oil (#1, 2 & 4)	398	gallons
Auto and Woodsr	Sitka	Distillate Fuel Oil (#1, 2 & 4)	962	gallons
Cascade Creek V	Sitka	Distillate Fuel Oil (#1, 2 & 4)	809	gallons
White House	Sitka	Distillate Fuel Oil (#1, 2 & 4)	570	gallons
1312 Federal Wa	Thorne Bay	Distillate Fuel Oil (#1, 2 & 4)	1,855	gallons
525 Bennett	Wrangell	Distillate Fuel Oil (#1, 2 & 4)	4,763	gallons

Table 2. Total Company-Wide Stationary Source Fuel Combustion

Fuel Type	Quantity Combusted	Units
Anthracite Coal	0	tons
Bituminous Coal	0	tons
Sub-bituminous Coal	0	tons
Lignite Coal	0	tons
Natural Gas	0	scf
Distillate Fuel Oil (#1, 2 & 4)	51,045	gallons
Residual Fuel Oil (#5 & 6)	0	gallons
Kerosene	0	gallons
LPG	0	gallons
Propane	11,115	gallons
Wood and Wood Waste	0	tons
Landfill Gas (50%CH ₄ , 50%CO ₂)	0	scf

Table 3. Total Company-wide CO₂, CH₄ and N₂O Emissions from Stationary Source Fuel Combustion

Fuel Type	CO ₂ (kg)	CH ₄ (g)	N ₂ O (g)
Anthracite Coal	0.0	0.0	0.0
Bituminous Coal	0.0	0.0	0.0
Sub-bituminous Coal	0.0	0.0	0.0
Lignite Coal	0.0	0.0	0.0
Natural Gas	0.0	0.0	0.0
Distillate Fuel Oil (#1, 2 & 4)	517,867.7	77,874.6	4,247.7
Residual Fuel Oil (#5 & 6)	0.0	0.0	0.0
Kerosene	0.0	0.0	0.0
LPG	0.0	0.0	0.0
Propane	63,824.6	11,132.1	607.2
Total Fossil Fuel Emissions	581,692.3	89,006.7	4,854.9
Wood and Wood Waste	0.0	0.0	0.0
Landfill Gas (50%CH ₄ , 50%CO ₂)	0.0	0.0	0.0
Total Non-Fossil Fuel Emissions	0.0	0.0	0.0
Total Emissions for all Fuels	581,692.3	89,006.7	4,854.9
Total CO₂ Emissions - Equivalent (metric tons)			585.1
Total Biomass CO₂ Emissions - Equivalent (metric tons)			0.0

Notes:

- CO₂ emissions estimated using emission factors provided in Tables B-5 and B-6 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (May 2008)*.
- CH₄ and N₂O emissions estimated using emission factors provided in Tables A-1 (commercial sector values), B-1 and B-2 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (May 2008)*.
- CH₄ and N₂O factors for "commercial petroleum" used for kerosene, LPG and propane. CH₄ and N₂O factors for "natural gas" used for landfill gas.

2.0. Direct Emissions from Mobile Sources

Instructions:

(A) Enter data in ORANGE cells in proper units as appropriate in Table 1. Final emissions data is provided in Table 6. Biomass emissions are not reported in the total CO₂ emissions, but are reported separately in Table 6.

Step 1. Enter Biodiesel and Ethanol percentages if known, or leave default values.

- Biodiesel assumed to be mix of biofuel and diesel (GHG emissions from biofuel need not be reported)
- Ethanol assumed to be mix of ethanol and gasoline (GHG emissions from ethanol need not be reported).

Biofuel Percent:	20%
Ethanol Percent:	80%

Step 2. Enter "Vehicle Year", "Fuel Usage" and "Miles Traveled" for each vehicle or group of vehicles (by vehicle type, vehicle year and fuel type) in Table 1.

- Select "Vehicle Type" from drop down box (closest type available). Enter "Fuel Used" in appropriate units.
- If mileage or amount of fuel used unknown, estimate using approximate fuel economy values (see Table 7).
- See example entry in first row (RED Italics).

Table 1. Mobile Source Fuel Combustion and Miles Traveled

Source ID	Source Description	Vehicle Type	Vehicle Year	Fuel Usage	Units	Miles Traveled
<i>Fleet-012</i>	<i>HQ Fleet</i>	<i>Gasoline Heavy-Duty Vehicles</i>	<i>1990</i>	<i>500</i>	<i>gal</i>	<i>15,000</i>
1555	Craig Fleet	Gasoline Light-Duty Trucks	1999	233	gal	5,166
1585	Craig Fleet	Gasoline Heavy-Duty Vehicles	2001	422	gal	5,576
1624	Craig Fleet	Gasoline Heavy-Duty Vehicles	2002	382	gal	6,081
1662	Craig Fleet	Gasoline Light-Duty Trucks	2003	118	gal	1,590
1664	Craig Fleet	Gasoline Heavy-Duty Vehicles	2003	1,083	gal	14,625
1672	Craig Fleet	Gasoline Heavy-Duty Vehicles	2003	556	gal	9,009
1685	Craig Fleet	Gasoline Light-Duty Trucks	2004	394	gal	5,715
1710	Craig Fleet	Gasoline Heavy-Duty Vehicles	2005	408	gal	6,612
1711	Craig Fleet	Gasoline Light-Duty Trucks	2005	351	gal	5,235
1712	Craig Fleet	Gasoline Light-Duty Trucks	2005	318	gal	4,388
1737	Craig Fleet	Gasoline Light-Duty Trucks	2006	576	gal	8,357
1738	Craig Fleet	Gasoline Light-Duty Trucks	2006	393	gal	5,856
1736	Craig Fleet	Gasoline Heavy-Duty Vehicles	2007	265	gal	3,949
1935	Hoonah Fleet	Gasoline Light-Duty Trucks	1995	7	gal	94
1506	Hoonah Fleet	Gasoline Heavy-Duty Vehicles	1997	58	gal	807
1505	Hoonah Fleet	Gasoline Heavy-Duty Vehicles	1999	144	gal	1,795
1612	Juneau Fleet	Gasoline Heavy-Duty Vehicles	2001	162	gal	2,030
1632	Hoonah Fleet	Gasoline Heavy-Duty Vehicles	2001	139	gal	2,015
1667	Hoonah Fleet	Gasoline Heavy-Duty Vehicles	2003	355	gal	4,897
1693	Hoonah Fleet	Gasoline Heavy-Duty Vehicles	2004	278	gal	3,843
1694	Hoonah Fleet	Gasoline Light-Duty Trucks	2004	267	gal	3,609
1713	Hoonah Fleet	Gasoline Heavy-Duty Vehicles	2005	282	gal	3,888
1545	Juneau Fleet	Gasoline Heavy-Duty Vehicles	1998	7	gal	100
1651	Juneau Fleet	Gasoline Heavy-Duty Vehicles	1999	197	gal	2,760
1576	Juneau Fleet	Gasoline Light-Duty Trucks	2000	113	gal	1,683
1577	Juneau Fleet	Gasoline Light-Duty Trucks	2000	63	gal	1,044
1589	Juneau Fleet	Gasoline Heavy-Duty Vehicles	2001	104	gal	1,430
1596	Juneau Fleet	Gasoline Heavy-Duty Vehicles	2001	422	gal	5,825
1617	Juneau Fleet	Gasoline Passenger Cars	2001	0	gal	1
1618	Juneau Fleet	Gasoline Passenger Cars	2001	131	gal	2,421
1631	Juneau Fleet	Gasoline Light-Duty Trucks	2001	120	gal	1,783
1634	Juneau Fleet	Gasoline Light-Duty Trucks	2002	958	gal	12,929
1640	Juneau Fleet	Gasoline Passenger Cars	2002	104	gal	2,045
1661	Juneau Fleet	Gasoline Heavy-Duty Vehicles	2003	249	gal	3,442
1674	Juneau Fleet	Gasoline Heavy-Duty Vehicles	2004	65	gal	902
1676	Juneau Fleet	Gasoline Light-Duty Trucks	2004	998	gal	13,767

1681	Juneau Fleet	Gasoline Heavy-Duty Vehicles	2004	131	gal	1,813
1683	Juneau Fleet	Gasoline Heavy-Duty Vehicles	2004	72	gal	999
1684	Juneau Fleet	Gasoline Heavy-Duty Vehicles	2004	0	gal	0
1703	Juneau Fleet	Gasoline Light-Duty Trucks	2005	110	gal	1,485
1709	Juneau Fleet	Gasoline Heavy-Duty Vehicles	2005	76	gal	1,051
1717	Juneau Fleet	Gasoline Light-Duty Trucks	2005	189	gal	2,555
1723	Juneau Fleet	Gasoline Light-Duty Trucks	2005	92	gal	1,367
1729	Juneau Fleet	Gasoline Light-Duty Trucks	2005	216	gal	2,922
1732	Juneau Fleet	Diesel Light-Duty Trucks	2005	96	gal	1,397
1983	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	1996	33	gal	560
1514	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	1997	11	gal	151
1516	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	1997	3	gal	38
1517	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	1997	81	gal	1,123
1582	Ketchikan Fleet	Gasoline Light-Duty Trucks	2000	469	gal	6,661
1584	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2001	14	gal	179
1601	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2001	218	gal	2,872
1602	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2001	242	gal	3,191
1613	Ketchikan Fleet	Gasoline Passenger Cars	2001	2	gal	33
1621	Ketchikan Fleet	Gasoline Light-Duty Trucks	2002	399	gal	6,211
1645	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2003	1,353	gal	19,674
1650	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2003	225	gal	3,272
1652	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2003	94	gal	1,362
1653	Ketchikan Fleet	Gasoline Light-Duty Trucks	2003	30	gal	419
1655	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2003	1	gal	10
1658	Ketchikan Fleet	Gasoline Light-Duty Trucks	2003	100	gal	1,530
1659	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2003	186	gal	2,704
1669	Ketchikan Fleet	Gasoline Light-Duty Trucks	2003	694	gal	10,549
1670	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2003	138	gal	2,153
1675	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2004	142	gal	2,060
1690	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2004	156	gal	2,263
1691	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2004	4	gal	58
1701	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2005	145	gal	2,104
1724	Ketchikan Fleet	Gasoline Light-Duty Trucks	2005	111	gal	1,645
1735	Ketchikan Fleet	Gasoline Light-Duty Trucks	2006	115	gal	1,782
1739	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2006	67	gal	1,048
1752	Ketchikan Fleet	Gasoline Light-Duty Trucks	2006	12	gal	163
1743	Ketchikan Fleet	Gasoline Light-Duty Trucks	2007	521	gal	7,040
1524	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	1998	72	gal	1,223
1527	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	1998	146	gal	2,480
1563	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	1999	188	gal	2,813
1564	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	1999	271	gal	4,060
1570	Petersburg Fleet	Gasoline Light-Duty Trucks	2000	116	gal	1,744
1590	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2001	133	gal	2,134
1599	Petersburg Fleet	Gasoline Light-Duty Trucks	2001	179	gal	2,870
1600	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2001	1,039	gal	16,630
1615	Petersburg Fleet	Gasoline Light-Duty Trucks	2001	478	gal	8,118
1627	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2002	205	gal	3,284
1628	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2002	116	gal	1,853
1665	Petersburg Fleet	Gasoline Light-Duty Trucks	2003	311	gal	5,286
1666	Petersburg Fleet	Gasoline Light-Duty Trucks	2003	73	gal	1,246
1679	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2004	122	gal	1,955
1680	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2004	136	gal	2,312
1702	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2005	95	gal	1,523
1706	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2005	354	gal	5,658
1707	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2005	110	gal	1,764
1708	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2005	229	gal	3,667
1740	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2006	233	gal	3,962
1741	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2006	93	gal	1,586
1744	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2006	120	gal	2,042

1745	Petersburg Fleet	Gasoline Light-Duty Trucks	2006	390	gal	6,637
1742	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2007	5	gal	76
1507	Sitka Fleet	Gasoline Light-Duty Trucks	1997	153	gal	2,112
1558	Sitka Fleet	Gasoline Heavy-Duty Vehicles	1999	112	gal	1,394
1562	Sitka Fleet	Gasoline Heavy-Duty Vehicles	1999	8	gal	100
1571	Sitka Fleet	Gasoline Light-Duty Trucks	2000	83	gal	1,147
1572	Sitka Fleet	Gasoline Heavy-Duty Vehicles	2000	320	gal	4,000
1588	Sitka Fleet	Gasoline Light-Duty Trucks	2001	136	gal	1,976
1597	Sitka Fleet	Gasoline Heavy-Duty Vehicles	2001	140	gal	2,038
1677	Sitka Fleet	Gasoline Heavy-Duty Vehicles	2004	6	gal	100
1682	Sitka Fleet	Gasoline Heavy-Duty Vehicles	2004	154	gal	2,242
1529	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	1998	799	gal	4,794
1532	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	1997	316	gal	3,477
1539	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	1998	38	gal	537
1553	Thorne Bay Fleet	Gasoline Light-Duty Trucks	1999	253	gal	3,031
1554	Thorne Bay Fleet	Gasoline Light-Duty Trucks	1999	21	gal	247
1583	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2000	31	gal	433
1586	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2001	343	gal	4,121
1591	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2001	635	gal	7,620
1592	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2001	305	gal	3,658
1593	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2001	1,397	gal	16,767
1594	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2001	194	gal	2,329
1595	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2001	433	gal	5,197
1622	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2002	435	gal	5,660
1623	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2002	1,096	gal	10,962
1625	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2002	605	gal	7,865
1626	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2002	272	gal	3,541
1651	Thorne Bay Fleet	Gasoline Light-Duty Trucks	2003	360	gal	4,685
1660	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2003	293	gal	3,803
1663	Thorne Bay Fleet	Gasoline Light-Duty Trucks	2003	115	gal	1,720
1673	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2003	492	gal	6,402
1686	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2004	441	gal	5,739
1689	Thorne Bay Fleet	Gasoline Light-Duty Trucks	2004	508	gal	8,131
1692	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2004	265	gal	3,440
1697	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2005	532	gal	6,386
1699	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2005	463	gal	5,555
1700	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2005	343	gal	4,121
1705	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2005	454	gal	5,443
1714	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2005	425	gal	5,100
1718	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2005	527	gal	6,318
1719	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2005	587	gal	7,042
1720	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2005	547	gal	6,566
1721	Thorne Bay Fleet	Gasoline Light-Duty Trucks	2005	569	gal	7,391
1733	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2006	171	gal	2,229
1755	Thorne Bay Fleet	Gasoline Light-Duty Trucks	2006	424	gal	5,939
1756	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2006	959	gal	13,425
1759	Thorne Bay Fleet	Gasoline Light-Duty Trucks	2006	371	gal	4,818
1760	Thorne Bay Fleet	Gasoline Light-Duty Trucks	2006	603	gal	7,840
1549	Wrangell Fleet	Gasoline Light-Duty Trucks	1998	102	gal	1,739
1551	Wrangell Fleet	Gasoline Light-Duty Trucks	1998	46	gal	916
1565	Wrangell Fleet	Gasoline Heavy-Duty Vehicles	1999	174	gal	2,610
1569	Wrangell Fleet	Gasoline Heavy-Duty Vehicles	2000	85	gal	1,277
1598	Wrangell Fleet	Gasoline Heavy-Duty Vehicles	2001	365	gal	4,560
1604	Wrangell Fleet	Gasoline Light-Duty Trucks	2001	103	gal	1,487
1605	Wrangell Fleet	Gasoline Heavy-Duty Vehicles	2001	218	gal	1,309
1616	Wrangell Fleet	Gasoline Light-Duty Trucks	2001	894	gal	12,969
1687	Wrangell Fleet	Diesel Heavy-Duty Vehicles	2004	25	gal	325
1688	Wrangell Fleet	Gasoline Heavy-Duty Vehicles	2004	162	gal	2,138
1704	Wrangell Fleet	Gasoline Heavy-Duty Vehicles	2005	204	gal	3,037

1715	Wrangell Fleet	Gasoline Heavy-Duty Vehicles	2005	221	gal	2,981
1716	Wrangell Fleet	Gasoline Heavy-Duty Vehicles	2005	178	gal	2,402
1754	Wrangell Fleet	Gasoline Light-Duty Trucks	2006	269	gal	4,819
1753	Wrangell Fleet	Gasoline Heavy-Duty Vehicles	2007	31	gal	450
1568	Yakutat Fleet	Gasoline Heavy-Duty Vehicles	1999	521	gal	7,036
1574	Yakutat Fleet	Gasoline Heavy-Duty Vehicles	2000	329	gal	4,444
1575	Yakutat Fleet	Gasoline Heavy-Duty Vehicles	2000	213	gal	3,094
1603	Yakutat Fleet	Gasoline Heavy-Duty Vehicles	2001	232	gal	3,250
1644	Yakutat Fleet	Gasoline Heavy-Duty Vehicles	2002	179	gal	2,789
1695	Yakutat Fleet	Gasoline Heavy-Duty Vehicles	2004	384	gal	5,565
1698	Yakutat Fleet	Gasoline Heavy-Duty Vehicles	2005	267	gal	3,474
1155	Wrangell Fleet	Diesel Agricultural Equip.	1996	78	gal	545
1172	Hoonah Fleet	Diesel Agricultural Equip.	2000	23	gal	161
1620	Unk	Gasoline Light-Duty Trucks	2001	221	gal	2,766
1696	Unk	Gasoline Heavy-Duty Vehicles	2004	251	gal	3,459
1521	Unk	Gasoline Light-Duty Trucks	1998	67	gal	1,133
1523	Unk	Gasoline Heavy-Duty Vehicles	1998	57	gal	968
1638	Unk	Gasoline Light-Duty Trucks	2002	368	gal	5,892
1649	Unk	Gasoline Heavy-Duty Vehicles	2003	76	gal	1,222

Table 2. Total Company-Wide Mobile Source Fuel Usage and CO₂ Emissions

Fuel Type	Fuel Usage	Units	CO ₂ (kg)
Motor Gasoline	46,338	gallons	408,236.0
Diesel Fuel	222	gallons	2,256.8
Residual Fuel Oil (#5, & 6)	0	gallons	0.0
Avgas	0	gallons	0.0
Jet Fuel	0	gallons	0.0
LPG	0	gallons	0.0
Ethanol (gasoline component only)	0	gallons	0.0
Biodiesel (diesel component only)	0	gallons	0.0
Liquefied Natural Gas (LNG)	0	gallons	0.0
Compressed Natural Gas (CNG)	0	scf	0.0

Table 3. Total Company-Wide Highway Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Gasoline Passenger Cars	1984-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005-present	0	0.0	0.0
Gasoline Light-Duty Trucks (Vans, Pickup Trucks, SUVs)	1987-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	94	8.5	4.9
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	1,739	126.6	68.0
	1999	5,166	291.4	165.8
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	1,590	18.1	24.6
	2004	9,324	123.1	141.7
	2005-present	38,430	388.1	603.4
Gasoline Heavy-Duty Vehicles	1985-1986	0	0.0	0.0
	1987	0	0.0	0.0
	1988-1989	0	0.0	0.0
	1990-1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	807	139.3	74.6
	1998	0	0.0	0.0
	1999	1,795	257.6	103.8
	2000	0	0.0	0.0
	2001	9,621	1,188.2	508.0
	2002	6,081	794.8	332.0
	2003	28,531	3,537.8	1,520.7
	2004	3,843	109.5	131.0
2005-present	15,497	274.3	505.2	

Table 4. Total Company-Wide Highway non-Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Diesel Passenger Cars	1960-1982	0	0.0	0.0
	1983-present	0	0.0	0.0
Diesel Light-Duty Trucks	1960-1982	0	0.0	0.0
	1983-1995	0	0.0	0.0
	1996-present	0	0.0	0.0
Diesel Heavy-Duty Vehicles	1960-present	325	1.6	1.7
Motorcycles	Non-Catalyst Control	0	0.0	0.0
	Uncontrolled	0	0.0	0.0
CNG Light-Duty Vehicles		0	0.0	0.0
CNG Heavy-Duty Vehicles		0	0.0	0.0
CNG Buses		0	0.0	0.0
LPG Light-Duty Vehicles		0	0.0	0.0
LPG Heavy-Duty Vehicles		0	0.0	0.0
LNG Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Light-Duty Vehicles		0	0.0	0.0
Ethanol Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Buses		0	0.0	0.0

Table 5. Total Company-Wide Non-Highway Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Fuel Usage (gallons)	N ₂ O (g)	CH ₄ (g)
Residual Oil Ships and Boats	0	0.0	0.0
Diesel Ships and Boats	0	0.0	0.0
Gasoline Ships and Boats	0	0.0	0.0
Diesel Locomotives	0	0.0	0.0
Gasoline Agricultural Equip.	0	0.0	0.0
Diesel Agricultural Equip.	101	25.9	145.5
Gasoline Construction Equip.	0	0.0	0.0
Diesel Construction Equip.	0	0.0	0.0
Jet Fuel Aircraft	0	0.0	0.0
Avgas Aircraft	0	0.0	0.0
Biofuel Vehicles (diesel component only)	0	0.0	0.0
Other Diesel Sources	0	0.0	0.0
Other Gasoline Sources	0	0.0	0.0

Table 6. Total CO₂ Emissions from Mobile Sources

Total CO₂ Emissions - Equivalent (metric tons)	412.8
Total Biomass CO₂ Emissions - Equivalent (metric tons)	0.0

Notes:

- CO₂, CH₄ and N₂O emission factors for vehicles from Tables 2 and 3, A-6 and A-7, and B-1 through B-7 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Mobile Combustion Sources (May 2008)*.
- Emission factors updated with latest values from *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005* as needed.
- Average mpg values from the U.S. Department of Transportation, Federal Highway Administration, Highway Statistics 2005, Table VM-1.
- Bus mpg values from American Public Transportation Association, Public Transportation Fact Book, Page 23, April 2006.
- Densities of fuels from Table A-36, *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005*.

Table 7. Average Fuel Economy by Vehicle Type

Vehicle Type	Average Fuel Economy (mpg)
Passenger Cars	22.5
Motorcycles	50
Diesel Buses (Diesel Heavy-Duty Vehicles)	3.7
CNG Buses	2.4
LNG Buses (LNG Heavy-Duty Vehicles)	1.8
Other 2-axle, 4-tire Vehicles	16.2
Single unit 2-axle 6-tire or more Trucks	8.8
Combination Trucks	5.9

1.0. Indirect Emissions from Purchase of Electricity

Instructions:

(A) Enter total electricity purchased (kWh) for each unit, facility or site in ORANGE cells of Table 1 for each eGRID subregion. Final emissions data is provided in Table 2.

Step 1. Select eGRID "Subregion" from drop box and enter "Electricity Purchased" for each unit, facility or site.

- Use map (Figure 1) at bottom of sheet to determine appropriate eGRID subregion.
- Emission rates for each eGRID subregion are provided in Table 3.
- See example entry in first row (RED Italics).

Table 1. Total Amount of Electricity Purchased by eGRID Subregion

Source ID	Source Description	eGRID Subregion	Electricity Purchased (kWh)	CO ₂ Emissions (lb)	CH ₄ Emissions (lb)	N ₂ O Emissions (lb)
Craig	Alaska Power and Telephone	AKMS (ASCC Miscellaneous)	157,846	75,781.7	3.8	0.7
Hoonah	Inside Passage Electric Cooperative	AKMS (ASCC Miscellaneous)	50,547	24,267.6	1.2	0.2
Juneau	Alaska Electric Light and Power	AKMS (ASCC Miscellaneous)	223,052	107,087.1	5.3	1.0
Juneau Regional Office (leased from GSA)		AKMS (ASCC Miscellaneous)				
Ketchikan SO (leased from GSA)		AKMS (ASCC Miscellaneous)				
Ketchikan-Misty Fiords	Ketchikan Public Utilities	AKMS (ASCC Miscellaneous)	479,640	230,274.7	11.4	2.1
Petersburg SO	City of Petersburg	AKMS (ASCC Miscellaneous)	171,840	82,500.2	4.1	0.8
Petersburg RD	City of Petersburg	AKMS (ASCC Miscellaneous)	160,772	77,186.5	3.8	0.7
Sitka RD/SO (leased from GSA)	City and Borough of Sitka	AKMS (ASCC Miscellaneous)	24,163	11,600.6	0.6	0.1
Thorne Bay	Alaska Power and Telephone	AKMS (ASCC Miscellaneous)	216,750	104,061.5	5.2	1.0
Wrangell	City of Wrangell	AKMS (ASCC Miscellaneous)	164,599	79,023.8	3.9	0.7
Yakutat RD	Yakutat Power C/O AVEC	AKMS (ASCC Miscellaneous)	2,315	1,111.4	0.1	0.0
Yakutat Office (leased from Kwaan Assoc.)	Yakutat Power C/O AVEC	AKMS (ASCC Miscellaneous)				
Total Emissions for All Subregions			1,651,524	792,895.2	39.3	7.3

Table 2. Total Emissions from Electricity Purchases

Total CO₂ Emissions - Equivalent (metric tons)	361.1
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- Notes:
1. CO₂, CH₄ and N₂O emissions estimated using methodology provided in *Climate Leaders Greenhouse Gas Inventory Protocol - Indirect Emissions from Purchase/Sales of Electricity and Steam (July 2008)*.
 2. Emission factors in Table 3 are from eGRID2006, which represents 2004 national data.

Table 3. CO₂, CH₄ and N₂O eGRID2006 Emission Factors by Subregion (2004 Data)

Subregion	CO ₂ Factor (lb CO ₂ /MWh)	CH ₄ Factor (lb CH ₄ /MWh)	N ₂ O Factor (lb N ₂ O/MWh)
AKGD (ASCC Alaska Grid)	1,257.19	0.0266	0.0064
AKMS (ASCC Miscellaneous)	480.10	0.0238	0.0044
AZNM (WECC Southwest)	1,254.02	0.0175	0.0148
CAMX (WECC California)	878.71	0.0366	0.0085
ERCT (ERCOT All)	1,420.56	0.0214	0.0148

FRCC (FRCC All)	1,327.66	0.0528	0.0150
HIMS (HICC Miscellaneous)	1,456.17	0.0999	0.0182
HIOA (HICC Oahu)	1,728.12	0.0911	0.0212
MORE (MRO East)	1,858.72	0.0314	0.0289
MROW (MRO West)	1,813.81	0.0264	0.0287
NEWE (NPCC New England)	908.90	0.0795	0.0152
NWPP (WECC Northwest)	921.10	0.0217	0.0140
NYCW (NPCC NYC/Westchester)	922.22	0.0384	0.0060
NYLI (NPCC Long Island)	1,412.20	0.0684	0.0117
NYUP (NPCC Upstate NY)	819.68	0.0242	0.0114
RFCE (RFC East)	1,095.53	0.0244	0.0168
RFCM (RFC Michigan)	1,641.41	0.0340	0.0253
RFCW (RFC West)	1,556.39	0.0196	0.0244
RMPA (WECC Rockies)	2,035.81	0.0241	0.0302
SPNO (SPP North)	1,971.42	0.0236	0.0303
SPSO (SPP South)	1,761.14	0.0301	0.0230
SRMV (SERC Mississippi Valley)	1,135.46	0.0413	0.0132
SRMW (SERC Midwest)	1,844.34	0.0214	0.0288
SRSO (SERC South)	1,490.37	0.0388	0.0248
SRTV (SERC Tennessee Valley)	1,494.89	0.0233	0.0237
SRVC (SERC Virginia/Carolina)	1,146.39	0.0291	0.0191

Figure 1. eGRID2006 Subregions (2004 Data)

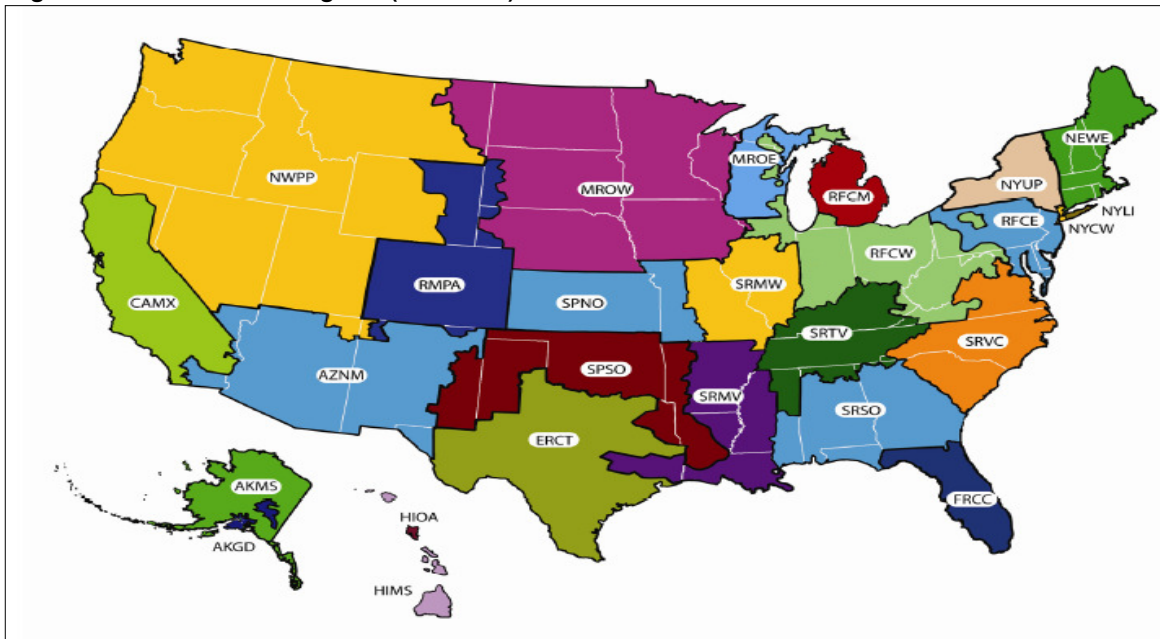


Table 2. Total Company-Wide Mobile Source Fuel Usage and CO₂ Emissions

Fuel Type	Fuel Usage	Units	CO ₂ (kg)
Motor Gasoline	0	gallons	0.0
Diesel Fuel	0	gallons	0.0
Residual Fuel Oil (#5, & 6)	0	gallons	0.0
Avgas	39,096	gallons	325,275.0
Jet Fuel	14,818	gallons	141,806.3
LPG	0	gallons	0.0
Ethanol (gasoline component only)	0	gallons	0.0
Biodiesel (diesel component only)	0	gallons	0.0
Liquefied Natural Gas (LNG)	0	gallons	0.0
Compressed Natural Gas (CNG)	0	scf	0.0

Table 3. Total Company-Wide Highway Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Gasoline Passenger Cars	1984-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005-present	0	0.0	0.0
Gasoline Light-Duty Trucks (Vans, Pickup Trucks, SUVs)	1987-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005-present	0	0.0	0.0
Gasoline Heavy-Duty Vehicles	1985-1986	0	0.0	0.0
	1987	0	0.0	0.0
	1988-1989	0	0.0	0.0
	1990-1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
2005-present	0	0.0	0.0	

Table 4. Total Company-Wide Highway non-Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Diesel Passenger Cars	1960-1982	0	0.0	0.0
	1983-present	0	0.0	0.0
Diesel Light-Duty Trucks	1960-1982	0	0.0	0.0
	1983-1995	0	0.0	0.0
	1996-present	0	0.0	0.0
Diesel Heavy-Duty Vehicles	1960-present	0	0.0	0.0
Motorcycles	Non-Catalyst Control	0	0.0	0.0
	Uncontrolled	0	0.0	0.0
CNG Light-Duty Vehicles		0	0.0	0.0
CNG Heavy-Duty Vehicles		0	0.0	0.0
CNG Buses		0	0.0	0.0
LPG Light-Duty Vehicles		0	0.0	0.0
LPG Heavy-Duty Vehicles		0	0.0	0.0
LNG Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Light-Duty Vehicles		0	0.0	0.0
Ethanol Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Buses		0	0.0	0.0

Table 5. Total Company-Wide Non-Highway Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Fuel Usage (gallons)	N ₂ O (g)	CH ₄ (g)
Residual Oil Ships and Boats	0	0.0	0.0
Diesel Ships and Boats	0	0.0	0.0
Gasoline Ships and Boats	0	0.0	0.0
Diesel Locomotives	0	0.0	0.0
Gasoline Agricultural Equip.	0	0.0	0.0
Diesel Agricultural Equip.	0	0.0	0.0
Gasoline Construction Equip.	0	0.0	0.0
Diesel Construction Equip.	0	0.0	0.0
Jet Fuel Aircraft	14,818	4,565.5	3,972.0
Avgas Aircraft	39,096	4,169.4	275,181.6
Biofuel Vehicles (diesel component only)	0	0.0	0.0
Other Diesel Sources	0	0.0	0.0
Other Gasoline Sources	0	0.0	0.0

Table 6. Total CO₂ Emissions from Mobile Sources

Total CO₂ Emissions - Equivalent (metric tons)	475.7
Total Biomass CO₂ Emissions - Equivalent (metric tons)	0.0

Notes:

1. CO₂, CH₄ and N₂O emission factors for vehicles from Tables 2 and 3, A-6 and A-7, and B-1 through B-7 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Mobile Combustion Sources (May 2008)*.
2. Emission factors updated with latest values from *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005* as needed.
3. Average mpg values from the U.S. Department of Transportation, Federal Highway Administration, Highway Statistics 2005, Table VM-1.
4. Bus mpg values from American Public Transportation Association, Public Transportation Fact Book, Page 23, April 2006.
5. Densities of fuels from Table A-36, *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005*.

Table 7. Average Fuel Economy by Vehicle Type

Vehicle Type	Average Fuel Economy (mpg)
Passenger Cars	22.5
Motorcycles	50
Diesel Buses (Diesel Heavy-Duty Vehicles)	3.7
CNG Buses	2.4
LNG Buses (LNG Heavy-Duty Vehicles)	1.8
Other 2-axle, 4-tire Vehicles	16.2
Single unit 2-axle 6-tire or more Trucks	8.8
Combination Trucks	5.9

Table 2. Total Company-Wide Stationary Source Fuel Combustion

Fuel Type	Quantity Combusted	Units
Anthracite Coal	0	tons
Bituminous Coal	0	tons
Sub-bituminous Coal	0	tons
Lignite Coal	0	tons
Natural Gas	0	scf
Distillate Fuel Oil (#1, 2 & 4)	2,093	gallons
Residual Fuel Oil (#5 & 6)	0	gallons
Kerosene	0	gallons
LPG	0	gallons
Propane	0	gallons
Wood and Wood Waste	0	tons
Landfill Gas (50%CH ₄ , 50%CO ₂)	0	scf

Table 3. Total Company-wide CO₂, CH₄ and N₂O Emissions from Stationary Source Fuel Combustion

Fuel Type	CO ₂ (kg)	CH ₄ (g)	N ₂ O (g)
Anthracite Coal	0.0	0.0	0.0
Bituminous Coal	0.0	0.0	0.0
Sub-bituminous Coal	0.0	0.0	0.0
Lignite Coal	0.0	0.0	0.0
Natural Gas	0.0	0.0	0.0
Distillate Fuel Oil (#1, 2 & 4)	21,234.0	3,193.1	174.2
Residual Fuel Oil (#5 & 6)	0.0	0.0	0.0
Kerosene	0.0	0.0	0.0
LPG	0.0	0.0	0.0
Propane	0.0	0.0	0.0
Total Fossil Fuel Emissions	21,234.0	3,193.1	174.2
Wood and Wood Waste	0.0	0.0	0.0
Landfill Gas (50%CH ₄ , 50%CO ₂)	0.0	0.0	0.0
Total Non-Fossil Fuel Emissions	0.0	0.0	0.0
Total Emissions for all Fuels	21,234.0	3,193.1	174.2
Total CO₂ Emissions - Equivalent (metric tons)			21.4
Total Biomass CO₂ Emissions - Equivalent (metric tons)			0.0

Notes:

- CO₂ emissions estimated using emission factors provided in Tables B-5 and B-6 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (May 2008)*.
- CH₄ and N₂O emissions estimated using emission factors provided in Tables A-1 (commercial sector values), B-1 and B-2 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (May 2008)*.
- CH₄ and N₂O factors for "commercial petroleum" used for kerosene, LPG and propane. CH₄ and N₂O factors for "natural gas" used for landfill gas.

Table 2. Total Company-Wide Stationary Source Fuel Combustion

Fuel Type	Quantity Combusted	Units
Anthracite Coal	0	tons
Bituminous Coal	0	tons
Sub-bituminous Coal	0	tons
Lignite Coal	0	tons
Natural Gas	0	scf
Distillate Fuel Oil (#1, 2 & 4)	10,058	gallons
Residual Fuel Oil (#5 & 6)	0	gallons
Kerosene	0	gallons
LPG	0	gallons
Propane	0	gallons
Wood and Wood Waste	0	tons
Landfill Gas (50%CH ₄ , 50%CO ₂)	0	scf

Table 3. Total Company-wide CO₂, CH₄ and N₂O Emissions from Stationary Source Fuel Combustion

Fuel Type	CO ₂ (kg)	CH ₄ (g)	N ₂ O (g)
Anthracite Coal	0.0	0.0	0.0
Bituminous Coal	0.0	0.0	0.0
Sub-bituminous Coal	0.0	0.0	0.0
Lignite Coal	0.0	0.0	0.0
Natural Gas	0.0	0.0	0.0
Distillate Fuel Oil (#1, 2 & 4)	102,038.8	15,344.1	837.0
Residual Fuel Oil (#5 & 6)	0.0	0.0	0.0
Kerosene	0.0	0.0	0.0
LPG	0.0	0.0	0.0
Propane	0.0	0.0	0.0
Total Fossil Fuel Emissions	102,038.8	15,344.1	837.0
Wood and Wood Waste	0.0	0.0	0.0
Landfill Gas (50%CH ₄ , 50%CO ₂)	0.0	0.0	0.0
Total Non-Fossil Fuel Emissions	0.0	0.0	0.0
Total Emissions for all Fuels	102,038.8	15,344.1	837.0
Total CO₂ Emissions - Equivalent (metric tons)			102.6
Total Biomass CO₂ Emissions - Equivalent (metric tons)			0.0

Notes:

- CO₂ emissions estimated using emission factors provided in Tables B-5 and B-6 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (May 2008)*.
- CH₄ and N₂O emissions estimated using emission factors provided in Tables A-1 (commercial sector values), B-1 and B-2 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (May 2008)*.
- CH₄ and N₂O factors for "commercial petroleum" used for kerosene, LPG and propane. CH₄ and N₂O factors for "natural gas" used for landfill gas.

Table 2. Total Company-Wide Stationary Source Fuel Combustion

Fuel Type	Quantity Combusted	Units
Anthracite Coal	0	tons
Bituminous Coal	0	tons
Sub-bituminous Coal	0	tons
Lignite Coal	0	tons
Natural Gas	0	scf
Distillate Fuel Oil (#1, 2 & 4)	16,052	gallons
Residual Fuel Oil (#5 & 6)	0	gallons
Kerosene	0	gallons
LPG	0	gallons
Propane	0	gallons
Wood and Wood Waste	0	tons
Landfill Gas (50%CH ₄ , 50%CO ₂)	0	scf

Table 3. Total Company-wide CO₂, CH₄ and N₂O Emissions from Stationary Source Fuel Combustion

Fuel Type	CO ₂ (kg)	CH ₄ (g)	N ₂ O (g)
Anthracite Coal	0.0	0.0	0.0
Bituminous Coal	0.0	0.0	0.0
Sub-bituminous Coal	0.0	0.0	0.0
Lignite Coal	0.0	0.0	0.0
Natural Gas	0.0	0.0	0.0
Distillate Fuel Oil (#1, 2 & 4)	162,851.4	24,488.9	1,335.8
Residual Fuel Oil (#5 & 6)	0.0	0.0	0.0
Kerosene	0.0	0.0	0.0
LPG	0.0	0.0	0.0
Propane	0.0	0.0	0.0
Total Fossil Fuel Emissions	162,851.4	24,488.9	1,335.8
Wood and Wood Waste	0.0	0.0	0.0
Landfill Gas (50%CH ₄ , 50%CO ₂)	0.0	0.0	0.0
Total Non-Fossil Fuel Emissions	0.0	0.0	0.0
Total Emissions for all Fuels	162,851.4	24,488.9	1,335.8
Total CO₂ Emissions - Equivalent (metric tons)			163.8
Total Biomass CO₂ Emissions - Equivalent (metric tons)			0.0

Notes:

- CO₂ emissions estimated using emission factors provided in Tables B-5 and B-6 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (May 2008)*.
- CH₄ and N₂O emissions estimated using emission factors provided in Tables A-1 (commercial sector values), B-1 and B-2 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (May 2008)*.
- CH₄ and N₂O factors for "commercial petroleum" used for kerosene, LPG and propane. CH₄ and N₂O factors for "natural gas" used for landfill gas.

Table 2. Total Company-Wide Stationary Source Fuel Combustion

Fuel Type	Quantity Combusted	Units
Anthracite Coal	0	tons
Bituminous Coal	0	tons
Sub-bituminous Coal	0	tons
Lignite Coal	0	tons
Natural Gas	0	scf
Distillate Fuel Oil (#1, 2 & 4)	1,195	gallons
Residual Fuel Oil (#5 & 6)	0	gallons
Kerosene	0	gallons
LPG	0	gallons
Propane	0	gallons
Wood and Wood Waste	0	tons
Landfill Gas (50%CH ₄ , 50%CO ₂)	0	scf

Table 3. Total Company-wide CO₂, CH₄ and N₂O Emissions from Stationary Source Fuel Combustion

Fuel Type	CO ₂ (kg)	CH ₄ (g)	N ₂ O (g)
Anthracite Coal	0.0	0.0	0.0
Bituminous Coal	0.0	0.0	0.0
Sub-bituminous Coal	0.0	0.0	0.0
Lignite Coal	0.0	0.0	0.0
Natural Gas	0.0	0.0	0.0
Distillate Fuel Oil (#1, 2 & 4)	12,125.6	1,823.4	99.5
Residual Fuel Oil (#5 & 6)	0.0	0.0	0.0
Kerosene	0.0	0.0	0.0
LPG	0.0	0.0	0.0
Propane	0.0	0.0	0.0
Total Fossil Fuel Emissions	12,125.6	1,823.4	99.5
Wood and Wood Waste	0.0	0.0	0.0
Landfill Gas (50%CH ₄ , 50%CO ₂)	0.0	0.0	0.0
Total Non-Fossil Fuel Emissions	0.0	0.0	0.0
Total Emissions for all Fuels	12,125.6	1,823.4	99.5
Total CO₂ Emissions - Equivalent (metric tons)			12.2
Total Biomass CO₂ Emissions - Equivalent (metric tons)			0.0

Notes:

- CO₂ emissions estimated using emission factors provided in Tables B-5 and B-6 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (May 2008)*.
- CH₄ and N₂O emissions estimated using emission factors provided in Tables A-1 (commercial sector values), B-1 and B-2 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (May 2008)*.
- CH₄ and N₂O factors for "commercial petroleum" used for kerosene, LPG and propane. CH₄ and N₂O factors for "natural gas" used for landfill gas.

Table 2. Total Company-Wide Stationary Source Fuel Combustion

Fuel Type	Quantity Combusted	Units
Anthracite Coal	0	tons
Bituminous Coal	0	tons
Sub-bituminous Coal	0	tons
Lignite Coal	0	tons
Natural Gas	0	scf
Distillate Fuel Oil (#1, 2 & 4)	10,688	gallons
Residual Fuel Oil (#5 & 6)	0	gallons
Kerosene	0	gallons
LPG	0	gallons
Propane	0	gallons
Wood and Wood Waste	0	tons
Landfill Gas (50%CH ₄ , 50%CO ₂)	0	scf

Table 3. Total Company-wide CO₂, CH₄ and N₂O Emissions from Stationary Source Fuel Combustion

Fuel Type	CO ₂ (kg)	CH ₄ (g)	N ₂ O (g)
Anthracite Coal	0.0	0.0	0.0
Bituminous Coal	0.0	0.0	0.0
Sub-bituminous Coal	0.0	0.0	0.0
Lignite Coal	0.0	0.0	0.0
Natural Gas	0.0	0.0	0.0
Distillate Fuel Oil (#1, 2 & 4)	108,428.2	16,305.0	889.4
Residual Fuel Oil (#5 & 6)	0.0	0.0	0.0
Kerosene	0.0	0.0	0.0
LPG	0.0	0.0	0.0
Propane	0.0	0.0	0.0
Total Fossil Fuel Emissions	108,428.2	16,305.0	889.4
Wood and Wood Waste	0.0	0.0	0.0
Landfill Gas (50%CH ₄ , 50%CO ₂)	0.0	0.0	0.0
Total Non-Fossil Fuel Emissions	0.0	0.0	0.0
Total Emissions for all Fuels	108,428.2	16,305.0	889.4
Total CO₂ Emissions - Equivalent (metric tons)			109.0
Total Biomass CO₂ Emissions - Equivalent (metric tons)			0.0

Notes:

- CO₂ emissions estimated using emission factors provided in Tables B-5 and B-6 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (May 2008)*.
- CH₄ and N₂O emissions estimated using emission factors provided in Tables A-1 (commercial sector values), B-1 and B-2 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (May 2008)*.
- CH₄ and N₂O factors for "commercial petroleum" used for kerosene, LPG and propane. CH₄ and N₂O factors for "natural gas" used for landfill gas.

Table 2. Total Company-Wide Stationary Source Fuel Combustion

Fuel Type	Quantity Combusted	Units
Anthracite Coal	0	tons
Bituminous Coal	0	tons
Sub-bituminous Coal	0	tons
Lignite Coal	0	tons
Natural Gas	0	scf
Distillate Fuel Oil (#1, 2 & 4)	4,342	gallons
Residual Fuel Oil (#5 & 6)	0	gallons
Kerosene	0	gallons
LPG	0	gallons
Propane	0	gallons
Wood and Wood Waste	0	tons
Landfill Gas (50%CH ₄ , 50%CO ₂)	0	scf

Table 3. Total Company-wide CO₂, CH₄ and N₂O Emissions from Stationary Source Fuel Combustion

Fuel Type	CO ₂ (kg)	CH ₄ (g)	N ₂ O (g)
Anthracite Coal	0.0	0.0	0.0
Bituminous Coal	0.0	0.0	0.0
Sub-bituminous Coal	0.0	0.0	0.0
Lignite Coal	0.0	0.0	0.0
Natural Gas	0.0	0.0	0.0
Distillate Fuel Oil (#1, 2 & 4)	44,050.6	6,624.1	361.3
Residual Fuel Oil (#5 & 6)	0.0	0.0	0.0
Kerosene	0.0	0.0	0.0
LPG	0.0	0.0	0.0
Propane	0.0	0.0	0.0
Total Fossil Fuel Emissions	44,050.6	6,624.1	361.3
Wood and Wood Waste	0.0	0.0	0.0
Landfill Gas (50%CH ₄ , 50%CO ₂)	0.0	0.0	0.0
Total Non-Fossil Fuel Emissions	0.0	0.0	0.0
Total Emissions for all Fuels	44,050.6	6,624.1	361.3
Total CO₂ Emissions - Equivalent (metric tons)			44.3
Total Biomass CO₂ Emissions - Equivalent (metric tons)			0.0

Notes:

- CO₂ emissions estimated using emission factors provided in Tables B-5 and B-6 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (May 2008)*.
- CH₄ and N₂O emissions estimated using emission factors provided in Tables A-1 (commercial sector values), B-1 and B-2 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (May 2008)*.
- CH₄ and N₂O factors for "commercial petroleum" used for kerosene, LPG and propane. CH₄ and N₂O factors for "natural gas" used for landfill gas.

Table 2. Total Company-Wide Stationary Source Fuel Combustion

Fuel Type	Quantity Combusted	Units
Anthracite Coal	0	tons
Bituminous Coal	0	tons
Sub-bituminous Coal	0	tons
Lignite Coal	0	tons
Natural Gas	0	scf
Distillate Fuel Oil (#1, 2 & 4)	1,855	gallons
Residual Fuel Oil (#5 & 6)	0	gallons
Kerosene	0	gallons
LPG	0	gallons
Propane	0	gallons
Wood and Wood Waste	0	tons
Landfill Gas (50%CH ₄ , 50%CO ₂)	0	scf

Table 3. Total Company-wide CO₂, CH₄ and N₂O Emissions from Stationary Source Fuel Combustion

Fuel Type	CO ₂ (kg)	CH ₄ (g)	N ₂ O (g)
Anthracite Coal	0.0	0.0	0.0
Bituminous Coal	0.0	0.0	0.0
Sub-bituminous Coal	0.0	0.0	0.0
Lignite Coal	0.0	0.0	0.0
Natural Gas	0.0	0.0	0.0
Distillate Fuel Oil (#1, 2 & 4)	18,814.3	2,829.2	154.3
Residual Fuel Oil (#5 & 6)	0.0	0.0	0.0
Kerosene	0.0	0.0	0.0
LPG	0.0	0.0	0.0
Propane	0.0	0.0	0.0
Total Fossil Fuel Emissions	18,814.3	2,829.2	154.3
Wood and Wood Waste	0.0	0.0	0.0
Landfill Gas (50%CH ₄ , 50%CO ₂)	0.0	0.0	0.0
Total Non-Fossil Fuel Emissions	0.0	0.0	0.0
Total Emissions for all Fuels	18,814.3	2,829.2	154.3
Total CO₂ Emissions - Equivalent (metric tons)			18.9
Total Biomass CO₂ Emissions - Equivalent (metric tons)			0.0

Notes:

- CO₂ emissions estimated using emission factors provided in Tables B-5 and B-6 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (May 2008)*.
- CH₄ and N₂O emissions estimated using emission factors provided in Tables A-1 (commercial sector values), B-1 and B-2 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (May 2008)*.
- CH₄ and N₂O factors for "commercial petroleum" used for kerosene, LPG and propane. CH₄ and N₂O factors for "natural gas" used for landfill gas.

Table 2. Total Company-Wide Stationary Source Fuel Combustion

Fuel Type	Quantity Combusted	Units
Anthracite Coal	0	tons
Bituminous Coal	0	tons
Sub-bituminous Coal	0	tons
Lignite Coal	0	tons
Natural Gas	0	scf
Distillate Fuel Oil (#1, 2 & 4)	4,763	gallons
Residual Fuel Oil (#5 & 6)	0	gallons
Kerosene	0	gallons
LPG	0	gallons
Propane	450	gallons
Wood and Wood Waste	0	tons
Landfill Gas (50%CH ₄ , 50%CO ₂)	0	scf

Table 3. Total Company-wide CO₂, CH₄ and N₂O Emissions from Stationary Source Fuel Combustion

Fuel Type	CO ₂ (kg)	CH ₄ (g)	N ₂ O (g)
Anthracite Coal	0.0	0.0	0.0
Bituminous Coal	0.0	0.0	0.0
Sub-bituminous Coal	0.0	0.0	0.0
Lignite Coal	0.0	0.0	0.0
Natural Gas	0.0	0.0	0.0
Distillate Fuel Oil (#1, 2 & 4)	48,324.8	7,266.9	396.4
Residual Fuel Oil (#5 & 6)	0.0	0.0	0.0
Kerosene	0.0	0.0	0.0
LPG	0.0	0.0	0.0
Propane	2,584.0	450.7	24.6
Total Fossil Fuel Emissions	50,908.8	7,717.6	421.0
Wood and Wood Waste	0.0	0.0	0.0
Landfill Gas (50%CH ₄ , 50%CO ₂)	0.0	0.0	0.0
Total Non-Fossil Fuel Emissions	0.0	0.0	0.0
Total Emissions for all Fuels	50,908.8	7,717.6	421.0
Total CO₂ Emissions - Equivalent (metric tons)			51.2
Total Biomass CO₂ Emissions - Equivalent (metric tons)			0.0

Notes:

- CO₂ emissions estimated using emission factors provided in Tables B-5 and B-6 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (May 2008)*.
- CH₄ and N₂O emissions estimated using emission factors provided in Tables A-1 (commercial sector values), B-1 and B-2 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (May 2008)*.
- CH₄ and N₂O factors for "commercial petroleum" used for kerosene, LPG and propane. CH₄ and N₂O factors for "natural gas" used for landfill gas.

Table 2. Total Company-Wide Stationary Source Fuel Combustion

Fuel Type	Quantity Combusted	Units
Anthracite Coal	0	tons
Bituminous Coal	0	tons
Sub-bituminous Coal	0	tons
Lignite Coal	0	tons
Natural Gas	0	scf
Distillate Fuel Oil (#1, 2 & 4)	0	gallons
Residual Fuel Oil (#5 & 6)	0	gallons
Kerosene	0	gallons
LPG	0	gallons
Propane	0	gallons
Wood and Wood Waste	0	tons
Landfill Gas (50%CH ₄ , 50%CO ₂)	0	scf

Table 3. Total Company-wide CO₂, CH₄ and N₂O Emissions from Stationary Source Fuel Combustion

Fuel Type	CO ₂ (kg)	CH ₄ (g)	N ₂ O (g)
Anthracite Coal	0.0	0.0	0.0
Bituminous Coal	0.0	0.0	0.0
Sub-bituminous Coal	0.0	0.0	0.0
Lignite Coal	0.0	0.0	0.0
Natural Gas	0.0	0.0	0.0
Distillate Fuel Oil (#1, 2 & 4)	0.0	0.0	0.0
Residual Fuel Oil (#5 & 6)	0.0	0.0	0.0
Kerosene	0.0	0.0	0.0
LPG	0.0	0.0	0.0
Propane	0.0	0.0	0.0
Total Fossil Fuel Emissions	0.0	0.0	0.0
Wood and Wood Waste	0.0	0.0	0.0
Landfill Gas (50%CH ₄ , 50%CO ₂)	0.0	0.0	0.0
Total Non-Fossil Fuel Emissions	0.0	0.0	0.0
Total Emissions for all Fuels	0.0	0.0	0.0
Total CO₂ Emissions - Equivalent (metric tons)			0.0
Total Biomass CO₂ Emissions - Equivalent (metric tons)			0.0

Notes:

- CO₂ emissions estimated using emission factors provided in Tables B-5 and B-6 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (May 2008)*.
- CH₄ and N₂O emissions estimated using emission factors provided in Tables A-1 (commercial sector values), B-1 and B-2 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (May 2008)*.
- CH₄ and N₂O factors for "commercial petroleum" used for kerosene, LPG and propane. CH₄ and N₂O factors for "natural gas" used for landfill gas.

Table 2. Total Company-Wide Mobile Source Fuel Usage and CO₂ Emissions

Fuel Type	Fuel Usage	Units	CO ₂ (kg)
Motor Gasoline	5,499	gallons	48,446.2
Diesel Fuel	0	gallons	0.0
Residual Fuel Oil (#5, & 6)	0	gallons	0.0
Avgas	0	gallons	0.0
Jet Fuel	0	gallons	0.0
LPG	0	gallons	0.0
Ethanol (gasoline component only)	0	gallons	0.0
Biodiesel (diesel component only)	0	gallons	0.0
Liquefied Natural Gas (LNG)	0	gallons	0.0
Compressed Natural Gas (CNG)	0	scf	0.0

Table 3. Total Company-Wide Highway Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Gasoline Passenger Cars	1984-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005-present	0	0.0	0.0
Gasoline Light-Duty Trucks (Vans, Pickup Trucks, SUVs)	1987-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	5,166	291.4	165.8
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	6,081	138.6	108.2
	2003	16,215	184.9	251.3
	2004	5,715	75.4	86.9
	2005-present	27,785	280.6	436.2
Gasoline Heavy-Duty Vehicles	1985-1986	0	0.0	0.0
	1987	0	0.0	0.0
	1988-1989	0	0.0	0.0
	1990-1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	5,576	688.6	294.4
	2002	0	0.0	0.0
	2003	9,009	1,117.1	480.2
	2004	0	0.0	0.0
2005-present	6,612	117.0	215.6	

Table 4. Total Company-Wide Highway non-Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Diesel Passenger Cars	1960-1982	0	0.0	0.0
	1983-present	0	0.0	0.0
Diesel Light-Duty Trucks	1960-1982	0	0.0	0.0
	1983-1995	0	0.0	0.0
	1996-present	0	0.0	0.0
Diesel Heavy-Duty Vehicles	1960-present	0	0.0	0.0
Motorcycles	Non-Catalyst Control	0	0.0	0.0
	Uncontrolled	0	0.0	0.0
CNG Light-Duty Vehicles		0	0.0	0.0
CNG Heavy-Duty Vehicles		0	0.0	0.0
CNG Buses		0	0.0	0.0
LPG Light-Duty Vehicles		0	0.0	0.0
LPG Heavy-Duty Vehicles		0	0.0	0.0
LNG Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Light-Duty Vehicles		0	0.0	0.0
Ethanol Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Buses		0	0.0	0.0

Table 5. Total Company-Wide Non-Highway Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Fuel Usage (gallons)	N ₂ O (g)	CH ₄ (g)
Residual Oil Ships and Boats	0	0.0	0.0
Diesel Ships and Boats	0	0.0	0.0
Gasoline Ships and Boats	0	0.0	0.0
Diesel Locomotives	0	0.0	0.0
Gasoline Agricultural Equip.	0	0.0	0.0
Diesel Agricultural Equip.	0	0.0	0.0
Gasoline Construction Equip.	0	0.0	0.0
Diesel Construction Equip.	0	0.0	0.0
Jet Fuel Aircraft	0	0.0	0.0
Avgas Aircraft	0	0.0	0.0
Biofuel Vehicles (diesel component only)	0	0.0	0.0
Other Diesel Sources	0	0.0	0.0
Other Gasoline Sources	0	0.0	0.0

Table 6. Total CO₂ Emissions from Mobile Sources

Total CO₂ Emissions - Equivalent (metric tons)	49.4
Total Biomass CO₂ Emissions - Equivalent (metric tons)	0.0

Notes:

1. CO₂, CH₄ and N₂O emission factors for vehicles from Tables 2 and 3, A-6 and A-7, and B-1 through B-7 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Mobile Combustion Sources (May 2008)*.
2. Emission factors updated with latest values from *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005* as needed.
3. Average mpg values from the U.S. Department of Transportation, Federal Highway Administration, Highway Statistics 2005, Table VM-1.
4. Bus mpg values from American Public Transportation Association, Public Transportation Fact Book, Page 23, April 2006.
5. Densities of fuels from Table A-36, *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005*.

Table 7. Average Fuel Economy by Vehicle Type

Vehicle Type	Average Fuel Economy (mpg)
Passenger Cars	22.5
Motorcycles	50
Diesel Buses (Diesel Heavy-Duty Vehicles)	3.7
CNG Buses	2.4
LNG Buses (LNG Heavy-Duty Vehicles)	1.8
Other 2-axle, 4-tire Vehicles	16.2
Single unit 2-axle 6-tire or more Trucks	8.8
Combination Trucks	5.9

Table 2. Total Company-Wide Mobile Source Fuel Usage and CO₂ Emissions

Fuel Type	Fuel Usage	Units	CO ₂ (kg)
Motor Gasoline	1,781	gallons	15,693.3
Diesel Fuel	23	gallons	233.5
Residual Fuel Oil (#5, & 6)	0	gallons	0.0
Avgas	0	gallons	0.0
Jet Fuel	0	gallons	0.0
LPG	0	gallons	0.0
Ethanol (gasoline component only)	0	gallons	0.0
Biodiesel (diesel component only)	0	gallons	0.0
Liquefied Natural Gas (LNG)	0	gallons	0.0
Compressed Natural Gas (CNG)	0	scf	0.0

Table 3. Total Company-Wide Highway Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Gasoline Passenger Cars	1984-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005-present	0	0.0	0.0
Gasoline Light-Duty Trucks (Vans, Pickup Trucks, SUVs)	1987-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	94	8.5	4.9
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	3,609	47.6	54.9
	2005-present	0	0.0	0.0
Gasoline Heavy-Duty Vehicles	1985-1986	0	0.0	0.0
	1987	0	0.0	0.0
	1988-1989	0	0.0	0.0
	1990-1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	807	139.3	74.6
	1998	0	0.0	0.0
	1999	1,795	257.6	103.8
	2000	0	0.0	0.0
	2001	2,015	248.9	106.4
	2002	0	0.0	0.0
	2003	4,897	607.2	261.0
	2004	7,302	208.1	249.0
2005-present	3,888	68.8	126.7	

Table 4. Total Company-Wide Highway non-Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Diesel Passenger Cars	1960-1982	0	0.0	0.0
	1983-present	0	0.0	0.0
Diesel Light-Duty Trucks	1960-1982	0	0.0	0.0
	1983-1995	0	0.0	0.0
	1996-present	0	0.0	0.0
Diesel Heavy-Duty Vehicles	1960-present	0	0.0	0.0
Motorcycles	Non-Catalyst Control	0	0.0	0.0
	Uncontrolled	0	0.0	0.0
CNG Light-Duty Vehicles		0	0.0	0.0
CNG Heavy-Duty Vehicles		0	0.0	0.0
CNG Buses		0	0.0	0.0
LPG Light-Duty Vehicles		0	0.0	0.0
LPG Heavy-Duty Vehicles		0	0.0	0.0
LNG Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Light-Duty Vehicles		0	0.0	0.0
Ethanol Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Buses		0	0.0	0.0

Table 5. Total Company-Wide Non-Highway Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Fuel Usage (gallons)	N ₂ O (g)	CH ₄ (g)
Residual Oil Ships and Boats	0	0.0	0.0
Diesel Ships and Boats	0	0.0	0.0
Gasoline Ships and Boats	0	0.0	0.0
Diesel Locomotives	0	0.0	0.0
Gasoline Agricultural Equip.	0	0.0	0.0
Diesel Agricultural Equip.	23	5.9	33.1
Gasoline Construction Equip.	0	0.0	0.0
Diesel Construction Equip.	0	0.0	0.0
Jet Fuel Aircraft	0	0.0	0.0
Avgas Aircraft	0	0.0	0.0
Biofuel Vehicles (diesel component only)	0	0.0	0.0
Other Diesel Sources	0	0.0	0.0
Other Gasoline Sources	0	0.0	0.0

Table 6. Total CO₂ Emissions from Mobile Sources

Total CO₂ Emissions - Equivalent (metric tons)	16.4
Total Biomass CO₂ Emissions - Equivalent (metric tons)	0.0

Notes:

1. CO₂, CH₄ and N₂O emission factors for vehicles from Tables 2 and 3, A-6 and A-7, and B-1 through B-7 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Mobile Combustion Sources (May 2008)*.
2. Emission factors updated with latest values from *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005* as needed.
3. Average mpg values from the U.S. Department of Transportation, Federal Highway Administration, Highway Statistics 2005, Table VM-1.
4. Bus mpg values from American Public Transportation Association, Public Transportation Fact Book, Page 23, April 2006.
5. Densities of fuels from Table A-36, *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005*.

Table 7. Average Fuel Economy by Vehicle Type

Vehicle Type	Average Fuel Economy (mpg)
Passenger Cars	22.5
Motorcycles	50
Diesel Buses (Diesel Heavy-Duty Vehicles)	3.7
CNG Buses	2.4
LNG Buses (LNG Heavy-Duty Vehicles)	1.8
Other 2-axle, 4-tire Vehicles	16.2
Single unit 2-axle 6-tire or more Trucks	8.8
Combination Trucks	5.9

Table 2. Total Company-Wide Mobile Source Fuel Usage and CO₂ Emissions

Fuel Type	Fuel Usage	Units	CO ₂ (kg)
Motor Gasoline	4,581	gallons	40,356.1
Diesel Fuel	96	gallons	977.9
Residual Fuel Oil (#5, & 6)	0	gallons	0.0
Avgas	0	gallons	0.0
Jet Fuel	0	gallons	0.0
LPG	0	gallons	0.0
Ethanol (gasoline component only)	0	gallons	0.0
Biodiesel (diesel component only)	0	gallons	0.0
Liquefied Natural Gas (LNG)	0	gallons	0.0
Compressed Natural Gas (CNG)	0	scf	0.0

Table 3. Total Company-Wide Highway Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Gasoline Passenger Cars	1984-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	2,422	38.3	26.6
	2002	2,045	31.3	21.9
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005-present	0	0.0	0.0
Gasoline Light-Duty Trucks (Vans, Pickup Trucks, SUVs)	1987-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	2,727	169.3	94.4
	2001	1,783	29.2	26.9
	2002	12,929	294.8	230.1
	2003	0	0.0	0.0
	2004	13,767	181.7	209.3
	2005-present	8,329	84.1	130.8
Gasoline Heavy-Duty Vehicles	1985-1986	0	0.0	0.0
	1987	0	0.0	0.0
	1988-1989	0	0.0	0.0
	1990-1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	100	16.9	6.4
	1999	2,760	396.1	159.5
	2000	0	0.0	0.0
	2001	7,255	896.0	383.1
	2002	0	0.0	0.0
	2003	3,442	426.8	183.5
	2004	3,714	105.8	126.6
2005-present	1,051	18.6	34.3	

Table 4. Total Company-Wide Highway non-Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Diesel Passenger Cars	1960-1982	0	0.0	0.0
	1983-present	0	0.0	0.0
Diesel Light-Duty Trucks	1960-1982	0	0.0	0.0
	1983-1995	0	0.0	0.0
	1996-present	1,397	2.1	1.4
Diesel Heavy-Duty Vehicles	1960-present	0	0.0	0.0
Motorcycles	Non-Catalyst Control	0	0.0	0.0
	Uncontrolled	0	0.0	0.0
CNG Light-Duty Vehicles		0	0.0	0.0
CNG Heavy-Duty Vehicles		0	0.0	0.0
CNG Buses		0	0.0	0.0
LPG Light-Duty Vehicles		0	0.0	0.0
LPG Heavy-Duty Vehicles		0	0.0	0.0
LNG Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Light-Duty Vehicles		0	0.0	0.0
Ethanol Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Buses		0	0.0	0.0

Table 5. Total Company-Wide Non-Highway Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Fuel Usage (gallons)	N ₂ O (g)	CH ₄ (g)
Residual Oil Ships and Boats	0	0.0	0.0
Diesel Ships and Boats	0	0.0	0.0
Gasoline Ships and Boats	0	0.0	0.0
Diesel Locomotives	0	0.0	0.0
Gasoline Agricultural Equip.	0	0.0	0.0
Diesel Agricultural Equip.	0	0.0	0.0
Gasoline Construction Equip.	0	0.0	0.0
Diesel Construction Equip.	0	0.0	0.0
Jet Fuel Aircraft	0	0.0	0.0
Avgas Aircraft	0	0.0	0.0
Biofuel Vehicles (diesel component only)	0	0.0	0.0
Other Diesel Sources	0	0.0	0.0
Other Gasoline Sources	0	0.0	0.0

Table 6. Total CO₂ Emissions from Mobile Sources

Total CO₂ Emissions - Equivalent (metric tons)	42.2
Total Biomass CO₂ Emissions - Equivalent (metric tons)	0.0

Notes:

1. CO₂, CH₄ and N₂O emission factors for vehicles from Tables 2 and 3, A-6 and A-7, and B-1 through B-7 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Mobile Combustion Sources (May 2008)*.
2. Emission factors updated with latest values from *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005* as needed.
3. Average mpg values from the U.S. Department of Transportation, Federal Highway Administration, Highway Statistics 2005, Table VM-1.
4. Bus mpg values from American Public Transportation Association, Public Transportation Fact Book, Page 23, April 2006.
5. Densities of fuels from Table A-36, *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005*.

Table 7. Average Fuel Economy by Vehicle Type

Vehicle Type	Average Fuel Economy (mpg)
Passenger Cars	22.5
Motorcycles	50
Diesel Buses (Diesel Heavy-Duty Vehicles)	3.7
CNG Buses	2.4
LNG Buses (LNG Heavy-Duty Vehicles)	1.8
Other 2-axle, 4-tire Vehicles	16.2
Single unit 2-axle 6-tire or more Trucks	8.8
Combination Trucks	5.9

2.0. Direct Emissions from Mobile Sources

Instructions:

- (A) Enter data in ORANGE cells in proper units as appropriate in Table 1. Final emissions data is provided in Table 6.
Biomass emissions are not reported in the total CO₂ emissions, but are reported separately in Table 6.

Step 1. Enter Biodiesel and Ethanol percentages if known, or leave default values.

- Biodiesel assumed to be mix of biofuel and diesel (GHG emissions from biofuel need not be reported)
- Ethanol assumed to be mix of ethanol and gasoline (GHG emissions from ethanol need not be reported).

Biofuel Percent:	20	%
Ethanol Percent:	80	%

Step 2. Enter "Vehicle Year", "Fuel Usage" and "Miles Traveled" for each vehicle or group of vehicles (by vehicle type, vehicle year and fuel type) in Table 1.

- Select "Vehicle Type" from drop down box (closest type available). Enter "Fuel Used" in appropriate units.
- If mileage or amount of fuel used unknown, estimate using approximate fuel economy values (see Table 7).
- See example entry in first row (RED Italics).

Table 1. Mobile Source Fuel Combustion and Miles Traveled

Source ID	Source Description	Vehicle Type	Vehicle Year	Fuel Usage	Units	Miles Traveled
<i>Fleet-012</i>	<i>HQ Fleet</i>	<i>Gasoline Heavy-Duty Vehicles</i>	<i>1990</i>	<i>500</i>	<i>gal</i>	<i>15,000</i>
1983	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	1996	33	gal	560
1514	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	1997	11	gal	151
1516	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	1997	3	gal	38
1517	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	1997	81	gal	1,123
1582	Ketchikan Fleet	Gasoline Light-Duty Trucks	2000	469	gal	6,661
1584	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2001	14	gal	179
1601	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2001	218	gal	2,872
1602	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2001	242	gal	3,191
1613	Ketchikan Fleet	Gasoline Passenger Cars	2001	2	gal	33
1621	Ketchikan Fleet	Gasoline Light-Duty Trucks	2002	399	gal	6,211
1645	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2003	1,353	gal	19,674
1650	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2003	225	gal	3,272
1652	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2003	94	gal	1,362
1653	Ketchikan Fleet	Gasoline Light-Duty Trucks	2003	30	gal	419
1655	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2003	1	gal	10
1658	Ketchikan Fleet	Gasoline Light-Duty Trucks	2003	100	gal	1,530
1659	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2003	186	gal	2,704
1669	Ketchikan Fleet	Gasoline Light-Duty Trucks	2003	694	gal	10,549
1670	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2003	138	gal	2,153
1675	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2004	142	gal	2,060
1690	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2004	156	gal	2,263
1691	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2004	4	gal	58
1701	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2005	145	gal	2,104
1724	Ketchikan Fleet	Gasoline Light-Duty Trucks	2005	111	gal	1,645
1735	Ketchikan Fleet	Gasoline Light-Duty Trucks	2006	115	gal	1,782
1739	Ketchikan Fleet	Gasoline Heavy-Duty Vehicles	2006	67	gal	1,048
1752	Ketchikan Fleet	Gasoline Light-Duty Trucks	2006	12	gal	163
1743	Ketchikan Fleet	Gasoline Light-Duty Trucks	2007	521	gal	7,040

Table 2. Total Company-Wide Mobile Source Fuel Usage and CO₂ Emissions

Fuel Type	Fuel Usage	Units	CO ₂ (kg)
Motor Gasoline	5,563	gallons	49,012.1
Diesel Fuel	0	gallons	0.0
Residual Fuel Oil (#5, & 6)	0	gallons	0.0
Avgas	0	gallons	0.0
Jet Fuel	0	gallons	0.0
LPG	0	gallons	0.0
Ethanol (gasoline component only)	0	gallons	0.0
Biodiesel (diesel component only)	0	gallons	0.0
Liquefied Natural Gas (LNG)	0	gallons	0.0
Compressed Natural Gas (CNG)	0	scf	0.0

Table 3. Total Company-Wide Highway Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Gasoline Passenger Cars	1984-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	33	0.5	0.4
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005-present	0	0.0	0.0
Gasoline Light-Duty Trucks (Vans, Pickup Trucks, SUVs)	1987-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	6,661	413.6	230.5
	2001	0	0.0	0.0
	2002	6,211	141.6	110.6
	2003	12,498	142.5	193.7
	2004	0	0.0	0.0
	2005-present	10,630	107.4	166.9
Gasoline Heavy-Duty Vehicles	1985-1986	0	0.0	0.0
	1987	0	0.0	0.0
	1988-1989	0	0.0	0.0
	1990-1995	0	0.0	0.0
	1996	560	94.1	71.6
	1997	1,312	226.5	121.2
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	6,242	770.9	329.6
	2002	0	0.0	0.0
	2003	29,175	3,617.7	1,555.0
	2004	4,381	124.9	149.4
2005-present	3,152	55.8	102.8	

Table 4. Total Company-Wide Highway non-Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Diesel Passenger Cars	1960-1982	0	0.0	0.0
	1983-present	0	0.0	0.0
Diesel Light-Duty Trucks	1960-1982	0	0.0	0.0
	1983-1995	0	0.0	0.0
	1996-present	0	0.0	0.0
Diesel Heavy-Duty Vehicles	1960-present	0	0.0	0.0
Motorcycles	Non-Catalyst Control	0	0.0	0.0
	Uncontrolled	0	0.0	0.0
CNG Light-Duty Vehicles		0	0.0	0.0
CNG Heavy-Duty Vehicles		0	0.0	0.0
CNG Buses		0	0.0	0.0
LPG Light-Duty Vehicles		0	0.0	0.0
LPG Heavy-Duty Vehicles		0	0.0	0.0
LNG Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Light-Duty Vehicles		0	0.0	0.0
Ethanol Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Buses		0	0.0	0.0

Table 5. Total Company-Wide Non-Highway Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Fuel Usage (gallons)	N ₂ O (g)	CH ₄ (g)
Residual Oil Ships and Boats	0	0.0	0.0
Diesel Ships and Boats	0	0.0	0.0
Gasoline Ships and Boats	0	0.0	0.0
Diesel Locomotives	0	0.0	0.0
Gasoline Agricultural Equip.	0	0.0	0.0
Diesel Agricultural Equip.	0	0.0	0.0
Gasoline Construction Equip.	0	0.0	0.0
Diesel Construction Equip.	0	0.0	0.0
Jet Fuel Aircraft	0	0.0	0.0
Avgas Aircraft	0	0.0	0.0
Biofuel Vehicles (diesel component only)	0	0.0	0.0
Other Diesel Sources	0	0.0	0.0
Other Gasoline Sources	0	0.0	0.0

Table 6. Total CO₂ Emissions from Mobile Sources

Total CO₂ Emissions - Equivalent (metric tons)	50.8
Total Biomass CO₂ Emissions - Equivalent (metric tons)	0.0

Notes:

1. CO₂, CH₄ and N₂O emission factors for vehicles from Tables 2 and 3, A-6 and A-7, and B-1 through B-7 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Mobile Combustion Sources (May 2008)*.
2. Emission factors updated with latest values from *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005* as needed.
3. Average mpg values from the U.S. Department of Transportation, Federal Highway Administration, Highway Statistics 2005, Table VM-1.
4. Bus mpg values from American Public Transportation Association, Public Transportation Fact Book, Page 23, April 2006.
5. Densities of fuels from Table A-36, *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005*.

Table 7. Average Fuel Economy by Vehicle Type

Vehicle Type	Average Fuel Economy (mpg)
Passenger Cars	22.5
Motorcycles	50
Diesel Buses (Diesel Heavy-Duty Vehicles)	3.7
CNG Buses	2.4
LNG Buses (LNG Heavy-Duty Vehicles)	1.8
Other 2-axle, 4-tire Vehicles	16.2
Single unit 2-axle 6-tire or more Trucks	8.8
Combination Trucks	5.9

2.0. Direct Emissions from Mobile Sources

Instructions:

- (A) Enter data in ORANGE cells in proper units as appropriate in Table 1. Final emissions data is provided in Table 6.
 Biomass emissions are not reported in the total CO₂ emissions, but are reported separately in Table 6.

Step 1. Enter Biodiesel and Ethanol percentages if known, or leave default values.

- Biodiesel assumed to be mix of biofuel and diesel (GHG emissions from biofuel need not be reported)
- Ethanol assumed to be mix of ethanol and gasoline (GHG emissions from ethanol need not be reported).

Biofuel Percent:	20	%
Ethanol Percent:	80	%

Step 2. Enter "Vehicle Year", "Fuel Usage" and "Miles Traveled" for each vehicle or group of vehicles (by vehicle type, vehicle year and fuel type) in Table 1.

- Select "Vehicle Type" from drop down box (closest type available). Enter "Fuel Used" in appropriate units.
- If mileage or amount of fuel used unknown, estimate using approximate fuel economy values (see Table 7).
- See example entry in first row (RED Italics).

Table 1. Mobile Source Fuel Combustion and Miles Traveled

Source ID	Source Description	Vehicle Type	Vehicle Year	Fuel Usage	Units	Miles Traveled
<i>Fleet-012</i>	<i>HQ Fleet</i>	<i>Gasoline Heavy-Duty Vehicles</i>	<i>1990</i>	<i>500</i>	<i>gal</i>	<i>15,000</i>
1524	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	1998	72	gal	1,223
1525	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	1998	54	gal	814
1527	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	1998	146	gal	2,480
1563	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	1999	188	gal	2,813
1564	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	1999	271	gal	4,060
1570	Petersburg Fleet	Gasoline Light-Duty Trucks	2000	116	gal	1,744
1590	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2001	133	gal	2,134
1599	Petersburg Fleet	Gasoline Light-Duty Trucks	2001	179	gal	2,870
1600	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2001	1,039	gal	16,630
1615	Petersburg Fleet	Gasoline Light-Duty Trucks	2001	478	gal	8,118
1627	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2002	205	gal	3,284
1628	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2002	116	gal	1,853
1665	Petersburg Fleet	Gasoline Light-Duty Trucks	2003	311	gal	5,286
1666	Petersburg Fleet	Gasoline Light-Duty Trucks	2003	73	gal	1,246
1679	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2004	122	gal	1,955
1680	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2004	136	gal	2,312
1702	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2005	95	gal	1,523
1706	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2005	354	gal	5,658
1707	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2005	110	gal	1,764
1708	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2005	229	gal	3,667
1740	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2006	233	gal	3,962
1741	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2006	93	gal	1,586
1744	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2006	120	gal	2,042
1745	Petersburg Fleet	Gasoline Light-Duty Trucks	2006	390	gal	6,637
1742	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	2007	5	gal	76
1965	Petersburg Fleet	Gasoline Heavy-Duty Vehicles	1996	66	gal	1,052

Table 2. Total Company-Wide Mobile Source Fuel Usage and CO₂ Emissions

Fuel Type	Fuel Usage	Units	CO ₂ (kg)
Motor Gasoline	5,334	gallons	46,992.5
Diesel Fuel	0	gallons	0.0
Residual Fuel Oil (#5, & 6)	0	gallons	0.0
Avgas	0	gallons	0.0
Jet Fuel	0	gallons	0.0
LPG	0	gallons	0.0
Ethanol (gasoline component only)	0	gallons	0.0
Biodiesel (diesel component only)	0	gallons	0.0
Liquefied Natural Gas (LNG)	0	gallons	0.0
Compressed Natural Gas (CNG)	0	scf	0.0

Table 3. Total Company-Wide Highway Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Gasoline Passenger Cars	1984-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005-present	0	0.0	0.0
Gasoline Light-Duty Trucks (Vans, Pickup Trucks, SUVs)	1987-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	1,744	108.3	60.3
	2001	10,988	180.2	165.9
	2002	0	0.0	0.0
	2003	6,532	74.5	101.2
	2004	0	0.0	0.0
	2005-present	6,637	67.0	104.2
Gasoline Heavy-Duty Vehicles	1985-1986	0	0.0	0.0
	1987	0	0.0	0.0
	1988-1989	0	0.0	0.0
	1990-1995	0	0.0	0.0
	1996	1,052	176.7	134.4
	1997	0	0.0	0.0
	1998	3,703	626.9	237.4
	1999	6,873	986.3	397.3
	2000	0	0.0	0.0
	2001	18,764	2,317.4	990.7
	2002	5,137	671.4	280.5
	2003	0	0.0	0.0
	2004	4,267	121.6	145.5
2005-present	20,278	358.9	661.1	

Table 4. Total Company-Wide Highway non-Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Diesel Passenger Cars	1960-1982	0	0.0	0.0
	1983-present	0	0.0	0.0
Diesel Light-Duty Trucks	1960-1982	0	0.0	0.0
	1983-1995	0	0.0	0.0
	1996-present	0	0.0	0.0
Diesel Heavy-Duty Vehicles	1960-present	0	0.0	0.0
Motorcycles	Non-Catalyst Control	0	0.0	0.0
	Uncontrolled	0	0.0	0.0
CNG Light-Duty Vehicles		0	0.0	0.0
CNG Heavy-Duty Vehicles		0	0.0	0.0
CNG Buses		0	0.0	0.0
LPG Light-Duty Vehicles		0	0.0	0.0
LPG Heavy-Duty Vehicles		0	0.0	0.0
LNG Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Light-Duty Vehicles		0	0.0	0.0
Ethanol Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Buses		0	0.0	0.0

Table 5. Total Company-Wide Non-Highway Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Fuel Usage (gallons)	N ₂ O (g)	CH ₄ (g)
Residual Oil Ships and Boats	0	0.0	0.0
Diesel Ships and Boats	0	0.0	0.0
Gasoline Ships and Boats	0	0.0	0.0
Diesel Locomotives	0	0.0	0.0
Gasoline Agricultural Equip.	0	0.0	0.0
Diesel Agricultural Equip.	0	0.0	0.0
Gasoline Construction Equip.	0	0.0	0.0
Diesel Construction Equip.	0	0.0	0.0
Jet Fuel Aircraft	0	0.0	0.0
Avgas Aircraft	0	0.0	0.0
Biofuel Vehicles (diesel component only)	0	0.0	0.0
Other Diesel Sources	0	0.0	0.0
Other Gasoline Sources	0	0.0	0.0

Table 6. Total CO₂ Emissions from Mobile Sources

Total CO₂ Emissions - Equivalent (metric tons)	48.8
Total Biomass CO₂ Emissions - Equivalent (metric tons)	0.0

Notes:

1. CO₂, CH₄ and N₂O emission factors for vehicles from Tables 2 and 3, A-6 and A-7, and B-1 through B-7 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Mobile Combustion Sources (May 2008)*.
2. Emission factors updated with latest values from *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005* as needed.
3. Average mpg values from the U.S. Department of Transportation, Federal Highway Administration, Highway Statistics 2005, Table VM-1.
4. Bus mpg values from American Public Transportation Association, Public Transportation Fact Book, Page 23, April 2006.
5. Densities of fuels from Table A-36, *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005*.

Table 7. Average Fuel Economy by Vehicle Type

Vehicle Type	Average Fuel Economy (mpg)
Passenger Cars	22.5
Motorcycles	50
Diesel Buses (Diesel Heavy-Duty Vehicles)	3.7
CNG Buses	2.4
LNG Buses (LNG Heavy-Duty Vehicles)	1.8
Other 2-axle, 4-tire Vehicles	16.2
Single unit 2-axle 6-tire or more Trucks	8.8
Combination Trucks	5.9

Table 2. Total Company-Wide Mobile Source Fuel Usage and CO₂ Emissions

Fuel Type	Fuel Usage	Units	CO ₂ (kg)
Motor Gasoline	1,112	gallons	9,796.7
Diesel Fuel	0	gallons	0.0
Residual Fuel Oil (#5, & 6)	0	gallons	0.0
Avgas	0	gallons	0.0
Jet Fuel	0	gallons	0.0
LPG	0	gallons	0.0
Ethanol (gasoline component only)	0	gallons	0.0
Biodiesel (diesel component only)	0	gallons	0.0
Liquefied Natural Gas (LNG)	0	gallons	0.0
Compressed Natural Gas (CNG)	0	scf	0.0

Table 3. Total Company-Wide Highway Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Gasoline Passenger Cars	1984-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005-present	0	0.0	0.0
Gasoline Light-Duty Trucks (Vans, Pickup Trucks, SUVs)	1987-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	2,112	184.0	95.5
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	1,147	71.2	39.7
	2001	1,976	32.4	29.8
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005-present	0	0.0	0.0
Gasoline Heavy-Duty Vehicles	1985-1986	0	0.0	0.0
	1987	0	0.0	0.0
	1988-1989	0	0.0	0.0
	1990-1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	1,494	214.4	86.4
	2000	4,000	436.8	197.2
	2001	2,038	251.7	107.6
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	2,342	66.7	79.9
2005-present	0	0.0	0.0	

Table 4. Total Company-Wide Highway non-Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Diesel Passenger Cars	1960-1982	0	0.0	0.0
	1983-present	0	0.0	0.0
Diesel Light-Duty Trucks	1960-1982	0	0.0	0.0
	1983-1995	0	0.0	0.0
	1996-present	0	0.0	0.0
Diesel Heavy-Duty Vehicles	1960-present	0	0.0	0.0
Motorcycles	Non-Catalyst Control	0	0.0	0.0
	Uncontrolled	0	0.0	0.0
CNG Light-Duty Vehicles		0	0.0	0.0
CNG Heavy-Duty Vehicles		0	0.0	0.0
CNG Buses		0	0.0	0.0
LPG Light-Duty Vehicles		0	0.0	0.0
LPG Heavy-Duty Vehicles		0	0.0	0.0
LNG Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Light-Duty Vehicles		0	0.0	0.0
Ethanol Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Buses		0	0.0	0.0

Table 5. Total Company-Wide Non-Highway Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Fuel Usage (gallons)	N ₂ O (g)	CH ₄ (g)
Residual Oil Ships and Boats	0	0.0	0.0
Diesel Ships and Boats	0	0.0	0.0
Gasoline Ships and Boats	0	0.0	0.0
Diesel Locomotives	0	0.0	0.0
Gasoline Agricultural Equip.	0	0.0	0.0
Diesel Agricultural Equip.	0	0.0	0.0
Gasoline Construction Equip.	0	0.0	0.0
Diesel Construction Equip.	0	0.0	0.0
Jet Fuel Aircraft	0	0.0	0.0
Avgas Aircraft	0	0.0	0.0
Biofuel Vehicles (diesel component only)	0	0.0	0.0
Other Diesel Sources	0	0.0	0.0
Other Gasoline Sources	0	0.0	0.0

Table 6. Total CO₂ Emissions from Mobile Sources

Total CO₂ Emissions - Equivalent (metric tons)	10.2
Total Biomass CO₂ Emissions - Equivalent (metric tons)	0.0

Notes:

1. CO₂, CH₄ and N₂O emission factors for vehicles from Tables 2 and 3, A-6 and A-7, and B-1 through B-7 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Mobile Combustion Sources (May 2008)*.
2. Emission factors updated with latest values from *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005* as needed.
3. Average mpg values from the U.S. Department of Transportation, Federal Highway Administration, Highway Statistics 2005, Table VM-1.
4. Bus mpg values from American Public Transportation Association, Public Transportation Fact Book, Page 23, April 2006.
5. Densities of fuels from Table A-36, *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005*.

Table 7. Average Fuel Economy by Vehicle Type

Vehicle Type	Average Fuel Economy (mpg)
Passenger Cars	22.5
Motorcycles	50
Diesel Buses (Diesel Heavy-Duty Vehicles)	3.7
CNG Buses	2.4
LNG Buses (LNG Heavy-Duty Vehicles)	1.8
Other 2-axle, 4-tire Vehicles	16.2
Single unit 2-axle 6-tire or more Trucks	8.8
Combination Trucks	5.9

2.0. Direct Emissions from Mobile Sources

Instructions:

- (A) Enter data in ORANGE cells in proper units as appropriate in Table 1. Final emissions data is provided in Table 6.
 Biomass emissions are not reported in the total CO₂ emissions, but are reported separately in Table 6.

Step 1. Enter Biodiesel and Ethanol percentages if known, or leave default values.

- Biodiesel assumed to be mix of biofuel and diesel (GHG emissions from biofuel need not be reported)
- Ethanol assumed to be mix of ethanol and gasoline (GHG emissions from ethanol need not be reported).

Biofuel Percent:	20	%
Ethanol Percent:	80	%

Step 2. Enter "Vehicle Year", "Fuel Usage" and "Miles Traveled" for each vehicle or group of vehicles (by vehicle type, vehicle year and fuel type) in Table 1.

- Select "Vehicle Type" from drop down box (closest type available). Enter "Fuel Used" in appropriate units.
- If mileage or amount of fuel used unknown, estimate using approximate fuel economy values (see Table 7).
- See example entry in first row (RED Italics).

Table 1. Mobile Source Fuel Combustion and Miles Traveled

Source ID	Source Description	Vehicle Type	Vehicle Year	Fuel Usage	Units	Miles Traveled
<i>Fleet-012</i>	<i>HQ Fleet</i>	<i>Gasoline Heavy-Duty Vehicles</i>	<i>1990</i>	<i>500</i>	<i>gal</i>	<i>15,000</i>
1529	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	1998	799	gal	4,794
1532	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	1997	316	gal	3,477
1539	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	1998	38	gal	537
1553	Thorne Bay Fleet	Gasoline Light-Duty Trucks	1999	253	gal	3,031
1554	Thorne Bay Fleet	Gasoline Light-Duty Trucks	1999	21	gal	247
1583	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2000	31	gal	433
1586	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2001	343	gal	4,121
1591	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2001	635	gal	7,620
1592	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2001	305	gal	3,658
1593	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2001	1,397	gal	16,767
1594	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2001	194	gal	2,329
1595	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2001	433	gal	5,197
1622	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2002	435	gal	5,660
1623	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2002	1,096	gal	10,962
1625	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2002	605	gal	7,865
1626	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2002	272	gal	3,541
1651	Thorne Bay Fleet	Gasoline Light-Duty Trucks	2003	360	gal	4,685
1660	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2003	293	gal	3,803
1663	Thorne Bay Fleet	Gasoline Light-Duty Trucks	2003	115	gal	1,720
1673	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2003	492	gal	6,402
1686	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2004	441	gal	5,739
1689	Thorne Bay Fleet	Gasoline Light-Duty Trucks	2004	508	gal	8,131
1692	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2004	265	gal	3,440
1697	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2005	532	gal	6,386
1699	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2005	463	gal	5,555
1700	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2005	343	gal	4,121
1705	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2005	454	gal	5,443
1714	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2005	425	gal	5,100
1718	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2005	527	gal	6,318
1719	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2005	587	gal	7,042
1720	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2005	547	gal	6,566
1721	Thorne Bay Fleet	Gasoline Light-Duty Trucks	2005	569	gal	7,391
1733	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2006	171	gal	2,229
1755	Thorne Bay Fleet	Gasoline Light-Duty Trucks	2006	424	gal	5,939
1756	Thorne Bay Fleet	Gasoline Heavy-Duty Vehicles	2006	959	gal	13,425
1759	Thorne Bay Fleet	Gasoline Light-Duty Trucks	2006	371	gal	4,818
1760	Thorne Bay Fleet	Gasoline Light-Duty Trucks	1006	603	gal	7,840

Table 2. Total Company-Wide Mobile Source Fuel Usage and CO₂ Emissions

Fuel Type	Fuel Usage	Units	CO ₂ (kg)
Motor Gasoline	16,622	gallons	146,439.8
Diesel Fuel	0	gallons	0.0
Residual Fuel Oil (#5, & 6)	0	gallons	0.0
Avgas	0	gallons	0.0
Jet Fuel	0	gallons	0.0
LPG	0	gallons	0.0
Ethanol (gasoline component only)	0	gallons	0.0
Biodiesel (diesel component only)	0	gallons	0.0
Liquefied Natural Gas (LNG)	0	gallons	0.0
Compressed Natural Gas (CNG)	0	scf	0.0

Table 3. Total Company-Wide Highway Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Gasoline Passenger Cars	1984-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005-present	0	0.0	0.0
Gasoline Light-Duty Trucks (Vans, Pickup Trucks, SUVs)	1987-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	3,278	184.9	105.2
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	6,405	73.0	99.3
	2004	8,131	107.3	123.6
	2005-present	13,330	134.6	209.3
Gasoline Heavy-Duty Vehicles	1985-1986	0	0.0	0.0
	1987	0	0.0	0.0
	1988-1989	0	0.0	0.0
	1990-1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	3,477	600.1	321.3
	1998	5,331	902.5	341.7
	1999	0	0.0	0.0
	2000	433	47.3	21.3
	2001	39,692	4,902.0	2,095.7
	2002	28,028	3,663.3	1,530.3
	2003	10,205	1,265.4	543.9
	2004	9,179	261.6	313.0
2005-present	62,185	1,100.7	2,027.2	

Table 4. Total Company-Wide Highway non-Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Diesel Passenger Cars	1960-1982	0	0.0	0.0
	1983-present	0	0.0	0.0
Diesel Light-Duty Trucks	1960-1982	0	0.0	0.0
	1983-1995	0	0.0	0.0
	1996-present	0	0.0	0.0
Diesel Heavy-Duty Vehicles	1960-present	0	0.0	0.0
Motorcycles	Non-Catalyst Control	0	0.0	0.0
	Uncontrolled	0	0.0	0.0
CNG Light-Duty Vehicles		0	0.0	0.0
CNG Heavy-Duty Vehicles		0	0.0	0.0
CNG Buses		0	0.0	0.0
LPG Light-Duty Vehicles		0	0.0	0.0
LPG Heavy-Duty Vehicles		0	0.0	0.0
LNG Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Light-Duty Vehicles		0	0.0	0.0
Ethanol Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Buses		0	0.0	0.0

Table 5. Total Company-Wide Non-Highway Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Fuel Usage (gallons)	N ₂ O (g)	CH ₄ (g)
Residual Oil Ships and Boats	0	0.0	0.0
Diesel Ships and Boats	0	0.0	0.0
Gasoline Ships and Boats	0	0.0	0.0
Diesel Locomotives	0	0.0	0.0
Gasoline Agricultural Equip.	0	0.0	0.0
Diesel Agricultural Equip.	0	0.0	0.0
Gasoline Construction Equip.	0	0.0	0.0
Diesel Construction Equip.	0	0.0	0.0
Jet Fuel Aircraft	0	0.0	0.0
Avgas Aircraft	0	0.0	0.0
Biofuel Vehicles (diesel component only)	0	0.0	0.0
Other Diesel Sources	0	0.0	0.0
Other Gasoline Sources	0	0.0	0.0

Table 6. Total CO₂ Emissions from Mobile Sources

Total CO₂ Emissions - Equivalent (metric tons)	150.7
Total Biomass CO₂ Emissions - Equivalent (metric tons)	0.0

Notes:

1. CO₂, CH₄ and N₂O emission factors for vehicles from Tables 2 and 3, A-6 and A-7, and B-1 through B-7 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Mobile Combustion Sources (May 2008)*.
2. Emission factors updated with latest values from *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005* as needed.
3. Average mpg values from the U.S. Department of Transportation, Federal Highway Administration, Highway Statistics 2005, Table VM-1.
4. Bus mpg values from American Public Transportation Association, Public Transportation Fact Book, Page 23, April 2006.
5. Densities of fuels from Table A-36, *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005*.

Table 7. Average Fuel Economy by Vehicle Type

Vehicle Type	Average Fuel Economy (mpg)
Passenger Cars	22.5
Motorcycles	50
Diesel Buses (Diesel Heavy-Duty Vehicles)	3.7
CNG Buses	2.4
LNG Buses (LNG Heavy-Duty Vehicles)	1.8
Other 2-axle, 4-tire Vehicles	16.2
Single unit 2-axle 6-tire or more Trucks	8.8
Combination Trucks	5.9

Table 2. Total Company-Wide Mobile Source Fuel Usage and CO₂ Emissions

Fuel Type	Fuel Usage	Units	CO ₂ (kg)
Motor Gasoline	3,052	gallons	26,888.1
Diesel Fuel	103	gallons	1,045.5
Residual Fuel Oil (#5, & 6)	0	gallons	0.0
Avgas	0	gallons	0.0
Jet Fuel	0	gallons	0.0
LPG	0	gallons	0.0
Ethanol (gasoline component only)	0	gallons	0.0
Biodiesel (diesel component only)	0	gallons	0.0
Liquefied Natural Gas (LNG)	0	gallons	0.0
Compressed Natural Gas (CNG)	0	scf	0.0

Table 3. Total Company-Wide Highway Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Gasoline Passenger Cars	1984-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005-present	0	0.0	0.0
Gasoline Light-Duty Trucks (Vans, Pickup Trucks, SUVs)	1987-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	2,655	193.3	103.8
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	14,456	237.1	218.3
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005-present	4,819	48.7	75.7
Gasoline Heavy-Duty Vehicles	1985-1986	0	0.0	0.0
	1987	0	0.0	0.0
	1988-1989	0	0.0	0.0
	1990-1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	2,610	374.5	150.9
	2000	1,277	139.4	63.0
	2001	5,869	724.8	309.9
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	2,138	60.9	72.9
2005-present	8,870	157.0	289.2	

Table 4. Total Company-Wide Highway non-Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Diesel Passenger Cars	1960-1982	0	0.0	0.0
	1983-present	0	0.0	0.0
Diesel Light-Duty Trucks	1960-1982	0	0.0	0.0
	1983-1995	0	0.0	0.0
	1996-present	0	0.0	0.0
Diesel Heavy-Duty Vehicles	1960-present	325	1.6	1.7
Motorcycles	Non-Catalyst Control	0	0.0	0.0
	Uncontrolled	0	0.0	0.0
CNG Light-Duty Vehicles		0	0.0	0.0
CNG Heavy-Duty Vehicles		0	0.0	0.0
CNG Buses		0	0.0	0.0
LPG Light-Duty Vehicles		0	0.0	0.0
LPG Heavy-Duty Vehicles		0	0.0	0.0
LNG Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Light-Duty Vehicles		0	0.0	0.0
Ethanol Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Buses		0	0.0	0.0

Table 5. Total Company-Wide Non-Highway Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Fuel Usage (gallons)	N ₂ O (g)	CH ₄ (g)
Residual Oil Ships and Boats	0	0.0	0.0
Diesel Ships and Boats	0	0.0	0.0
Gasoline Ships and Boats	0	0.0	0.0
Diesel Locomotives	0	0.0	0.0
Gasoline Agricultural Equip.	0	0.0	0.0
Diesel Agricultural Equip.	78	20.0	112.4
Gasoline Construction Equip.	0	0.0	0.0
Diesel Construction Equip.	0	0.0	0.0
Jet Fuel Aircraft	0	0.0	0.0
Avgas Aircraft	0	0.0	0.0
Biofuel Vehicles (diesel component only)	0	0.0	0.0
Other Diesel Sources	0	0.0	0.0
Other Gasoline Sources	0	0.0	0.0

Table 6. Total CO₂ Emissions from Mobile Sources

Total CO₂ Emissions - Equivalent (metric tons)	28.6
Total Biomass CO₂ Emissions - Equivalent (metric tons)	0.0

Notes:

1. CO₂, CH₄ and N₂O emission factors for vehicles from Tables 2 and 3, A-6 and A-7, and B-1 through B-7 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Mobile Combustion Sources (May 2008)*.
2. Emission factors updated with latest values from *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005* as needed.
3. Average mpg values from the U.S. Department of Transportation, Federal Highway Administration, Highway Statistics 2005, Table VM-1.
4. Bus mpg values from American Public Transportation Association, Public Transportation Fact Book, Page 23, April 2006.
5. Densities of fuels from Table A-36, *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005*.

Table 7. Average Fuel Economy by Vehicle Type

Vehicle Type	Average Fuel Economy (mpg)
Passenger Cars	22.5
Motorcycles	50
Diesel Buses (Diesel Heavy-Duty Vehicles)	3.7
CNG Buses	2.4
LNG Buses (LNG Heavy-Duty Vehicles)	1.8
Other 2-axle, 4-tire Vehicles	16.2
Single unit 2-axle 6-tire or more Trucks	8.8
Combination Trucks	5.9

Table 2. Total Company-Wide Mobile Source Fuel Usage and CO₂ Emissions

Fuel Type	Fuel Usage	Units	CO ₂ (kg)
Motor Gasoline	2,125	gallons	18,721.3
Diesel Fuel	0	gallons	0.0
Residual Fuel Oil (#5, & 6)	0	gallons	0.0
Avgas	0	gallons	0.0
Jet Fuel	0	gallons	0.0
LPG	0	gallons	0.0
Ethanol (gasoline component only)	0	gallons	0.0
Biodiesel (diesel component only)	0	gallons	0.0
Liquefied Natural Gas (LNG)	0	gallons	0.0
Compressed Natural Gas (CNG)	0	scf	0.0

Table 3. Total Company-Wide Highway Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Gasoline Passenger Cars	1984-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005-present	0	0.0	0.0
Gasoline Light-Duty Trucks (Vans, Pickup Trucks, SUVs)	1987-1993	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005-present	0	0.0	0.0
Gasoline Heavy-Duty Vehicles	1985-1986	0	0.0	0.0
	1987	0	0.0	0.0
	1988-1989	0	0.0	0.0
	1990-1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	7,036	1,009.7	406.7
	2000	7,538	823.1	371.6
	2001	3,250	401.4	171.6
	2002	2,789	364.5	152.3
	2003	0	0.0	0.0
	2004	5,565	158.6	189.8
2005-present	3,474	61.5	113.3	

Table 4. Total Company-Wide Highway non-Gasoline Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	N ₂ O (g)	CH ₄ (g)
Diesel Passenger Cars	1960-1982	0	0.0	0.0
	1983-present	0	0.0	0.0
Diesel Light-Duty Trucks	1960-1982	0	0.0	0.0
	1983-1995	0	0.0	0.0
	1996-present	0	0.0	0.0
Diesel Heavy-Duty Vehicles	1960-present	0	0.0	0.0
Motorcycles	Non-Catalyst Control	0	0.0	0.0
	Uncontrolled	0	0.0	0.0
CNG Light-Duty Vehicles		0	0.0	0.0
CNG Heavy-Duty Vehicles		0	0.0	0.0
CNG Buses		0	0.0	0.0
LPG Light-Duty Vehicles		0	0.0	0.0
LPG Heavy-Duty Vehicles		0	0.0	0.0
LNG Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Light-Duty Vehicles		0	0.0	0.0
Ethanol Heavy-Duty Vehicles		0	0.0	0.0
Ethanol Buses		0	0.0	0.0

Table 5. Total Company-Wide Non-Highway Mobile Source Mileage and CH₄/N₂O Emissions

Vehicle Type	Fuel Usage (gallons)	N ₂ O (g)	CH ₄ (g)
Residual Oil Ships and Boats	0	0.0	0.0
Diesel Ships and Boats	0	0.0	0.0
Gasoline Ships and Boats	0	0.0	0.0
Diesel Locomotives	0	0.0	0.0
Gasoline Agricultural Equip.	0	0.0	0.0
Diesel Agricultural Equip.	0	0.0	0.0
Gasoline Construction Equip.	0	0.0	0.0
Diesel Construction Equip.	0	0.0	0.0
Jet Fuel Aircraft	0	0.0	0.0
Avgas Aircraft	0	0.0	0.0
Biofuel Vehicles (diesel component only)	0	0.0	0.0
Other Diesel Sources	0	0.0	0.0
Other Gasoline Sources	0	0.0	0.0

Table 6. Total CO₂ Emissions from Mobile Sources

Total CO₂ Emissions - Equivalent (metric tons)	19.6
Total Biomass CO₂ Emissions - Equivalent (metric tons)	0.0

Notes:

1. CO₂, CH₄ and N₂O emission factors for vehicles from Tables 2 and 3, A-6 and A-7, and B-1 through B-7 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Mobile Combustion Sources (May 2008)*.
2. Emission factors updated with latest values from *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005* as needed.
3. Average mpg values from the U.S. Department of Transportation, Federal Highway Administration, Highway Statistics 2005, Table VM-1.
4. Bus mpg values from American Public Transportation Association, Public Transportation Fact Book, Page 23, April 2006.
5. Densities of fuels from Table A-36, *U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005*.

Table 7. Average Fuel Economy by Vehicle Type

Vehicle Type	Average Fuel Economy (mpg)
Passenger Cars	22.5
Motorcycles	50
Diesel Buses (Diesel Heavy-Duty Vehicles)	3.7
CNG Buses	2.4
LNG Buses (LNG Heavy-Duty Vehicles)	1.8
Other 2-axle, 4-tire Vehicles	16.2
Single unit 2-axle 6-tire or more Trucks	8.8
Combination Trucks	5.9

3.0. Direct Emissions from Refrigeration and Air Conditioning Equipment

NOT CALCULATED - ASSUMED DE MINIMIS



Instructions:

- (A) Select ONE of the THREE options (1, 2 or 3) from which to estimate emissions. Options range from most preferred method (Option 1) to least preferred method (Option 3).
- (B) Enter data in ORANGE cells as appropriate for the selected option. Final emissions data is provided in Table 4.

- Option 1.** Material Balance Method: Enter company-wide total gases stored and transferred (by gas) in Table 1.
- Inventory Change = difference of gas stored in inventory from beginning to end of reporting period. (Includes only gas stored on-site (i.e. cylinders) and not gas contained within equipment).
 - Transferred Amount = gas purchased minus gas sold/disposed during reporting period.
 - Gas purchased includes: Purchases for inventory, as part of equipment servicing (not from inventory) within purchased equipment and gas returned to the site after off-site recycling.
 - Gas sold/disposed includes: Returns to supplier, sales or disposals (including within equipment), and gas sent off-site for recycling, reclamation, or destruction.
 - Capacity Change = capacity of all units at beginning minus capacity of all units at end of reporting period. (can be assumed to be capacity of new units minus capacity of retired units).

Table 1. Company-Wide Refrigeration Gas CO₂ Equivalent Emissions - Material Balance

Gas	Gas GWP	Inventory Change (lb)	Transferred Amount (lb)	Capacity Change (lb)	CO ₂ Emissions (lb)
CO ₂	1				
HFC-23	11,700				
HFC-32	650				
HFC-125	2,800				
HFC-134a	1,300				
HFC-143a	3,800				
HFC-152a	140				
HFC-236fa	6,300				
CF ₄	6,500				
C ₂ F ₆	9,200				
SF ₆	23,900				

- Option 2.** Material Balance Method (Simplified): Enter company-wide total gases in units (by gas) in Table 2.
- New units are those installed during reporting period (do not include any data for new units pre-charged by supplier) disposed units were disposed of during the reporting period, and existing units are all others.
 - Charge/Recharge = gas added to units by company or a contractor (do not include pre-charge by manufacturer).
 - Capacity = sum of the full capacity for all units (do not include new units pre-charged by manufacturer).
 - Amount recovered = total gas recovered from all retired units.

Table 2. Company-Wide Refrigeration Gas CO₂ Equivalent Emissions - Simplified Material Balance

Gas	Gas GWP	New Units		Existing Units	Disposed Units		CO ₂ Emissions (lb)
		Charge (lb)	Capacity (lb)	Recharge (lb)	Capacity (lb)	Recovered (lb)	
CO ₂	1						
HFC-23	11,700						
HFC-32	650						
HFC-125	2,800						
HFC-134a	1,300						
HFC-143a	3,800						
HFC-152a	140						
HFC-236fa	6,300						
CF ₄	6,500						
C ₂ F ₆	9,200						
SF ₆	23,900						

Table 4. Total Emissions from Refrigeration and Air Conditioning Equipment

Total CO₂ Emissions - Equivalent (metric tons)	0.0
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Notes:

1. CO₂ emissions estimated using emission factors provided in Table 2 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct HFC and PFC Emissions from Use of Refrigeration and Air Conditioning Equipment (May 2008)*.
2. GWP data obtained from USEPA - *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2005, April 15, 2007*

Table 5. Type of Equipment and Default Capacity Ranges (Lower to Upper Range) for Table 3

Domestic Refrigeration	Domestic refrigeration units (capacity 0.05 to 0.5 kg)
Stand-Alone Commercial	Stand alone commercial applications (capacity 0.2 to 6 kg)
Medium/Large Commercial	Medium and large commercial refrigeration units (capacity 50 to 2,000 kg)
Transport Refrigeration	Transportation refrigeration units (capacity 3 to 8 kg)
Industrial Refrigeration	Industrial, food processing and cold storage units (capacity 10 to 10,000 kg)
Chillers	Commercial chillers (default capacity 10 to 2,000 kg)
Residential/Commercial A/C	Residential and commercial units, including heat pumps (capacity 0.5 to 100 kg)
Car A/C Units	Passenger car A/C units (capacity 0.5 kg)
Light-Duty Truck A/C Units	Light-duty truck A/C units (capacity 1.5 kg)

4.0. Direct Emissions from Fire Suppression Equipment

NOT CALCULATED - ASSUMED DE MINIMIS



Instructions:

- (A) Select ONE of the THREE options (1, 2 or 3) from which to estimate emissions. Options range from most preferred method (Option 1) to least preferred method (Option 3).
- (B) Enter data in ORANGE cells as appropriate for the selected option. Final emissions data is provided in Table 4.

- Option 1.** Material Balance Method: Enter company-wide fire suppression gases stored and transferred (by gas) in Table 1.
- Inventory Change = difference of gas stored in inventory from beginning to end of reporting period. (Includes only gas stored on-site (i.e. cylinders) and not gas contained within equipment).
 - Transferred Amount = gas purchased minus gas sold/disposed during reporting period.
 - Gas purchased includes: Purchases for inventory, as part of equipment servicing (not from inventory) within purchased equipment and gas returned to the site after off-site recycling.
 - Gas sold/disposed includes: Returns to supplier, sales or disposals (including within equipment), and gas sent off-site for recycling, reclamation, or destruction.
 - Capacity Change = capacity of all units at beginning minus capacity of all units at end of reporting period. (can be assumed to be capacity of new units minus capacity of retired units).

Table 1. Company-Wide Fire Suppression Gas CO₂ Equivalent Emissions - Material Balance

Gas	Gas GWP	Inventory Change (lb)	Transferred Amount (lb)	Capacity Change (lb)	CO ₂ Emissions (lb)
CO ₂	1				
HFC-23	11,700				
HFC-125	2,800				
HFC-134a	1,300				
HFC-227ea	2,900				
HFC-236fa	6,300				
CF ₄	6,500				
C ₄ F ₁₀	7,000				

- Option 2.** Material Balance Method (Simplified): Enter company-wide fire suppression gas in units (by gas) in Table 2.
- New units are those installed during reporting period (do not include any data for new units pre-charged by supplier) disposed units were disposed of during the reporting period, and existing units are all others.
 - Charge/Recharge = gas added to units by company or a contractor (do not include pre-charge by manufacturer).
 - Capacity = sum of the full capacity for all units (do not include new units pre-charged by manufacturer).
 - Amount recovered = total gas recovered from all retired units.

Table 2. Company-Wide Fire Suppression Gas CO₂ Equivalent Emissions - Simplified Material Balance

Gas	Gas GWP	New Units		Existing Units	Disposed Units		CO ₂ Emissions (lb)
		Charge (lb)	Capacity (lb)	Recharge (lb)	Capacity (lb)	Recovered (lb)	
CO ₂	1						
HFC-23	11,700						
HFC-125	2,800						
HFC-134a	1,300						
HFC-227ea	2,900						
HFC-236fa	6,300						
CF ₄	6,500						
C ₄ F ₁₀	7,000						

1.0. Indirect Emissions from Purchase of Electricity

Instructions:

(A) Enter total electricity purchased (kWh) for each unit, facility or site in ORANGE cells of Table 1 for each eGRID subregion. Final emissions data is provided in Table 2.

Step 1. Select eGRID "Subregion" from drop box and enter "Electricity Purchased" for each unit, facility or site.

- Use map (Figure 1) at bottom of sheet to determine appropriate eGRID subregion.
- Emission rates for each eGRID subregion are provided in Table 3.
- See example entry in first row (RED Italics).

Table 1. Total Amount of Electricity Purchased by eGRID Subregion

Source ID	Source Description	eGRID Subregion	Electricity Purchased (kWh)	CO ₂ Emissions (lb)	CH ₄ Emissions (lb)	N ₂ O Emissions (lb)
Craig RD Local Utilities	Alaska Power and Telephone	AKMS (ASCC Miscellaneous)	157,846	75,781.7	3.8	0.7
Total Emissions for All Subregions			157,846	75,781.7	3.8	0.7

Table 2. Total Emissions from Electricity Purchases

Total CO₂ Emissions - Equivalent (metric tons)	34.5
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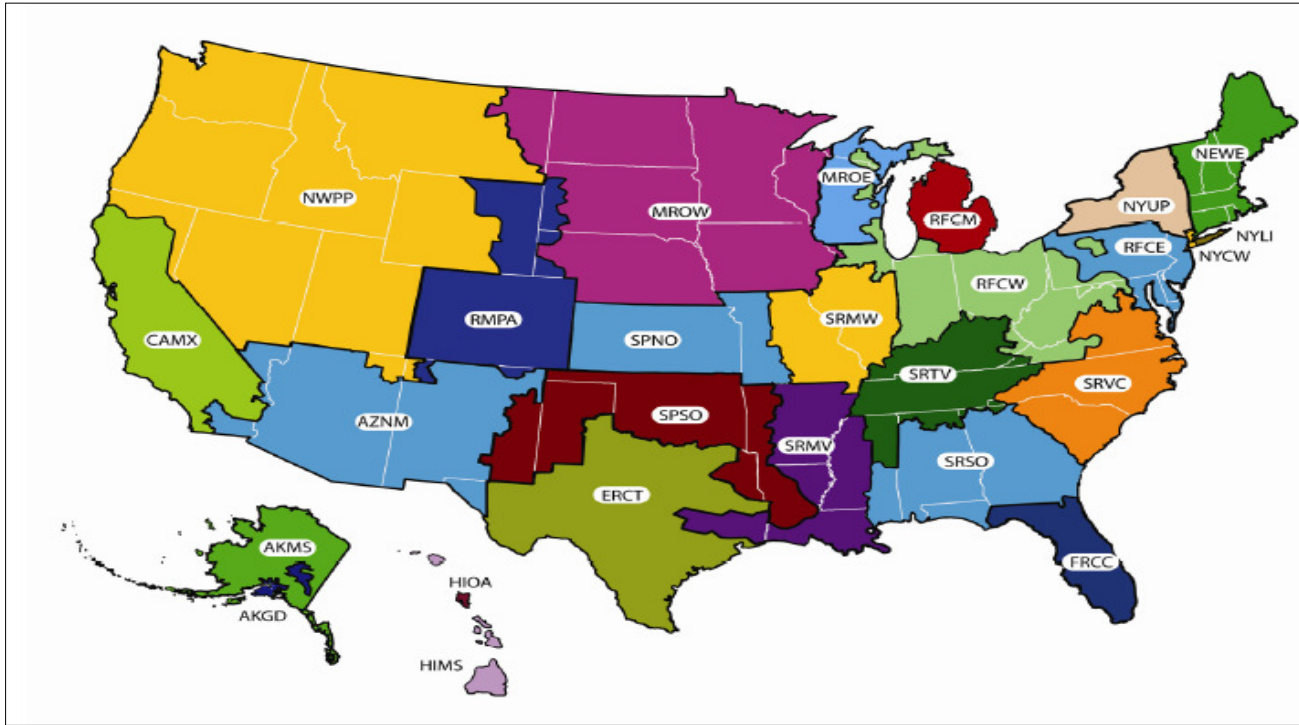
Notes:

1. CO₂, CH₄ and N₂O emissions estimated using methodology provided in *Climate Leaders Greenhouse Gas Inventory Protocol - Indirect Emissions from Purchase/Sales of Electricity and Steam (July 2008)*.
2. Emission factors in Table 3 are from eGRID2006, which represents 2004 national data.

Table 3. CO₂, CH₄ and N₂O eGRID2006 Emission Factors by Subregion (2004 Data)

Subregion	CO ₂ Factor (lb CO ₂ /MWh)	CH ₄ Factor (lb CH ₄ /MWh)	N ₂ O Factor (lb N ₂ O/MWh)
AKGD (ASCC Alaska Grid)	1,257.19	0.0266	0.0064
AKMS (ASCC Miscellaneous)	480.10	0.0238	0.0044
AZNM (WECC Southwest)	1,254.02	0.0175	0.0148
CAMX (WECC California)	878.71	0.0366	0.0085
ERCT (ERCOT All)	1,420.56	0.0214	0.0148
FRCC (FRCC All)	1,327.66	0.0528	0.0150
HIMS (HICC Miscellaneous)	1,456.17	0.0999	0.0182
HIOA (HICC Oahu)	1,728.12	0.0911	0.0212
MORE (MRO East)	1,858.72	0.0314	0.0289
MROW (MRO West)	1,813.81	0.0264	0.0287
NEWE (NPCC New England)	908.90	0.0795	0.0152
NWPP (WECC Northwest)	921.10	0.0217	0.0140
NYCW (NPCC NYC/Westchester)	922.22	0.0384	0.0060
NYLI (NPCC Long Island)	1,412.20	0.0684	0.0117
NYUP (NPCC Upstate NY)	819.68	0.0242	0.0114
RFCE (RFC East)	1,095.53	0.0244	0.0168
RFCM (RFC Michigan)	1,641.41	0.0340	0.0253
RFCW (RFC West)	1,556.39	0.0196	0.0244
RMPA (WECC Rockies)	2,035.81	0.0241	0.0302
SPNO (SPP North)	1,971.42	0.0236	0.0303
SPSO (SPP South)	1,761.14	0.0301	0.0230
SRMV (SERC Mississippi Valley)	1,135.46	0.0413	0.0132
SRMW (SERC Midwest)	1,844.34	0.0214	0.0288
SRSO (SERC South)	1,490.37	0.0388	0.0248
SRTV (SERC Tennessee Valley)	1,494.89	0.0233	0.0237
SRVC (SERC Virginia/Carolina)	1,146.39	0.0291	0.0191

Figure 1. eGRID2006 Subregions (2004 Data)



1.0. Indirect Emissions from Purchase of Electricity

Instructions:

(A) Enter total electricity purchased (kWh) for each unit, facility or site in ORANGE cells of Table 1 for each eGRID subregion. Final emissions data is provided in Table 2.

Step 1. Select eGRID "Subregion" from drop box and enter "Electricity Purchased" for each unit, facility or site.

- Use map (Figure 1) at bottom of sheet to determine appropriate eGRID subregion.
- Emission rates for each eGRID subregion are provided in Table 3.
- See example entry in first row (RED Italics).

Table 1. Total Amount of Electricity Purchased by eGRID Subregion

Source ID	Source Description	eGRID Subregion	Electricity Purchased (kWh)	CO ₂ Emissions (lb)	CH ₄ Emissions (lb)	N ₂ O Emissions (lb)
Hoonah RD Local Utilities	Inside Passage Electric Cooperative	AKMS (ASCC Miscellaneous)	50,547	24,267.6	1.2	0.2
Total Emissions for All Subregions			50,547	24,267.6	1.2	0.2

Table 2. Total Emissions from Electricity Purchases

Total CO₂ Emissions - Equivalent (metric tons)	11.1
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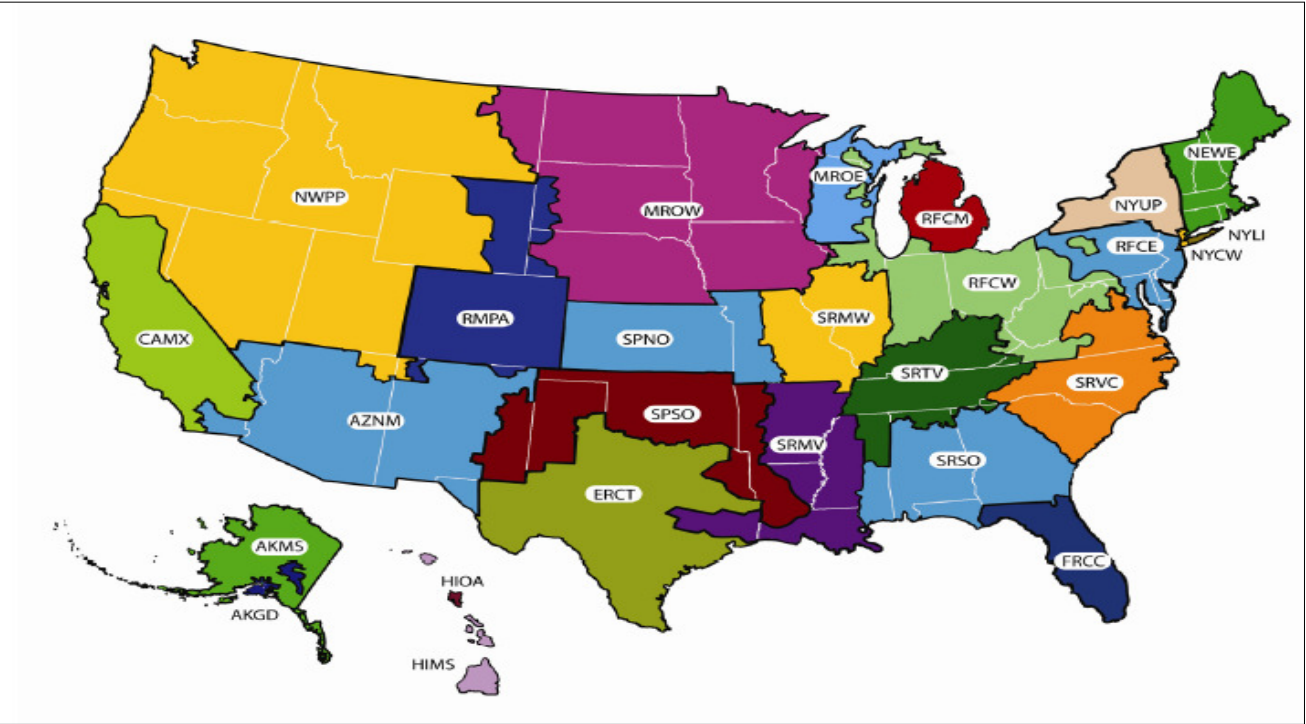
Notes:

1. CO₂, CH₄ and N₂O emissions estimated using methodology provided in *Climate Leaders Greenhouse Gas Inventory Protocol - Indirect Emissions from Purchase/Sales of Electricity and Steam (July 2008)*.
2. Emission factors in Table 3 are from eGRID2006, which represents 2004 national data.

Table 3. CO₂, CH₄ and N₂O eGRID2006 Emission Factors by Subregion (2004 Data)

Subregion	CO ₂ Factor (lb CO ₂ /MWh)	CH ₄ Factor (lb CH ₄ /MWh)	N ₂ O Factor (lb N ₂ O/MWh)
AKGD (ASCC Alaska Grid)	1,257.19	0.0266	0.0064
AKMS (ASCC Miscellaneous)	480.10	0.0238	0.0044
AZNM (WECC Southwest)	1,254.02	0.0175	0.0148
CAMX (WECC California)	878.71	0.0366	0.0085
ERCT (ERCOT All)	1,420.56	0.0214	0.0148
FRCC (FRCC All)	1,327.66	0.0528	0.0150
HIMS (HICC Miscellaneous)	1,456.17	0.0999	0.0182
HIOA (HICC Oahu)	1,728.12	0.0911	0.0212
MORE (MRO East)	1,858.72	0.0314	0.0289
MROW (MRO West)	1,813.81	0.0264	0.0287
NEWE (NPCC New England)	908.90	0.0795	0.0152
NWPP (WECC Northwest)	921.10	0.0217	0.0140
NYCW (NPCC NYC/Westchester)	922.22	0.0384	0.0060
NYLI (NPCC Long Island)	1,412.20	0.0684	0.0117
NYUP (NPCC Upstate NY)	819.68	0.0242	0.0114
RFCE (RFC East)	1,095.53	0.0244	0.0168
RFCM (RFC Michigan)	1,641.41	0.0340	0.0253
RFCW (RFC West)	1,556.39	0.0196	0.0244
RMPA (WECC Rockies)	2,035.81	0.0241	0.0302
SPNO (SPP North)	1,971.42	0.0236	0.0303
SPSO (SPP South)	1,761.14	0.0301	0.0230
SRMV (SERC Mississippi Valley)	1,135.46	0.0413	0.0132
SRMW (SERC Midwest)	1,844.34	0.0214	0.0288
SRSO (SERC South)	1,490.37	0.0388	0.0248
SRTV (SERC Tennessee Valley)	1,494.89	0.0233	0.0237
SRVC (SERC Virginia/Carolina)	1,146.39	0.0291	0.0191

Figure 1. eGRID2006 Subregions (2004 Data)



1.0. Indirect Emissions from Purchase of Electricity

Instructions:

(A) Enter total electricity purchased (kWh) for each unit, facility or site in ORANGE cells of Table 1 for each eGRID subregion. Final emissions data is provided in Table 2.

Step 1. Select eGRID "Subregion" from drop box and enter "Electricity Purchased" for each unit, facility or site.

- Use map (Figure 1) at bottom of sheet to determine appropriate eGRID subregion.
- Emission rates for each eGRID subregion are provided in Table 3.
- See example entry in first row (RED Italics).

Table 1. Total Amount of Electricity Purchased by eGRID Subregion

Source ID	Source Description	eGRID Subregion	Electricity Purchased (kWh)	CO ₂ Emissions (lb)	CH ₄ Emissions (lb)	N ₂ O Emissions (lb)
Juneau RD Local Utility	Alaska Electric Light and Power	AKMS (ASCC Miscellaneous)	223,052	107,087.1	5.3	1.0
Total Emissions for All Subregions			223,052	107,087.1	5.3	1.0

Table 2. Total Emissions from Electricity Purchases

Total CO₂ Emissions - Equivalent (metric tons)	48.8
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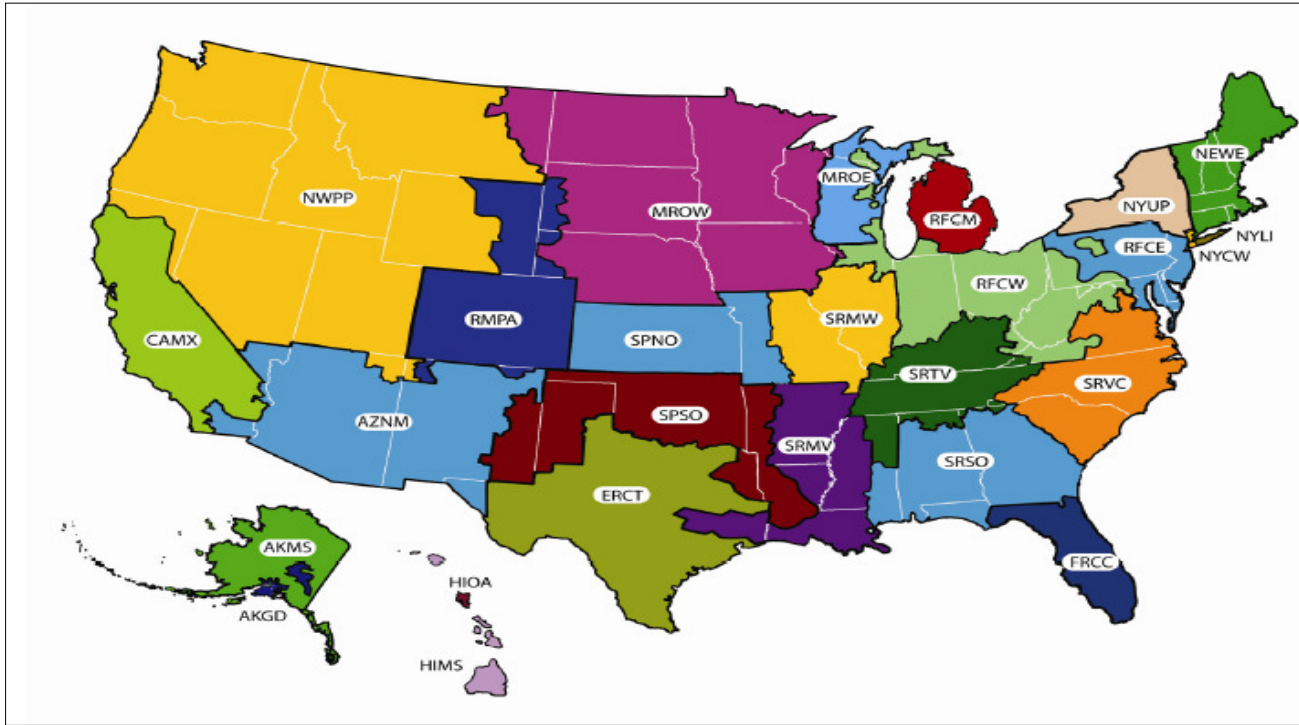
Notes:

1. CO₂, CH₄ and N₂O emissions estimated using methodology provided in *Climate Leaders Greenhouse Gas Inventory Protocol - Indirect Emissions from Purchase/Sales of Electricity and Steam (July 2008)*.
2. Emission factors in Table 3 are from eGRID2006, which represents 2004 national data.

Table 3. CO₂, CH₄ and N₂O eGRID2006 Emission Factors by Subregion (2004 Data)

Subregion	CO ₂ Factor (lb CO ₂ /MWh)	CH ₄ Factor (lb CH ₄ /MWh)	N ₂ O Factor (lb N ₂ O/MWh)
AKGD (ASCC Alaska Grid)	1,257.19	0.0266	0.0064
AKMS (ASCC Miscellaneous)	480.10	0.0238	0.0044
AZNM (WECC Southwest)	1,254.02	0.0175	0.0148
CAMX (WECC California)	878.71	0.0366	0.0085
ERCT (ERCOT All)	1,420.56	0.0214	0.0148
FRCC (FRCC All)	1,327.66	0.0528	0.0150
HIMS (HICC Miscellaneous)	1,456.17	0.0999	0.0182
HIOA (HICC Oahu)	1,728.12	0.0911	0.0212
MORE (MRO East)	1,858.72	0.0314	0.0289
MROW (MRO West)	1,813.81	0.0264	0.0287
NEWE (NPCC New England)	908.90	0.0795	0.0152
NWPP (WECC Northwest)	921.10	0.0217	0.0140
NYCW (NPCC NYC/Westchester)	922.22	0.0384	0.0060
NYLI (NPCC Long Island)	1,412.20	0.0684	0.0117
NYUP (NPCC Upstate NY)	819.68	0.0242	0.0114
RFCE (RFC East)	1,095.53	0.0244	0.0168
RFCM (RFC Michigan)	1,641.41	0.0340	0.0253
RFCW (RFC West)	1,556.39	0.0196	0.0244
RMPA (WECC Rockies)	2,035.81	0.0241	0.0302
SPNO (SPP North)	1,971.42	0.0236	0.0303
SPSO (SPP South)	1,761.14	0.0301	0.0230
SRMV (SERC Mississippi Valley)	1,135.46	0.0413	0.0132
SRMW (SERC Midwest)	1,844.34	0.0214	0.0288
SRSO (SERC South)	1,490.37	0.0388	0.0248
SRTV (SERC Tennessee Valley)	1,494.89	0.0233	0.0237
SRVC (SERC Virginia/Carolina)	1,146.39	0.0291	0.0191

Figure 1. eGRID2006 Subregions (2004 Data)



1.0. Indirect Emissions from Purchase of Electricity

Instructions:

(A) Enter total electricity purchased (kWh) for each unit, facility or site in ORANGE cells of Table 1 for each eGRID subregion. Final emissions data is provided in Table 2.

Step 1. Select eGRID "Subregion" from drop box and enter "Electricity Purchased" for each unit, facility or site.

- Use map (Figure 1) at bottom of sheet to determine appropriate eGRID subregion.
- Emission rates for each eGRID subregion are provided in Table 3.
- See example entry in first row (RED Italics).

Table 1. Total Amount of Electricity Purchased by eGRID Subregion

Source ID	Source Description	eGRID Subregion	Electricity Purchased (kWh)	CO ₂ Emissions (lb)	CH ₄ Emissions (lb)	N ₂ O Emissions (lb)
Ketchikan SO	Local Utilities	AKMS (ASCC Miscellaneous)				
Ketchikan	Ketchikan Public Util	AKMS (ASCC Miscellaneous)	479,640	230,274.7	11.4	2.1
Total Emissions for All Subregions			479,640	230,274.7	11.4	2.1

Table 2. Total Emissions from Electricity Purchases

Total CO₂ Emissions - Equivalent (metric tons)	104.9
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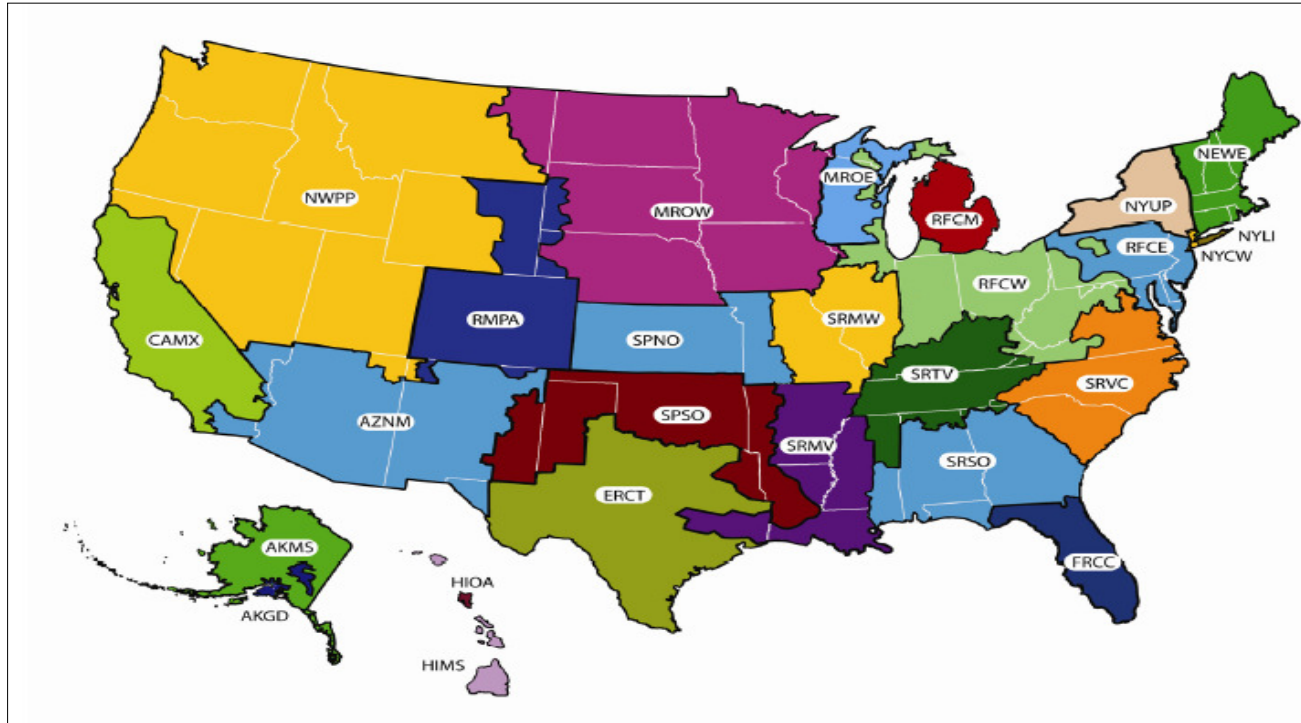
Notes:

1. CO₂, CH₄ and N₂O emissions estimated using methodology provided in *Climate Leaders Greenhouse Gas Inventory Protocol - Indirect Emissions from Purchase/Sales of Electricity and Steam (July 2008)*.
2. Emission factors in Table 3 are from eGRID2006, which represents 2004 national data.

Table 3. CO₂, CH₄ and N₂O eGRID2006 Emission Factors by Subregion (2004 Data)

Subregion	CO₂ Factor (lb CO₂/MWh)	CH₄ Factor (lb CH₄/MWh)	N₂O Factor (lb N₂O/MWh)
AKGD (ASCC Alaska Grid)	1,257.19	0.0266	0.0064
AKMS (ASCC Miscellaneous)	480.10	0.0238	0.0044
AZNM (WECC Southwest)	1,254.02	0.0175	0.0148
CAMX (WECC California)	878.71	0.0366	0.0085
ERCT (ERCOT All)	1,420.56	0.0214	0.0148
FRCC (FRCC All)	1,327.66	0.0528	0.0150
HIMS (HICC Miscellaneous)	1,456.17	0.0999	0.0182
HIOA (HICC Oahu)	1,728.12	0.0911	0.0212
MORE (MRO East)	1,858.72	0.0314	0.0289
MROW (MRO West)	1,813.81	0.0264	0.0287
NEWE (NPCC New England)	908.90	0.0795	0.0152
NWPP (WECC Northwest)	921.10	0.0217	0.0140
NYCW (NPCC NYC/Westchester)	922.22	0.0384	0.0060
NYLI (NPCC Long Island)	1,412.20	0.0684	0.0117
NYUP (NPCC Upstate NY)	819.68	0.0242	0.0114
RFCE (RFC East)	1,095.53	0.0244	0.0168
RFCM (RFC Michigan)	1,641.41	0.0340	0.0253
RFCW (RFC West)	1,556.39	0.0196	0.0244
RMPA (WECC Rockies)	2,035.81	0.0241	0.0302
SPNO (SPP North)	1,971.42	0.0236	0.0303
SPSO (SPP South)	1,761.14	0.0301	0.0230
SRMV (SERC Mississippi Valley)	1,135.46	0.0413	0.0132
SRMW (SERC Midwest)	1,844.34	0.0214	0.0288
SRSO (SERC South)	1,490.37	0.0388	0.0248
SRTV (SERC Tennessee Valley)	1,494.89	0.0233	0.0237
SRVC (SERC Virginia/Carolina)	1,146.39	0.0291	0.0191

Figure 1. eGRID2006 Subregions (2004 Data)



1.0. Indirect Emissions from Purchase of Electricity

Instructions:

(A) Enter total electricity purchased (kWh) for each unit, facility or site in ORANGE cells of Table 1 for each eGRID subregion. Final emissions data is provided in Table 2.

Step 1. Select eGRID "Subregion" from drop box and enter "Electricity Purchased" for each unit, facility or site.

- Use map (Figure 1) at bottom of sheet to determine appropriate eGRID subregion.
- Emission rates for each eGRID subregion are provided in Table 3.
- See example entry in first row (RED Italics).

Table 1. Total Amount of Electricity Purchased by eGRID Subregion

Source ID	Source Description	eGRID Subregion	Electricity Purchased (kWh)	CO ₂ Emissions (lb)	CH ₄ Emissions (lb)	N ₂ O Emissions (lb)
Petersburg SO Local Utilities	City of Petersburg	AKMS (ASCC Miscellaneous)	171,840	82,500.2	4.1	0.8
Petersburg RD Local Utilities		AKMS (ASCC Miscellaneous)	160,772	77,186.5	3.8	0.7
Total Emissions for All Subregions			332,612	159,686.7	7.9	1.5

Table 2. Total Emissions from Electricity Purchases

Total CO₂ Emissions - Equivalent (metric tons)	72.7
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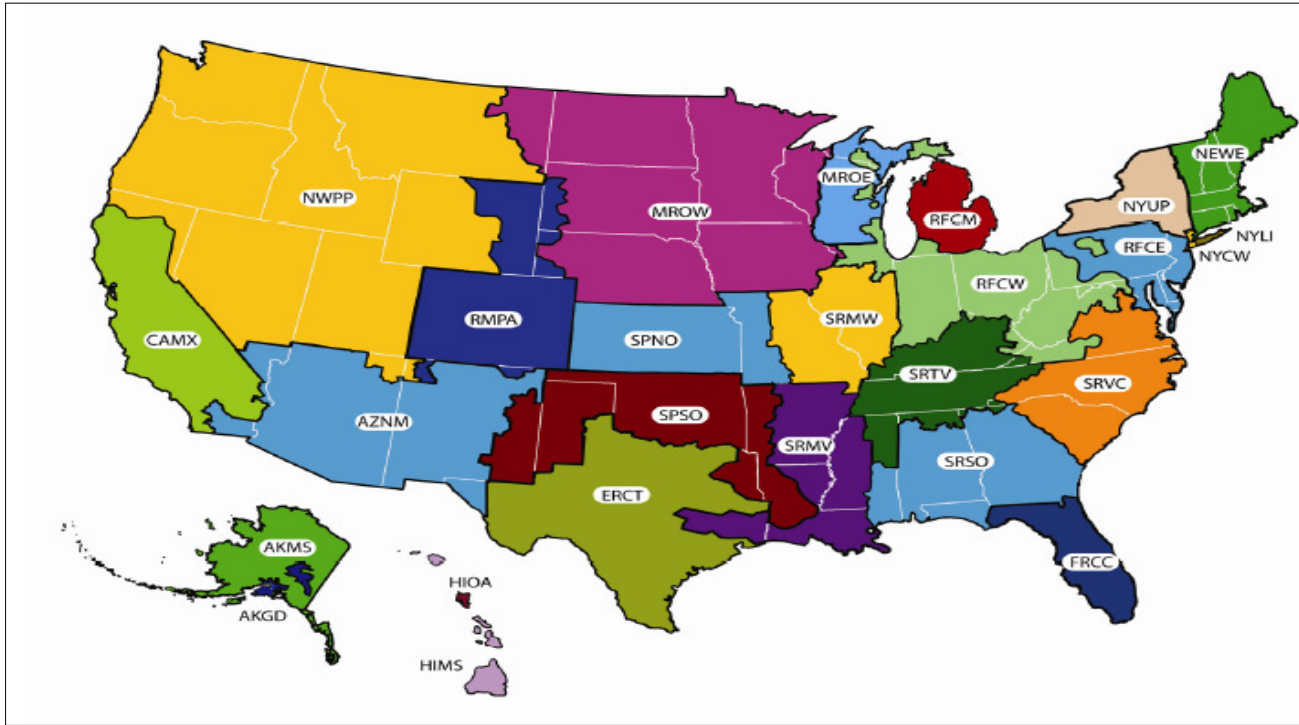
Notes:

1. CO₂, CH₄ and N₂O emissions estimated using methodology provided in *Climate Leaders Greenhouse Gas Inventory Protocol - Indirect Emissions from Purchase/Sales of Electricity and Steam (July 2008)*.
2. Emission factors in Table 3 are from eGRID2006, which represents 2004 national data.

Table 3. CO₂, CH₄ and N₂O eGRID2006 Emission Factors by Subregion (2004 Data)

Subregion	CO ₂ Factor (lb CO ₂ /MWh)	CH ₄ Factor (lb CH ₄ /MWh)	N ₂ O Factor (lb N ₂ O/MWh)
AKGD (ASCC Alaska Grid)	1,257.19	0.0266	0.0064
AKMS (ASCC Miscellaneous)	480.10	0.0238	0.0044
AZNM (WECC Southwest)	1,254.02	0.0175	0.0148
CAMX (WECC California)	878.71	0.0366	0.0085
ERCT (ERCOT All)	1,420.56	0.0214	0.0148
FRCC (FRCC All)	1,327.66	0.0528	0.0150
HIMS (HICC Miscellaneous)	1,456.17	0.0999	0.0182
HIOA (HICC Oahu)	1,728.12	0.0911	0.0212
MORE (MRO East)	1,858.72	0.0314	0.0289
MROW (MRO West)	1,813.81	0.0264	0.0287
NEWE (NPCC New England)	908.90	0.0795	0.0152
NWPP (WECC Northwest)	921.10	0.0217	0.0140
NYCW (NPCC NYC/Westchester)	922.22	0.0384	0.0060
NYLI (NPCC Long Island)	1,412.20	0.0684	0.0117
NYUP (NPCC Upstate NY)	819.68	0.0242	0.0114
RFCE (RFC East)	1,095.53	0.0244	0.0168
RFCM (RFC Michigan)	1,641.41	0.0340	0.0253
RFCW (RFC West)	1,556.39	0.0196	0.0244
RMPA (WECC Rockies)	2,035.81	0.0241	0.0302
SPNO (SPP North)	1,971.42	0.0236	0.0303
SPSO (SPP South)	1,761.14	0.0301	0.0230
SRMV (SERC Mississippi Valley)	1,135.46	0.0413	0.0132
SRMW (SERC Midwest)	1,844.34	0.0214	0.0288
SRSO (SERC South)	1,490.37	0.0388	0.0248
SRTV (SERC Tennessee Valley)	1,494.89	0.0233	0.0237
SRVC (SERC Virginia/Carolina)	1,146.39	0.0291	0.0191

Figure 1. eGRID2006 Subregions (2004 Data)



1.0. Indirect Emissions from Purchase of Electricity

Instructions:

(A) Enter total electricity purchased (kWh) for each unit, facility or site in ORANGE cells of Table 1 for each eGRID subregion. Final emissions data is provided in Table 2.

Step 1. Select eGRID "Subregion" from drop box and enter "Electricity Purchased" for each unit, facility or site.

- Use map (Figure 1) at bottom of sheet to determine appropriate eGRID subregion.
- Emission rates for each eGRID subregion are provided in Table 3.
- See example entry in first row (RED Italics).

Table 1. Total Amount of Electricity Purchased by eGRID Subregion

Source ID	Source Description	eGRID Subregion	Electricity Purchased (kWh)	CO ₂ Emissions (lb)	CH ₄ Emissions (lb)	N ₂ O Emissions (lb)
Sitka RD Local Utilities	City and Borough of Sitka	AKMS (ASCC Miscellaneous)	24,163	11,600.6	0.6	0.1
Total Emissions for All Subregions			24,163	11,600.6	0.6	0.1

Table 2. Total Emissions from Electricity Purchases

Total CO₂ Emissions - Equivalent (metric tons)	5.3
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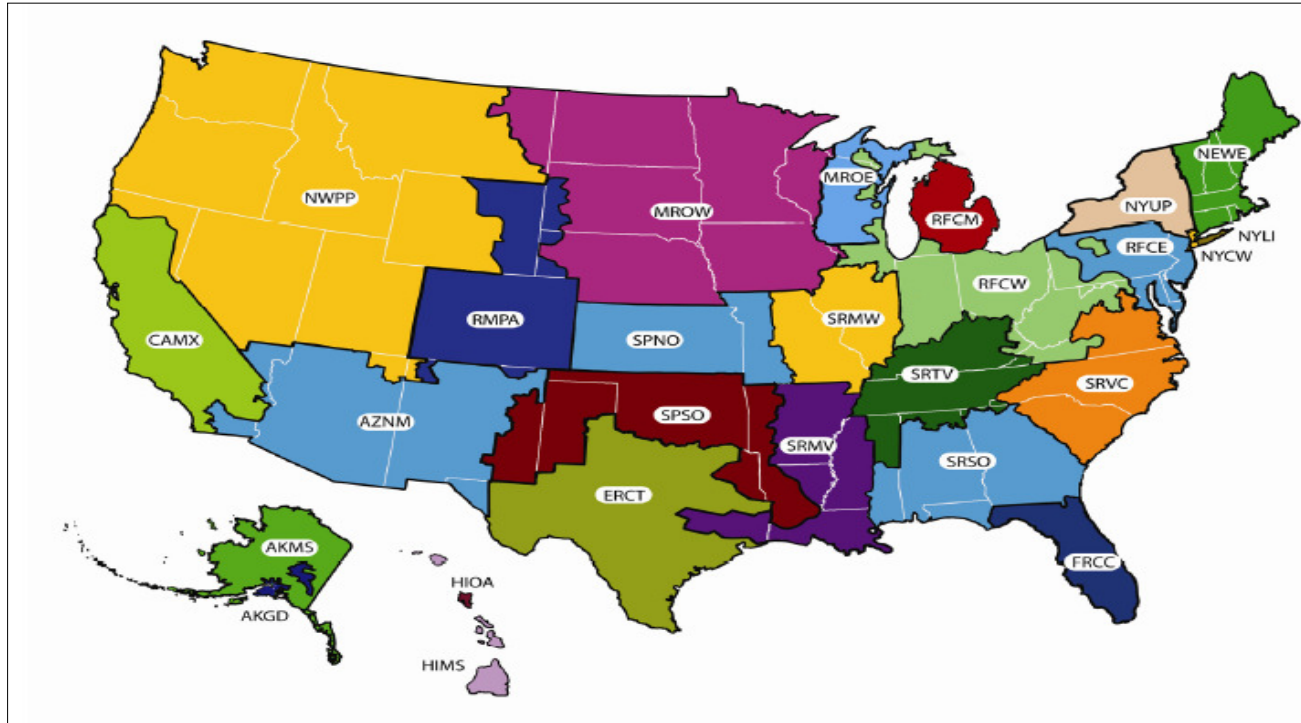
Notes:

1. CO₂, CH₄ and N₂O emissions estimated using methodology provided in *Climate Leaders Greenhouse Gas Inventory Protocol - Indirect Emissions from Purchase/Sales of Electricity and Steam (July 2008)*.
2. Emission factors in Table 3 are from eGRID2006, which represents 2004 national data.

Table 3. CO₂, CH₄ and N₂O eGRID2006 Emission Factors by Subregion (2004 Data)

Subregion	CO ₂ Factor (lb CO ₂ /MWh)	CH ₄ Factor (lb CH ₄ /MWh)	N ₂ O Factor (lb N ₂ O/MWh)
AKGD (ASCC Alaska Grid)	1,257.19	0.0266	0.0064
AKMS (ASCC Miscellaneous)	480.10	0.0238	0.0044
AZNM (WECC Southwest)	1,254.02	0.0175	0.0148
CAMX (WECC California)	878.71	0.0366	0.0085
ERCT (ERCOT All)	1,420.56	0.0214	0.0148
FRCC (FRCC All)	1,327.66	0.0528	0.0150
HIMS (HICC Miscellaneous)	1,456.17	0.0999	0.0182
HIOA (HICC Oahu)	1,728.12	0.0911	0.0212
MORE (MRO East)	1,858.72	0.0314	0.0289
MROW (MRO West)	1,813.81	0.0264	0.0287
NEWE (NPCC New England)	908.90	0.0795	0.0152
NWPP (WECC Northwest)	921.10	0.0217	0.0140
NYCW (NPCC NYC/Westchester)	922.22	0.0384	0.0060
NYLI (NPCC Long Island)	1,412.20	0.0684	0.0117
NYUP (NPCC Upstate NY)	819.68	0.0242	0.0114
RFCE (RFC East)	1,095.53	0.0244	0.0168
RFCM (RFC Michigan)	1,641.41	0.0340	0.0253
RFCW (RFC West)	1,556.39	0.0196	0.0244
RMPA (WECC Rockies)	2,035.81	0.0241	0.0302
SPNO (SPP North)	1,971.42	0.0236	0.0303
SPSO (SPP South)	1,761.14	0.0301	0.0230
SRMV (SERC Mississippi Valley)	1,135.46	0.0413	0.0132
SRMW (SERC Midwest)	1,844.34	0.0214	0.0288
SRSO (SERC South)	1,490.37	0.0388	0.0248
SRTV (SERC Tennessee Valley)	1,494.89	0.0233	0.0237
SRVC (SERC Virginia/Carolina)	1,146.39	0.0291	0.0191

Figure 1. eGRID2006 Subregions (2004 Data)



1.0. Indirect Emissions from Purchase of Electricity (THORNE BAY)

Instructions:

(A) Enter total electricity purchased (kWh) for each unit, facility or site in ORANGE cells of Table 1 for each eGRID subregion. Final emissions data is provided in Table 2.

Step 1. Select eGRID "Subregion" from drop box and enter "Electricity Purchased" for each unit, facility or site.

- Use map (Figure 1) at bottom of sheet to determine appropriate eGRID subregion.
- Emission rates for each eGRID subregion are provided in Table 3.
- See example entry in first row (RED Italics).

Table 1. Total Amount of Electricity Purchased by eGRID Subregion

Source ID	Source Description	eGRID Subregion	Electricity Purchased (kWh)	CO ₂ Emissions (lb)	CH ₄ Emissions (lb)	N ₂ O Emissions (lb)
Thorne Bay RD Local Utilities	Alaska Power and Telephone	AKMS (ASCC Miscellaneous)	216,750	104,061.5	5.2	1.0
Total Emissions for All Subregions			216,750	104,061.5	5.2	1.0

Table 2. Total Emissions from Electricity Purchases

Total CO₂ Emissions - Equivalent (metric tons)	47.4
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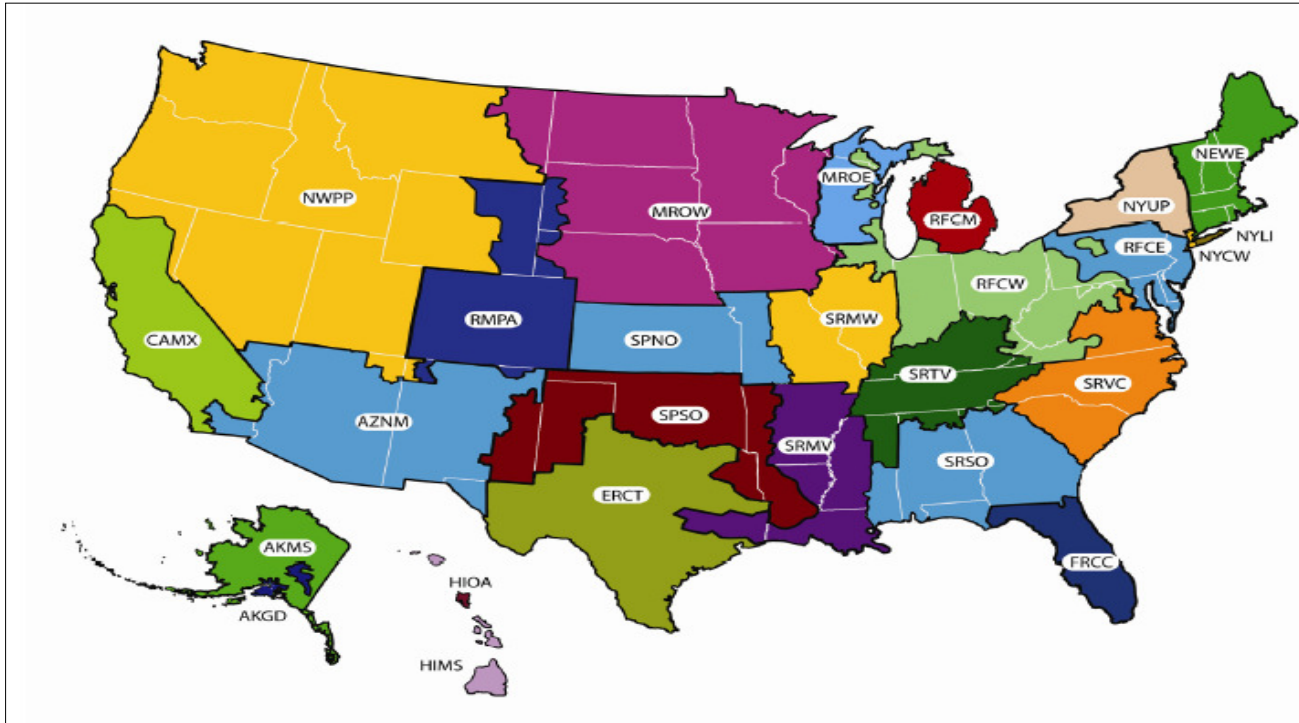
Notes:

1. CO₂, CH₄ and N₂O emissions estimated using methodology provided in *Climate Leaders Greenhouse Gas Inventory Protocol - Indirect Emissions from Purchase/Sales of Electricity and Steam (July 2008)*.
2. Emission factors in Table 3 are from eGRID2006, which represents 2004 national data.

Table 3. CO₂, CH₄ and N₂O eGRID2006 Emission Factors by Subregion (2004 Data)

Subregion	CO ₂ Factor (lb CO ₂ /MWh)	CH ₄ Factor (lb CH ₄ /MWh)	N ₂ O Factor (lb N ₂ O/MWh)
AKGD (ASCC Alaska Grid)	1,257.19	0.0266	0.0064
AKMS (ASCC Miscellaneous)	480.10	0.0238	0.0044
AZNM (WECC Southwest)	1,254.02	0.0175	0.0148
CAMX (WECC California)	878.71	0.0366	0.0085
ERCT (ERCOT All)	1,420.56	0.0214	0.0148
FRCC (FRCC All)	1,327.66	0.0528	0.0150
HIMS (HICC Miscellaneous)	1,456.17	0.0999	0.0182
HIOA (HICC Oahu)	1,728.12	0.0911	0.0212
MORE (MRO East)	1,858.72	0.0314	0.0289
MROW (MRO West)	1,813.81	0.0264	0.0287
NEWE (NPCC New England)	908.90	0.0795	0.0152
NWPP (WECC Northwest)	921.10	0.0217	0.0140
NYCW (NPCC NYC/Westchester)	922.22	0.0384	0.0060
NYLI (NPCC Long Island)	1,412.20	0.0684	0.0117
NYUP (NPCC Upstate NY)	819.68	0.0242	0.0114
RFCE (RFC East)	1,095.53	0.0244	0.0168
RFCM (RFC Michigan)	1,641.41	0.0340	0.0253
RFCW (RFC West)	1,556.39	0.0196	0.0244
RMPA (WECC Rockies)	2,035.81	0.0241	0.0302
SPNO (SPP North)	1,971.42	0.0236	0.0303
SPSO (SPP South)	1,761.14	0.0301	0.0230
SRMV (SERC Mississippi Valley)	1,135.46	0.0413	0.0132
SRMW (SERC Midwest)	1,844.34	0.0214	0.0288
SRSO (SERC South)	1,490.37	0.0388	0.0248
SRTV (SERC Tennessee Valley)	1,494.89	0.0233	0.0237
SRVC (SERC Virginia/Carolina)	1,146.39	0.0291	0.0191

Figure 1. eGRID2006 Subregions (2004 Data)



1.0. Indirect Emissions from Purchase of Electricity

Instructions:

(A) Enter total electricity purchased (kWh) for each unit, facility or site in ORANGE cells of Table 1 for each eGRID subregion. Final emissions data is provided in Table 2.

Step 1. Select eGRID "Subregion" from drop box and enter "Electricity Purchased" for each unit, facility or site.

- Use map (Figure 1) at bottom of sheet to determine appropriate eGRID subregion.
- Emission rates for each eGRID subregion are provided in Table 3.
- See example entry in first row (RED Italics).

Table 1. Total Amount of Electricity Purchased by eGRID Subregion

Source ID	Source Description	eGRID Subregion	Electricity Purchased (kWh)	CO ₂ Emissions (lb)	CH ₄ Emissions (lb)	N ₂ O Emissions (lb)
Wrangell RD Local Utilities	City of Wrangell	AKMS (ASCC Miscellaneous)	164,599	79,023.8	3.9	0.7
Total Emissions for All Subregions			164,599	79,023.8	3.9	0.7

Table 2. Total Emissions from Electricity Purchases

Total CO₂ Emissions - Equivalent (metric tons)	36.0
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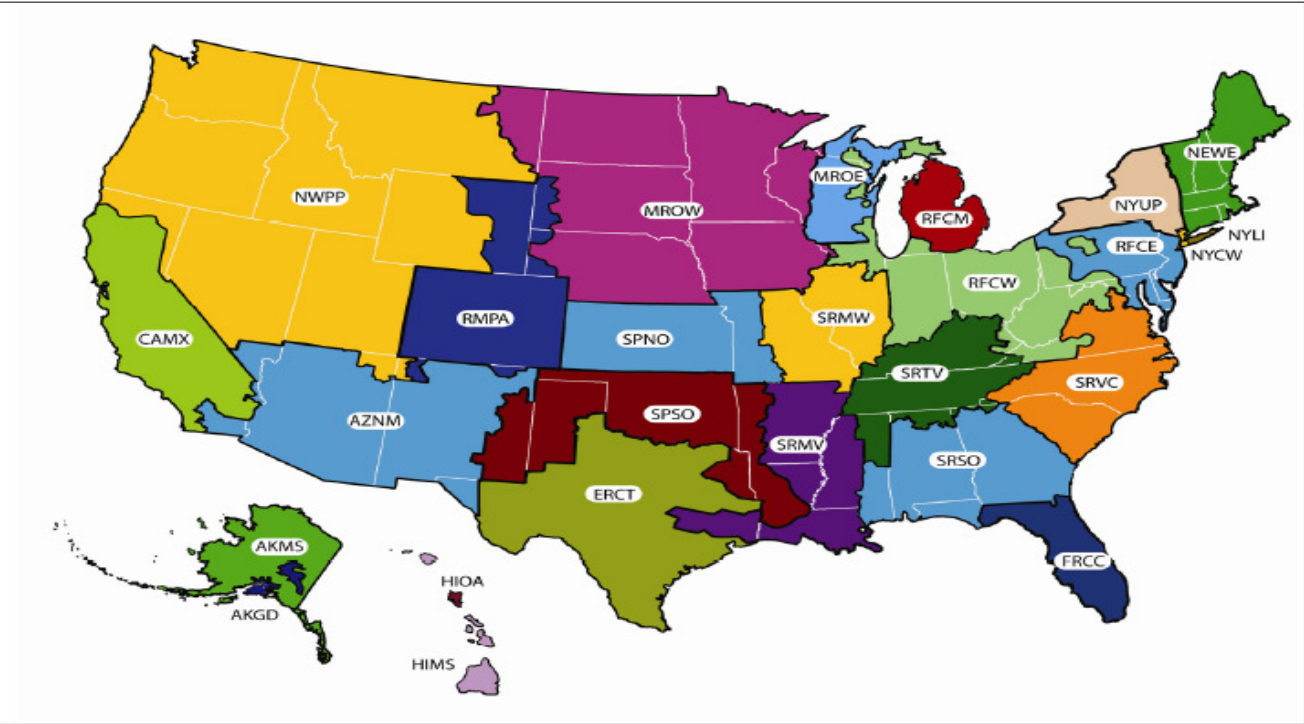
Notes:

1. CO₂, CH₄ and N₂O emissions estimated using methodology provided in *Climate Leaders Greenhouse Gas Inventory Protocol - Indirect Emissions from Purchase/Sales of Electricity and Steam (July 2008)*.
2. Emission factors in Table 3 are from eGRID2006, which represents 2004 national data.

Table 3. CO₂, CH₄ and N₂O eGRID2006 Emission Factors by Subregion (2004 Data)

Subregion	CO ₂ Factor (lb CO ₂ /MWh)	CH ₄ Factor (lb CH ₄ /MWh)	N ₂ O Factor (lb N ₂ O/MWh)
AKGD (ASCC Alaska Grid)	1,257.19	0.0266	0.0064
AKMS (ASCC Miscellaneous)	480.10	0.0238	0.0044
AZNM (WECC Southwest)	1,254.02	0.0175	0.0148
CAMX (WECC California)	878.71	0.0366	0.0085
ERCT (ERCOT All)	1,420.56	0.0214	0.0148
FRCC (FRCC All)	1,327.66	0.0528	0.0150
HIMS (HICC Miscellaneous)	1,456.17	0.0999	0.0182
HIOA (HICC Oahu)	1,728.12	0.0911	0.0212
MORE (MRO East)	1,858.72	0.0314	0.0289
MROW (MRO West)	1,813.81	0.0264	0.0287
NEWE (NPCC New England)	908.90	0.0795	0.0152
NWPP (WECC Northwest)	921.10	0.0217	0.0140
NYCW (NPCC NYC/Westchester)	922.22	0.0384	0.0060
NYLI (NPCC Long Island)	1,412.20	0.0684	0.0117
NYUP (NPCC Upstate NY)	819.68	0.0242	0.0114
RFCE (RFC East)	1,095.53	0.0244	0.0168
RFCM (RFC Michigan)	1,641.41	0.0340	0.0253
RFCW (RFC West)	1,556.39	0.0196	0.0244
RMPA (WECC Rockies)	2,035.81	0.0241	0.0302
SPNO (SPP North)	1,971.42	0.0236	0.0303
SPSO (SPP South)	1,761.14	0.0301	0.0230
SRMV (SERC Mississippi Valley)	1,135.46	0.0413	0.0132
SRMW (SERC Midwest)	1,844.34	0.0214	0.0288
SRSO (SERC South)	1,490.37	0.0388	0.0248
SRTV (SERC Tennessee Valley)	1,494.89	0.0233	0.0237
SRVC (SERC Virginia/Carolina)	1,146.39	0.0291	0.0191

Figure 1. eGRID2006 Subregions (2004 Data)



1.0. Indirect Emissions from Purchase of Electricity

Instructions:

(A) Enter total electricity purchased (kWh) for each unit, facility or site in ORANGE cells of Table 1 for each eGRID subregion. Final emissions data is provided in Table 2.

Step 1. Select eGRID "Subregion" from drop box and enter "Electricity Purchased" for each unit, facility or site.

- Use map (Figure 1) at bottom of sheet to determine appropriate eGRID subregion.
- Emission rates for each eGRID subregion are provided in Table 3.
- See example entry in first row (RED Italics).

Table 1. Total Amount of Electricity Purchased by eGRID Subregion

Source ID	Source Description	eGRID Subregion	Electricity Purchased (kWh)	CO ₂ Emissions (lb)	CH ₄ Emissions (lb)	N ₂ O Emissions (lb)
Yakutat RD	Yakutat Power	AKMS (ASCC Miscellaneous)	2,315	1,111.4	0.1	0.0
Yakutat Office (Leased from Kw)	Yakutat Power	AKMS (ASCC Miscellaneous)				
Total Emissions for All Subregions			2,315	1,111.4	0.1	0.0

Table 2. Total Emissions from Electricity Purchases

Total CO₂ Emissions - Equivalent (metric tons)	0.5
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Notes:

1. CO₂, CH₄ and N₂O emissions estimated using methodology provided in *Climate Leaders Greenhouse Gas Inventory Protocol - Indirect Emissions from Purchase/Sales of Electricity and Steam (July 2008)*.
2. Emission factors in Table 3 are from eGRID2006, which represents 2004 national data.

Table 3. CO₂, CH₄ and N₂O eGRID2006 Emission Factors by Subregion (2004 Data)

Subregion	CO ₂ Factor (lb CO ₂ /MWh)	CH ₄ Factor (lb CH ₄ /MWh)	N ₂ O Factor (lb N ₂ O/MWh)
AKGD (ASCC Alaska Grid)	1,257.19	0.0266	0.0064
AKMS (ASCC Miscellaneous)	480.10	0.0238	0.0044
AZNM (WECC Southwest)	1,254.02	0.0175	0.0148
CAMX (WECC California)	878.71	0.0366	0.0085
ERCT (ERCOT All)	1,420.56	0.0214	0.0148
FRCC (FRCC All)	1,327.66	0.0528	0.0150
HIMS (HICC Miscellaneous)	1,456.17	0.0999	0.0182
HIOA (HICC Oahu)	1,728.12	0.0911	0.0212
MORE (MRO East)	1,858.72	0.0314	0.0289
MROW (MRO West)	1,813.81	0.0264	0.0287
NEWE (NPCC New England)	908.90	0.0795	0.0152
NWPP (WECC Northwest)	921.10	0.0217	0.0140
NYCW (NPCC NYC/Westchester)	922.22	0.0384	0.0060
NYLI (NPCC Long Island)	1,412.20	0.0684	0.0117
NYUP (NPCC Upstate NY)	819.68	0.0242	0.0114
RFCE (RFC East)	1,095.53	0.0244	0.0168
RFCM (RFC Michigan)	1,641.41	0.0340	0.0253
RFCW (RFC West)	1,556.39	0.0196	0.0244
RMPA (WECC Rockies)	2,035.81	0.0241	0.0302
SPNO (SPP North)	1,971.42	0.0236	0.0303
SPSO (SPP South)	1,761.14	0.0301	0.0230
SRMV (SERC Mississippi Valley)	1,135.46	0.0413	0.0132
SRMW (SERC Midwest)	1,844.34	0.0214	0.0288
SRSO (SERC South)	1,490.37	0.0388	0.0248
SRTV (SERC Tennessee Valley)	1,494.89	0.0233	0.0237
SRVC (SERC Virginia/Carolina)	1,146.39	0.0291	0.0191

Figure 1. eGRID2006 Subregions (2004 Data)

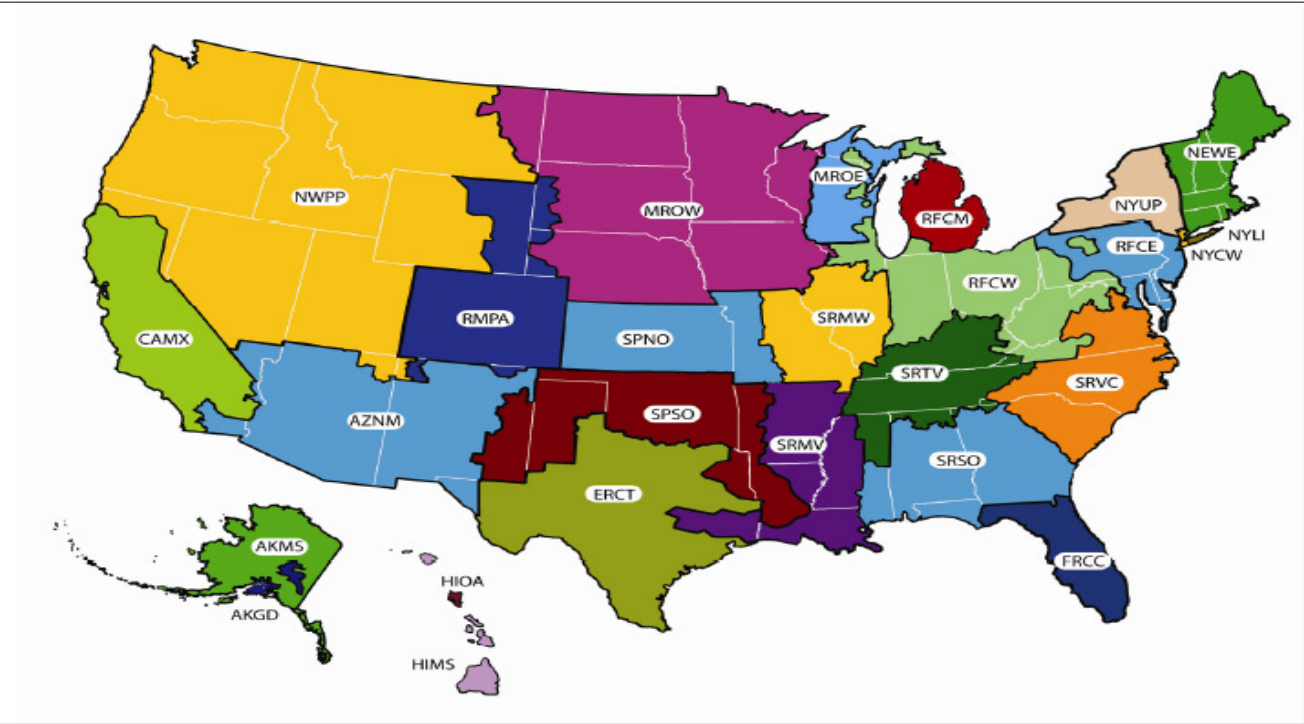


Table 3. Total Emissions From Steam Purchases

Total CO₂ Emissions - Equivalent (metric tons)	0.0
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Notes:

- CO₂ emissions estimated using emission factors provided in Tables B-5 and B-6 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (July 2008)*.
- CH₄ and N₂O emissions estimated using emission factors provided in Tables A-1 (electricity generation sector values), B-1 and B-2 of the *Climate Leaders Greenhouse Gas Inventory Protocol - Direct Emissions from Stationary Combustion Sources (May 2008)*.

Table 4. Default Emission Factors for CO₂, CH₄ and N₂O

Fuel Type	CO₂ Factor (kg/mmBtu)	CH₄ Factor (g/mmBtu)	N₂O Factor (g/mmBtu)
Anthracite Coal	102.58	1	1.6
Bituminous Coal	92.53	1	1.6
Sub-bituminous Coal	96.12	1	1.6
Lignite Coal	95.47	1	1.6
Unspecified (electric utility)	94.31	1	1.6
Coke	101.1	1	1.6
Natural Gas	52.79	1	0.1
Distillate Fuel Oil (#1, 2 & 4)	72.42	3	0.6
Residual Fuel Oil (#5 & 6)	78.01	3	0.6
Kerosene	71.58	3	0.6
Petroleum Coke	101.1	3	0.6
LPG	62.93	3	0.6
Propane	62.73	3	0.6
Wood and Wood Waste	92.93	32	4.2
Landfill Gas (50%CH ₄ ,50%CO ₂)	51.81	1	0.1

Mass			
1 pound (lb)	453.6 grams (g)	0.4536 kilograms (kg)	0.0004536 metric tons (tonne)
1 kilogram (kg)	2.205 pounds (lb)		
1 short ton (ton)	2,000 pounds (lb)	907.2 kilograms (kg)	
1 metric ton (tonne)	2,205 pounds (lb)	1,000 kilograms (kg)	1.102 short tons (tons)

Volume			
1 cubic foot (ft ³)	7.4805 US gallons (gal)	0.1781 barrel (bbl)	
1 cubic foot (ft ³)	28.32 liters (L)	0.02832 cubic meters (m ³)	
1 US gallon (gal)	0.0238 barrel (bbl)	3.785 liters (L)	0.003785 cubic meters (m ³)
1 barrel (bbl)	42 US gallons (gal)	158.99 liters (L)	0.1589 cubic meters (m ³)
1 liter (L)	0.001 cubic meters (m ³)	0.2642 US gallons (gal)	
1 cubic meter (m ³)	6.2897 barrels (bbl)	264.2 US gallons (gal)	1,000 liters (L)

Energy			
1 kilowatt hour (kWh)	3,412 Btu (Btu)	3,600 kilojoules (KJ)	
1 megajoule (MJ)	0.001 gigajoules (GJ)		
1 gigajoule (GJ)	0.9478 million Btu (mmBtu)	277.8 kilowatt hours (kWh)	
1 Btu (Btu)	1,055 joules (J)		
1 million Btu (mmBtu)	1.055 gigajoules (GJ)	293 kilowatt hours (kWh)	
1 therm (therm)	100,000 Btu (Btu)	0.1055 gigajoules (GJ)	29.3 kilowatt hours (kWh)
100 ft ³ of natural gas (scf)	1.03 therm (therm)	1,030 Btu (Btu)	

Distance	
1 land mile	1.609 land kilometers
1 nautical mile	1.15 land miles

Other	
Kilo	1,000
Mega	1,000,000
Giga	1,000,000,000
Tera	1,000,000,000,000
Molecular Weigh of C	12
Molecular Weight of CO ₂	44