	A	B	C	D	E	F	G	H	I	J
1		**Please Complete and return by February 27**								
2										
3		Fill out only the yellow boxes. Calculation results appear in blue and green columns to the right								
4		Boxes with blue borders have drop down choices. Make sure you're reporting kWHr or MWHrs correctly								
5		If you don't know your eGRID Subregion, ask me, or check the table on the "Input" worksheet at cell AR15								
6		Electricity CO2 factors come from eGRID 2007 and differ from those estimated last year.								
7		Add comments (or questions) wherever needed - we need to understand the assumptions or estimates you've entered.								
8		Make sure you include your name and phone number so I can reach you with any question I have.								
9		Columns M-U yield the CO2 emissions. Columns W- AE show CO2-equivalent emissions								
10		"Other direct fugitives" are in pounds.								
11		If you have refrigerant blends, please report the quantities of the constituents as separate values. If you don't know the composition of a specific								
12										
13										
14		**Dave Moore**		**425-237=1972**						

	A	B	C	D	E	F	G
1							
2							
3		**Site Name ▶**	**Renton**				
4		**City ▶**	**Renton**				
5		**State ▶**	**WA**				
6		**Zip Code ▶**			◀ Enter 5 digit zip code		
7		**Contact Name ▶**	**Sean Caldwell**				
8		**Phone Number ▶**					
9		**eGRID Subregion ▶**	**WECC Northwest**				
10							
11							
12			**▼ yellow boxes ▼**				
13			**2008**	**2007**	**2006**	**2005**	**2004**
14	**Electricity**	kWHr	82,132,565	84,726,000	89,373,144	85,855,782	
15	**Natural Gas**	MMBTU	332,910.0	344,242.7	364,672.0	338,016.4	
16	**#5 or #6 Residual Fuel Oil**	gallons		16,312.0	12,000.0	0.0	
17	**Purchased Steam**	MMBTU					
18	**Comments/Assumptions:**						
19	Other Fuels		**2008**	**2007**	**2006**	**2005**	**2004**
20	**#1, #2 Diesel (on-road - taxed)**	gallons		103,911.2	145,486.4	141,368.0	
21	**#1, #2, #4 Diesel (untaxed)**	gallons		28,106.8	9,561.0	9,723.6	
22	**Bio-diesel (on-road - taxed)**	gallons					
23	**Bio-diesel (untaxed)**	gallons					
24	**Motor Gasoline (on-road - taxed)**	gallons		84,250.9	85,035.2	80,220.2	
25	**Motor Gasoline (untaxed)**	gallons					
26	**Jet A / Jet Fuel**	gallons		0.0	0.0	0.0	
27	**Aviation Gasoline**	gallons		0.0	0.0	0.0	
28	**Propane**	gallons		0.0	1,017.2	0.0	
29	**LPG**	gallons					
30	**CNG**	SCF					
31							
32							
33							

	H	I	J	K	L	M	N	O	P	Q
1										
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10										
11										
12						**2008**	**2007**	**2006**	**2005**	**2004**
13	**2003**	**2002**	**2001**	**2000**	**Utilities**	**CO_2** Metric Tons	**CO_2** Metric Tons	**CO_2** Metric Tons	**CO_2** Metric Tons	**CO_2** Metric Tons
14					**Electricity**	33,613	34,674	36,576	35,136	0
15					**Natural Gas**	17,664	18,266	19,349	17,935	0
16					**#5 or #6 Residual Fuel Oil**	0	192	142	0	0
17					**Purchased Steam**					
18					**Total**	51,277	53,132	56,067	53,072	0
19	**2003**	**2002**	**2001**	**2000**	Other Fuels	**2008**	**2007**	**2006**	**2005**	**2004**
20					**#1, #2 Diesel (on-road - taxed)**	0.00	1,054.27	1,476.09	1,434.31	0.00
21					**#1, #2, #4 Diesel (untaxed)**	0.00	285.17	97.01	98.65	0.00
22					**Bio-diesel (on-road - taxed)**	0.00	0.00	0.00	0.00	0.00
23					**Bio-diesel (untaxed)**	0.00	0.00	0.00	0.00	0.00
24					**Motor Gasoline (on-road - taxed)**	0.00	742.25	749.16	706.74	0.00
25					**Motor Gasoline (untaxed)**	0.00	0.00	0.00	0.00	0.00
26					**Jet A / Jet Fuel**	0.00	0.00	0.00	0.00	0.00
27					**Aviation Gasoline**	0.00	0.00	0.00	0.00	0.00
28					**Propane**	0.00	0.00	5.84	0.00	0.00
29					**LPG**	0.00	0.00	0.00	0.00	0.00
30					**CNG**	0.00	0.00	0.00	0.00	0.00
31										
32					**Total Scope 1**	17,664.2				
33					**Total Scope 2**	33,612.7				

	R	S	T	U	V	W	X	Y	Z
1									
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10									
11									
12	**2003**	**2002**	**2001**	**2000**		**2008**	**2007**	**2006**	**2005**
13	**CO_2** Metric Tons	**CO_2** Metric Tons	**CO_2** Metric Tons	**CO_2** Metric Tons	**Utilities**	**CO_2-eq** Metric Tons	**CO_2-eq** Metric Tons	**CO_2-eq** Metric Tons	**CO_2-eq** Metric Tons
14	0	0	0	0	**Electricity**	33,800	34,867	36,779	35,332
15	0	0	0	0	**Natural Gas**	17,709	18,312	19,399	17,981
16	0	0	0	0	**#5 or #6 Residual Fuel Oil**	0	193	142	0
17					**Purchased Steam**				
18	0	0	0	0	**Total**	763	383	153	77
19	**2003**	**2002**	**2001**	**2000**	**Other Fuels**	**2008**	**2007**	**2006**	**2005**
20	0.00	0.00	0.00	0.00	**#1, #2 Diesel (on-road - taxed)**	0.00	1,060.29	1,484.51	1,442.49
21	0.00	0.00	0.00	0.00	**#1, #2, #4 Diesel (untaxed)**	0.00	286.80	97.56	99.22
22	0.00	0.00	0.00	0.00	**Bio-diesel (on-road - taxed)**	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	**Bio-diesel (untaxed)**	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	**Motor Gasoline (on-road - taxed)**	0.00	746.62	753.57	710.90
25	0.00	0.00	0.00	0.00	**Motor Gasoline (untaxed)**	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	**Jet A / Jet Fuel**	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	**Aviation Gasoline**	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	**Propane**	0.00	0.00	5.88	0.00
29	0.00	0.00	0.00	0.00	**LPG**	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	**CNG**	0.00	0.00	0.00	0.00
31									
32									
33									

	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK
1											
2											
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6											
7											
8											
9											
10											
11											
12	**2004**	**2003**	**2002**	**2001**	**2000**						
13	**CO_2-eq** Metric Tons	**CO_2-eq** Metric Tons	**CO_2-eq** Metric Tons	**CO_2-eq** Metric Tons	**CO_2-eq** Metric Tons						
14	0	0	0.00	0.00	0.00						
15	0	0	0.00	0.00	0.00						
16	0	0	0.00	0.00	0.00						
17											
18	38	19	15.33	7.66	0.77						
19	**2004**	**2003**	**2002**	**2001**	**2000**						
20	0.00	0.00	0.00	0.00	0.00						
21	0.00	0.00	0.00	0.00	0.00						
22	0.00	0.00	0.00	0.00	0.00						
23	0.00	0.00	0.00	0.00	0.00						
24	0.00	0.00	0.00	0.00	0.00						
25	0.00	0.00	0.00	0.00	0.00						
26	0.00	0.00	0.00	0.00	0.00						
27	0.00	0.00	0.00	0.00	0.00						
28	0.00	0.00	0.00	0.00	0.00						
29	0.00	0.00	0.00	0.00	0.00						
30	0.00	0.00	0.00	0.00	0.00						
31											
32											
33											

	AL	AM	AN	AO	AP	AQ	AR	AS	AT
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12	Unit Conversions								
13									
14	Electricity (MWh)			energy (MWh)					
15	kWHr	0.001		BTU	3412000		**eGRID 2007 Subregion**	**eGRID 2007 Subregion Name**	**CO2 (lbs / MWh)**
16	MWHr	1		GJ	3.6		AKGD	ASCC Alaska Grid	1,232.36
17	Natural Gas (MMBtu)			kWh	1000		AKMS	ASCC Miscellaneous	498.86
18	CCF	10.13		MMBTU	3.412		ERCT	ERCOT All	1,324.35
19	GJ	1.055055853		MWh	1		FRCC	FRCC All	1,318.57
20	MMBTU	1		PJ	0.0000036		HIMS	HICC Miscellaneous	1,514.92
21	PJ	1.0055E-06		TJ	0.0036		HIOA	HICC Oahu	1,811.98
22	Therms	10.00238767					MROE	MRO East	1,834.72
23	volume (gallons)			CNG (SCF)			MROW	MRO West	1,821.84
24	cm^3	3785.412		SCF	1		NYLI	NPCC Long Island	1,536.80
25	gallons	1		gallons			NEWE	NPCC New England	927.68
26	kL	3.79E-03					NYCW	NPCC NYC/Westchester	815.45
27	liters	3.785412					NYUP	NPCC Upstate NY	720.80
28	ML	3.79E-06					RFCE	RFC East	1,139.07
29							RFCM	RFC Michigan	1,563.28
30	mass (lbs)						RFCW	RFC West	1,537.82
31	g	453.6					SRMW	SERC Midwest	1,830.51
32	kg	0.4536					SRMV	SERC Mississippi Valley	1,019.74
33	kilotonne	4.536E-07					SRSO	SERC South	1,489.54

	AU	AV	AW	AX	AY	AZ	BA
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15	**CH_4 (lbs / MWh)**	**N_2O (lbs / MWh)**	**CO_2eq (lbs / MWh)**	**CO_2eq (lbs / kWh)**	**Sites**		
16	0.02560	0.00651	1,234.91	1.23491			
17	0.02075	0.00408	500.56	0.50056			
18	0.01865	0.01511	1,329.43	1.32943	Houston San Antonio		
19	0.04592	0.01694	1,324.79	1.32479			
20	0.31468	0.04688	1,536.07	1.53607			
21	0.10947	0.02362	1,821.60	1.82160			
22	0.02759	0.03036	1,844.71	1.84471			
23	0.02800	0.03071	1,831.95	1.83195			
24	0.11541	0.01809	1,544.84	1.54484			
25	0.08649	0.01701	934.77	0.93477			
26	0.03602	0.00546	817.90	0.81790			
27	0.02482	0.01119	724.79	0.72479			
28	0.03027	0.01871	1,145.51	1.14551	Philadelphia		
29	0.03393	0.02717	1,572.42	1.57242			
30	0.01823	0.02571	1,546.18	1.54618	Chicago, ExFO		
31	0.02115	0.03050	1,840.41	1.84041	St. Louis Leadership Ctr		
32	0.02431	0.01171	1,023.88	1.02388			
33	0.02627	0.02547	1,497.99	1.49799	Eglin AFB Macon		

	A	B	C	D	E	F	G
34							
35							
36							
37							
38	Comments/Assumptions:						
39							
40	Other Direct / Fugitive Emissions		2008	2007	2006	2005	2004
41	CO_2	lbs		116.7	208.6	0.0	
42	CH_4	lbs		0.0	235.6	0.0	
43	N_2O	lbs		0.0	0.0	0.0	
44	SF_6	lbs		0.0	0.0	0.0	
45	HFC-23	lbs		20.0	43.5	0.0	
46	HFC-32	lbs		0.0	0.0	0.0	
47	HFC-41	lbs		0.0	0.0	0.0	
48	HFC-43-10mee	lbs		0.0	0.0	0.0	
49	HFC-125	lbs		10.6	24.4	0.0	
50	HFC-134	lbs		0.0	0.0	0.0	
51	HFC-134a	lbs		3,441.0	4,924.3	0.0	
52	HFC-143	lbs		0.0	0.0	0.0	
53	HFC-143a	lbs		12.5	28.9	0.0	
54	HFC-152	lbs		0.0	0.0	0.0	
55	HFC-152a	lbs		0.0	0.0	0.0	
56	HFC-161	lbs		0.0	0.0	0.0	
57	HFC-227ea	lbs		0.0	0.0	0.0	
58	HFC-236cb	lbs		0.0	0.0	0.0	
59	HFC-236ea	lbs		0.0	0.0	0.0	
60	HFC-236fa	lbs		0.0	0.0	0.0	
61	HFC-245ca	lbs		0.0	0.0	0.0	
62	HFC-245fa	lbs		0.0	86.7	0.0	
63	HFC-365mfc	lbs		0.0	0.0	0.0	
64							
65	PFC-14	lbs		0.0	0.0	0.0	
66	PFC-116	lbs		0.0	0.0	0.0	
67	PFC-218	lbs		0.0	0.0	0.0	
68	PFC-318	lbs		0.0	0.0	0.0	

	H	I	J	K	L	M	N	O	P	Q
34					**Total Stationary**	51,276.9				
35					**Total Mobile**	0.0				
36										
37					**Total by year**	51,276.9				
38					totals:					
39						**2008**	**2007**	**2006**	**2005**	**2004**
40	**2003**	**2002**	**2001**	**2000**	**Other Direct / Fugitive Emissions**	**CO_2-eq** Metric Tons	**CO_2-eq** Metric Tons	**CO_2-eq** Metric Tons	**CO_2-eq** Metric Tons	**CO_2-eq** Metric Tons
41					**CO_2**	0.00	0.05	0.09	0.00	0.00
42					**CH_4**	0.00	0.00	2.24	0.00	0.00
43					**N_2O**	0.00	0.00	0.00	0.00	0.00
44					**SF_6**	0.00	0.00	0.00	0.00	0.00
45					**HFC-23**	0.00	106.14	230.86	0.00	0.00
46					**HFC-32**	0.00	0.00	0.00	0.00	0.00
47					**HFC-41**	0.00	0.00	0.00	0.00	0.00
48					**HFC-43-10mee**	0.00	0.00	0.00	0.00	0.00
49					**HFC-125**	0.00	13.41	31.01	0.00	0.00
50					**HFC-134**	0.00	0.00	0.00	0.00	0.00
51					**HFC-134a**	0.00	2,029.03	2,903.73	0.00	0.00
52					**HFC-143**	0.00	0.00	0.00	0.00	0.00
53					**HFC-143a**	0.00	21.51	49.74	0.00	0.00
54					**HFC-152**	0.00	0.00	0.00	0.00	0.00
55					**HFC-152a**	0.00	0.00	0.00	0.00	0.00
56					**HFC-161**	0.00	0.00	0.00	0.00	0.00
57					**HFC-227ea**	0.00	0.00	0.00	0.00	0.00
58					**HFC-236cb**	0.00	0.00	0.00	0.00	0.00
59					**HFC-236ea**	0.00	0.00	0.00	0.00	0.00
60					**HFC-236fa**	0.00	0.00	0.00	0.00	0.00
61					**HFC-245ca**	0.00	0.00	0.00	0.00	0.00
62					**HFC-245fa**	0.00	0.00	37.36	0.00	0.00
63					**HFC-365mfc**	0.00	0.00	0.00	0.00	0.00
64										
65					**PFC-14**	0.00	0.00	0.00	0.00	0.00
66					**PFC-116**	0.00	0.00	0.00	0.00	0.00
67					**PFC-218**	0.00	0.00	0.00	0.00	0.00
68					**PFC-318**	0.00	0.00	0.00	0.00	0.00

	R	S	T	U	V	W	X	Y	Z
34									
35									
36									
37									
38					totals:				
39	2003	2002	2001	2000		2008	2007	2006	2005
40	CO_2-eq Metric Tons	CO_2-eq Metric Tons	CO_2-eq Metric Tons	CO_2-eq Metric Tons	Other Direct / Fugitive Emissions	CO_2-eq Metric Tons	CO_2-eq Metric Tons	CO_2-eq Metric Tons	CO_2-eq Metric Tons
41	0.00	0.00	0.00	0.00	CO_2	0.00	0.05	0.09	0.00
42	0.00	0.00	0.00	0.00	CH_4	0.00	0.00	2.24	0.00
43	0.00	0.00	0.00	0.00	N_2O	0.00	0.00	0.00	0.00
44	0.00	0.00	0.00	0.00	SF_6	0.00	0.00	0.00	0.00
45	0.00	0.00	0.00	0.00	HFC-23	0.00	106.14	230.86	0.00
46	0.00	0.00	0.00	0.00	HFC-32	0.00	0.00	0.00	0.00
47	0.00	0.00	0.00	0.00	HFC-41	0.00	0.00	0.00	0.00
48	0.00	0.00	0.00	0.00	HFC-43-10mee	0.00	0.00	0.00	0.00
49	0.00	0.00	0.00	0.00	HFC-125	0.00	13.41	31.01	0.00
50	0.00	0.00	0.00	0.00	HFC-134	0.00	0.00	0.00	0.00
51	0.00	0.00	0.00	0.00	HFC-134a	0.00	2,029.03	2,903.73	0.00
52	0.00	0.00	0.00	0.00	HFC-143	0.00	0.00	0.00	0.00
53	0.00	0.00	0.00	0.00	HFC-143a	0.00	21.51	49.74	0.00
54	0.00	0.00	0.00	0.00	HFC-152	0.00	0.00	0.00	0.00
55	0.00	0.00	0.00	0.00	HFC-152a	0.00	0.00	0.00	0.00
56	0.00	0.00	0.00	0.00	HFC-161	0.00	0.00	0.00	0.00
57	0.00	0.00	0.00	0.00	HFC-227ea	0.00	0.00	0.00	0.00
58	0.00	0.00	0.00	0.00	HFC-236cb	0.00	0.00	0.00	0.00
59	0.00	0.00	0.00	0.00	HFC-236ea	0.00	0.00	0.00	0.00
60	0.00	0.00	0.00	0.00	HFC-236fa	0.00	0.00	0.00	0.00
61	0.00	0.00	0.00	0.00	HFC-245ca	0.00	0.00	0.00	0.00
62	0.00	0.00	0.00	0.00	HFC-245fa	0.00	0.00	37.36	0.00
63	0.00	0.00	0.00	0.00	HFC-365mfc	0.00	0.00	0.00	0.00
64									
65	0.00	0.00	0.00	0.00	PFC-14	0.00	0.00	0.00	0.00
66	0.00	0.00	0.00	0.00	PFC-116	0.00	0.00	0.00	0.00
67	0.00	0.00	0.00	0.00	PFC-218	0.00	0.00	0.00	0.00
68	0.00	0.00	0.00	0.00	PFC-318	0.00	0.00	0.00	0.00

	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK
34											
35											
36											
37											
38											
39	**2004**	**2003**	**2002**	**2001**	**2000**						
40	CO_2-eq Metric Tons	CO_2-eq Metric Tons	CO_2-eq Metric Tons	CO_2-eq Metric Tons	CO_2-eq Metric Tons						
41	0.00	0.00	0.00	0.00	0.00						
42	0.00	0.00	0.00	0.00	0.00						
43	0.00	0.00	0.00	0.00	0.00						
44	0.00	0.00	0.00	0.00	0.00						
45	0.00	0.00	0.00	0.00	0.00						
46	0.00	0.00	0.00	0.00	0.00						
47	0.00	0.00	0.00	0.00	0.00						
48	0.00	0.00	0.00	0.00	0.00						
49	0.00	0.00	0.00	0.00	0.00						
50	0.00	0.00	0.00	0.00	0.00						
51	0.00	0.00	0.00	0.00	0.00						
52	0.00	0.00	0.00	0.00	0.00						
53	0.00	0.00	0.00	0.00	0.00						
54	0.00	0.00	0.00	0.00	0.00						
55	0.00	0.00	0.00	0.00	0.00						
56	0.00	0.00	0.00	0.00	0.00						
57	0.00	0.00	0.00	0.00	0.00						
58	0.00	0.00	0.00	0.00	0.00						
59	0.00	0.00	0.00	0.00	0.00						
60	0.00	0.00	0.00	0.00	0.00						
61	0.00	0.00	0.00	0.00	0.00						
62	0.00	0.00	0.00	0.00	0.00						
63	0.00	0.00	0.00	0.00	0.00						
64											
65	0.00	0.00	0.00	0.00	0.00						
66	0.00	0.00	0.00	0.00	0.00						
67	0.00	0.00	0.00	0.00	0.00						
68	0.00	0.00	0.00	0.00	0.00						

	AL	AM	AN	AO	AP	AQ	AR	AS	AT
34	lbs	1.00					SRTV	SERC Tennessee Valley	1,510.44
35	metric tonne	4.536E-04					SRVC	SERC Virginia/Carolina	1,134.88
36	short ton	0.0005					SPNO	SPP North	1,960.94
37							SPSO	SPP South	1,658.14
38	Financial Factor Basis Selection							U.S. Average	1329.3469
39							CAMX	WECC California	724.12
40	on a basis of…						NWPP	WECC Northwest	902.24
41	expenses						RMPA	WECC Rockies	1,883.08
42	sales						AZNM	WECC Southwest	1,311.05
43									
44									
45									
46									
47									
48									
49									
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51									
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	AU	AV	AW	AX	AY	AZ	BA
34	0.02005	0.02564	1,518.81	1.51881	Huntsville		
35	0.02377	0.01979	1,141.51	1.14151			
36	0.02382	0.03209	1,971.39	1.97139	Wichita		
37	0.02498	0.02261	1,665.67	1.66567			
38	0.0272666	0.0206025	1336.306274	1.33631			
39	0.03024	0.00808	727.26	0.72726	All California		
40	0.01913	0.01490	907.26	0.90726	All Washington, Oregon		
41	0.02288	0.02875	1,892.47	1.89247			
42	0.01745	0.01794	1,316.98	1.31698	Mesa		
43							
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47							
48							
49							
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	A	B	C	D	E	F	G
69	**PFC-3-1-10**	lbs		0.0	0.0	0.0	
70	**PFC-4-1-12**	lbs		0.0	0.0	0.0	
71	**PFC-5-1-14**	lbs		0.0	0.0	0.0	
72							
73							

	H	I	J	K	L	M	N	O	P	Q
69					**PFC-3-1-10**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
70					**PFC-4-1-12**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
71					**PFC-5-1-14**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
72										
73						0.00				

	R	S	T	U	V	W	X	Y	Z
69	0.00	0.00	0.00	0.00	PFC-3-1-10	0.00	0.00	0.00	0.00
70	0.00	0.00	0.00	0.00	PFC-4-1-12	0.00	0.00	0.00	0.00
71	0.00	0.00	0.00	0.00	PFC-5-1-14	0.00	0.00	0.00	0.00
72									
73									

	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK
69	0.00	0.00	0.00	0.00	0.00						
70	0.00	0.00	0.00	0.00	0.00						
71	0.00	0.00	0.00	0.00	0.00						
72											
73											

	AL	AM	AN	AO	AP	AQ	AR	AS	AT
69									
70									
71									
72									
73									

	AU	AV	AW	AX	AY	AZ	BA
69							
70							
71							
72							
73							

	A	B	C	D	E
1					
2					
3			**Emissions source**	**Corporate data source**	**Activity Data units**
4	**Stationary Combustion**		Natural gas CO_2	Monthly utility bills for each facility	MMBtu
5			Natural Gas CH_4	N/A. Automatic calculation.	MMBtu
6			Natural Gas N_2O	N/A. Automatic calculation.	MMBtu
7			Natural gasCO2-equivalent	N/A. Automatic calculation.	MMBtu
8			Fuel Oil (#1, #2 and #4) CO_2	Monthly fuel purchase records	Gallons
9			Fuel Oil (#1, #2 and #4) CH_4	N/A. Automatic calculation.	
10			Fuel Oil (#1, #2 and #4) N_2O	N/A. Automatic calculation.	
11			Fuel Oil (#1, #2 and #4) - CO_2-Equiv	N/A. Automatic calculation.	
12			Fuel Oil (#5 or #6) CO_2	Monthly fuel purchase records	Gallons
13			Fuel Oil (#5 or #6) CH_4	N/A. Automatic calculation.	
14			Fuel Oil (#5 or #6) N_2O	N/A. Automatic calculation.	
15			Fuel Oil (#5 or #6) - CO_2-Equiv	N/A. Automatic calculation.	
16			Propane CO_2	Monthly fuel purchase records	Gallons
17			Propane CH_4	N/A. Automatic calculation.	
18			Propane N_2O	N/A. Automatic calculation.	
19			Propane - CO_2-Equiv	N/A. Automatic calculation.	
20			Generic Liquid Fuel CH_4	N/A. Automatic calculation.	MMBtu
21			Generic Liquid Fuel N_2O	N/A. Automatic calculation.	MMBtu
22			Anthracite	Monthly fuel purchase records	Short Tons
23			Bituminous	Monthly fuel purchase records	Short Tons
24			Sub-bituminous	Monthly fuel purchase records	Short Tons
25			Lignite	Monthly fuel purchase records	Short Tons
26			Coke	Monthly fuel purchase records	Short Tons
27			CH_4 from combustion of coal	N/A. Automatic calculation.	MMBtu
28			N_2O from combustion of coal	N/A. Automatic calculation.	MMBtu
29			**Emissions source**	**Corporate data source**	**Activity Data units**
30	**Mobile Sources**		Motor gasoline	Fuel purchase receipts	Gallons
31			CH_4 from combustion of liquid fuels (all types)	N/A. Automatic calculation.	Gallons

	F	G	H	I	J
1					
2	**Direct / Fugitive Emission Calculations w/ GWP**				
3	**Quantification Methodology**	**Metric Emission factors**	**English emission factors**	**Emission Factor Units**	**lbs emission / gallon**
4	All units are converted into MMBtu before the emission factor in the next column is applied. MMBTU * EF = CO2	**53.06**	116.98	**kg CO_2/MMBtu or lb CO_2/MMBtu**	
5	MMBtu of Natural Gas * EF * GWP	0.005	0.011023	kg CH_4 /MMBtu or lb CH_4 /MMBtu	
6	MMBtu of Natural Gas * EF * GWP	0.000095	0.000209	kg N_2O/MMBtu or lb N_2O/MMBtu	
7		**53.19**	117.27	**kg CO_2-eq / MMBtu or lb CO2-eq /MMBtu**	
8	Convert to MMBtu. Multiply by EF in next column Gallons of Fuel Oil * 0.1387 MMBTU/gal * EF	73.15	161.27	kg CO_2/MMBtu or lb CO_2/MMBtu	22.36787
9	Gallons of Fuel Oil * 0.1387 MMBTU/gal * EF	0.011	0.024251	kg CH_4 /MMBtu or lb CH_4 /MMBtu	0.00336
10	Gallons of Fuel Oil * 0.1387 MMBTU/gal * EF	0.000601	0.001325	kg N_2O/MMBtu or lb N_2O/MMBtu	0.00018
11	Gallons of Fuel Oil * 0.1387 MMBTU/gal * EF	**73.57**	162.19	**kg CO_2-eq / MMBtu or lb CO2-eq /MMBtu**	22.49547
12	Convert to MMBtu. Multiply by EF in next column Gallons of Fuel Oil * 0.14969 MMBtu/gal * EF	78.80	173.72	kg CO_2/MMBtu or lb CO_2/MMBtu	26.00475
13	Gallons of Fuel Oil * 0.14969 MMBtu/gal * EF	0.011	0.024251	kg CH_4 /MMBtu or lb CH_4 /MMBtu	0.00363
14	Gallons of Fuel Oil * 0.14969 MMBtu/gal * EF	0.000601	0.001325	kg N_2O/MMBtu or lb N_2O/MMBtu	0.00020
15	Gallons of Fuel Oil * 0.14969 MMBtu/gal * EF	**79.22**	174.64	**kg CO_2-eq / MMBtu or lb CO2-eq /MMBtu**	26.14247
16	Convert to MMBtu. Multiply by EF in next column Gallons * 0.09105 MMBtu/gal * EF	63.07	139.05	kg CO_2/MMBtu or lb CO_2/MMBtu	12.66008
17	Gallons * 0.09105 MMBtu/gal * EF	0.011	0.024251	kg CH_4 /MMBtu or lb CH_4 /MMBtu	0.00221
18	Gallons * 0.09105 MMBtu/gal * EF	0.000601	0.001325	kg N_2O/MMBtu or lb N_2O/MMBtu	0.00012
19	Gallons * 0.09105 MMBtu/gal * EF	**63.49**	139.97	**kg CO_2-eq / MMBtu or lb CO2-eq /MMBtu**	12.74385
20	MMBtu of Liquid Fuels * EF * GWP	0.011	0.024251	kg CH4/MMBtu	
21	MMBtu of Liquid Fuels * EF * GWP	0.000601	0.001325	kg N2O/MMBtu	
22	Short Tons of Coal * EF	2,599.83	5,731.64	kg CO_2/Short Ton, or lb CO_2/Short Ton	
23	Short Tons of Coal * EF	2,330.04	5,136.85	kg CO_2/Short Ton, or lb CO_2/Short Ton	
24	Short Tons of Coal * EF	1,674.86	3,692.43	kg CO_2/Short Ton, or lb CO_2/Short Ton	
25	Short Tons of Coal * EF	1,370.32	3,021.03	kg CO_2/Short Ton, or lb CO_2/Short Ton	
26	Short Tons of Coal * EF	2,818.93	6,214.67	kg CO_2/Short Ton, or lb CO_2/Short Ton	
27	MMBtu of Coal * EF * GWP	0.011	0.024251	kg CH_4/Short Ton, or lb CH_4/Short Ton	
28	MMBtu of Coal * EF * GWP	0.00160	0.003527	kg N_2O / Short Ton, lb N_2O / Short Ton	
29	**Quantification Methodology**	**Metric Emission factors**	**English emission factors**	**Emission Factor Units**	**lbs emission / gallon**
30	Gallons * EF	8.81	19.422702	kg CO_2/Gallon lb CO2/Gallon	
31	MMBtu of Liquid Fuels * EF * GWP	0.001	0.003013	kg CH4/Gallon lb CH4/Gallon	

	K	L
1		
2		
3	**Emission Factor Units**	**GWP (Global Warming Potential)**
4		1
5		21
6		310
7		-
8	lb CO_2 / gallon	1
9	lb CH_4 / gallon	21
10	lb N_{2O}/ gallon	310
11	lb CO_2equiv / gallon	-
12	lb CO_2 / gallon	1
13	lb CH_4 / gallon	21
14	lb N_{2O}/ gallon	310
15	lb CO_2equiv / gallon	-
16	lb CO_2 / gallon	1
17	lb CH_4 / gallon	21
18	lb N_{2O}/ gallon	310
19	lb CO_2equiv / gallon	-
20		21
21		310
22		1
23		1
24		1
25		1
26		1
27		21
28		310
29	**Emission Factor Units**	**GWP (Global Warming Potential)**
30		1
31		21

	M	N	O
1			
2			
3	**EF Source**		**Name**
4	U.S. EPA Climate Leaders, Greenhouse Gas Inventory Protocol Core Module Guidance: Direct Emissions from Stationary Combustion Sources, May 2008.		CH_4
5			CO_2
6			HFC-125
7			HFC-134
8			HFC-134a
9			HFC-143
10			HFC-143a
11			HFC-152
12			HFC-152a
13			HFC-161
14			HFC-227ea
15			HFC-23
16			HFC-236cb
17			HFC-236ea
18			HFC-236fa
19			HFC-245ca
20			HFC-245fa
21			HFC-32
22			HFC-365mfc
23			HFC-41
24			HFC-43-10mee
25			N_2O
26			PFC-116
27			PFC-14
28			PFC-218
29	**EF Source**		PFC-3-1-10
30			PFC-318
31			PFC-4-1-12

	P	Q	R	S	T	U
1						
2						
3	**Formula**	**CAS**	**Common Name**	**GWP**		
4	CH_4	74-82-8	Methane	21		
5	CO_2	124-38-9	Carbon Dioxide	1		
6	C2HF5	354-33-6	Pentafluoroethane	2,800		
7	CHF2CHF2	359-35-3	1,1,2,2-Tetrafluoroethane	1,000		
8	CH2FCF3	811-97-2	1,1,1,2-Tetrafluoroethane	1,300		
9	CH2FCHF2	430-66-0	1,1,2-Trifluoroethane	300		
10	CH3CF3	420-46-2	1,1,1-Trifluoroethane	3,800		
11	CH2FCH2F	624-72-6	1,2-Difluoroethane	43		
12	CHF2CH3	75-37-6	1,1-Difluoroethane	140		
13	CH3CH2F	353-36-6	Monofluoroethane (Ethyl fluoride)	12		
14	CF3CHFCF3	431-89-0	1,1,1,2,3,3,3-Heptafluoropropane	2,900		
15	CHF3	75-46-7	Trifluoromethane	11,700		
16	CH2FCF2CF3	60598-1 1-0	1,1,1,2,2,3-Hexafluoropropane	1,300		
17	CHF2CHFCF3	431-63-0	1,1,1,2,3,3-Hexafluoropropane	1,200		
18	CF3CH2CF3	690-39-1	1,1,1,3,3,3-Hexafluoropropane	6,300		
19	CH2FCF2CHF2	679-86-7	1,1,2,2,3-Pentafluoropropane	560		(a)
20	CHF2CH2CF3	460-73-1	1,1,1,3,3-Pentafluoropropane	950		(b)
21	CH2F2	75-10-5	Difluoromethane (Methylene fluoride)	650		(c)
22	CH3CF2CH2CF3	406-58-6	1,1,1,3,3-Pentafluorobutane	890		(d)
23	CH3F	593-53-3	Fluoromethane (Methyl fluoride)	150		
24	C5H2F10	138495-42-8	1,1,1,2,3,4,4,5,5,5- decafluoropentane	1,300		
25	N_2O	10024-97-2	Nitrous Oxide	310		
26	C2F6(CF3CF3)	76-16-4	Perfluoroethane (Hexafluoroethane)	9,200		
27	CF4	75-73-0	Tetrafluoromethane (Carbon tetrafluoride)	6,500		
28	C3F8 (CF3CF2CF3)	76-19-7	Perfluoropropane (Octafluoropropane)	7,000		
29	C4F10	355-25-9	Perfluorobutane	7,000		
30	c-C4F8 (-(CF2)4 -)	115-25-3	Perfluorocyclobutane (Octafluorocyclobutane)	8,700		
31	C5F12	678-26-2	Perfluoropentane (dodecafluoropentane)	7,500		

	V	W	X	Y	Z
1					
2					
3	**Alternate Estimation where Actual Energy Use is not available**				
4			(d)	(a)	
5	**Building Type**	**Alt. Bldg Name**	**Electricity (Btu/ft^2)**	**Electricity (kWh/ft^2)**	
6	Crew Shelter	Office	5,902.8	17.3	
7	Factory	Warehouse	2,593.1	7.6	
8	Gatehouse	Office	5,902.8	17.3	
9	Hangar	Warehouse	2,593.1	7.6	
10	Lab	Office	5,902.8	17.3	
11	Office	Office	5,902.8	17.3	
12	Other	Office	5,902.8	17.3	
13	Res	Lodging	4,606.2	13.5	
14	Storage	Warehouse	2,593.1	7.6	
15	Support	Office	5,902.8	17.3	
16	Trailer	Lodging	4,606.2	13.5	
17	Warehouse	Warehouse	2,593.1	7.6	
18					
19	http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set15/2003pdf/c14a.pdf				
20	http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set16/2003pdf/c24a.pdf				
21	1028 Btu/ft^3 of Natural Gas				
22	341.2 Btu/kWh				
23					
24	**Alternate Estimation where Actual Energy Use is not available**				
25		**Ft^3/Ft^2**		**BTU/Ft^2**	
26	**Space Type**	Average	Median	Average	Median
27	**Mercantile**	32.5	34	33,410	34,952
28	**Office**	31.8	35.7	32,690	36,700
29	**Service**	54.1	44.5	55,615	45,746
30	**Warehouse / Storage**	23.4	22.1	24,055	22,719
31	**Other**	67.6	46.3	69,493	47,596

	AA	AB	AC	AD
1				
2				
3				
4	(b)	(c)	(d)	
5	**ft^3 of Nat. Gas / ft^2**	**Nat. Gas (Btu/ft^2)**	**Nat. Gas (kWh/ft^2)**	
6	31.8	32,690.4	95.8	
7	23.4	24,055.2	70.5	
8	31.8	32,690.4	95.8	
9	23.4	24,055.2	70.5	
10	31.8	32,690.4	95.8	
11	31.8	32,690.4	95.8	
12	31.8	32,690.4	95.8	
13	48.9	50,269.2	147.3	
14	23.4	24,055.2	70.5	
15	31.8	32,690.4	95.8	
16	48.9	50,269.2	147.3	
17	23.4	24,055.2	70.5	
18				
19				
20				
21				
22				
23				
24				
25	**$kWHr/Ft^2$**		**BTU/Ft^2**	
26	Average	Median	Average	Median
27	19.2	12.7	6,551	4,333
28	17.3	11.5	5,903	3,924
29	11	6.3	3,753	2,150
30	7.6	3.1	2,593	1,058
31	22.5	7.2	7,677	2,457

	A	B	C	D	E
32			N_2O from combustion of liquid fuels (all types)	N/A. Automatic calculation.	Gallons
33			Motor gasoline	N/A. Automatic calculation.	Gallons
34			Diesel fuel (#1 and #2)	Fuel purchase receipts	Gallons
35			Generic Liquid Fuel CH_4	N/A. Automatic calculation.	Gallons
36			Generic Liquid Fuel N2O	N/A. Automatic calculation.	Gallons
37			Diesel fuel (#1 and #2)	N/A. Automatic calculation.	Gallons
38			B100 (100% biodiesel)	Fuel purchase receipts	Gallons
39			Generic Liquid Fuel CH_4	N/A. Automatic calculation.	Gallons
40			Generic Liquid Fuel N2O	N/A. Automatic calculation.	Gallons
41			B100		
42			Biodiesel blends (B20, B10 and B5)	Fuel purchase receipts	Gallons
43			Generic Liquid Fuel CH_4	N/A. Automatic calculation.	Gallons
44			Generic Liquid Fuel N2O	N/A. Automatic calculation.	Gallons
45			Biodiesel blends		
46			Ethanol blends (E100, E85, E10)	Fuel purchase receipts	Gallons
47			Generic Liquid Fuel CH_4	N/A. Automatic calculation.	Gallons
48			Generic Liquid Fuel N2O	N/A. Automatic calculation.	Gallons
49			Ethanol blends		
50			Aviation gasoline	Fuel purchase receipts	Gallons
51			Generic Liquid Fuel CH_4	N/A. Automatic calculation.	Gallons
52			Generic Liquid Fuel N2O	N/A. Automatic calculation.	Gallons
53			Aviation gasoline		
54			Jet fuel	Fuel purchase receipts	Gallons

	F	G	H	I	J
32	MMBtu of Liquid Fuels * EF * GWP	0.000075	0.000165	kg N2O/Gallon lb N2O/Gallon	
33		8.86	19.537002	kg CO_2-equiv/Gallon lb CO2-equiv/Gallon	
34	Gallons * EF	10.15	22.376893	kg CO_2/Gallon lb CO2/Gallon	
35	MMBtu of Liquid Fuels * EF * GWP	0.002	0.003363	kg CH4/Gallon lb CH4/Gallon	
36	MMBtu of Liquid Fuels * EF * GWP	0.000083	0.000184	kg N2O/Gallon lb N2O/Gallon	
37		10.21	22.504490	kg CO_2-equiv/Gallon lb CO2-equiv/Gallon	
38	Gallons * EF * 0% (non-biofuel content)	9.46	20.855705	kg CO_2/Gallon lb CO2/Gallon	
39	MMBtu of Liquid Fuels * EF * GWP	0.002	0.003363	kg CH4/Gallon lb CH4/Gallon	
40	MMBtu of Liquid Fuels * EF * GWP	0.000083	0.000184	kg N2O/Gallon lb N2O/Gallon	
41		9.52	20.983302	kg CO_2-equiv/Gallon lb CO2-equiv/Gallon	
42	Gallons * EF * 80%, 90% or 95% (non-biofuel content)	10.15	22.376893	kg CO_2/Gallon lb CO2/Gallon	
43	MMBtu of Liquid Fuels * EF * GWP	0.002	0.003363	kg CH4/Gallon lb CH4/Gallon	
44	MMBtu of Liquid Fuels * EF * GWP	0.000083	0.000184	kg N2O/Gallon lb N2O/Gallon	
45		10.21	22.504490	kg CO_2-equiv/Gallon lb CO2-equiv/Gallon	
46	Gallons * EF * 0%, 15% or 90% (non-biofuel content)	8.81	19.422702	kg CO_2/Gallon lb CO2/Gallon	
47	MMBtu of Liquid Fuels * EF * GWP	0.001	0.002043	kg CH4/Gallon lb CH4/Gallon	
48	MMBtu of Liquid Fuels * EF * GWP	0.000051	0.000112	kg N2O/Gallon lb N2O/Gallon	
49		8.85	19.500224	kg CO_2-equiv/Gallon lb CO2-equiv/Gallon	
50	Gallons * EF	8.32	18.342438	kg CO_2/Gallon lb CO2/Gallon	
51	MMBtu of Liquid Fuels * EF * GWP	0.001	0.002920	kg CH4/Gallon lb CH4/Gallon	
52	MMBtu of Liquid Fuels * EF * GWP	0.000072	0.000160	kg N2O/Gallon lb N2O/Gallon	
53		8.37	18.453234	kg CO_2-equiv/Gallon lb CO2-equiv/Gallon	
54	Gallons * EF	9.57	21.098213	kg CO_2/Gallon lb CO2/Gallon	

	K	L
32		310
33		
34		1
35		21
36		310
37		
38		1
39		21
40		310
41		
42		1
43		21
44		310
45		
46		1
47		21
48		310
49		
50		1
51		21
52		310
53		
54		1

	M	N	O
32			PFC-5-1-14
33			SF_6
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
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49			
50	U.S. EPA Climate Leaders, Greenhouse Gas Inventory Protocol Core Module Guidance: Direct Emissions from Mobile Combustion Sources, May 2008.		
51			
52			
53			
54			

	P	Q	R	S	T	U
32	C6F14	355-42-0	Perfluorohexane	7,400		
33	SF_6	2551-62-4	Sulfur hexafluoride	23,900		
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	V	W	X	Y	Z
32	**Vacant**	23	21.7	23,644	22,308
33	**Lodging**	48.9	36.7	50,269	37,728
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49					
50	Service 73 11.0 3.0 6.3 11.8 5.8 0.88 0.080				
51	Warehouse and Storage 154 7.6 1.4 3.1 6.2 10.8 0.53 0.070				
52	Other 510 22.5 3.5 7.2 20.3 40.0 1.76 0.078				
53	Vacant 42 2.4 0.4 1.7 3.8 3.9 0.22 0.092				
54					

	AA	AB	AC	AD
32	2.4	1.7	819	580
33	13.5	11.9	4,606	4,060
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	A	B	C	D	E
55			Generic Liquid Fuel CH_4	N/A. Automatic calculation.	Gallons
56			Generic Liquid Fuel N2O	N/A. Automatic calculation.	Gallons
57			Jet fuel		
58			Compressed natural gas	Fuel purchase receipts	scf
59			Liquified natural gas	Fuel purchase receipts	Gallons
60			Generic Liquid Fuel CH_4	N/A. Automatic calculation.	Gallons
61			Generic Liquid Fuel N2O	N/A. Automatic calculation.	Gallons
62			Liquified natural gas CO2-eq		
63			Propane	Fuel purchase receipts	Gallons
64			Generic Liquid Fuel CH_4	N/A. Automatic calculation.	Gallons
65			Generic Liquid Fuel N_2O	N/A. Automatic calculation.	Gallons
66			Propane CO_2-eq		
67			Fuel oil (#5 and #6)	Fuel purchase receipts	Gallons
68			Generic Liquid Fuel CH_4	N/A. Automatic calculation.	Gallons
69			Generic Liquid Fuel N2O	N/A. Automatic calculation.	Gallons
70			Fuel oil (#5 and #6) CO_2-eq		
71					
72					
73					
74			**Emissions source**	**Corporate data source**	**Activity Data units**
75	**Air conditioning equipment**		Fugitive HFCs from air conditioning equipment	Real estate records square footage of conditioned space	Square feet (ft^2)
76					
77	**Estimated Electrical**			Real estate records square footage of conditioned space	Square feet (ft2)
78					
79	**Estimated Natural Gas**			Real estate records square footage of conditioned space	Square feet (ft2)

	F	G	H	I	J
55	MMBtu of Liquid Fuels * EF * GWP	0.001	0.003274	kg CH4/Gallon lb CH4/Gallon	
56	MMBtu of Liquid Fuels * EF * GWP	0.000081	0.000179	kg N2O/Gallon lb N2O/Gallon	
57		9.63	21.222415	kg CO_2-equiv/Gallon lb CO2-equiv/Gallon	
58	scf * EF	0.054	0.119049	kg CO_2/SCF lb CO2/SCF	
59	Gallons * EF	4.46	9.832605	kg CO_2/Gallon lb CO2/Gallon	
60	MMBtu of Liquid Fuels * EF * GWP	0.001	0.002222	kg CH4/Gallon lb CH4/Gallon	
61	MMBtu of Liquid Fuels * EF * GWP	0.000055	0.000121	kg N2O/Gallon lb N2O/Gallon	
62		4.50	9.916918	kg CO_2-equiv/Gallon lb CO2-equiv/Gallon	
63	Gallons * EF	5.74	12.654519	kg CO_2/Gallon lb CO2/Gallon	
64	MMBtu of Liquid Fuels * EF * GWP	0.001	0.002208	kg CH4/Gallon lb CH4/Gallon	
65	MMBtu of Liquid Fuels * EF * GWP	0.000055	0.000121	kg N2O/Gallon lb N2O/Gallon	
66		5.78	12.738284	kg CO_2-equiv/Gallon lb CO2-equiv/Gallon	
67	Gallons * EF	11.80	26.014516	kg CO_2/Gallon lb CO2/Gallon	
68	MMBtu of Liquid Fuels * EF * GWP	0.002	0.003630	kg CH4/Gallon lb CH4/Gallon	
69	MMBtu of Liquid Fuels * EF * GWP	0.000090	0.000198	kg N2O/Gallon lb N2O/Gallon	
70		11.86246733	26.15223273	kg CO_2-equiv/Gallon lb CO2-equiv/Gallon	
71					
72	**Building Emission Estimates where**				
73					
74	**Quantification Methodology**	**Metric Emission factors**	**English emission factors**		
75	ft^2 of conditioned space * EF	0.45000	**0.9921**		
76					
77	ft2 of conditioned space * EF				
78					
79	ft2 of conditioned space * EF				

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55		21
56		310
57		
58		1
59		1
60		21
61		310
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63		1
64		21
65		310
66		
67		1
68		21
69		310
70		
71		
72	e no Records are Available	
73		
74	Emission Factor Units	GWP (Global Warming Potential)
75	kg CO_2/ft^2 or lb CO_2/ft^2	1,300
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74	**EF Source**		
75	The emission factor from leakage of HFCs was developed by E Source with approval of EPA Climate Leaders. A variety of sources were used to calcuate the factor including ASHRAE, DOE and EPA.		
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83			**Emissions source**	**Corporate data source**	**Activity Data units**
84	**Corporate Business Travel - Air**		CO_2 from commercial flights by employees - Short Flights (<=310 miles)	Flight Receipts, number of tickets for each type flight	Miles per one-way flight
85			CO2 from commercial flights by employees - Medium Flights (>310 and <=994 Miles)	Flight Receipts, number of tickets for each type flight	Miles per one-way flight
86			CO_2 from commercial flights by employees - Long Flights (>994 Miles)	Flight Receipts, number of tickets for each type flight	Miles per one-way flight
87	**Business Vehicle Travel - Fuel Receipts**		Motor gasoline	Fuel purchase receipts	Gallons
88			Diesel fuel (#1 and #2)	Fuel purchase receipts	Gallons
89	**Business Vehicle Travel - Mileage**		Passenger Car (i.e., rentals, taxis)	Vehicle Miles Traveled	Miles
90			Light-Duty Truck or SUV	Vehicle Miles Traveled	Miles
91			Train	Vehicle Miles Traveled	Miles
92			Bus - Diesel	Vehicle Miles Traveled	Miles
93			Large pickup or SUV (8 cyl.) (<15 mpg)	Vehicle Miles Traveled	Miles
94			Med-size pick-up or SUV (6 cyl.) (16-20 mpg)	Vehicle Miles Traveled	Miles
95			Full-size car (6 cyl.) (21-25 mpg)	Vehicle Miles Traveled	Miles
96			Med-size car (4 cyl.) (26-30 mpg)	Vehicle Miles Traveled	Miles
97			Compact car (31-35 mpg)	Vehicle Miles Traveled	Miles
98			High-efficiency compact (36-40 mpg)	Vehicle Miles Traveled	Miles
99			Hybrid car (41-50 mpg)	Vehicle Miles Traveled	Miles
100			Diesel Passenger Cars	Vehicle Miles Traveled	Miles
101			Diesel light-duty trucks (SUVs, Pick-ups, and vans)	Vehicle Miles Traveled	Miles
102			Motorcycle	Vehicle Miles Traveled	Miles
103			Intercity Rail (i.e., Amtrack)	Vehicle Miles Traveled	Miles

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81					**Business Tr**
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83	**Quantification Methodology**	**Metric Emission factors**	**English emission factors**		
84	Number of one-way flights * Miles per each flight * EF	0.241	0.5322		
85	Number of one-way flights * Miles per each flight * EF	0.192	0.4236		
86	Number of one-way flights * Miles per each flight * EF	0.177	0.3903		
87	Gallons * EF	8.810	19.4227		
88	Gallons * EF	10.150	22.3769		
89	Miles * EF	0.364	0.8025		
90	Miles * EF	0.519	1.1442		
91	Miles * EF	0.140	0.3086		
92	Miles * EF	0.150	0.3307		
93	Miles * EF	0.680	1.4991		
94	Miles * EF	0.490	1.0803		
95	Miles * EF	0.380	0.8378		
96	Miles * EF	0.310	0.6834		
97	Miles * EF	0.270	0.5952		
98	Miles * EF	0.230	0.5071		
99	Miles * EF	0.200	0.4409		
100	Miles * EF	0.240	0.5293		
101	Miles * EF	0.385	0.8491		
102	Miles * EF	0.167	0.3682		
103	Miles * EF	0.185	0.4079		

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81	**avel**	
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83	**Emission Factor Units**	**GWP (Global Warming Potential)**
84	kg CO_2/pass. mile lb CO_2/pass. mile	1
85	kg CO_2/pass. mile lb CO_2/pass. mile	1
86	kg CO_2/pass. mile lb CO_2/pass. mile	1
87	kg CO2/gallon lb CO2/gallon	1
88	kg CO2/gallon lb CO2/gallon	1
89	kg CO2/mile lb CO2/mile	1
90	kg CO2/mile lb CO2/mile	1
91	kg CO2/mile lb CO2/mile	1
92	kg CO2/mile lb CO2/mile	1
93	kg CO2/mile lb CO2/mile	1
94	kg CO2/mile lb CO2/mile	1
95	kg CO2/mile lb CO2/mile	1
96	kg CO2/mile lb CO2/mile	1
97	kg CO2/mile lb CO2/mile	1
98	kg CO2/mile lb CO2/mile	1
99	kg CO2/mile lb CO2/mile	1
100	kg CO2/mile lb CO2/mile	1
101	kg CO2/mile lb CO2/mile	1
102	kg CO2/mile lb CO2/mile	1
103	kg CO2/mile lb CO2/mile	1

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83	**EF Source**		
84	Air travel definitions and factors are from the WRI/WBCSD's *GHG Protocol* Mobile Combustion Tool. The emissions factors for short and long haul flights are originally from UK DEFRA.		
85	Air travel definitions and factors are from the WRI/WBCSD's GHG Protocol Mobile Combustion Tool. The emissions factors for short and long haul flights are originally from UK DEFRA. The emissions factor for medium haul flights was derived, using an assum		
86	Air travel definitions and factors are from the WRI/WBCSD's *GHG Protocol* Mobile Combustion Tool. The emissions factors for short and long haul flights are originally from UK DEFRA.		
87	U.S. EPA Climate Leaders, Greenhouse Gas Inventory Protocol Core Module Guidance: Direct Emissions from Mobile Combustion Sources, May 2008.		
88			
89	U.S. EPA Climate Leaders, Greenhouse Gas Inventory Protocol Core Module Guidance: Direct Emissions from Mobile Combustion Sources, May 2008.		
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93	Gasoline vehicle factors based on mileage estimates from "Fuel Economy," (www.fueleconomy.gov). All other emission factors derived from EPA Climate Leaders Greenhouse Gas Inventory Protocol Core Module Guidance, Optional Emissions from Commuting, Business		
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	A	B	C	D	E
104			Commuter Rail	Vehicle Miles Traveled	Miles
105			Transit Rail (i.e., subway, tram)	Vehicle Miles Traveled	Miles
106			Urban Bus - Diesel	Vehicle Miles Traveled	Miles

	F	G	H	I	J
104	Miles * EF	0.172	0.3792		
105	Miles * EF	0.163	0.3594		
106	Miles * EF	0.107	0.2359		

	K	L
104	kg CO2/mile lb CO2/mile	1
105	kg CO2/mile lb CO2/mile	1
106	kg CO2/mile lb CO2/mile	1

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