Energy Use from Scope 1 & 2 Sources at SEA Airport: 2005, 2015-2020

				2005*	2015	2016	2017	2018	2019	2020	
Scope 1	**Stationary Source**	**Natural Gas**	Central Plant Boiler	2,657,740	2,555,579	2,610,907	2,778,918	2,720,675	2,545,547	2,272,020	therms
			Pumphouse	UNKNOWN	544	890	496	14	176	1,664	therms
			Fleet Maintenance (AC2 Bldg)	UNKNOWN	55,991	54,855	55,069	56,798	43,206	13,065	therms
			Fire Department	UNKNOWN	23,687	23,695	32,593	29,424	29,000	25,210	therms
			Learning Center Building	UNKNOWN	8,574	8,639	9,237	8,464	7,339	8,442	therms
			Bus Maintenance Facility	-	21,289	27,167	33,067	32,478	45,157	39,667	therms
			Distribution Center	-	5,856	5,582	5,715	5,588	5,854	7,076	therms
			Cargo Building 161E	-	3,285	5,053	6,110	6,199	7,024	7,313	therms
			Cargo Building 166B-2380 S 166th St	-	-	-	22,270	47,852	73,857	80,877	therms
			Airfield Security Gate	-	-	-	2,435	697	712	1,576	therms
			TOTAL NATURAL GAS	**2,657,740**	**2,674,804**	**2,736,788**	**2,945,910**	**2,908,189**	**2,757,871**	**2,456,910**	**therms**
		Biogenic Fuel[a]	**THERMAL RENEWABLE NATURAL GAS**	**-**	**-**	**-**	**-**	**-**	**-**	**450,000**	**therms**
		Generator Diesel	**TOTAL DIESEL**	**UNKNOWN**	14,784	10,195	6,451	69,405	24,130	28,384	**gallons**
	Mobile Source	**Mobile Fleet Fossil Fuel Use**	Gasoline Delivered	144,268	121,181	117,750	119,360	133,536	132,540	117,573	gallons
			Gasoline Commercial	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	1,237	126	gallons
			Business Miles Personal Vehicles	UNKNOWN	2,227	1,952	1,688	1,143	1,409	226	gallons
			TOTAL GASOLINE	**144,268**	**123,408**	**119,702**	**121,048**	**134,679**	**135,186**	**117,924**	**gallons**
			TOTAL DIESEL	**16,745**	**23,734**	**27,091**	**37,415**	**37,415**	**12,518**	**10,883**	**gallons**
			TOTAL CNG	**179,710**	**257,382**	**412,206**	**422,275**	**429,624**	**451,633**	**247,484**	**GGE**
		Biogenic Fuel[a]	**TOTAL RENEWABLE NATURAL GAS**	**-**	**160,820**	**-**	**-**	**-**	**-**	**94,948**	**GGE**
			TOTAL RENEWABLE DIESEL (R99)	**-**	**-**	**-**	**-**	**-**	**57,034**	**30,858**	**gallons**
Scope 2		**Electricity**	Airport-Only Electricity (BPA)[b]	149,691,000	111,173,466	109,079,501	113,631,859	115,819,178	117,817,071	110,759,374	kWh
			eGSE electricity [c]	-	-	-	-	1,317,784	836,346	445,885	kWh
			Runway Lighting (Seattle City Light)	-	1,458,300	1,612,500	1,673,700	1,548,300	1,697,100	1,731,300	kWh
			Distribution Center (PSE)	-	140,257	146,290	161,218	161,605	168,096	167,130	kWh
			Bus Mnt Facility (PSE)	-	808,727	871,514	882,950	883,628	893,110	794,536	kWh
			North Employee Parking Lot (SCL)	UNKNOWN	439,435	431,340	472,118	477,299	437,179	458,227	kWh
			Westfield Office (PSE)	-	-	16,897	126,663	153,360	159,920	158,149	kWh
			Misc PSE Srcs (PSE)	UNKNOWN	917,589	987,208	935,412	1,108,282	1,275,735	1,032,095	kWh
			TOTAL ELECTRICITY	**149,691,000**	**114,937,775**	**113,145,250**	**117,883,920**	**120,151,652**	**122,448,211**	**115,546,695**	**kWh**

*2005 is the baseline year for Port of Seattle's Scope 1&2 greenhouse gas reduction targets. Most baseline data is from the airport's 2006 published inventory.
Where "-" is shown, the value is zero, typically because the facility was not yet built. Where "UNKNOWN" is shown, the facility was operational but no data was collected in that year's inventory
(a) Emissions associated with biogenic sources of energy are not included in the total emissions as they are part of the natural carbon cycle and are excluded under UNFCCC guidelines
(b) For 2005, this total includes tenants who are metered and billed. For all remaining years, billed and metered tenants are not included in this total.
(c) Fully metered/billing eGSE system to airlines not in place until 2018. For 2014-2017, eGSE electricity is included in Airport-Only Electricity. After 2018, eGSE billed to airlines is Scope 3

CO_2 Emissions from Scope 1 & 2 Sources at SEA Airport: 2005, 2015-2020

All units in tonnes

			2005*	2015	2016	2017	2018	2019	2020
Scope 1	Stationary Source	Natural Gas Boilers	14,102	14,193	14,521	15,631	15,431	14,633	13,036
	Stationary Source	Diesel in Back-up Generators	UNKNOWN	151	104	66	709	246	290
	Mobile Source	Gasoline Use in Fleet	1,267	1,084	1,051	1,063	1,182	1,187	1,035
		Diesel Use in Fleet	171	242	277	382	382	128	111
		CNG Use in Fleet	1,241	1,777	2,846	2,915	2,966	3,118	1,709
Scope 2	Indirect Energy - Location Based Approach [d]	All Electricity Purchased	61,261	34,890	33,637	35,045	35,720	36,402	34,218
	Indirect Energy - Market Based Approach	BPA Electricity Purchased [b]	6,326	1,838	1,767	1,841	1,216	1,850	1,739
		PSE Electricity Purchased [e]	UNKNOWN	1,027	1,034	1,077	1,180	702	90
		SCL Electricity Purchased	UNKNOWN	45	29	45	29	31	32
		TOTAL	**23,106**	**20,356**	**21,629**	**23,020**	**23,095**	**21,895**	**18,042**

*2005 is the baseline year for Port of Seattle's Scope 1&2 greenhouse gas reduction targets. Most baseline data is from the airport's 2006 published inventory.
Where "-" is shown, the value is zero, typically because the facility was not yet built. Where "UNKNOWN" is shown, the facility was operational but no data was collected in that year's inventory
(a) Emissions associated with biogenic sources of energy are not included in the total emissions as they are part of the natural carbon cycle and are excluded under UNFCCC guidelines
(b) For 2005, this total includes tenants who are metered and billed. For all remaining years, billed tenants and billed users of electrictricity are not included in this total.
(c) Fully metered/billing eGSE system to airlines not in place until 2018. For 2015, eGSE electricity is included in Airport-Only Electricity
(d) The Port follows the GHG Protocol by including both Location- and Market-based electricity, but uses Market-based to track its goals due to our contractual ability to influence GHG intensity
(e) In 2019, the Port purchased PSE's Green Direct electricity for half of the year, which is why the emissions in the total only reflect half of the year's expected GHG emissions

SEA Seattle-Tacoma International Airport

Emission Factors Used for Scope 1 & 2 Sources at SEA Airport: 2005, 2015-2020

Scope	Year	Fuel	Emission Factor	Original Units	Converted Emission Factor	Converted Units	Citation
1	All	Natural Gas in Boilers	53.0600	kg CO2/MMBTU	0.00530600	tonnes CO2/therm	https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf
	All	Diesel in Generators	10.2100	kg CO2/gallon	0.01021000	tonnes CO2/gallon	https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf
	All	Gasoline in Vehicles	8.7800	kg CO2/gallon	0.00878000	tonnes CO2/gallon	https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf
	All	Diesel in Vehicles	10.2100	kg CO2/gallon	0.01021000	tonnes CO2/gallon	https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf
	All	Natural Gas in Vehicles	0.0545	kg CO2/scf	0.00690352	tonnes CO2/GGE	https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf
2	2010	PSE Electricity	n/a	n/a	0.00039338	tonnes CO2/kWh	Same as 2011 - no data
	2011	PSE Electricity	n/a	n/a	0.00039338	tonnes CO2/kWh	http://pse.com/aboutpse/Environment/Documents/GHG_Inventory2011.pdf
	2012	PSE Electricity	n/a	n/a	0.00040306	tonnes CO2/kWh	http://pse.com/aboutpse/Environment/Documents/GHG_Inventory2012.pdf
	2013	PSE Electricity	n/a	n/a	0.00044304	tonnes CO2/kWh	http://pse.com/aboutpse/Environment/Documents/GHG_Inventory2013.pdf
	2014	PSE Electricity	n/a	n/a	0.00044721	tonnes CO2/kWh	http://pse.com/aboutpse/Environment/Documents/GHG_Inventory2014.pdf
	2015	PSE Electricity	n/a	n/a	0.00055010	tonnes CO2/kWh	https://pse.com/aboutpse/Environment/Documents/GHG_Inventory_2015.pdf
	2016	PSE Electricity	n/a	n/a	0.00051150	tonnes CO2/kWh	https://pse.com/aboutpse/Environment/Documents/GHG_Inventory_2016.pdf
	2017	PSE Electricity	n/a	n/a	0.00051150	tonnes CO2/kWh	Same as 2016 - no new data
	2018	PSE Electricity	n/a	n/a	0.00051150	tonnes CO2/kWh	Same as 2016 - no new data
	2019	PSE Electricity	n/a	n/a	0.00047277	tonnes CO2/kWh	https://www.pse.com/-/media/PDFs/GHG_Inventory_2018.pdf
	2005	BPA Electricity	0.04226	tonnes CO2/MWh	0.00004226	tonnes CO2/kWh	BPA correspondence using eGRID/TCR methodology
	2010	BPA Electricity	0.0217	tonnes CO2/MWh	0.00002170	tonnes CO2/kWh	Same as 2011 - no data
	2011	BPA Electricity	0.0217	tonnes CO2/MWh	0.00002170	tonnes CO2/kWh	BPA correspondence using eGRID/TCR methodology
	2012	BPA Electricity	0.0167	tonnes CO2/MWh	0.00001670	tonnes CO2/kWh	BPA correspondence using eGRID/TCR methodology
	2013	BPA Electricity	0.0198	tonnes CO2/MWh	0.00001980	tonnes CO2/kWh	BPA correspondence using eGRID/TCR methodology
	2014	BPA Electricity	0.0213	tonnes CO2/MWh	0.00002130	tonnes CO2/kWh	BPA correspondence using eGRID/TCR methodology
	2015	BPA Electricity	0.0165	tonnes CO2/MWh	0.00001653	tonnes CO2/kWh	BPA correspondence using eGRID/TCR methodology
	2016	BPA Electricity	0.0162	tonnes CO2/MWh	0.0000162	tonnes CO2/kWh	BPA correspondence using eGRID/TCR methodology
	2017	BPA Electricity	0.0162	tonnes CO2/MWh	0.0000162	tonnes CO2/kWh	BPA correspondence using eGRID/TCR methodology
	2018	BPA Electricity	0.0105	tonnes CO2/MWh	0.0000105	tonnes CO2/kWh	BPA correspondence using eGRID/TCR methodology
	2019	BPA Electricity	0.0157	tonnes CO2/MWh	0.0000157	tonnes CO2/kWh	BPA correspondence using eGRID/TCR methodology
	2010	SCL Retail Electricity	45.57	lbs CO2/MWh	0.00002066	tonnes CO2/kWh	SCL correspondence & SCL retail factors found at https://www.theclimateregistry.org/our-members/cris-public-reports/
	2011	SCL Retail Electricity	13.77	lbs CO2/MWh	0.00000625	tonnes CO2/kWh	SCL correspondence & SCL retail factors found at https://www.theclimateregistry.org/our-members/cris-public-reports/
	2012	SCL Retail Electricity	25.62	lbs CO2/MWh	0.00001162	tonnes CO2/kWh	SCL correspondence & SCL retail factors found at https://www.theclimateregistry.org/our-members/cris-public-reports/
	2013	SCL Retail Electricity	33.23	lbs CO2/MWh	0.00001507	tonnes CO2/kWh	SCL correspondence & SCL retail factors found at https://www.theclimateregistry.org/our-members/cris-public-reports/
	2014	SCL Retail Electricity	20.08	lbs CO2/MWh	0.00000911	tonnes CO2/kWh	SCL correspondence & SCL retail factors found at https://www.theclimateregistry.org/our-members/cris-public-reports/
	2015	SCL Retail Electricity	52.44	lbs CO2/MWh	0.00002379	tonnes CO2/kWh	SCL correspondence & SCL retail factors found at https://www.theclimateregistry.org/our-members/cris-public-reports/
	2016	SCL Retail Electricity	31.22	lbs CO2/MWh	0.00001416	tonnes CO2/kWh	SCL correspondence & SCL retail factors found at https://www.theclimateregistry.org/our-members/cris-public-reports/
	2017	SCL Retail Electricity	46.37	lbs CO2/MWh	0.00002103	tonnes CO2/kWh	SCL correspondence & SCL retail factors found at https://www.theclimateregistry.org/our-members/cris-public-reports/
	2018	SCL Retail Electricity	32.05	lbs CO2/MWh	0.00001454	tonnes CO2/kWh	SCL correspondence & SCL retail factors found at https://www.theclimateregistry.org/our-members/cris-public-reports/
	2019	SCL Retail Electricity	32.05	lbs CO2/MWh	0.00001454	tonnes CO2/kWh	SCL correspondence & SCL retail factors found at https://www.theclimateregistry.org/our-members/cris-public-reports/
	2020	SCL Retail Electricity	32.05	lbs CO2/MWh	0.00001454	tonnes CO2/kWh	Same as 2018 until we get updates
2	2005	eGRID NWPP Electricity	902.24	lbs CO2e/MWh	0.00040925	tonnes CO2/kWh	https://www.epa.gov/energy/egrid
	2010-11	eGRID NWPP Electricity	842.58	lbs CO2e/MWh	0.00038219	tonnes CO2/kWh	https://www.epa.gov/energy/egrid
	2012-15	eGRID NWPP Electricity	669.23	lbs CO2e/MWh	0.00030356	tonnes CO2/kWh	https://www.epa.gov/energy/egrid
	2016-19	eGRID NWPP Electricity	655.41	lbs CO2e/MWh	0.00029729	tonnes CO2/kWh	https://www.epa.gov/energy/egrid

Note: The emission factor for Renewable Natural Gas (RNG) and Renewable Diesel is 0 because combustion of the fuel is considered to produce biogenic CO2 emissions.
These emissions and are not included in the total emissions estimate, because they are considered to be part of the natural carbon cycle and so are excluded under UNFCCC guidelines.