

Energy Use from Scope 1 & 2 Sources at SEA Airport: 2005, 2015-2021

			2005*	2015	2016	2017	2018	2019	2020	2021			
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	1,291,876	therms	
			Pumphouse	UNKNOWN	544	890	496	14	176	1,664	5,936	therms	
			Fleet Maintenance (AC2 Bldg)	UNKNOWN	55,991	54,855	55,069	56,798	43,206	13,065	11,557	therms	
			Fire Department	UNKNOWN	23,687	23,695	32,593	29,424	29,000	25,210	24,795	therms	
			Learning Center Building	UNKNOWN	8,574	8,639	9,237	8,464	7,339	8,442	7,254	therms	
			Bus Maintenance Facility	-	21,289	27,167	33,067	32,478	45,157	39,667	36,647	therms	
			Distribution Center	-	5,856	5,582	5,715	5,588	5,854	7,076	8,171	therms	
			Cargo Building 161E	-	3,285	5,053	6,110	6,199	7,024	7,313	8,173	therms	
			Interim Fire Station (built 2021)	-	-	-	-	-	-	-	-	835	therms
			Cargo Building 166B-2380 S 166th St	-	-	-	22,270	47,852	73,857	80,877	75,190	therms	
			Airfield Security Gate	-	-	-	2,435	697	712	1,576	1,590	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	1,472,026	therms		
	Biogenic Fuel ^(a)	Thermal Renewable Natural Gas	-	-	-	-	-	-	450,000	1,500,000	therms		
	Generator Diesel	TOTAL DIESEL	UNKNOWN	14,784	10,195	6,451	69,405	24,130	28,384	40,875	gallons		
	Mobile Source	Mobile Fleet Fossil Fuel Use	Gasoline Delivered	144,268	121,181	117,750	119,360	133,536	132,540	117,573	127,008	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	204	gallons	
			TOTAL GASOLINE	144,268	123,408	119,702	121,048	134,679	135,186	117,924	127,212	gallons	
			TOTAL DIESEL	16,745	23,734	27,091	37,415	37,415	12,518	10,883	20,042	gallons	
		TOTAL CNG	179,710	257,382	412,206	422,275	429,624	451,633	247,484	-	GGE		
Biogenic Fuel ^(a)		Transpo Renewable Natural Gas	-	160,820	-	-	-	-	94,948	385,277	GGE		
	TOTAL RENEWABLE DIESEL (R99)	-	-	-	-	-	57,034	30,858	22,401	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	114,564,562	kWh		
		eGSE electricity ^(c)	-	-	-	-	1,317,784	836,346	445,885	477,092	kWh		
		Runway Lighting (Seattle City Light)	-	1,458,300	1,612,500	1,673,700	1,548,300	1,697,100	1,731,300	1,714,949	kWh		
		Distribution Center (PSE)	-	140,257	146,290	161,218	161,605	168,096	167,130	150,265	kWh		
		Bus Mnt Facility (PSE)	-	808,727	871,514	882,950	883,628	893,110	794,536	890,536	kWh		
		North Employee Parking Lot (SCL)	UNKNOWN	439,435	431,340	472,118	477,299	437,179	458,227	448,729	kWh		
		Westfield Office (PSE)	-	-	16,897	126,663	153,360	159,920	158,149	145,526	kWh		
		Misc PSE Srcs (PSE)	UNKNOWN	917,589	987,208	935,412	1,108,282	1,275,735	1,032,095	1,161,955	kWh		
		North Laydown Area (SCL)	-	-	-	-	-	-	-	-	11,728	kWh	
		TOTAL ELECTRICITY		149,691,000	114,937,775	113,145,250	117,883,920	120,151,652	122,448,211	115,100,811	119,088,250	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 tenants and billed users of electricity 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

CO₂ Emissions from Scope 1 & 2 Sources at SEA Airport: 2005, 2015-2021

All units in tonnes (metric tons)

			2005*	2015	2016	2017	2018	2019	2020	2021
Scope 1	Stationary Source	Natural Gas Boilers	14,102	14,193	14,521	15,631	15,431	14,633	13,036	7,811
	Stationary Source	Diesel in Back-up Generators	UNKNOWN	151	104	66	709	246	290	417
	Mobile Source	Gasoline Use in Fleet	1,267	1,084	1,051	1,063	1,182	1,187	1,035	1,117
		Diesel Use in Fleet	171	242	277	382	382	128	111	205
CNG Use in Fleet		1,241	1,777	2,846	2,915	2,966	3,118	1,709	0	
Scope 2	Indirect Energy - Location Based Approach^(d)	All Electricity Purchased	61,261	34,890	33,637	35,045	35,720	36,402	31,524	32,616
	Indirect Energy - Market Based Approach	BPA Electricity Purchased ^(b)	6,326	1,838	1,767	1,841	1,216	1,850	1,739	1,799
		PSE Electricity Purchased ^(e)	UNKNOWN	1,027	1,034	1,077	1,091	1,321	75	101
		SCL Electricity Purchased	UNKNOWN	45	29	45	29	40	41	41
TOTAL			23,106	20,356	21,629	23,020	23,006	22,523	18,036	11,490

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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/system/files/documents/2022-04/ghg_emission_factors_hub.pdf
	All	Diesel in Generators	10.2100	kg CO2/gallon	0.01021000	tonnes CO2/gallon	https://www.epa.gov/system/files/documents/2022-04/ghg_emission_factors_hub.pdf
	All	Gasoline in Vehicles	8.7800	kg CO2/gallon	0.00878000	tonnes CO2/gallon	https://www.epa.gov/system/files/documents/2022-04/ghg_emission_factors_hub.pdf
	All	Diesel in Vehicles	10.2100	kg CO2/gallon	0.01021000	tonnes CO2/gallon	https://www.epa.gov/system/files/documents/2022-04/ghg_emission_factors_hub.pdf
	All	Natural Gas in Vehicles	0.0545	kg CO2/scf	0.00690352	tonnes CO2/GGE	https://www.epa.gov/system/files/documents/2022-04/ghg_emission_factors_hub.pdf
2	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	0.00047277	tonnes CO2/kWh	https://www.pse.com/-/media/PDFs/GHG_Inventory_2018.pdf
	2019	PSE Electricity	n/a	n/a	0.00052894	tonnes CO2/kWh	https://www.pse.com/-/media/PDFs/2019-Greenhouse-InventoryFinalPSEWeb-1.pdf
	2020	PSE Electricity	n/a	n/a	0.00039446	tonnes CO2/kWh	https://www.pse.com/-/media/PDFs/GHG_Inventory_2020.pdf
	2021	PSE Electricity	n/a	n/a	0.00039446	tonnes CO2/kWh	Same as 2020 - no new data
	2005	BPA Electricity	0.04226	tonnes CO2/MWh	0.00004226	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	0.00001620	tonnes CO2/kWh	BPA correspondence using eGRID/TCR methodology
	2017	BPA Electricity	0.0162	tonnes CO2/MWh	0.00001620	tonnes CO2/kWh	BPA correspondence using eGRID/TCR methodology
	2018	BPA Electricity	0.0105	tonnes CO2/MWh	0.00001050	tonnes CO2/kWh	BPA correspondence using eGRID/TCR methodology
	2019	BPA Electricity	0.0157	tonnes CO2/MWh	0.00001570	tonnes CO2/kWh	BPA correspondence using eGRID/TCR methodology
	2020	BPA Electricity	0.0157	tonnes CO2/MWh	0.00001570	tonnes CO2/kWh	BPA correspondence using eGRID/TCR methodology
	2021	BPA Electricity	0.0157	tonnes CO2/MWh	0.00001570	tonnes CO2/kWh	BPA correspondence using eGRID/TCR methodology
	2015	SCL Retail Electricity	52.44	lbs CO2/MWh	0.00002379	tonnes CO2/kWh	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 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 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 retail factors found at https://www.theclimateregistry.org/our-members/cris-public-reports/
	2019	SCL Retail Electricity	41.58	lbs CO2/MWh	0.00001886	tonnes CO2/kWh	SCL retail factors found at https://www.theclimateregistry.org/our-members/cris-public-reports/
	2020	SCL Retail Electricity	41.58	lbs CO2/MWh	0.00001886	tonnes CO2/kWh	SCL retail factors found at https://www.theclimateregistry.org/our-members/cris-public-reports/
	2021	SCL Retail Electricity	41.58	lbs CO2/MWh	0.00001886	tonnes CO2/kWh	SCL retail factors found at https://www.theclimateregistry.org/our-members/cris-public-reports/
	2005	eGRID NWPP Electricity	902.24	lbs CO2e/MWh	0.00040925	tonnes CO2e/kWh	https://www.epa.gov/energy/egrid
	2012-15	eGRID NWPP Electricity	669.23	lbs CO2e/MWh	0.00030356	tonnes CO2e/kWh	https://www.epa.gov/energy/egrid
	2016-19	eGRID NWPP Electricity	655.41	lbs CO2e/MWh	0.00029729	tonnes CO2e/kWh	https://www.epa.gov/energy/egrid
	2020-21	eGRID NWPP Electricity	603.80	lbs CO2e/MWh	0.00027388	tonnes CO2e/kWh	https://www.epa.gov/energy/egrid