

2022 Greenhouse Gas Inventory



Description: Puget Sound Energy (PSE) serves more than 1.2 million electric customers and more than 900,000 natural gas customers in 10 counties. Our service territory includes the vibrant Puget Sound area and covers more than 6,000 square-miles, stretching from south Puget Sound to the Canadian border, and from central Washington's Kittitas Valley west to the Kitsap Peninsula. PSE's primary sources of direct GHG emissions are due to its role as an electric power provider and its natural gas operations, including pipeline leaks, gas storage, fugitive emissions and consumption by the end-user.

Industry: 22 – Utilities

Address: 355 110th Avenue NE
Bellevue, WA 98004

Issued: September 2025 *Updated emissions to follow AR5 standard.*

Reporting Information

Emissions Year: January 1, 2022 – December 31, 2022

Reporting Protocol: GHG Protocol

Additional Reporting Standards: The Climate Registry's General Reporting Protocol 3.0

Greenhouse Gases (GHGs): Carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆) and hydrofluorocarbons (HFCs)¹

Global Warming Potential (GWP) Standard: AR5²

Consolidation Methodology: Equity Share

North American Industry Classification System (NAIC) Codes: 221112 (Fossil Fuel Electric Power Generation) and 221210 (Natural Gas Distribution)

Geography: Washington State

PSE Power Generation Fleet Information

Facility Name	Resource Type	Equity Share
Lower Baker River	Hydro	100%
Snoqualmie Falls	Hydro	100%
Upper Baker River	Hydro	100%
Hopkins Ridge	Wind	100%
Lower Snake River	Wind	100%
Wild Horse	Wind and Solar	100%
Encogen	Natural Gas/Oil	100%
Ferndale	Natural Gas/Oil	100%
Frederickson	Natural Gas/Oil	100%
Fredonia	Natural Gas/Oil	100%
Whitehorn	Natural Gas/Oil	100%
Frederickson (Freddy) Unit 1	Natural Gas	49.85%
Goldendale	Natural Gas	100%
Mint Farm	Natural Gas	100%
Sumas	Natural Gas	100%
Crystal Mountain	Oil	100%
Colstrip	Coal	25%

¹ The remaining gases, perfluorocarbons (PFCs) and nitrogen trifluoride (NF₃), are not currently accounted for in the inventory due to a lack of robust data collection on usage at this time. These GHGs are not generally identified as significant emission sources in the electric and natural gas utility sectors.

² Specific GWP values are listed in the attached Greenhouse Gas Inventory tables.

Reporting Boundary

PSE inventories its Scope 1, 2 and 3 emissions as follows:

- Scope 1: direct emissions from PSE-owned facilities³
- Scope 2: indirect emissions associated with purchased energy for PSE use
- Scope 3: indirect emissions attributed to PSE's activities that are not owned or controlled by PSE

PSE's Scope 1 and 2 emissions are dominated by CO₂ produced during electricity generation. The majority of PSE's Scope 3 emissions are derived from natural gas sales to end-users and electricity purchased from other generators to serve our customer load.

Line losses associated with the electricity purchased to serve PSE customer load are included in Scope 2. For the 2022 inventory, the percentage of line loss used is from eGrid subregion NWPP (5.1% for 2022).

The attached tables summarize PSE's GHG inventory by scope and source. Emissions are adjusted for RECs bought and sold.

Scope 3 Indirect Emissions Disclosure

PSE currently only calculates three of the 15 Scope 3 categories. These categories are fuel- and energy-related activities (category 3), "Use of sold products" (category 11) and waste generated in operations (category 5). Scope 3 emissions from firm contract purchased electricity were calculated using the amount of electricity purchased, broken down by the electricity generation technology (e.g., coal, natural gas or petroleum).⁴ For all firm Bonneville Power Administration transactions and "non-unit-specific" purchases, PSE defaults to the Washington Department of Ecology emissions intensity metric according to WAC 480-109-300(4).

Natural gas distributed to PSE customers is considered "Direct Use Phase Emissions" and, therefore, emissions can be calculated with the same methodology that is used for combustion emissions.

Exclusion of Miniscule Sources

PSE has not included refrigerants and small emergency generators in its GHG inventory because the associated emissions are determined to be immaterial and below our *de minimis* threshold compared to the total Scope 1 and 2 emissions (<5% materiality threshold). Refrigerants are used in office spaces and vehicles for cooling and fire suppression, while the small emergency generators provide back-up power if needed.

³ Line losses associated with owned generation are included in Scope 1 emissions to avoid double-counting.

⁴ GHG Protocol, Category 3: Fuel- and Energy-Related Activities not included in Scope 1 or Scope 2.

Puget Sound Energy - 2022 Greenhouse Gas Inventory Summary

Emission Sources	Energy Amount (UOM) ¹	Emissions (metric ton)					Emissions in CO ₂ Equivalents (CO ₂ e) - 100-Year Timeframe (metric ton CO ₂ e)					
		CO ₂	CH ₄	N ₂ O	SF ₆	HFCs	CO ₂	CH ₄	N ₂ O	SF ₆	HFCs	Total CO ₂ e
Scope I												
Total PSE-owned Electric Operations	11,198,936,259 kWh	5,278,049	333.4	57.066	0.258	0	5,278,049	9,335	15,122.4	6,072	0	5,308,578
Total PSE-owned Natural Gas Operations	1,192,661,579 thm	15,459	2,678.0	0.024	0	0	15,459	74,985	6.4	0	0	90,450
Total PSE-owned Other Operations	—	8,905	1.1	0.145	0	0.297	8,905	31	38.3	0	99.5	9,073
Total Scope I		5,302,413	3,012.5	57.234	0.258	0.297	5,302,413	84,351	15,167.0	6,072	99.5	5,408,102
Scope II												
Total Scope II, Location-Based ²		342,141	31.8	4.546	0	0	342,141	891	1,204.7	0	0	344,236
Total Scope II, Market-Based		390,627	40.4	5.875	0	0	390,627	1,132	1,557.0	0	0	393,317
Scope III												
Total Electricity Purchases	17,936,211,325 kWh	4,983,001	543.9	79.645	0	0	4,983,001	15,230	21,105.9	0	0	5,019,336
Total Natural Gas Supply	1,250,235,129 thm	6,466,203	121.9	12.187	0	0	6,466,203	3,412	3,229.4	0	0	6,453,958
Other	—	109,770	0	0	0	0	109,770	0	0	0	0	109,770
Total Scope III		11,449,204	665.8	91.831	0	0	11,449,204	18,642	24,335.3	0	0	11,583,065
Emission Sources	Energy Amount (kWh) ³	Total CO ₂ e (metric ton) ⁴				CO ₂ e Emission Intensity (lb/kWh)			CO ₂ e Emission Intensity (metric ton/MWh)			
Total Electric Operations	22,253,667,215 kWh	9,357,605				0.915			0.415			

Global Warming Potential for 100-year lifecycle (AR5)

CO ₂	CH ₄	N ₂ O	SF ₆
1	28	265	23,500

2022 eGrid Subregion Emission Rate (lb/MWh)

CO ₂	CH ₄	N ₂ O
602.09	0.056	0.008

¹ UOM stands for unit of measure.

² The emission factors used to calculate Scope 2 emissions are from 2022 eGrid subregion NWPP.

³ The energy amount listed excludes wholesale and customer green programs (i.e., Green Direct and Green Power programs).

⁴ The CO₂e metric tons listed represents PSE's electric operation emissions (e.g., generation, electricity purchases and line losses) after excluding the emissions attributed to wholesale, which are determined to be based on PSE's overall electricity portfolio after removing customer green programs (i.e., Green Direct and Green Power programs).

Puget Sound Energy - 2022 Greenhouse Gas Inventory, Scope 1

Emission Sources	Energy Amount (UOM) ¹	Emissions (metric ton)					Emissions in CO ₂ Equivalents (CO ₂ e) - 100-Year Timeframe (metric ton CO ₂ e)					
		CO ₂	CH ₄	N ₂ O	SF ₆	HFCs	CO ₂	CH ₄	N ₂ O	SF ₆	HFCs	Total CO ₂ e
Scope I												
Electric Operations												
Hydro	758,615,340 kWh	0	0	0	0	0	0	0	0.0	0	0	0
Coal	2,726,665,000 kWh	2,663,357	284.5	52.129	0	0	2,663,357	7,967	13,814.2	0	0	2,685,139
Natural Gas/ Oil	6,028,682,020 kWh	2,614,692	48.8	4.936	0	0	2,614,692	1,368	1,308.1	0	0	2,617,368
Wind	1,684,973,899 kWh	0	0	0	0	0	0	0	0.0	0	0	0
Electrical Transmission and Distribution Equipment	—	0	0.0	0.000	0.258	0	0	0	0.0	6,072	0	6,072
Total PSE-owned Electric Operations	11,198,936,259 kWh	5,278,049	333.4	57.066	0.258	0	5,278,049	9,335	15,122.4	6,072	0	5,308,578
Natural Gas Operations												
Distribution	1,221,448,354 thm	8,958	2,643.2	0.017	0	0	8,958	74,010	4.4	0	0	82,973
Underground Storage	-28,786,775 thm ²	6,500	34.8	0.007	0	0	6,500	975	1.9	0	0	7,477
Total PSE-owned Natural Gas Operations	1,192,661,579 thm	15,459	2,678.0	0.024	0	0	15,459	74,985	6.4	0	0	90,450
Other Operations												
PSE-owned Vehicle Fleet	—	8,905	1.1	0.145	0	0.297	8,905	31	38.3	0	99.5	9,073
Total PSE-owned Other Operations	—	8,905	1.1	0.145	0	0.297	8,905	31	38.3	0	99.5	9,073
Total Scope I		5,302,413	3,012.5	57.234	0.258	0.297	5,302,413	84,351	15,167.0	6,072	99.5	5,408,102

Scope I Biogenic Sources	Biogenic CO ₂ Emissions (metric ton CO ₂)
Electric Operations - Biofuel	0.00

¹ UOM stands for unit of measure.

² Therms listed for underground storage represents the net sum of injections and withdrawals within the calendar year.

Puget Sound Energy - 2022 Greenhouse Gas Inventory, Scope 2

Emission Sources	Energy Amount (UOM) ¹	Emissions (metric ton)					Emissions in CO ₂ Equivalents (CO ₂ e) - 100-Year Timeframe (metric ton CO ₂ e)					
		CO ₂	CH ₄	N ₂ O	SF ₆	HFCs	CO ₂	CH ₄	N ₂ O	SF ₆	HFCs	Total CO ₂ e
Scope II												
Location-Based ²												
Purchased Heating	57,875 thm	463	0.0	0.006	0	0	463	1	1.6	0	0	466
Purchased Electricity	29,200,581 kWh	7,975	0.7	0.106	0	0	7,975	21	28.1	0	0	8,024
Sold renewable energy credits (RECs)	15,500,000 kWh	4,233	0.4	0.056	0	0	4,233	11	14.9	0	0	4,259
Line Losses ³	1,206,390,778 kWh	329,469	30.6	4.378	0	0	329,469	858	1,160.1	0	0	331,488
Total Scope II, Location-Based	—	342,141	31.8	4.546	0	0	342,141	891	1,204.7	0	0	344,236
Market-Based												
Purchased Heating	57,875 thm	463	0.0	0.006	0	0	463	1	1.6	0	0	466
Purchased Electricity	29,200,581 kWh	7,975	0.7	0.106	0	0	7,975	21	28.1	0	0	8,024
Sold renewable energy credits (RECs)	15,500,000 kWh	4,233	0.4	0.056	0	0	4,233	11	14.9	0	0	4,259
Line Losses ³	1,206,390,778 kWh	377,956	39.3	5.707	0	0	377,956	1,099	1,512.4	0	0	380,568
Total Scope II, Market-Based	—	390,627	40.4	5.875	0	0	390,627	1,132	1,557.0	0	0	393,317

Scope II Biogenic Sources	Biogenic CO ₂ Emissions (metric ton CO ₂)
Line losses related to biogenic sources	1,144

¹ UOM stands for unit of measure.

² The emission factors used to calculate Scope 2 emissions are from 2022 eGrid subregion NWPP.

³ For the 2022 inventory, the percentage of line loss used is from eGrid subregion NWPP (5.1% for 2022).

Puget Sound Energy - 2022 Greenhouse Gas Inventory, Scope 3

Emission Sources	Energy Amount (UOM) ¹	Emissions (metric ton)					Emissions in CO ₂ Equivalents (CO ₂ e) - 100-Year Timeframe (metric ton CO ₂ e)					
		CO ₂	CH ₄	N ₂ O	SF ₆	HFCs	CO ₂	CH ₄	N ₂ O	SF ₆	HFCs	Total CO ₂ e
Scope III												
Electricity Purchases												
Firm Contracts	10,967,603,778 kWh	3,744,381	428.7	63.187	0	0	3,744,381	12,004	16,744.6	0	0	3,773,130
Non-Firm Contracts	6,968,607,547 kWh	1,238,620	115.2	16.458	0	0	1,238,620	3,226	4,361.3	0	0	1,246,206
Total Electricity Purchases	17,936,211,325 kWh	4,983,001	543.9	79.645	0	0	4,983,001	15,230	21,105.9	0	0	5,019,336
Natural Gas Supply												
Supply to End-Users	1,246,675,599 thm	6,447,317	121.5	12.151	0	0	6,447,317	3,402	3,220.0	0	0	6,453,939
RNG	3,559,530 thm	0	0.4	0.036	0	0	0	10	9.4	0	0	19
Total Natural Gas Supply	1,250,235,129 thm	6,466,203	121.9	12.187	0	0	6,466,203	3,412	3,229.4	0	0	6,453,958
Other Categories ²	—	109,770	0	0	0	0	109,770	0	0	0	0	109,770
Total Scope III		11,449,204	665.8	91.831	0	0	11,449,204	18,642	24,335.3	0	0	11,583,065

Scope III Biogenic Sources	Biogenic CO ₂ Emissions (metric ton CO ₂)
Electricity Purchases	22,890
Natural Gas Supply - RNG	18,887
Total Biogenic Sources Scope III	41,777

Scope III Categories	Emissions in CO ₂ Equivalents (CO ₂ e) - 100-Year Timeframe (metric ton CO ₂ e)
Investments	—
Franchises	—
Downstream leased assets	—
End-of-life treatment of sold products	—
Use of sold products	6,453,958
Processing of sold products	—
Downstream transportation & distribution	—
Upstream leased assets	—
Employee commuting	—
Business travel	—
Waste generated in operations	109,770
Upstream transportation & distribution	—
Fuel- and energy-related activities	5,019,336
Capital goods	—
Purchased goods and services	—

¹ UOM stands for unit of measure.

² The other categories are the remaining Scope 3 categories that is not “Use of sold products” and “Fuel- and energy-related activities”.