Port of Seattle Results Summary

The Port of Seattle's mission is to promote economic opportunities and quality of life in the region by advancing trade, travel, commerce, and job creation in an equitable, accountable, and environmentally responsible manner.

The Port of Seattle has established a strong commitment to decarbonization and deepening community engagement through the Century Agenda, and takes action to reduce air and climate emissions through the Northwest Ports Clean Air Strategy (NWPCAS) and Maritime Climate and Air Action Plan (MCAAP). Through the NWPCAS and MCAAP, the Port of Seattle has made significant investments in shore power at its cruise terminals, increased the amount of cargo handling equipment at the cruise terminals meeting Tier 4 emission standards, and purchased newer, cleaner equipment and vehicles for the port's own fleet. The 2020 NWPCAS establishes the vision of phasing out seaport related emissions by 2050 or sooner, setting the stage for a transition to zero emission technologies.

Figure 6.1: Port of Seattle

The Port of Seattle has a mixture of

commercial fishing · bulk cargo shipping · cruise · marinas · locomotive · HD & fleet vehicles

KEY TAKEAWAYS

- **Emissions of all pollutants have decreased since 2005**
- **GHG, NO_x, and DPM emissions decreased between 2016 and 2021 due to reduced cruise activity associated with the COVID-19 pandemic**
- **Cruise vessels at berth continue to use shore power to reduce emissions**

Table 6.9: Port of Seattle 2021, 2016 and 2005 Maritime-related Emissions within the Airshed Comparison, tpy and %

Source category	NO_x	VOC	CO	SO_2	PM_{10}	$PM_{2.5}$	DPM	BC	CO_2e
Ocean-going vessels	802	28	74	31.4	12.7	11.4	12.3	0.3	52,516
Harbor vessels	189	5	31	0	6	6	6	5	12,737
Recreational vessels	55	77	620	0.1	1.8	1.6	0.4	0.4	8,022
Locomotives	54	2	14	0.1	1.3	1.2	1.3	1.0	5,331
Cargo-handling equipment	4	1	14	0.0	0.1	0.1	0.1	0.1	552
Heavy-duty vehicles	0	0	0	0.0	0.0	0.0	0.0	0.0	4
Fleet vehicles	1	0	3	0.0	0.0	0.0	0.0	0.0	434
2021 Total	**1,105**	**114**	**756**	**31.6**	**22.2**	**20.5**	**20.4**	**6.5**	**79,595**
2016 Total	**1,463**	**162**	**881**	**39.3**	**27.5**	**25.2**	**25.0**	**6.4**	**89,484**
2005 Total	**1,891**	**297**	**2,543**	**997.3**	**171.8**	**139.6**	**163.8**	**13.3**	**106,969**
2021 vs 2016 (= decrease = increase)	**-24%**	**-30%**	**-14%**	**-20%**	**-19%**	**-19%**	**-18%**	**1%**	**-11%**
2021 vs 2005 (= decrease = increase)	**-42%**	**-62%**	**-70%**	**-97%**	**-87%**	**-85%**	**-88%**	**-51%**	**-26%**

NOx (nitrogen oxide), VOC (volatile organic compounds), CO (carbon monoxide), SO2 (sulfur dioxide), PM10 (particulate matter <10 microns), PM2.5 (particulate matter <2.5 microns), DPM (diesel particulate matter), BC (black carbon), CO2e (carbon dioxide equivalent)

2021 vs 2016: Emission Reduction Initiatives

Accelerated Port-wide GHG reduction targets to achieve net-zero emissions by 2040 for port-controlled sources (Scopes 1 and 2) and carbon neutral or better by 2050 for industries operating on port facilities (Scope 3)

Adopted the Port's first ever comprehensive maritime climate change and air quality plan: Charting the Course to Zero: Port of Seattle's Maritime Climate and Air Action Plan

Reduced at-berth cruise emissions with shore power for cruise ships at two of three cruise berths

Achieved nearly **90% of terminal equipment meeting Tier 4 interim or equivalent emission standards**, including **40% of terminal equipment assets powered by electricity**

Completed four solar arrays on Port rooftops and switched to renewable diesel in Port-owned vehicles and equipment

30 cruise calls plugged in to shore power

generated over **600,000 kWh** of renewable solar power

90% of terminal equipment meeting Tier 4 emission standards (40% electric)

Looking ahead

- Completing the Seattle Waterfront Clean Energy Strategy in partnership with Seattle City Light and the Northwest Seaport Alliance to plan for the infrastructure and power needs to provide zero-emission energy for port, maritime, industrial, and other waterfront uses.
- Completing shore power installation at Pier 66, which will make all three cruise berths shore power ready.
- Launched the Pacific Northwest to Alaska Green Corridor with port, cruise industry, and nongovernmental organization partners to explore the feasibility of low- and zero emission cruise travel between Washington, British Columbia, and Alaska.
- Electrifying Port vehicles and equipment and installing charging infrastructure.
- Purchasing renewable natural gas across maritime properties.