

Item #: 10A

Date: 6/20/2023

Considering Acceleration of Scope 1 and 2 GHG Targets to Net Zero by 2040

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Port of Tacoma Commission Meeting

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Commissioners have requested this briefing to discuss accelerating of the Port of Tacoma's **Scope 1 and 2** GHG targets to achieving net zero by 2040 from the presently established goal of 2050.

- The NWSA is considering a similar action through the Environmental Working Group.

Unless directed otherwise by the Commission, staff plan to bring forward a resolution at the July Commission meeting that would establish the new scope 1 and 2 GHG targets.

What are Scope 1, 2, and 3 Emissions?

Definitions are from the [GHG Protocol](#) which sets standards internationally for corporate GHG reporting:

Scope	Sources
1	<ul style="list-style-type: none"> Fleet (vehicles and equipment, including port owned & operated CHE) Building/facility fuel combustion (natural gas, propane, etc.)
2	<ul style="list-style-type: none"> Purchased electricity at owned & operated facilities
3	<ul style="list-style-type: none"> Tenant electricity and fuel use <ul style="list-style-type: none"> Lighting/buildings CHE and vehicles Drayage trucks Trucks + busses that support cruise Ocean-going vessels Harbor vessels Locomotives Staff business travel Employee commuting (port and tenant) Waste Electricity transmission losses

Scope 1: Direct GHG emissions

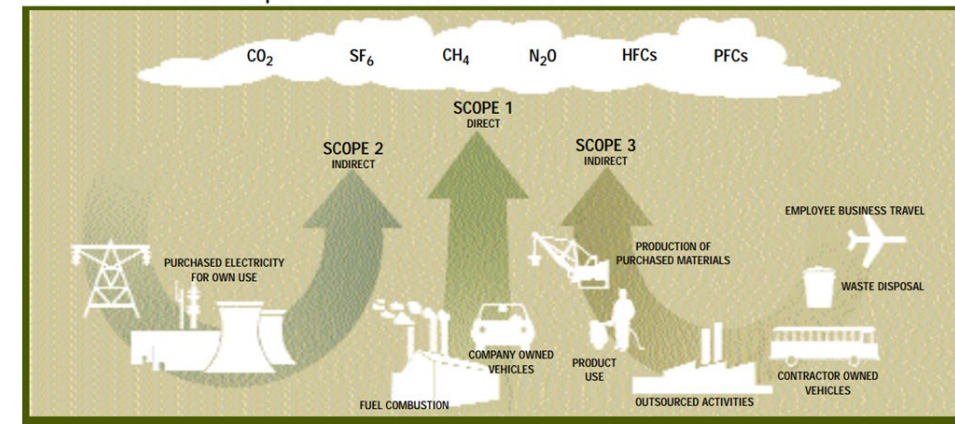
Direct GHG emissions occur from sources that are owned or controlled by the company, for example, emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.; emissions from chemical production in owned or controlled process equipment.

Scope 3: Other indirect GHG emissions

Scope 3 is an optional reporting category that allows for the treatment of all other indirect emissions. Scope 3 emissions are a consequence of the activities of the company, but occur from sources not owned or controlled by the company. Some examples of scope 3 activities are extraction and production of purchased materials; transportation of purchased fuels; and use of sold products and services.

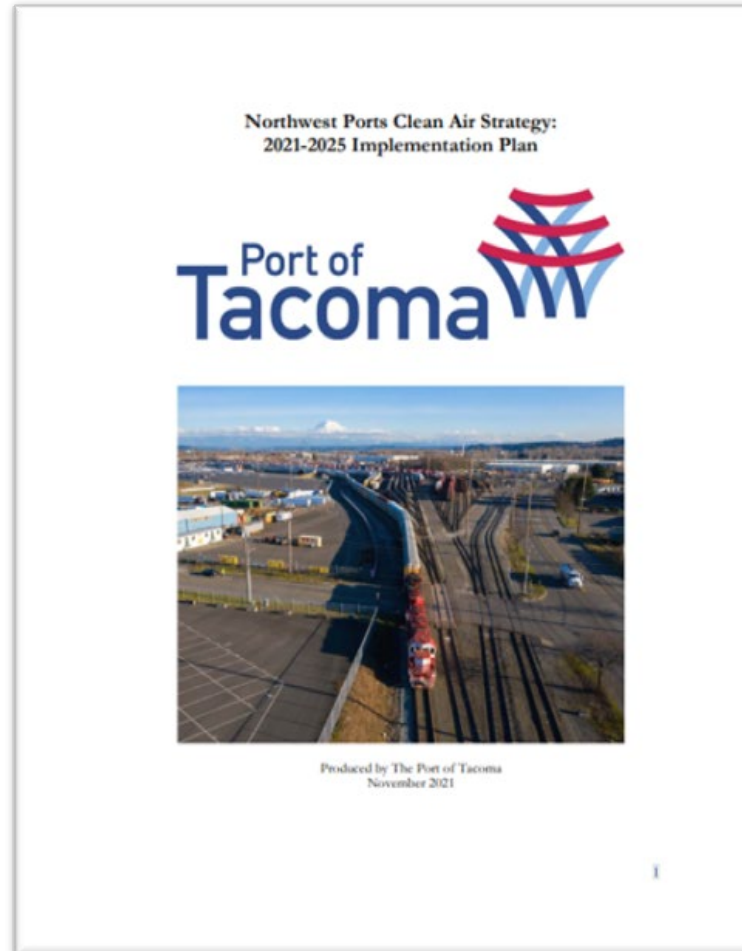
Scope 2: Electricity indirect GHG emissions

Scope 2 accounts for GHG emissions from the generation of purchased electricity² consumed by the company. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organizational boundary of the company. Scope 2 emissions physically occur at the facility where electricity is generated.



Leased assets: A company only accounts for emissions from leased assets that it operates as direct emissions (i.e. scope 1 & 2). Leased assets operated by tenants are considered indirect (i.e. scope 3).

Background – Existing GHG Policies



Resolution 2017-04-PT

A Resolution of the Port of Tacoma Commission

WHEREAS, the Port of Tacoma (Port) is the economic engine of Pierce County, the Puget Sound Region and the state, generating over 29,000 direct and indirect family-wage jobs and \$223 million in state and local taxes annually, and

WHEREAS, the Port values the environment, our neighbors, and intends to grow responsibly to ensure a sustainable future, and

WHEREAS, the Port is committed to integrated economic, environmental, and social decision-making and

WHEREAS, the Port provides best in class environmental stewardship and has returned more than 420 acres of property to productive use after legacy contamination cleanup, restored more than 100 acres of critical habitat for fish and other wildlife, and pioneered low-impact development technologies to treat industrial stormwater runoff and

WHEREAS, today the transportation industry is highly reliant on fossil fuels, the Port will continue to support energy efficiency, innovation, alternative fuel sources and renewable energy to advance the movement of commerce, and

WHEREAS, the Port has demonstrated leadership in reducing air emissions through the Northwest Ports Clean Air Strategy since 2008 and is on track with goals to reduce diesel particulate matter (DPM) emissions, to decrease immediate and long-term health effects on adjacent communities, and to reduce greenhouse gas emissions, and

WHEREAS, the Port previously undertook SEPA environmental review on the Northwest Ports Clean Air Strategy, and

WHEREAS, the Port has demonstrated leadership through the use of cleaner fuels, installation of shorepower, and use of on-dock rail and

NOW, THEREFORE, be it resolved that:

The Port adopts greenhouse gas reduction targets in keeping with the Paris Accords and in alignment with the global reductions necessary for keeping warming to within 2-degrees Celsius by 2050. The Port will reduce greenhouse gas emissions within the Puget Sound airshed as follows:

- By 2030:
 - 50% below 2005 levels (scope 1, 2 & 3 emissions)
- By 2050:
 - Carbon Neutral (scope 1 & 2 emissions)
 - 80% below 2005 levels (scope 3 emissions)

To accomplish these goals, the Port will advance initiatives specific to the operations it controls and work to influence other stakeholders whose emissions fall beyond the Port's

NWPCAS vision: "Phase out seaport related emissions by 2050"

Background – Existing GHG Targets



	2030	2040	2050
Port of Tacoma [Baseline=2005]	50% reduction for scope 1, 2 & 3 [GHG Resolution]	70% reduction for scope 1, 2 & 3 [NWPCAS IP]	"Phase out emissions" (100% for scope 1,2,3) [NWPCAS & NWPCAS IP]
NWSA [Baseline=2005]	50% reduction for scope 1, 2 & 3 [GHG Resolution]	70% reduction for scope 1, 2 & 3 [NWPCAS IP]	"Phase out emissions" (100% for scope 1,2,3) [NWPCAS & NWPCAS IP]
Port of Seattle [Baseline=2005 for scopes 1 and 2 and 2007 for scope 3]	50% reduction for scope 1, 2, and 3 [Century Agenda]	Net zero for scope 1 and 2 [Century Agenda]	Carbon neutral for scope 3 & "phase out emissions" [NWPCS + Century Agenda]

Audit progress via GHG Protocol

Definitions:

Net Zero: Emissions of GHGs are balanced by removals of GHG, including all GHGs (i.e. CO₂, methane, nitrous oxide, etc.).

Carbon Neutral: CO₂ emissions are balanced by CO₂ removals.

*Source: IPCC: [Glossary – Global Warming of 1.5 °C \(ipcc.ch\)](https://www.ipcc.ch/glossary/)

Policies that Establish GHG Targets:

2017 GHG Resolutions (PoT and NWSA)

Northwest Ports Clean Air Strategy (PoT, NWSA, PoS)

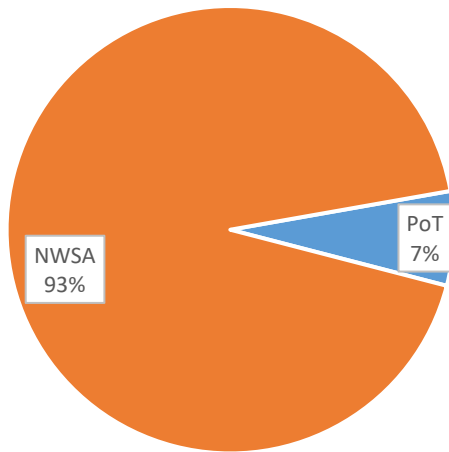
NWPCAS Implementation Plans (PoT, NWSA, PoS) [PoS's plan is called the MCAAP]

Century Agenda (PoS)

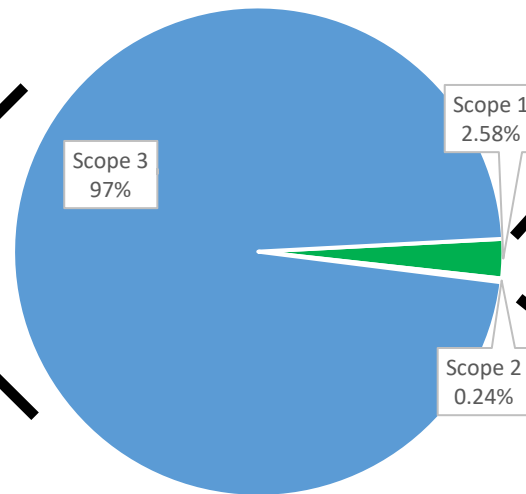
Why Prioritize Scope 1 and 2 Emissions Port of Tacoma

- Demonstrate leadership
- Take action where we have direct control

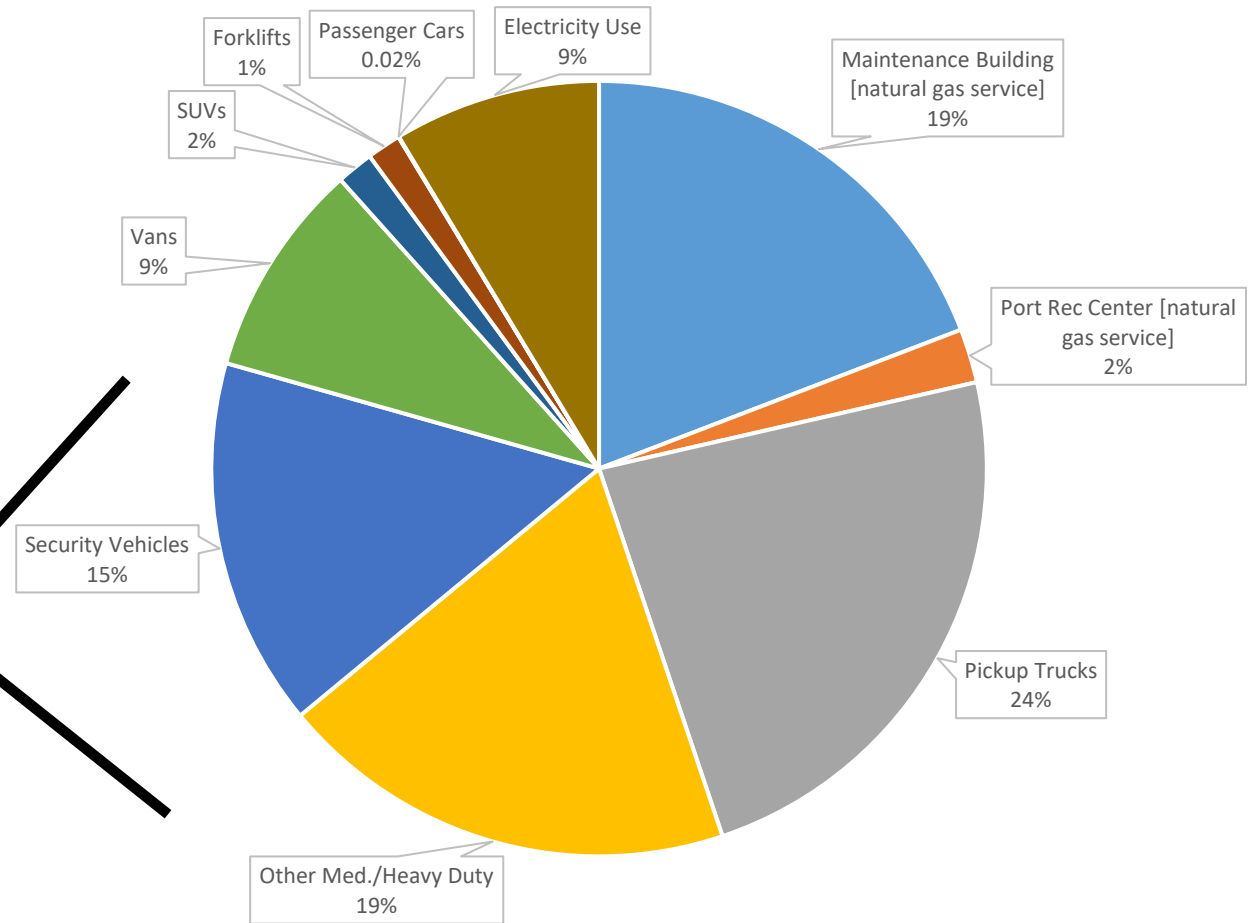
Total Tacoma Harbor Business
438,612 Tons



Port of Tacoma
29,920 Tons



PoT Scope 1 & 2
845 Tons



*Scope 3 emissions for NWSA and PoT include all relevant activities across the Puget Sound Airshed

Summary of Scope 1 and 2 Assets



These are home port assets that we expect to be operated by the PoT directly into the future, excluding assets that directly serve NWSA lines of business.

Scope 1 Asset	Description	Annual Fuel Use (Therms or gal)	Annual GHG Emissions (tons)
Facilities			
Maintenance Building	Natural gas service	27,632 Therms	162
Port Rec Center	Natural gas service	3,208 Therms	19
Fleet (Vehicles and Equipment)			
Maintenance (Fac + Equip)	Pickup Trucks: 34 SUVs: 5 Vans: 15 Forklifts: 12 Other: 59	38,788 gal	444
Security/Fab Center	Patrol Vehicles: 11 Other: 1	11,125 gal	131
Admin + Engineering	Pickup Trucks: 4 SUVs: 8 Vans: 1 Cars: 1 Other: 2	1,752 gal	21

Scope 2 Includes electrical usage at:

- Admin. Building
- Maintenance Building
- Port Rec Center
- Fabulich Center
- Other miscellaneous electrical meters

* NIM and EB1 fleets and facilities are considered part of the NWSA's scope 1 and 2

Implementation of net Zero Target

- Purchase zero tailpipe emission vehicles.
- Replace natural gas with electricity in scope 1 buildings/facilities. No natural gas in new construction.
- Purchase renewable fuels (like renewable diesel or renewable natural gas, RNG) for any assets that could not be replaced with zero tailpipe emission technologies.
- Purchase offset credits for any remaining net GHG emissions that could not be eliminated via other measures.

Tracking Progress & Public Accountability:

- Use the international GHG Protocol accounting/reporting standard
- Regular emission inventories (at least every 5 years)
- Third party verification of GHG inventory results

*Key Assumption: Clean Energy Transformation Act means grid electricity will be 100% renewable by 2045

Financial Implications

The rough order of magnitude estimated cost of the net zero scope 1 and 2 target, for the existing emission profile, is **\$8.9M - \$17.8M** [-25%/+50% range reflects high degree of uncertainty].

- Accelerating target means making the investments over 17 years rather than 27 years.

Vehicle Incremental Cost	Infrastructure Cost	Renewable Fuel Incremental Cost (Per 10 years)
\$1.4M - \$2.7M	\$6.8M - \$13.7M	\$0.9M - \$1.4M

Assumptions:

- Existing assets are replaced/upgraded/use renewable fuels 1:1, i.e. future fleets and facilities are equivalent to existing.
- Pickups, SUVs, vans, cars, and forklifts will reach end of useful life and need replacement before the target date; incremental vehicle cost of implementing a net zero policy is estimated as just the “EV premium”, not total vehicle cost, estimated at \$20k per vehicle
- Other equipment and heavier vehicles would use renewable fuels (electrification feasibility TBD)
- Charger infrastructure costs is assumed same unit cost as Admin Building project ~\$100k per charger and each electric vehicle gets its own charger
- Renewable fuel premiums are taken from PoS purchase data; \$1.36/gal for renewable diesel and 2.2x for RNG

Other Additional Financial Implications/Risks

- Increased risk of stranded assets; fleets may need to be replaced more quickly than necessitated by operational needs.
- An expansion of the scope 1 and 2 portfolio (i.e. fleet growth or new buildings) will mean more assets that will need to meet the goal.

Action Item at the July meeting for a resolution that would establish the new GHG targets.

- Would replace the 2017 GHG Resolution (2017-04)

The new resolution would include the following summary of targets, which includes the new 2040 net zero target.

Year	Emission Reduction Target
2030	50% (<i>scope 1, 2 and 3</i>)
2040	Net Zero (<i>scope 1 and 2</i>) 70% (<i>scope 3</i>)
2050	Net Zero (<i>scope 3</i>)



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