

THE NORTHWEST SEAPORT ALLIANCE
MEMORANDUM

MANAGING MEMBERS
ACTION ITEM

Item No. 9C
Date of Meeting November 7, 2023

DATE: October 30, 2023

TO: Managing Members

FROM: John Wolfe, CEO

Sponsor: Jason Jordan, Director Environmental and Planning

Project Manager: Graham VanderSchelden, Environmental PM

SUBJECT: First Reading: Resolution 2023-08 to Adopt New Targets to Achieve Net Zero Scope 1 and 2 GHG Emissions by 2040

A. ACTION REQUESTED

After first reading, request the Managing Members advance Resolution 2023-08, to update the NWSA's greenhouse gas emission reduction targets to achieve net-zero scope 1 and 2 emissions by 2040 to second reading.

B. SYNOPSIS

In December of 2022, the Managing Members requested that staff investigate acceleration of the NWSA's scope 1 and 2 greenhouse gas (GHG) targets to achieving net zero by 2040. Staff met with the Environmental Working Group twice in 2023 to discuss acceleration of the scope 1 and 2 targets, on March 29 and July 27. Direction from the working group was to bring this policy forward for consideration by Managing Members in the form of a new resolution.

On July 18, the Port of Tacoma Commission adopted a similar resolution to accelerate the Port of Tacoma's scope 1 and 2 GHG targets to net zero by 2040. Port of Seattle made similar updates to their Century Agenda in 2021. With the Port of Tacoma's resolution in place, both of the Homeports now share the ambition of achieving net zero GHG emissions by 2040 for scope 1 and 2 activities; this resolution would bring the NWSA's targets in alignment with the Homeports.

The proposed policy action would change the NWSA's GHG Targets as summarized in Table 1 below, accelerating the target to achieve net zero scope 1 and 2 GHG emissions from 2050 to 2040. The NWSA's targets are relative to a 2005 baseline year. Accelerated investment in charging infrastructure for electric vehicles and

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equipment, electric vehicles and equipment, building electrification, and/or renewable fuels will be needed to implement this target. There will be a critical investment decision in the future on whether to purchase electric or other zero emission technology straddle carriers or utilize renewable fuels to achieve net zero emissions.

Table 1. Summary of Proposed GHG Targets

Year	Existing Targets	New Targets
2030	50% (Scope 1, 2, and 3)	50% (Scope 1, 2, and 3)
2040	70% (Scope 1, 2, and 3)	Net Zero (Scope 1 and 2) 70% (Scope 3)
2050	100% (Scope 1, 2, and 3)	Net Zero (Scope 3)

C. BACKGROUND

Definition of Scope 1 and 2 Emissions:

The definitions of “scope 1” and “scope 2” emissions come from the International GHG Protocol, which is the standard for corporate GHG emissions reporting. Scope 1 emissions refer to direct emissions from an organization’s operations, which for the NWSA includes our cargo handling equipment and vehicle fleets and fuel used for building heating. Scope 2 emissions include any electricity purchased for facilities or operations that the NWSA directly controls. This includes a pro-rated share of the Port of Tacoma Admin Building, EB1 Terminal, the NIM Yard, and the T-46 Admin Building. Notably, scope 1 and 2 emissions are not inclusive of tenant operations and leased facilities, which are part of scope 3.

Summary of the NWSA’s Scope 1 and 2 Assets:

The NWSA’s scope 1 and 2 emissions profile include assets and licensed properties that directly serve the NWSA’s lines of business and are not leased. More specifically, these are assets for which the NWSA is financially responsible for purchasing fuel and or electricity used in their operations. This excludes Homeport assets with the minor exception of the Port of Tacoma Administration Building vehicle fleet, which is used by NWSA staff. The NWSA’s scope 1 emissions include a pro-rated portion of the Port of Tacoma Administration fleet based on the proportion of NWSA employees stationed at the Port of Tacoma Administration Building. In addition to the share of the Port of Tacoma Administration fleet, the NWSA’s scope 1 assets include fleets that serve EB 1 Terminal, the NIM Yard, and Terminal 7, as well as natural gas usage at the Terminal 46 Administration building. The NWSA’s scope 2 assets include electrical meters at the NIM Yard, EB1 Terminal, the Terminal 46 Administration Building, and a prorated share of the Port of Tacoma Administration Building. The NWSA’s scope 1 assets are summarized in the table below.

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Table 2. Summary of Scope 1 Assets

Scope 1 Asset	Description	Annual Fuel Use (Therms or gal)	Annual GHG Emissions (tons)
Facilities			
T-46 Admin Building	Natural gas service	18,385 Therms	108
Fleet (Vehicles and Equipment)			
Straddle Carrier Fleet	Straddle Carriers: 28	152,050 gal	1,716
EB 1 Terminal	Forklifts: 14 Yard Tractors: 2 Reach Stacker: 2 Vans: 1 Pickup Trucks: 6 SUVs: 1 Passenger Cars: 1 Other: 2	7,094 gal	80
NIM/T7	Forklifts: 8 Yard Tractors: 1 Vans: 1 Pickup Trucks: 10 SUVs: 2 Military Support: 3	5,391 gal	63
PoT Admin Fleet	-	-	9

Existing GHG Targets:

The NWSA has established its greenhouse policy through three mechanisms; the 2017 Greenhouse Gas Resolution (Resolution 2017-02), the Northwest Ports Clean Air Strategy, and the Northwest Ports Clean Air Strategy Implementation Plans.

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Northwest Ports Clean Air Strategy established the vision to phase out emissions by 2050, which is shared across the NWSA and the Homeports. As shown above in Table 1, the NWSA's current GHG emission reduction targets are to achieve 50% emission reductions by 2030, 70% by 2040, and net zero by 2050. These existing targets apply across all scopes (1,2, and 3).

In prior actions, both the Ports of Seattle and Tacoma updated their scope 1 and 2 GHG emission reduction targets to achieving net zero emissions by 2040; setting higher ambition than the Northwest Ports Clean Air Strategy for sources under their direct control. This action would bring the NWSA's scope 1 and 2 targets in alignment with the Homeports' targets and the new resolution would supersede 2017-02.

Emissions:

Addressing the NWSA's scope 1 and 2 emissions is an opportunity to demonstrate leadership because it is where the NWSA has direct operational control and can take direct action to reduce emissions. This is in contrast to reducing scope 3 emissions for which the NWSA must partner with tenants and other supply chain partners to implement emission reduction programs.

Because of the broad scope of emissions that are tracked and included in the NWSA's scope 3 emissions profile, scope 1 and 2 emissions make up a small fraction of the total. In addition to all on-facility activities that occur, vessel, truck and locomotive activities associated with moving port cargo that occur within the Puget Sound Airshed (depicted in green below in Figure 1) are included. For example, all vessel emissions from the time that a vessel enters the Strait of Juan de Fuca, until it leaves, are counted, about 150 nautical miles each way.

Figure 2 depicts the distribution of the NWSA's GHG and diesel particulate matter (DPM) emissions by source. The brightly colored wedges indicate sources of scope 3 emissions that the NWSA has jurisdictional influence over via lease agreements: ocean-going vessels (OGVs) while hoteling at berth, cargo handling equipment, and trucks as they operate on port facilities. These sources make up about approximately 19% of the total GHG emissions and 17% of the total DPM emissions. On-road trucks (i.e. trucks as they make port related trips outside of terminals) are shaded light green because while the NWSA does not have any direct jurisdictional influence on these activities via lease agreements, policies and programs that replace engines and fuels for newer/cleaner versions affect both on road and on terminal emissions. Core to the NWSA's sustainability program are programs designed to address these emission sources; our shore power program (ocean-going vessels at berth), our Clean Cargo Handling Equipment Program, and our Clean Truck Program. Our Green Corridor project is a critical first step towards reducing emissions from vessels as they transit, recognizing the importance of addressing that sector.

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While this proposed policy action would focus just on GHG emissions, DPM emissions are included in this discussion because they are the biggest driver of direct public health impacts. As we implement programs to reduce GHG emissions, we are keenly focused on maximizing the benefits to advancing environmental equity in our near port communities by prioritizing reductions of DPM and other air pollutant emissions from sources that operate in and near these communities. The sources over which the NWSA has jurisdictional influence through lease agreements are generally also the sources that exist closest to near port communities, making them good areas to prioritize our efforts. The fact that trucks make up a smaller proportion of the DPM distribution than the GHG distribution indicates that trucks are generally emitting less DPM per amount of fuel burned than many other sources. This is likely due to a number of factors including that the strictest regulations for onroad engines occurred earlier than for non-road engines, in many cases, non-road engines have longer useful lives than onroad engines, and the NWSA's 2007 model year requirement implemented in 2019 through the clean truck program.

Addressing the NWSA's scope 1 and 2 emissions will primarily consist of addressing emissions from equipment and vehicle fleets. Figure 3 shows the distribution of the NWSA's scope 1 and 2 emissions. Because purchased electricity in Tacoma and Seattle are very low carbon, scope 2 emissions are a small fraction of the total. By far the largest emissions source is the straddle carrier fleet that serves the North Intermodal Yard, at 87% of the total. The remaining emissions are roughly split between other fleets and equipment that serve EB1, the NIM Tard, and Terminal 7, and natural gas combustion emissions from NWSA office space in the Seattle Harbor.



Figure 1. Puget Sound Maritime Air Emissions Inventory Domain

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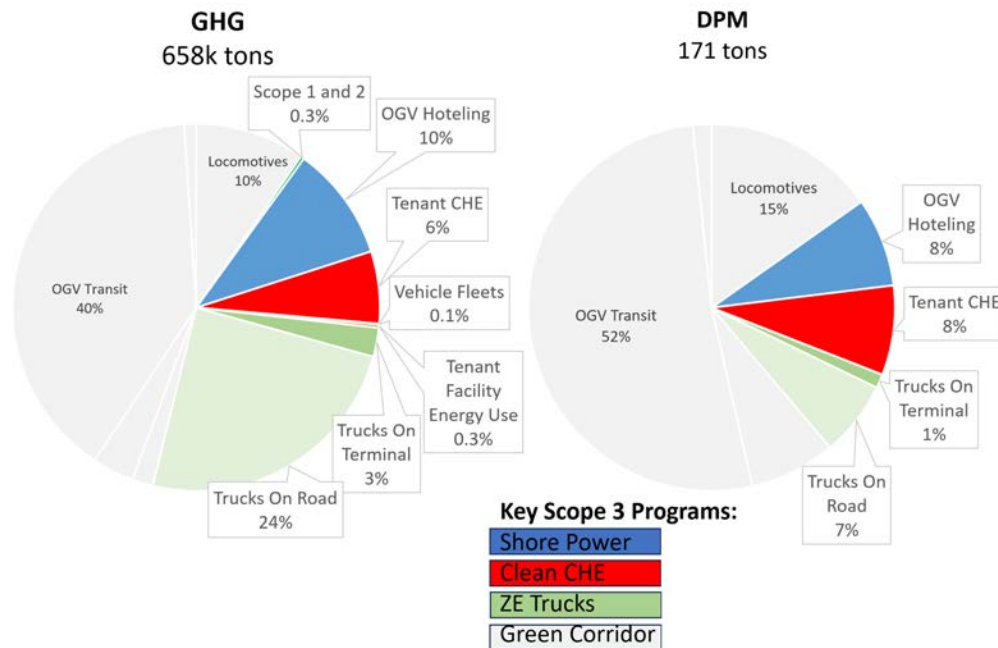


Figure 2. Distribution of NWSA's greenhouse gas (GHG) and diesel particulate matter (DPM) emissions by source, highlighting the sources for which the NWSA has jurisdictional influence through our leases (blue, red, and green). The NWSA has core programs dedicated to addressing each of these sources as indicated by color coding.

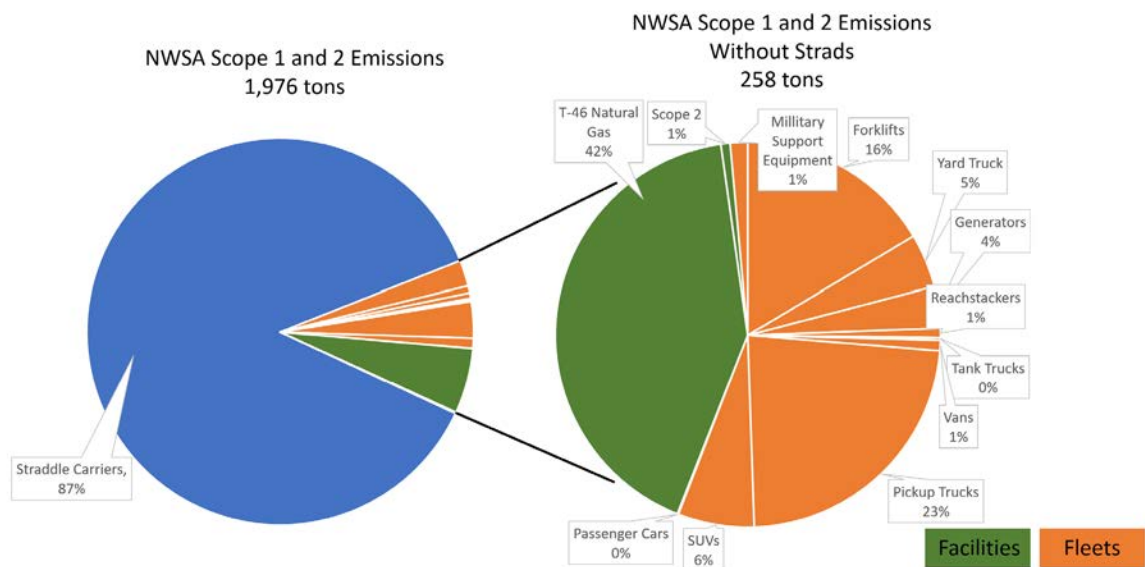


Figure 3. Distribution of the NWSA's scope 1 and 2 GHG emissions by source. Straddle carriers are by far the largest source of emissions, making up 87%. Of the non-straddle carrier emissions, about half are from fleets and half from facility natural gas use.

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D. IMPLEMENTATION APPROACHES

A net zero target allows for some flexibility in implementation but does carry an expectation that an organization will seek to maximize use of zero tailpipe emission technologies. Renewable and biofuels are acceptable ways to meet the target and should be utilized in cases where electrification or other zero tailpipe emission solutions are not feasible. Finally, carbon credits, or “offsets” may be purchased, but it is generally accepted that this option should only be utilized when there is no other way to achieve the goal. For example, renewable fuel is the pathway to meet the goal, but there is not a renewable fuel available with zero carbon intensity, and offsets may be purchased to cover the difference.

An important implementation consideration is RCW 194-29 which requires publicly owned fleets in Washington to purchase zero emission vehicles as turnover occurs, if feasible, and if not feasible purchase renewable and/or biofuels.

Additionally, the Washinton Clean Energy Transformation Act (CETA) requires utilities to provide 100% renewable power by 2045. Given that Seattle City Light and Tacoma Power already provide extremely low carbon electricity staff believe the best course of action is to rely on utility action under CETA to decarbonize scope 2. It also means that electrifying scope 1 assets is a good pathway to decarbonize since upstream emission from electricity will be minimized.

EB1, NIM, T7 Vehicle and Equipment Fleets:

These fleets will be addressed as part of the Port of Tacoma’s fleet electrification program since they are managed by the Port of Tacoma Fleet Maintenance team. The Air Quality and Sustainable Practices team has been working closely with the Maintenance team on a program to install charging and begin to electrify Port of Tacoma managed fleets. Installing charging is critical to enable purchase of electric vehicles as annual vehicle replacements are made.

The first project is currently underway to install charging at the Port of Tacoma Administration Building and purchase electric vehicles for the Port of Tacoma Administrative fleet. The next project to be considered is to install charging at the Port of Tacoma Maintenance Building, which may also serve T7 and NIM fleet vehicles, followed by charging at EB1.

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Straddle Carrier Fleet:

Electric straddle carriers are in the early stages of commercialization, with demonstrations beginning in other parts of the world and are currently much more expensive than conventional options. Therefore, developing a detailed fleet electrification plan is presently premature. Staff will explore purchase of renewable diesel to reduce emissions from the straddle carriers in the short term as well as the feasibility of small-scale demonstration of an electric machine. Staff will also continue to track technology development. If new straddle carrier purchases are needed in the near future, staff will perform a detailed feasibility assessment of electric machines as part of the investment decision.

Seattle Administrative Office Space:

Staff recommend waiting to pursue HVAC or other upgrades to the Seattle Harbor office space until there is more clarity around the long-term use of Terminal 46.

E. FINANCIAL IMPLICATIONS

Achieving net zero emission for the NWSA's scope 1 and 2 activities is expected to raise costs unless grants are secured to cover incremental costs and is not expected to directly lead to significant additional revenue. The NWSA has already set the goal of achieving net zero by 2050 through the Northwest Ports Clean Air Strategy, this policy change would mean making these investments 10 years earlier.

The actual cost of implementing this policy will depend heavily on the future price of zero emission equipment when they are purchased and/or the future price premium of renewable fuels. However, to provide a high level, rough order of magnitude estimate, staff developed the cost estimate shown in Table 2, using presently available information. This analysis represents the incremental costs to purchase electric vehicles and equipment or renewable fuels, or in other words, the cost above purchasing conventionally fueled vehicles and equipment or conventional fuels. This assumes that these assets would ordinarily be replaced before 2040 under "business as usual" conditions. These cost estimates should be considered a very rough order of magnitude only, as they are all pre-design and pre-site exploration and detailed discussions with equipment vendors have not yet been conducted. Renewable fuel cost premiums were estimated based on fuel prices paid by Port of Seattle. Electrification costs were estimated using unit costs from the Port of Tacoma Admin Building EV Charging Station project for future vehicle charging infrastructure and literature values for heavy equipment charging and vehicle and equipment costs. Staff assume that the cost of zero-emission vehicles and equipment will come down over time, but it is challenging to predict if/when they may reach cost parity with conventional options.

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Similarly, with the implementation of the Clean Fuel Standard in Washington, staff expect there to be higher supply of renewable fuels over time; but also expect demand to grow significantly given the movement towards decarbonization, making future cost premiums uncertain.

Ultimately, there will be a series of investment decisions presented to Managing Members as fleets are replaced and refined cost information will be presented as these projects are brought forward. Managing Members will need to consider the alternatives alongside other organization needs at that time to choose the best path(s) forward. The analysis does not include any future grant funds that may be pursued, which are likely to be important for making these investments feasible.

Table 2. Rough Order of Magnitude Costs for Electrification and Renewable Fuel Solutions to Achieving Net Zero for Scope 1 and 2 Assets. The implementation approaches are discrete, therefore not additive.

Scope 1 Asset	Emissions (tons/yr)	Alternatives			
		Renewable Fuel (Cost premium over 15 yr)	Electrification		
			Vehicles/ Equipment	Infrastructure	Total
T-46 Admin Building (building gas)	108	\$400k	-	\$1.1M	\$1.1M
Straddle Carrier Fleet	1,716	\$3.1M	\$39.2M	\$9.3M	\$48.5M
EB1 Terminal Fleet	80	\$140k	\$3.2M	\$3.7M	\$6.9M
NIM/T7 Fleet	63	\$110k	\$710k	\$2.9M	\$3.6M
		\$3.7M			\$60.1M

F. ATTACHMENTS TO THIS REQUEST

- Resolution No. 2023-08

G. PREVIOUS ACTIONS OR BRIEFINGS

- Environmental Working Group Meeting 3/29/2023
- Environmental Working Group Meeting 7/27/2023

RESOLUTION NO. 2023-08

**A RESOLUTION OF
THE NORTHWEST SEAPORT ALLIANCE**

Revising the Northwest Seaport Alliance’s Targets for Reducing Greenhouse Gas Emissions and Amending and Superseding Portions of 2017-02

WHEREAS, the Northwest Seaport Alliance (NWSA) is a critical economic engine of the Puget Sound Region, and the state of Washington, supporting over 58,400 direct and indirect jobs, generating over \$4 billion in labor income, and producing more than \$135.9 million annually in state and local taxes, and

WHEREAS, the NWSA is committed to facilitating sustainable economic prosperity, and

WHEREAS, the NWSA has consistently demonstrated leadership in reducing air and climate pollution since adopting the Northwest Ports Clean Air Strategy in 2008; and

WHEREAS, in 2020, the NWSA adopted an update to the Northwest Ports Clean Air Strategy Update, which sets the vision to “phase out emissions from seaport related activities by 2050”, and

WHEREAS, the NWSA first established organizational greenhouse gas reduction targets in 2017 in Resolution 2017-02, and

WHEREAS, the NWSA continues to demonstrate leadership in reducing greenhouse gas emissions through installation of shore power, the Clean Truck Program, and projects to deploy clean cargo handling equipment, and

WHEREAS, the NWSA wishes to amend the previously adopted 2017 targets to accelerate the planned decarbonization of its scope 1 and 2 activities to achieve net zero emissions by 2040, and

NOW, THEREFORE, BE IT RESOLVED BY THE MANAGING MEMBERS OF THE NORTHWEST SEAPORT ALLIANCE:

1. The NWSA hereby adopts updated Greenhouse Gas Targets as summarized below. These targets are relative to 2005 levels, the year of the NWSA’s first emissions inventory:

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

2. Provisions of Res. 2017-02 impacted by this update are hereby amended and superseded.

ADOPTED by the Managing Members of The Northwest Seaport Alliance at a regular meeting held on the ____ day of _____ 2023 and signed by its Co-Chairs and attested by its Co-Secretaries in authentication of its passage this this ____ day of _____ 2023.

Sam Cho, Co-Chair
The Northwest Seaport Alliance

Deanna Keller, Co-Chair
The Northwest Seaport Alliance

ATTEST:

Fred Felleman, Co-Secretary
The Northwest Seaport Alliance

John McCarthy, Co-Secretary
The Northwest Seaport Alliance

draft

Item No.: 9C

Date of Meeting: November 7, 2023

First Reading: Resolution to Adopt New GHG Emission Targets to Achieve Net Zero Scope 1 and 2 Emissions by 2040



THE NORTHWEST
SEAPORT ALLIANCE

SEATTLE + TACOMA

Graham VanderSchelden
Project Manager, Environmental

November 7, 2023

ACTION REQUESTED

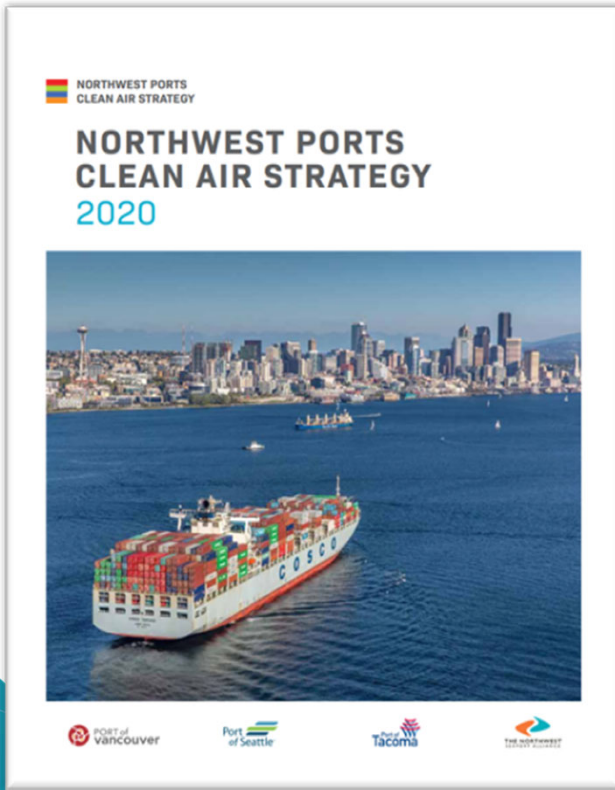
After first reading, request the Managing Members advance Resolution 2023-08, to update the NWSA's greenhouse gas emission reduction targets to achieve net zero scope 1 and 2 emissions by 2040 to second reading.

Proposed Action

Year	Existing Targets	New Targets
2030	50% (Scope 1, 2, and 3)	50% (Scope 1, 2, and 3)
2040	70% (Scope 1, 2, and 3)	Net Zero (Scope 1 and 2) 70% (Scope 3)
2050	Net Zero (Scope 1, 2, and 3)	Net Zero (Scope 3)

* Net zero by 2040 targets for scopes 1 and 2 have been adopted by both Homeports.

Existing GHG Policies



Item No.: 4A_Attach
Meeting: 9/05/17

RESOLUTION NO. 2017-02
A RESOLUTION OF
THE NORTHWEST SEAPORT ALLIANCE
GREENHOUSE GAS REDUCTION TARGETS

A Resolution establishing absolute greenhouse gas reduction targets for the Northwest Seaport Alliance, in keeping with the Paris Accord.

WHEREAS, The Northwest Seaport Alliance ("Alliance"), a port development authority of the State of Washington, organized pursuant to Chapter 53.57 RCW, is the fourth-largest container gateway in North America, supports over 48,000 family-wage jobs and generates \$379 million in state and local taxes annually to support education, police, fire services and road improvements; and

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

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

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

WHEREAS, the homeports of Seattle and Tacoma and the Alliance have demonstrated leadership in reducing air emissions through the Northwest Ports Clean Air Strategy since 2008 and are 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 Alliance has demonstrated leadership through the use of cleaner fuels, installation of shorepower and use of on-dock rail;

NOW, THEREFORE, BE IT RESOLVED BY THE MANAGING MEMBERS OF THE NORTHWEST SEAPORT ALLIANCE TO HEREBY ADOPT THE FOLLOWING RESOLUTION:

- The Alliance adopts greenhouse gas reduction targets in keeping with the Paris Agreement and in alignment with the global reductions necessary for keeping warming to within 2-degrees Celsius by 2050. The Alliance 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)

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

What are Scope 1, 2, and 3 GHG Emissions?

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

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.

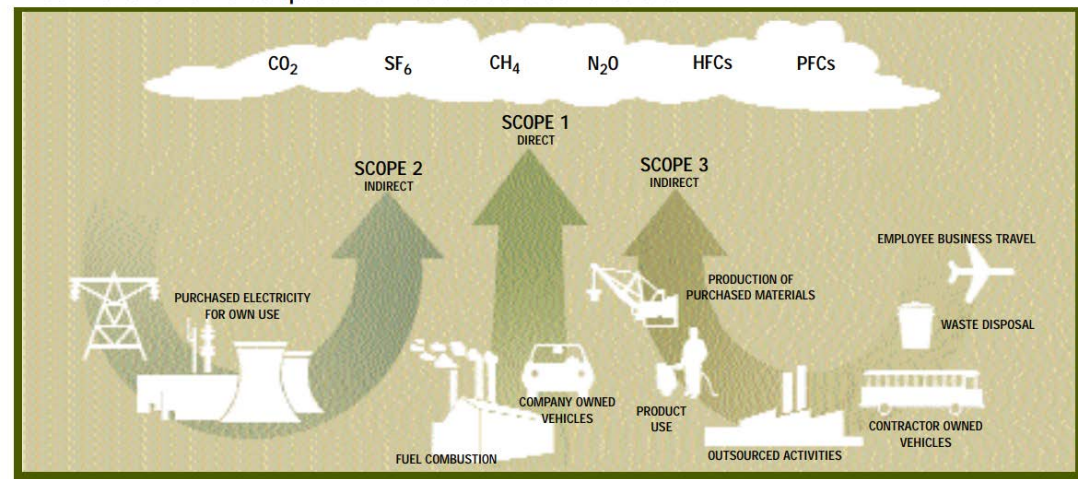
Scope 3: Other indirect GHG emissions

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.

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).

Scope 2: Electricity indirect GHG emissions

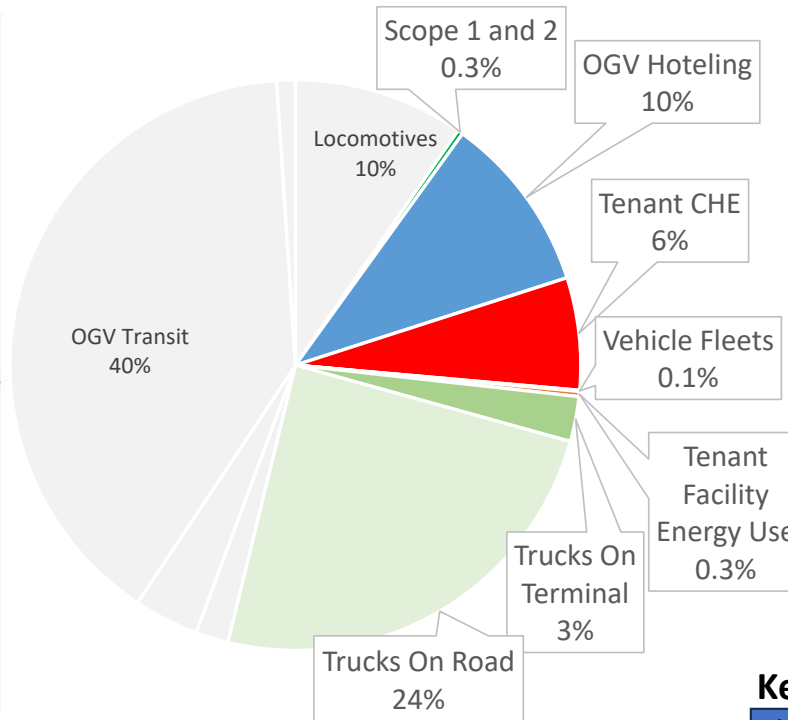
Scope 2 accounts for GHG emissions from the generation of purchased electricity² consumed by the company. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organizational boundary of the company. Scope 2 emissions physically occur at the facility where electricity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



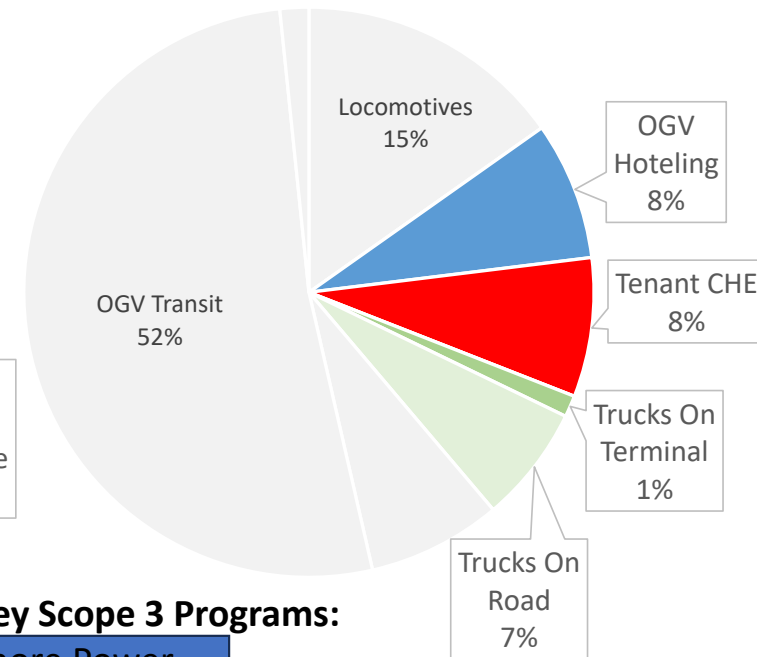
NWSA Emissions & Existing Programs



GHG
658k tons



DPM
171 tons



Key Scope 3 Programs:

- Shore Power
- Clean CHE
- ZE Trucks
- Green Corridor

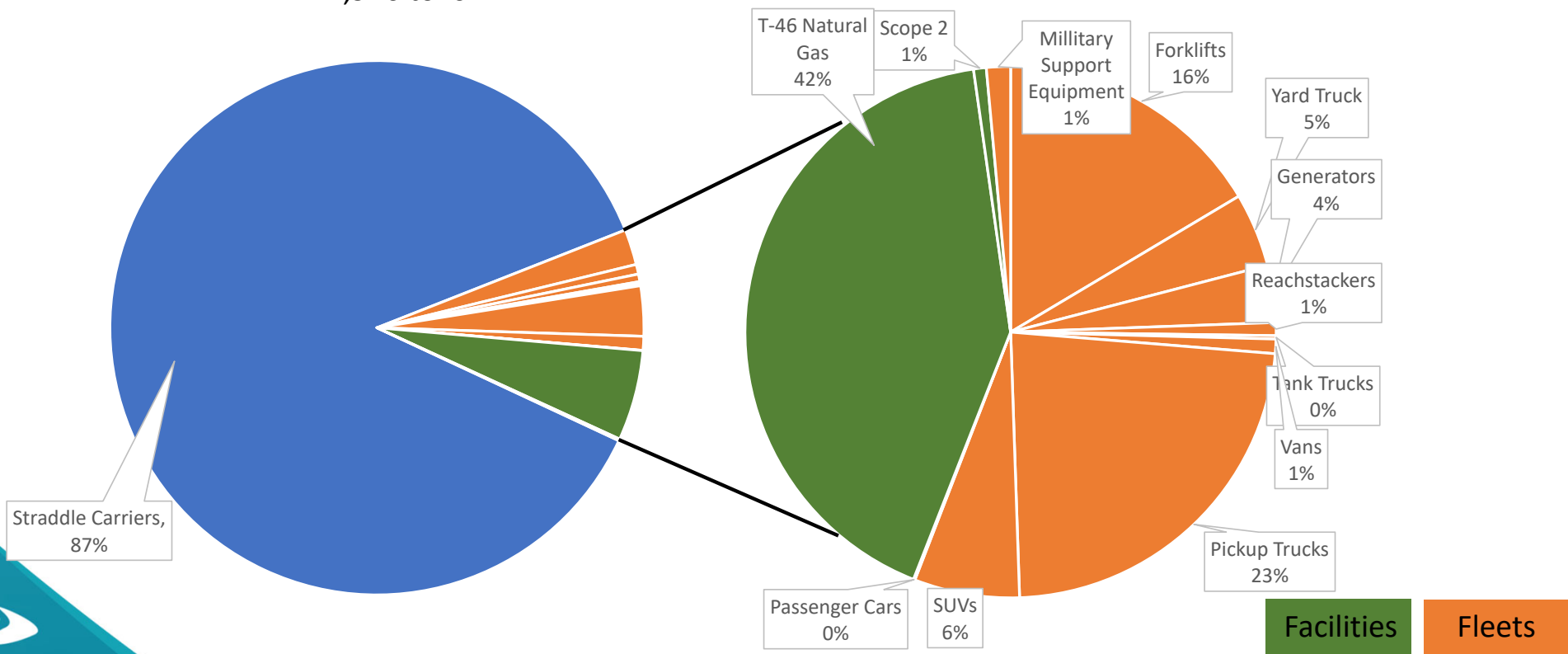
Why Prioritize Scope 1 and 2 Emissions?

- Demonstrate Leadership
- Take action where we have direct control

NWSA's Scope 1 and 2 GHG Emissions

NWSA Scope 1 and 2 Emissions
1,976 tons

NWSA Scope 1 and 2 Emissions
Without Strads
258 tons



What Are the NWSA's Scope 1 and 2 Assets?

These are assets that support NWSA lines of business. Many of these assets are currently owned by the PoT, but ownership will transition to the NWSA as equipment/vehicles are replaced. Fuel is paid by NWSA.

Scope 1 Asset	Description	Annual Fuel Use (Therms or gal)	Annual GHG Emissions (tons)
Facilities			
T-46 Admin Building	Natural gas service	18,385 Therms	108
Fleet (Vehicles and Equipment)			
Straddle Carrier Fleet	Straddle Carriers: 28	152,050 gal	1,716
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PoT Admin Fleet	-	-	9

Includes Fleets that Serve:

- Breakbulk
 - EB1
 - T7
- NIM Yard/Husky
 - Strads
 - Vehicles
 - Misc. Equipment
- Other Admin

Scope 2

- Share of PoT Admin Building
- T-46 Admin Building
- EB1
- NIM Yard

Implementation Approaches

Electrification/Zero Tailpipe

Emission Solutions

Advantages:

- Zero direct local air pollutant emissions
- Zero upstream emissions if/when WA Clean Energy Transformation Act goal is reached [if hydrogen; would need to be sourced from a zero-carbon source]

Disadvantages:

- Likely more expensive
- Requires new infrastructure
- In some cases, technologies are not yet commercialized
- Operational constraints of battery electric equipment (in some cases)

Renewable Fuels

(Renewable diesel, renewable natural gas)

Advantages:

- Likely to be cheaper in cases where cost parity is not achieved between ZE and conventionally fueled tech
- Drop-in fuel; does not require significant operational adaptation or infrastructure

Disadvantages:

- Local air pollutant emissions
- Production and market for renewable fuels is still developing and future availability and price is not certain
- Offsets may be needed to get footprint fully to net zero; renewable/biofuels are not zero carbon intensity (CA: Bio/RD: CI=8-80, conv D: CI=100)

As we implement this policy and make future investment decisions, ZE options should be preferred. But the net zero target retains the flexibility to use renewable fuels in cases where there are financial, operational, and/or other reasons to do so.

Implementation Actions and Costs

- Resources are limited and sustainability investments one of many needs; achieving net zero will likely add costs unless grant funding is secured to cover incremental cost; net zero projects are not expected to be revenue generating.

Implementation Approaches

State Law RCW 194-29 requires public fleet purchases to be EV if feasible

- NIM/T7/EB1 fleets:** Fleet electrification program underway in collaboration with Port of Tacoma
- Straddle Carrier Fleet:** Track technology development/demos, explore renewable fuels, consider ZE if/when replaced
- T-46 Admin Building:** Analyze options upon more clarity on long-term use

Incremental Costs to Implement this Policy

- Cost estimates are high level, pre-exploration/design; very rough order of magnitude only**
- Assume assets will need to be replaced between now and 2040; incremental cost is above conventional replacement/fuel
- Any additions/subtractions from the asset portfolio will change the scope and cost
- Uncertainty around availability and future cost premium of renewable/bio diesel and future cost of electric equipment
- Does not include EV fuel cost savings

Scope 1 Asset	Emissions (tons/yr)	Alternatives			
		Renewable Fuel (Cost premium over 15 yr)	Electrification		Total
			Vehicles/ Equipment	Infrastructure	
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