



PORT of  
**vancouver**

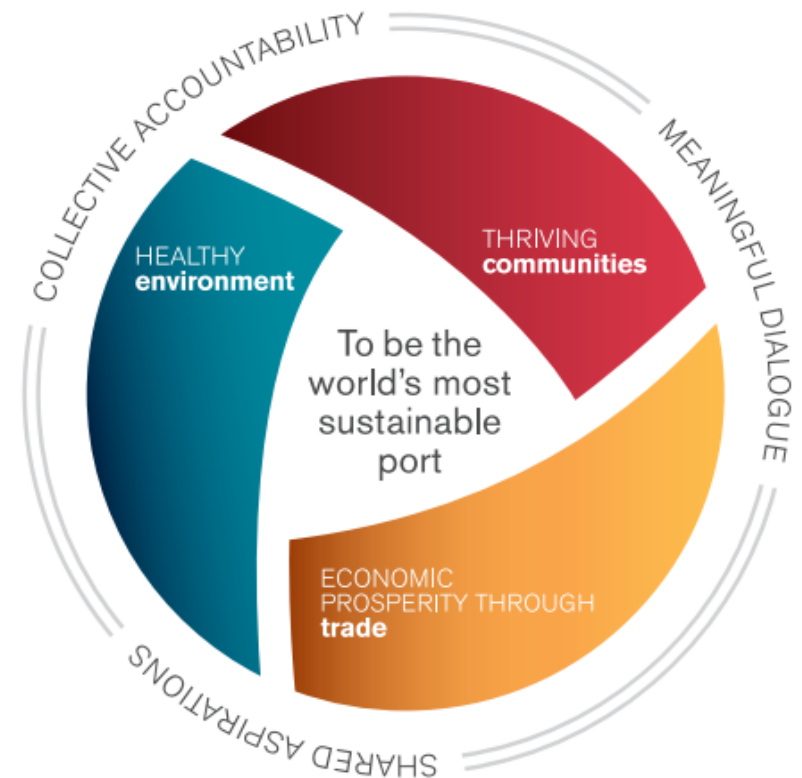
## Climate action overview

February 6, 2023

# Port authority vision

Canada's largest port enabling nearly \$300 billion in trade with more than 170 economies annually.

The Port Authority vision is for *the Port of Vancouver to be the world's most sustainable port.*



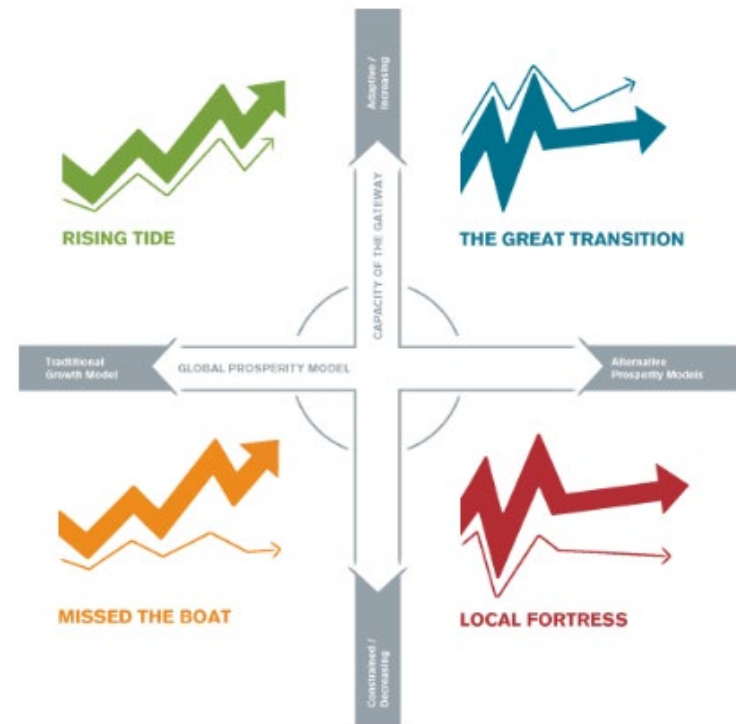
[www.portvancouver.com/about-us/sustainability/](http://www.portvancouver.com/about-us/sustainability/)



# Scenario planning

Since 2010, we have used long range scenario planning to challenge our assumptions about the future.

- The process has involved hundreds of individuals and organizations to imagine what port could look like in 2050
- Consensus emerged around an anticipated future featuring a shift to a low carbon economy that better balances economic, environmental and social sustainability
- Key driver of change: **the energy transition**
- What does this energy transition look like for the decarbonization of ports and shipping?



# Northwest Ports Clean Air Strategy

A collaborative strategy launched in 2007 with Ports of Seattle and Tacoma to reduce port-related emissions in Georgia Basin - Puget Sound airshed.

## Vision

**Phase out emissions from seaport-related activities by 2050, supporting cleaner air for our local communities and fulfilling our shared responsibility to help limit global temperature rise to 1.5°C.**



[https://www.portvancouver.com/wp-content/uploads/2021/04/NWP\\_CAS\\_Report\\_2020WEB.pdf](https://www.portvancouver.com/wp-content/uploads/2021/04/NWP_CAS_Report_2020WEB.pdf)

# Northwest Ports Clean Air Strategy

## Objectives

### Efficiency, fleet modernization, and interim fuels

Implement programs that promote equipment efficiency, phase out old high-emitting equipment, and support lower-emission interim fuels

### Infrastructure to support zero-emissions equipment

Facilitate collaboration to identify and address key infrastructure constraints by 2030

### Adoption of zero-emissions equipment

Facilitate collaboration to advance commercialization of zero-emissions equipment and enable adoption before 2050



OCEAN-GOING  
VESSELS (OGV)



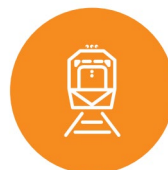
HARBOR VESSELS



TRUCKS



CARGO HANDLING  
EQUIPMENT (CHE)



RAIL

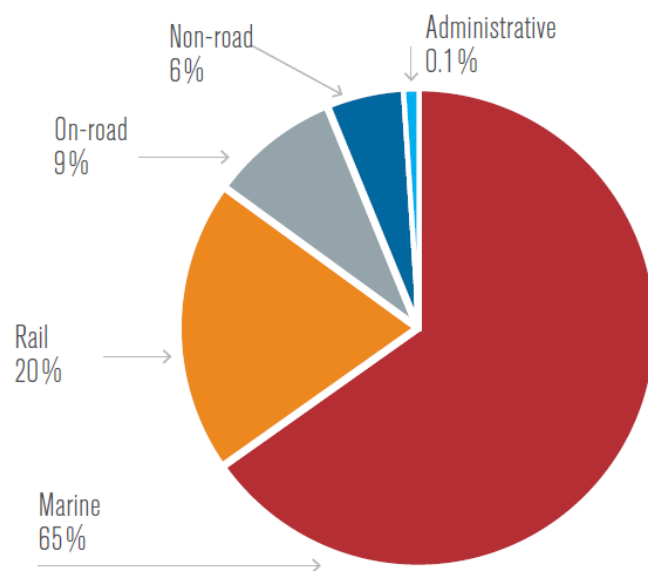


PORT ADMINISTRATION  
AND TENANT FACILITIES

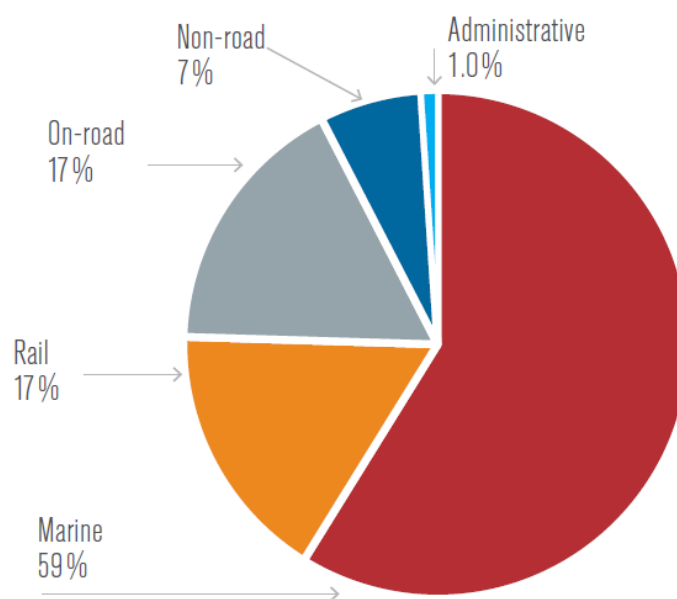
# Port emission contributions by source (2015)

The port emission inventory report provides information on port-related emissions and initiatives.

Air pollutant emissions by source, 2015



Greenhouse gas emissions by source, 2015

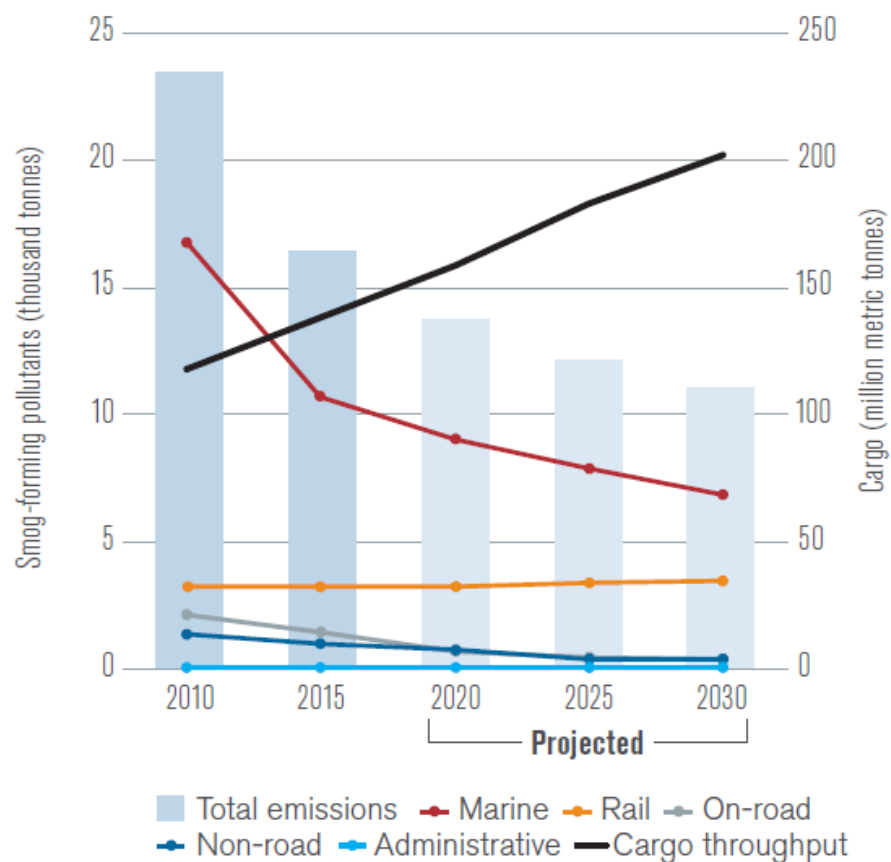


For more information visit: [www.portvancouver.com/environment/air-energy-climate-action/clean-air-strategy](http://www.portvancouver.com/environment/air-energy-climate-action/clean-air-strategy)

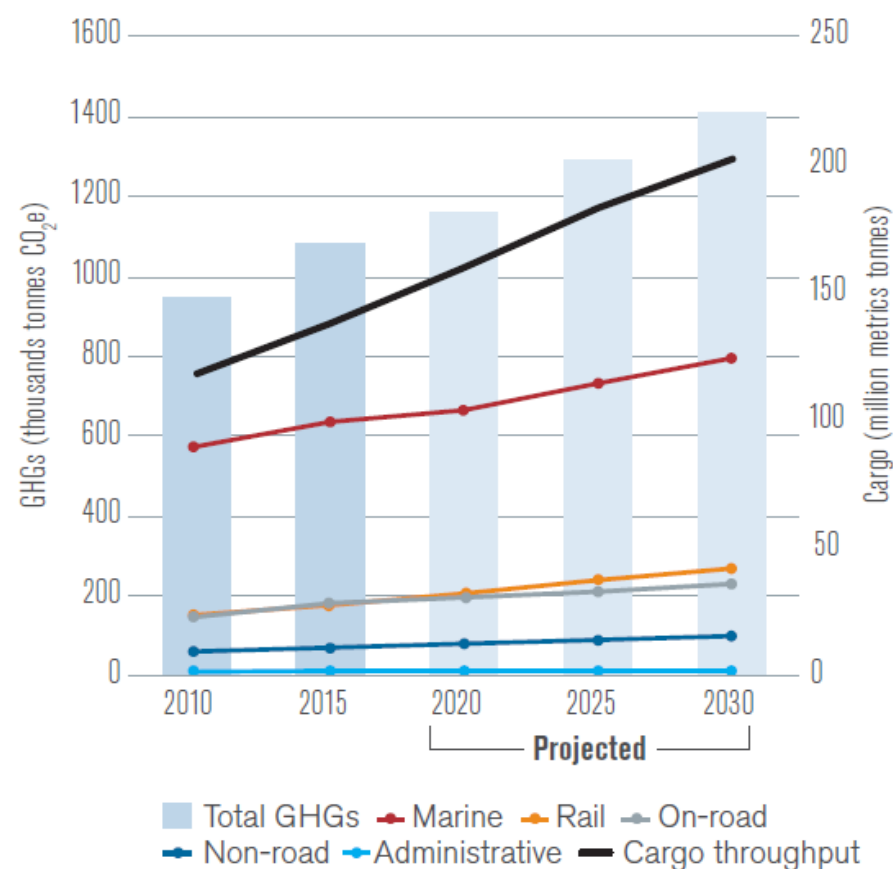


# Air pollutant and GHG emission trends

Air pollutant emissions and cargo throughput, 2010-2030



GHG emissions and cargo throughput, 2010-2030





# Marine emissions



# Ecoaction program for ships

Introduced in 2007, the Ecoaction program offers discounted harbour dues for cleaner and quieter ships.

- Participation has grown from 10% to nearly 40% of eligible ships calls
- **NEW Platinum** (75%) discount option in 2023 for vessels using alternative marine fuels, connecting to shore power, and obtaining underwater noise notations

## Ecoaction discount levels



# Blue Circle Award

Marine carriers with the highest participation rates in the Ecoaction program are recognized with the **Blue Circle Award**.



## Shipping lines

CMA CGM	MOL Chemical Tankers Pte. Ltd.
Evergreen Line	ONE – Ocean Network Express
Fednav Ltd.	Pacific Basin Shipping (Canada) Ltd.
G2 Ocean Shipping Canada Limited	Westwood Shipping Lines
Hapag-Lloyd	Yang Ming
HMM	

## Coastal marine operators

BC Ferries	North Arm Transportation
SAAM Towage Canada	Seaspan ULC



# Shore power facilities

Shore power introduced for cruise ships in 2009 and container ships in 2018.

- Over 32,000 tonnes of GHG emissions have been eliminated since introducing shore power facilities in 2009
- Second shore power berth completed at Centerm Terminal in 2022
- Goal to expand shore power to remaining cruise and container berths by 2030



# International collaboration on decarbonization

We are actively working with a number of organisations to help advance zero emission technologies and fuels for ports and shipping including:



## Getting to Zero Coalition

Initiative to accelerate the development of commercially viable zero emissions vessels by 2030



## The International Association of Ports and Harbours (IAPH), Clean Marine Fuels

Shaping global maritime policy while advancing sustainability and climate action



## World Ports Climate Action Program

Working with 12 leading global ports to accelerate decarbonization of shipping and ports

# LNG as a marine fuel

LNG is currently the only commercially viable and scalable alternative to oil-based marine fuels that significantly reduces air pollutants and can reduce GHG emissions by up to 27% w/ LNG from FortisBC Tilbury facility.

- Introduction of bio/renewable and synthetic gas can enable significant GHG reductions
- Regulators and industry must respond to concerns over methane emissions and life cycle carbon intensity to leverage the benefits of gas in the transition to zero emission fuels



# Green cruise corridor announcement

## FIRST MOVER COMMITMENT

Leading the Zero Greenhouse Gas Emission Transition



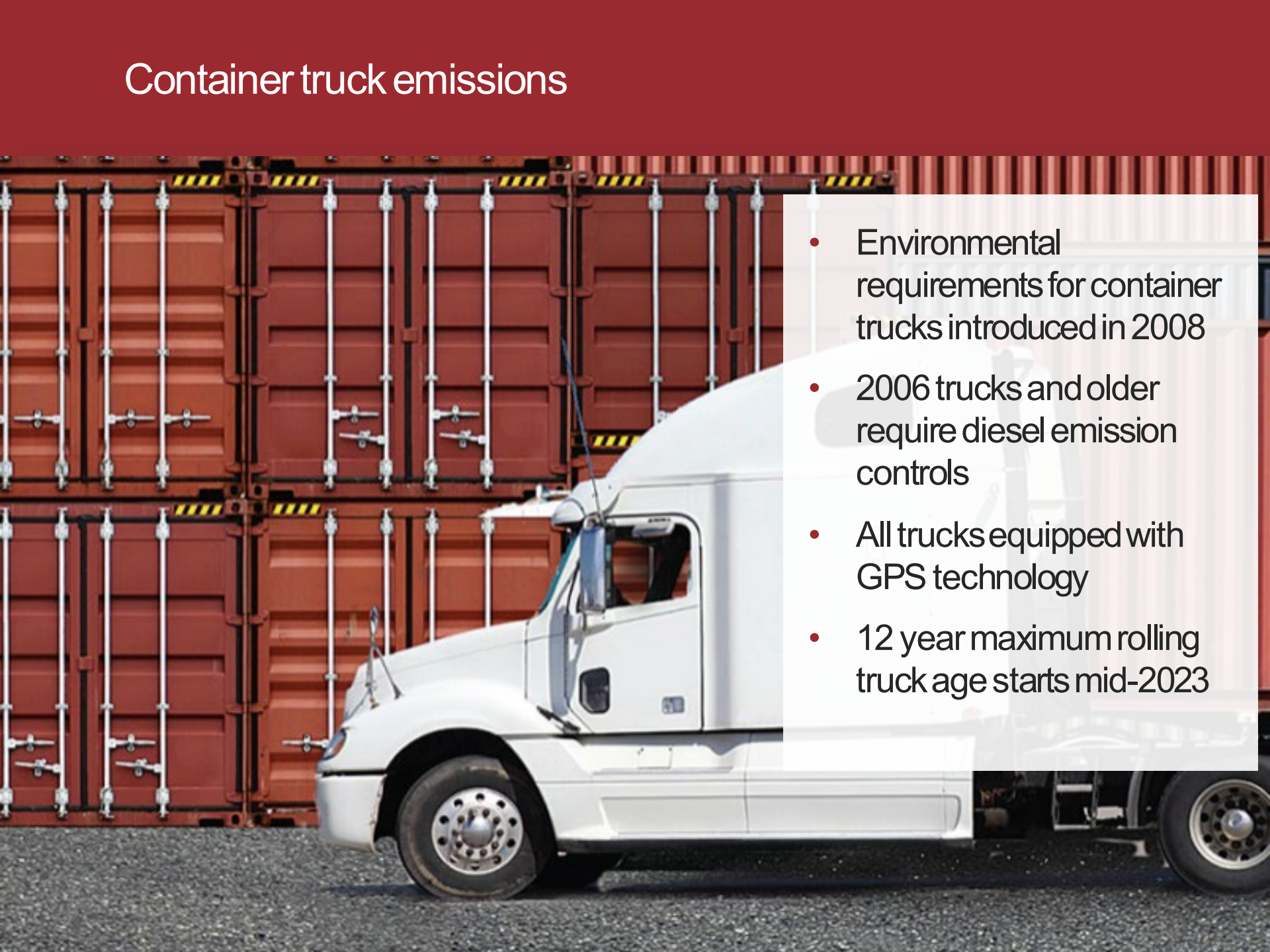
Vancouver Fraser  
Port Authority



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# Container truck emissions

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- A white semi-truck is parked on a gravel surface in front of a large red shipping container. The truck is facing left, and the container is stacked in the background. A semi-transparent white box containing a bulleted list is overlaid on the right side of the image.
- Environmental requirements for container trucks introduced in 2008
  - 2006 trucks and older require diesel emission controls
  - All trucks equipped with GPS technology
  - 12 year maximum rolling truck age starts mid-2023

# Environmental benefits of the rolling truck age program

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The program is estimated to result in the following annual emission reductions:

- Reduction of 15,000 tonnes of greenhouse gases (CO<sub>2</sub>e) – the equivalent of removing 3,000 passenger vehicles from the road each year
- Reduction of 575 tonnes of nitrous oxides (NO<sub>x</sub>) – the equivalent of removing 80,000 passenger vehicles
- Reduction of 37 tonnes of particulate matter 2.5 (PM<sub>2.5</sub>), a known carcinogen – the equivalent of removing 200,000 passenger vehicles

# Non-road emissions



- Environmental requirements for non-road equipment introduced in 2015
- Reduces diesel particulate matter emissions through phase-out of older, high-emission equipment
- Applies fees and rebates
- Prohibits introduction of old equipment on port lands



# Low emission technology initiative



## Clean technology initiative

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Partnership with the Government of British Columbia to facilitate scalable clean technology pilot projects in port applications, e.g.:

- 100% biodiesel in container ferry
- 100% renewable diesel in terminal locomotive
- 100% renewable diesel in port authority patrol boat
- 100% renewable diesel in tug boat
- Two battery electric terminal tractors
- Two battery electric container trucks
- Hydrogen powered rubber tire gantry
- Currently seeking funding for additional pilot projects to advance zero emission technologies
- Informs planning of energy infrastructure needed for a zero emission port

Thank you!