

Perspectives on decarbonizing long- haul trucking in Ontario

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April 25, 2023

Leading Canada's transition to clean energy

The Pembina Institute is a charity and clean energy think-tank that advocates for strong, effective policies to support Canada's clean energy transition.



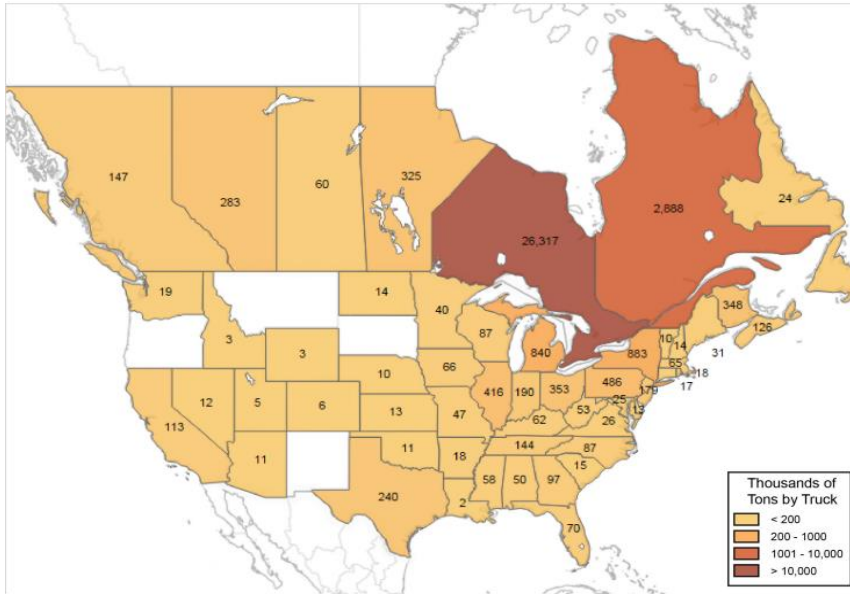
Quebec-Ontario Continental Corridor

- There were approximately 62,000 for-hire trucking companies in Ontario in 2019, with a combined operating revenue of over \$24 billion
- 200,000 trucks travel in Ontario on any given day, with about 1/3 of those (68,000 vehicles) moving in the Peel Region
- 3/4 of shipments in and out of Peel are intra-provincial, with Quebec the next largest trucking partner
- Highway 401 carries up to 44% of Ontario's interprovincial trade by road, with 41,000 trucks crossing at its busiest point.
- Approximately 3,000 long-distance heavy trucks cross the border between Ontario and Quebec on Highway 401 every day, while 300 long-distance trucks cross the Ottawa river

Source: Peel Region Goods Movement Strategic Plan (2017-2021),
Ontario Greater Golden Horseshoe Transportation Plan

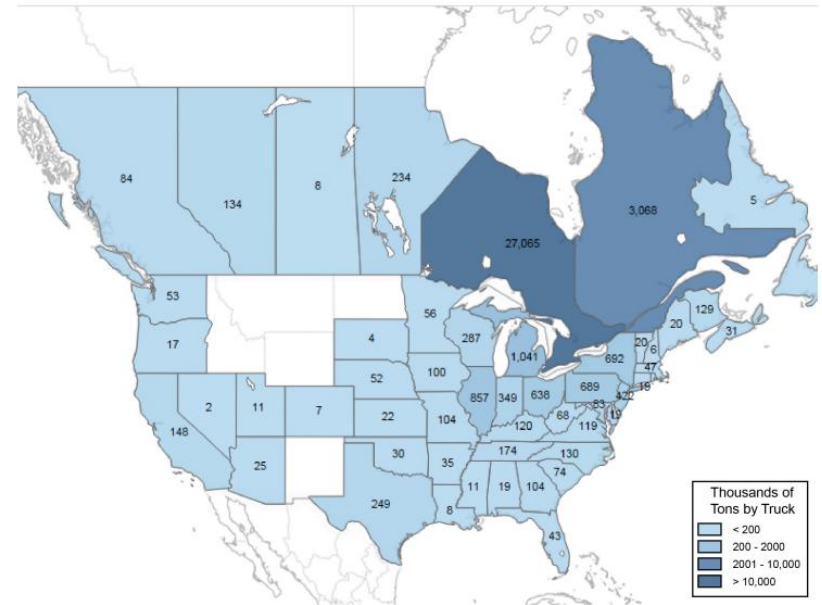
Freight between Ontario (Peel) and Quebec

Destinations of shipments from Peel



Source: MTO Commercial Vehicle Survey 2012

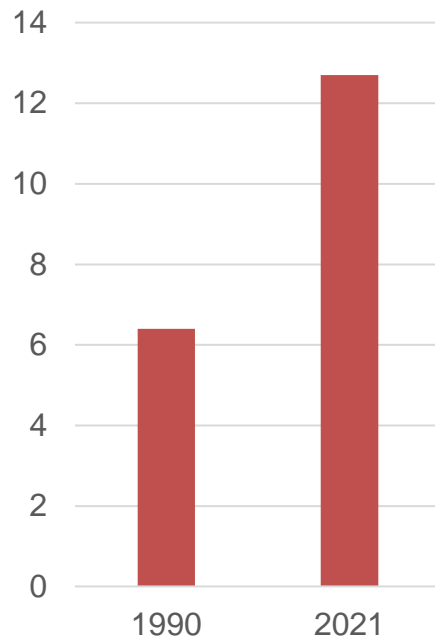
Origins of Shipments to Peel



Source: MTO Commercial Vehicle Survey 2012

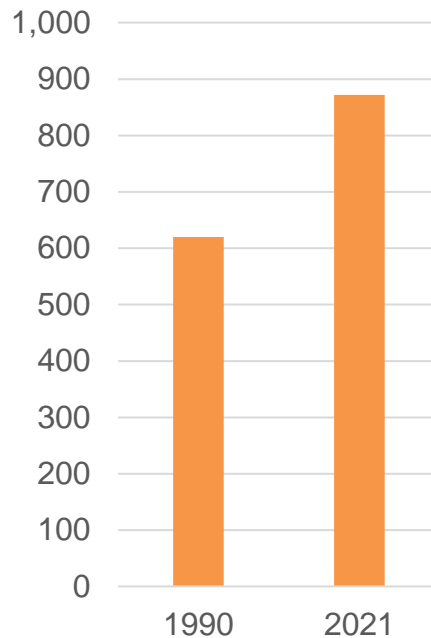
Ontario trucking GHG emissions

GHG Emissions from freight, Mt



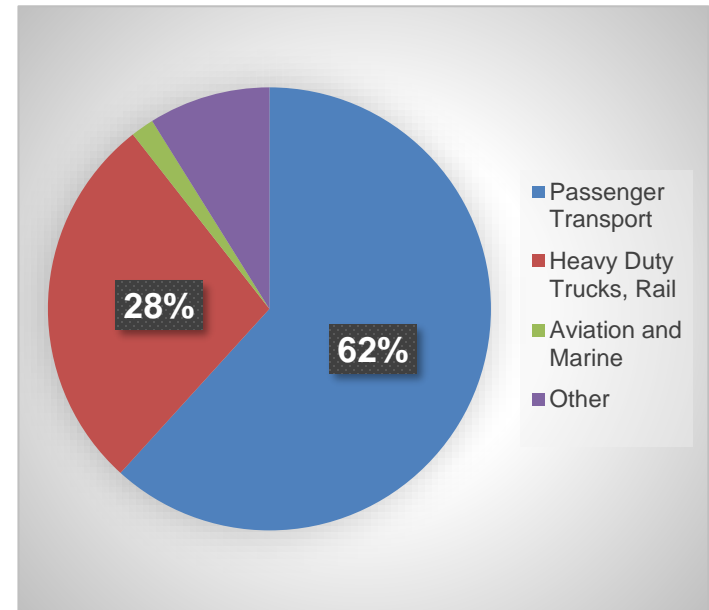
99% increase, 1990 to 2021

GHG Emissions from freight, tonnes per capita



41% increase per capita

Share of Transport Sector Emissions



Trucking in Ontario is responsible for close to 28% of GHG transport emissions

Near-term opportunities to lower fuel use and costs

- Accelerate fuel-saving devices/technologies and practices for diesel HDVs
- Train drivers to be more fuel efficient
- Increase SmartWay uptake in ON
- Using long combination vehicles to replace multiple vehicles
- Explore use of alternative fuels (natural gas, sustainably produced biofuel) as an option while transformative technology is developed



Transformative decarbonization opportunities – ZE HDVs



Policies and regulations

- **Regulations** such as mandates for 100% zero-emission vehicle sales and stringent vehicle emissions standards
- **Policies** such as strategic investments for a domestic zero-emission automotive industry and value chain, R&D and demonstration support, and public procurement schemes



Incentives and subsidies

- Financial incentives for **ZEV purchases** including rebates, grants, tax credits, preferential rate lending, and more
- Subsidies, tax credits and loan programs for **ZEV manufacturing**



Charging and fuelling infrastructure

- **Projects** funded partially or wholly by government to grow the number of publicly accessible stations
- **Minimum standards and requirements** for charging infrastructure to ensure interoperability



Capacity-building

- Zero-emission vehicle **awareness and education** initiatives
- **Skills training** for the operation, maintenance and repair of commercial zero-emission vehicles

Leveraging investments, policies & programs

Investments:

- **ZEVIP:** A \$680 million initiative ending in 2027 for eligible charging and refueling infrastructure in Canada
- **Charging and Hydrogen Refueling Infrastructure Initiative:** A \$500 million initiative via Canadian Infrastructure Bank for charging hydrogen refueling infrastructure.
- **iMHEV:** Offers point-of-sale incentives for Canadian organizations and businesses that buy or lease an eligible MHZEV
- \$5B joint venture between LG Energy Solution and Stellantis N.V. to develop a battery manufacturing facility in Windsor, Ontario

Policies and Strategies:

- **CFR:** Charging network operators and site hosts can earn credits for providing charging.
- MTO's Transportation Plan for the Greater Golden Horseshoe (incl. strategic goods movement network)
- Ontario's Hydrogen Strategy; Ontario's Driving Prosperity: The Future of Ontario's Automotive Sector

Initiatives:

- ON clean electricity grid + Ultra-low overnight Time-of-Use electricity rates (also relevant for small fleets)
- \$56.4M for OVIN to accelerate the development of next generation mobility technologies
- Hydro One \$4.95M heavy-duty electric truck charging pilot project

Policy comparison

	Vehicle purchase incentives	Charging infrastructure incentives	Pilot and demonstration programs	Fleet electricity rates	Support for fleet electrification assessments
BC	✓	✓	✓	✓	✓
QC	✓	✓	✓	✓	✓
ON			✓	✓	

British Columbia

BC Government

- Commercial Vehicle Pilot Program
- Specialty Use Vehicle Incentive Program

BC Hydro

- EV Ready Fleet Plan
- Electrical Infrastructure Incentive
- EV Fleet Pilot Project Incentive
- Fleet Electrification Rates

Québec

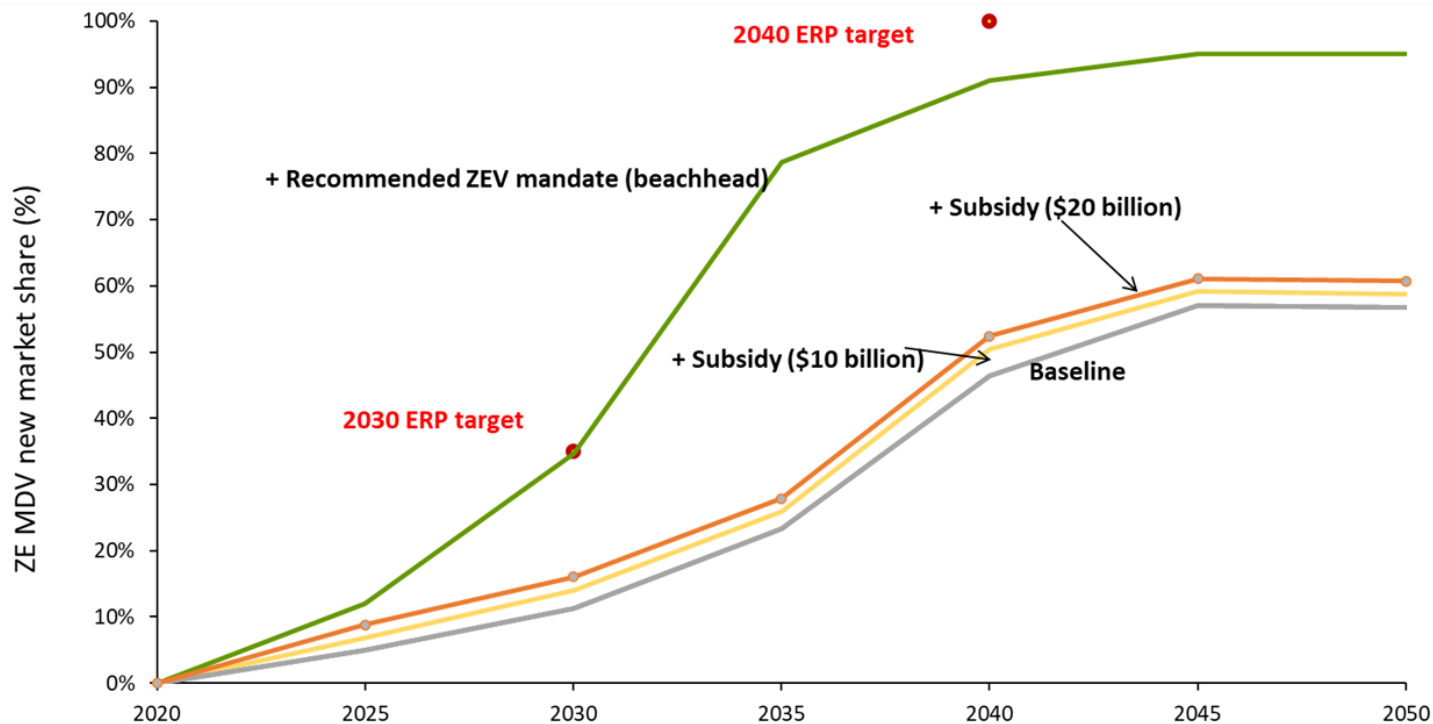
Quebec Government

- Transportez Vert Program
- Écocamionnage Program

Hydro-Québec

- Experimental Rate BR
- Cleo
- InnovHQ
- Electric Circuit

Additional policy options to accelerate ZE HDVs



<https://www.pembina.org/Decarbonizing-MHDVs>

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