




Urban delivery trucks

Thanks to short routes and low battery requirements, delivery fleets are a good fit for electrification.


Urban delivery cargo or step vans, with typical daily usage of less than 100 km, predictable urban-only routes, low battery requirements, and easy overnight rechargability using inexpensive chargers, are a prime candidate for electrification. In fact, demand for zero-emitting vans is increasing quickly. Large corporations including Amazon (100,000 trucks), UPS (11,000), Wal-Mart (4,500), FedEx (500), and Pepsi (100) have already added battery electric trucks to their urban delivery fleet.


Ease of electrification
★★★★★


 **Used for**
Urban last-mile deliveries (groceries, services, contractors)

 **Average distance travelled daily**
Less than 100 km

 **Number on the road in Canada**
500,000


 **Time to charge**
• Slower charger (Level 2): 5 to 8 hours
• Faster charger (direct current): ≈ 3 hours


 **Annual emissions from one diesel-powered delivery van**
10 to 14 tonnes CO₂e (2 times as high as a passenger car)

 **Cost to buy now**
Approximately 50% more expensive than a diesel equivalent

 **GHG savings if entire Canadian urban delivery van fleet is replaced with electric**
5 million tonnes CO₂e/year

 **Total lifetime cost by 2030 (without incentives)**
Cost competitive with a diesel truck

 **Charging location**
Charges overnight at a central depot

 **Major North American suppliers**
Ford, Mercedes Benz, Lightning eMotors, GreenPower, Rivian, Canco, Motiv, Workhorse



Roadblocks

- High upfront costs for electric delivery trucks remain a key roadblock, particularly for small and medium fleet owners.
- Fleet owners may be unaware of the benefits of electric trucks.

Key to acceleration

- Governments (federal and provincial) can raise awareness about the benefits of electric urban delivery trucks, as well as about the subsidy programs that help reduce the upfront costs.
- Uptake would likely increase if ZE delivery trucks were eligible for preferential parking access over conventional vehicles; zones designated as low- and zero-emission would also encourage uptake.

Transportation is the second biggest source of greenhouse gas emissions after the oil and gas sector in Canada.

Replacing fossil-fuelled vehicles (from passenger cars to long-haul trucks) with low- or zero-emission vehicles is essential to lowering pollutants in the atmosphere and keeping global warming below a 1.5 degree C increase. The federal government is currently implementing policies to hasten the transition to electric passenger cars, but buses and trucks must also be electrified. These bigger vehicles make up 35% of overall emissions generated by the transportation sector. Regardless of the size, we can jumpstart the transition to zero-emission vehicles through policy that implements a sales mandate which includes specific quotas and firm deadlines.



Photo: Roberta Franchuck, Pembina Institute

Pembina Institute resources

- Laying the Groundwork: Exploring the challenges and opportunities in the transition to zero-emission medium- and heavy-duty vehicles pembina.org/reports/laying-the-groundwork-mhdvs.pdf
- Towards Clean MHDVs: Preliminary policy solutions to decarbonize Canada's MHDVs pembina.org/reports/towards-clean-mhdvs-recommendations.pdf
- A guide to electrifying urban delivery fleets in Canadian cities: Why and how last-mile delivery companies should make the switch to electric vehicles pembina.org/pub/guide-electrifying-urban-delivery-fleets-canadian-cities
- Building healthy cities in the doorstep-delivery era: Sustainable urban freight solutions from around the world pembina.org/pub/building-healthy-cities-doorstep-delivery-era
- Purolator "steps up" to innovate for the climate pembina.org/blog/purolator-steps-innovate-climate

To learn more about the most effective means of transitioning Canada's biggest vehicles from fossil fuels to zero-emitting, see our policy analysis and recommendations at pembina.org/Decarbonizing-MHDVs

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