

Going Electric

How urban delivery fleets in the
GTHA & beyond can make the shift

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Opening remarks

Carolyn Kim

Transportation director,
Pembina Institute

Leading Canada's transition to clean energy

The Pembina Institute is a non-profit think-tank that advances a prosperous clean energy future for Canada through credible policy solutions.



Thank you to our partner





Moderator

Maddy Ewing

Transportation analyst,
Pembina Institute

Agenda

1. EVs for urban deliveries in the GTHA
2. Our publications
3. Key research findings
4. Panel discussion



Panellist

Mary de Guzman

Senior national manager of
corporate social responsibility
and sustainability, Purolator



Panellist

Sid Kakodkar

Electric vehicle solutions
engineer, Geotab

COVID-19 and online shopping



Photo: Roberta Franchuk

The state of urban deliveries

- E-commerce sales soaring
- Demand for fast, free delivery
- Predominantly ICEVs

Battery electric vehicles (EVs) for urban deliveries

- The next “wave” of electrification
- 12+ vehicle models available / announced in Canada
- No full-speed EVs deployed in the GTHA

Outstanding questions



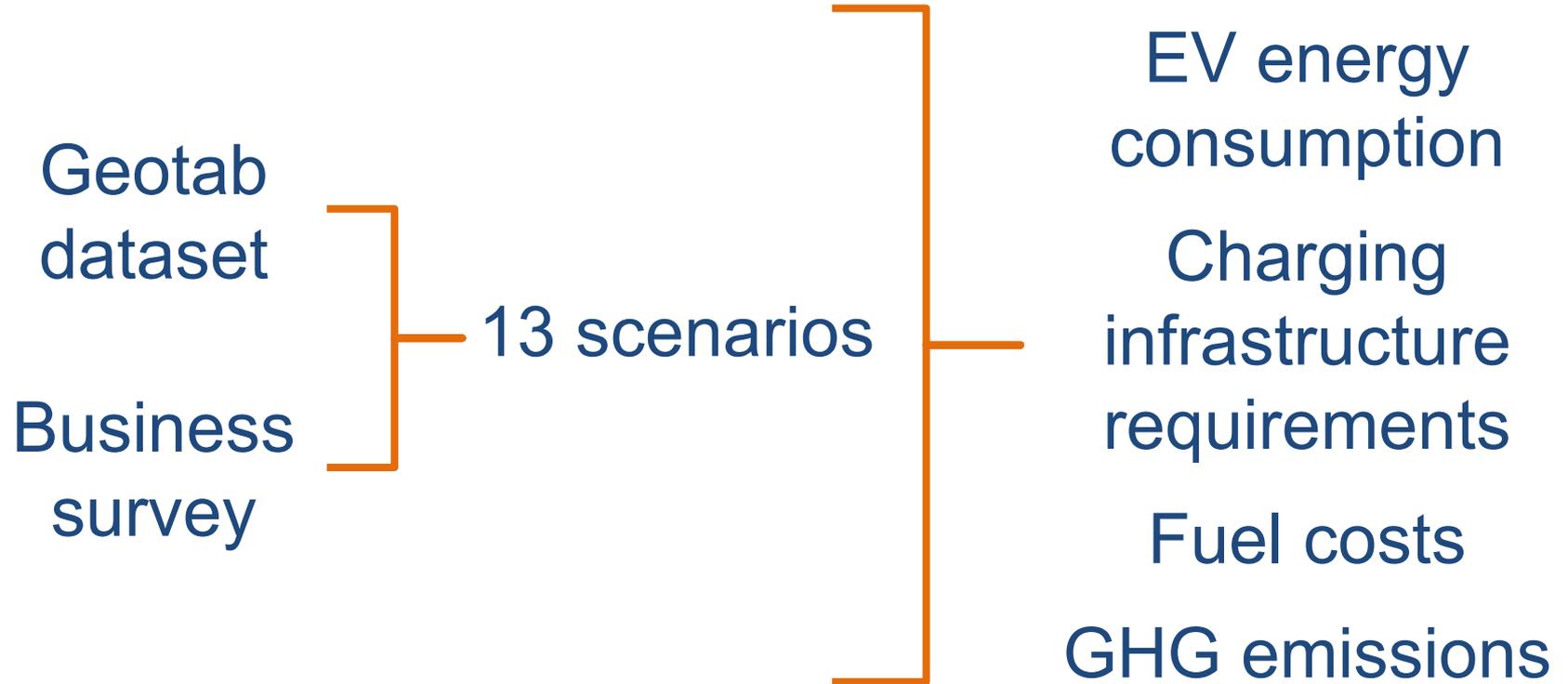
Photo: Roberta Franchuk

- What are the costs and benefits for businesses?
- How do businesses deploy EVs?
- How can different levels of government support this transition?

Our latest research



Modelling urban deliveries in the GTHA



Key vehicle and routing parameters

- Cargo vans (class 2b/3)
- Door-to-door deliveries
- Return-to-base operations
- Vehicle downtime overnight

Low vehicle power requirements

- Baseline route: 60 km
- Baseline energy demand: 10 kWh
- High-end energy demand: 43 kWh



Photo: Roberta Franchuk

DC fast chargers likely not required



Photo: Roberta Franchuk

- **Baseline scenario:** 7 hrs to reach a full charge using Level 1 charger
- **High energy demand scenario:** 6.5 hrs using Level 2 chargers

EVs save money and reduce GHGs

Baseline fuel cost
savings:

\$3,800-\$4,400

per vehicle

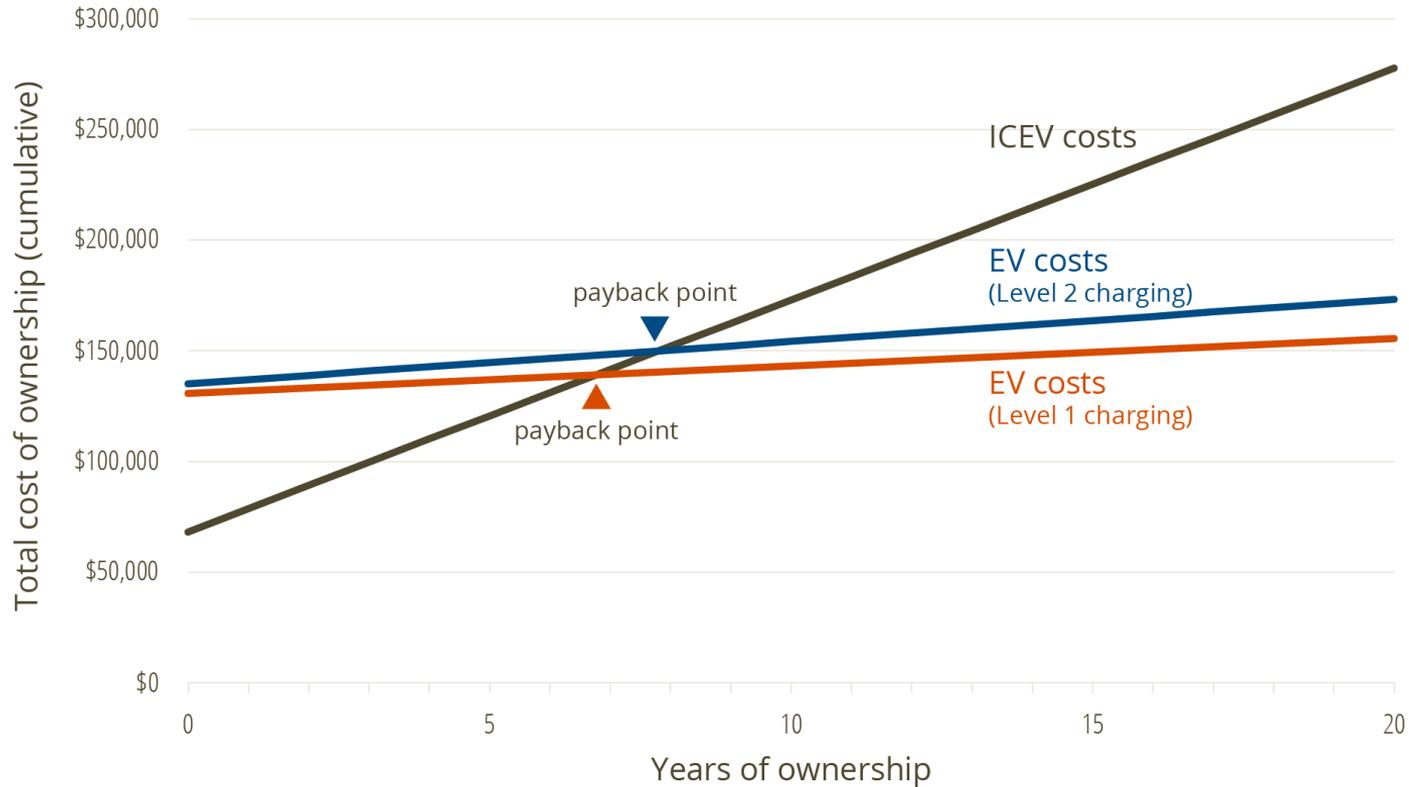
Baseline GHG
emission savings:

12 tonnes

CO₂e per vehicle

in comparison to an equivalent gasoline-powered ICEV

Payback period of 7-8 years



Study limitations

- Does not include cost of infrastructure or grid upgrades
- Electricity costs highly variable

Questions



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