

Electric Vehicles and EV Chargers

Electric Vehicles (EV)

The term EV commonly refers to three broad classes of vehicle that use electric motor propulsion for, at least part of, a trip. The three classes are:

- HEV - hybrid electric vehicle
- PHEV - plug-in hybrid electric vehicle
- BEV - battery electric vehicle.

In recent years PHEVs and BEVs have increased significantly in market penetration for a number of interrelated reasons, including increased battery capacity and range, lower costs, greater choice and improved charging infrastructure. Many experts anticipate that this market will rapidly shift toward BEV in the upcoming decades. BEVs as well as PHEVs rely on an external electricity input to charge a battery. However, because of their sole dependence on electric propulsion and Ontario's clean electricity mix, BEV are the only vehicle class to have zero tailpipe emissions.

EV Chargers

Charging infrastructure for light-duty vehicles also has three classes:

- Level 1
- Level 2
- DC Fast Chargers

Level 1 chargers use a standard electrical outlet and charge at a very slow rate. Charging a medium-range BEV can take almost an entire day. Level 2 chargers use amperage in the range of clothes dryers and electric ovens. Charging an equivalent vehicle can take less than five hours, making Level 2 charging more practical for public spaces where EV users can stop for an hour or two. DC Fast Chargers is the fastest class available today, requiring the same level of amperage from transmission infrastructure. While they can charge EVs quickly, they cost up about ten times as much as a Level 2 and are more expensive to maintain and operate.