



EMC's response to Ontario's consultation on the Integrated Energy Resource Plan

December 11, 2024

About EMC

Founded in 2006, Electric Mobility Canada is a national industry association that works to advance electric transportation in order to support the Canadian economy while fighting climate change and air pollution.

EMC has a wide range of member organizations including, light, medium, heavy-duty, and off-road vehicle manufacturers, infrastructure providers, utilities, tech companies, mining companies, research centers, governmental departments, cities, universities, fleet managers, unions, environmental NGOs, and EV owners' groups.

EMC's mission is to enable and accelerate the transition to sustainable electric mobility in Canada through advocacy, collaboration, education, and thought leadership, with the ultimate goal of creating a cleaner, healthier, and more prosperous future for all Canadians. Electric Mobility Canada supports the activities of its members by:

- Advocating for policies and initiatives that support the growth of the electric mobility sector and ensuring that policymakers hear the consensus positions of members.
- Facilitating collaboration and learning among industry players, policymakers, and other stakeholders to promote the adoption and integration of electric mobility solutions.
- Establishing itself as a thought leader in the electric mobility space by conducting research, providing education, promoting best practices and raising public awareness of the benefits of electric mobility and the importance of sustainable transportation solutions for Canada's future.



1) Harmonization of Voltage Standards

Ontario is currently using the 600V utility standard, which is not compatible with Electric Vehicle Supply Equipment (EVSE), predominantly designed for the 480V North American standards. This technical incompatibility, in addition to the smaller market covered by EV charging networks in the province, causes frequent delays of installations, additional labour and equipment costs as the 600V service requires step-down transformation for EVSE (*up to \$40,000 per installation in 2024*). Due to the small size of the 600V service market, OEMs find it economically unfeasible to design equipment specifically for it. Offering a secondary 480V service will reduce red tape that often causes EV charging projects to delay their deployment, leveraging the broader North American market while improving equipment availability.

To address these challenges, local distribution companies (LDCs) should maintain inventories for 480V equipment to ensure the pace of electrification meets the ambition of the government (*particularly EV adoption and GHG emission reduction*) and the needs of private investors. Additionally, a task force should explore pathways to address this market misalignment, and programs should be developed to offset transformation costs.

2) Make-Ready Infrastructure Costs

The high cost of preparing sites for EVSE installations remains a significant barrier to EVSE connection and widespread EV adoption. Many American states and utilities have addressed this issue through “Make-Ready” programs. A U.S based white paper defines “Make-Ready” as:

“The electrical equipment necessary to prepare a site for EV charger installation, which can include sub-panels, main panels, switchgear, conductors, wiring, transformers, and other equipment on both the customer- and utility-side of the meter.”¹

In Ontario, the situation is comparable. Connection costs for DC-fast charging stations can be prohibitively high, particularly when infrastructure upgrades are required or when power availability is limited. For a typical 4-port installation (250 kW each), a 1 MVA transformer alone costs approximately \$100,000. When combined with engineering and civil works, total costs often exceed \$150,000, with system expansion scenarios exceeding \$250,000.

These costs are primarily borne by the customer, but the utilities themselves often require significant capital for infrastructure upgrades. Such expenditures are not always anticipated in existing capital plans, creating further unpredictability.

To address these challenges, we recommend developing cost-sharing programs for grid connection infrastructure, leveraging funding mechanisms such as the Green and Sustainable Bonds framework to distribute costs more equitably. Standardized and transparent funding models for

¹ [connect-the-watts make-ready-best-practices.pdf](#)



make-ready installations should also be implemented, ensuring that customer contributions are clearly outlined, including a detailed breakdown of what these contributions cover. Additionally, incentive programs should be focused on high-capacity installations and areas with lower utilization, such as rural and remote regions, where longer payback periods and reduced revenue potential create greater barriers to deployment.

3) Grid Connection Timeframes

The Electric Vehicle Charging Connection Process (EVCCP) has introduced stability and business certainty for public EVSE owners. However, connection timelines remain inconsistent, with utility processes not regulated under the Distribution System Code (DSC) lacking transparency. These challenges are compounded by equipment shortages and planning delays, frequently pushing installation schedules into subsequent construction seasons. Such delays are even more serious in rural or remote areas and when projects rely on external factors, such as financing availability, before moving forward.

To address these barriers, we recommend that LDCs be mandated to develop proactive electrification preparation plans that include maintaining strategic inventories, particularly the procurement of transformers and switchgear that are essential for EVSE installations. Equally important is establishing clear, enforceable timeline requirements for all connection processes, including those not governed by the DSC or EVCCP.

4) Enhancing Grid Capacity Mapping

The Ontario Energy Board (OEB) is moving in the right direction through the Distributed Energy Resources (DER) Connections Review² process, which has made significant progress with Phase 1, requiring LDCs to post capacity information by March 3, 2025. However, further acceleration of Phase 2 of the capacity mapping initiative is critical, with a proposed finalization by Q3 2025. This will provide charging station owners and operators with the necessary information to assess where installations are financially viable. To ensure long-term utility and stakeholder engagement, we recommend implementing a centralized database for capacity mapping, establishing quarterly update requirements, and standardizing data formats across jurisdictions to enable seamless navigation across LDC territories.

5) Rate Structure Improvements

To optimize electricity affordability and utilization for EV owners and other consumers, we recommend expanding dynamic pricing options for Non-RPP Class B customers, particularly in multi-unit residential buildings (MURBs). Implementing Time-of-Use (TOU) rates for non-RPP Class B customers would incentivize EVSE installations at MURBs by providing a more predictable operational

² [Distributed Energy Resources \(DER\) Connections Review | Engage with Us](#)



cost structure while encouraging off-peak charging. This would lead to improved cost predictability for property managers, better utilization of non-peak clean baseload power, and enhanced responsiveness to TOU pricing signals.

For EV drivers living in single-family homes and town homes with dedicated panels, the Ultra-Low Time-of-Use (ULTOU) program offers significant cost savings, enabling charging at rates as low as \$0.05 per litre equivalent and a full charge possible for under \$2. Despite these benefits, adoption remains low. For instance, in Alectra's service area, only 3,000 residents participated compared to 21,424 new ZEV registrations since the rate was made available. To increase uptake, we recommend launching a public awareness campaign highlighting ULTOU benefits, implementing an incentive program for sign-ups (e.g., a \$10 bonus), and addressing common misconceptions about peak pricing penalties.

6) Electric Vehicle Charging Rate Structure

In May 2024, the Government directed the OEB to develop an Electric Vehicle Charger Discount Rate to reduce electricity costs for public EV chargers in areas with emerging demand, with a targeted implementation date of January 1, 2026.³ Recognizing the progress made during the summer consultations, where several promising rate structures were proposed⁴.

As a next step, we recommend accelerating the implementation timeline to July 2025 to support faster EV charging infrastructure deployment, enabling LDCs to apply the discount rate early where feasible, and developing clear transition guidelines for existing installations since this measure will be instrumental in minimizing disruptions while ensuring consistency.

7) EV-Ready Building & Electrical Codes

Implement EV-ready building code requirements for MURBs, ensuring all new residential parking spots are EV-ready, and 20-40% of non-residential parking spots include EV charging infrastructure. EV-Ready means parking spaces that feature an adjacent electrical outlet (e.g. either an electrical junction box or a receptacle) at which EVSE can be installed in the future.

The result is that LDC electrical services will be sized appropriately from the outset to accommodate future EV charging needs, while encouraging cities to set *additional* local EV-ready requirements.

³ [Ontario Exploring Options to Reduce Electricity Rates for Public EV Chargers | Ontario Newsroom](#)

⁴ [OEB shares materials to support stakeholder meeting on proposal for new delivery rate for public charging stations | Electric Vehicle Integration | Engage with Us](#)



Summary of recommendations

- Address the incompatibility between Ontario's 600V utility service and the 480V North American standard to improve EV charging infrastructure deployment efficiency.
- Implement cost-sharing programs and funding models for make-ready infrastructure to reduce EVSE connection costs, prioritizing high-capacity installations and rural areas with limited utilization.
- Mandate local distribution companies to develop electrification plans, maintain inventories of critical equipment, and adhere to enforceable grid connection timelines.
- Accelerate Phase 2 of capacity mapping and establish a centralized, standardized database with quarterly updates to improve grid capacity transparency for EVSE deployment.
- Expand dynamic pricing options for Non-RPP Class B customers, implement TOU rates for MURBs, and promote ULTOU adoption through public awareness campaigns and incentive programs to optimize electricity affordability and encourage off-peak EV charging.
- Accelerate the implementation of EV Charger Discount Rate to July 2025, enable early application by LDCs, and establish clear transition guidelines for existing installations to support faster EV charging infrastructure deployment.
- Mandate EV-ready parking in new multi-unit residential buildings with scaled infrastructure and encourage cities to develop their own EV-ready standards.

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