

**Submitted to:**  
Natural Resources Canada  
[greenbuildingsstrategy-  
strategiepourlesbatimentsverts@nrcan-rncan.gc.ca](https://greenbuildingsstrategy-strategiepourlesbatimentsverts@nrcan-rncan.gc.ca)



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## About Electric Mobility Canada

Founded in 2006, Electric Mobility Canada (EMC) 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. With more than 150 member organizations, EMC includes light-, medium-, heavy-duty, and off-road vehicle manufacturers; utilities; infrastructure providers; technology companies; mining companies; research centres; cities; governments; universities; unions; fleet managers; environmental organizations and electric vehicle owners' groups. The EMC team helps develop electric mobility policies, programs and projects that apply to all types of EVs, from bikes to cars, from buses to boats, from trucks to trains.

Electric Mobility Canada is the national voice of the transportation electrification industry, from B.C. to Atlantic Canada.

## Contact information

Daniel Breton, President and CEO, [daniel.breton@emc-mec.ca](mailto:daniel.breton@emc-mec.ca)  
Louise Levesque, Policy Director, [louise.levesque@emc-mec.ca](mailto:louise.levesque@emc-mec.ca)

EMC website: <https://emc-mec.ca/>

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## 1 Introduction

EMC applauds Canada's ambitious plans to reduce greenhouse gas (GHG) emissions across multiple sectors. The Canada Building Strategy seems to cover all challenges related to energy efficiency and climate resilience in the building sector (discussion document, July 2022) but we must underline one very significant omission: buildings play an essential role in the transition to electric by hosting electric vehicle (EV) charging infrastructure. Canada has set ambitious EV adoption targets as a central part of its emissions reduction plan and, to reach those targets, coordinated action is required between federal and provincial governments and stakeholders. In this paper, we will reiterate some of our previously communicated EV policy and program recommendations relevant to the building sector.

## 2 EMC Comments

### 2.1 Our Built Environment and the Transition to Electric Mobility

In addition to necessary energy efficiency and climate resiliency retrofits, Canada's 16 million dwellings and 482,000 commercial and public buildings should also plan to make their parking spaces EV-Ready<sup>1</sup> as soon as possible to facilitate and accelerate EV adoption. Home charging is the most practical and cost-effective way to charge an EV. We need to maximise home charging accessibility for Canadians to benefit from the full cost reduction associated with owning an EV. Commercial and public buildings also need to plan and implement EV charging installations for workers, visitors and fleet operations as Canada moves towards its goal of 100% ZEV sales in 2035 for light-duty vehicles and 2040 for medium- and heavy-duty vehicles.

While the building sector is responsible for 13% of Canada's direct greenhouse gas (GHG) emissions, or 88 Mt, 18% when accounting for off-site generation of electricity for use in buildings, in 2020, the transport sector was the second largest source of GHG emissions, accounting for 24% of total national emissions, or 159 Mt of carbon dioxide equivalent (CO<sub>2</sub> eq). The integration of EV charging infrastructure in our buildings is essential to the transition to electric transportation and to the reduction of Canada's GHG emissions. Our built environment is facing increasing pressure from extreme weather and climate change and building stock climate resilience is a concern. Transportation electrification is an important part of Canada's emissions reduction plan and to achieve the transition, EV charging needs to be accessible at home, at work and at commercial buildings.

In addition to building better new buildings (which should integrate EV-Ready installations), achieving net-zero, climate resilience **and the transition to electric transportation**, will require retrofits for a large majority of buildings standing today since these will still be in use in 30 years, well past the deadlines for Canada's 100% ZEV sales targets. Ubiquitous charging installations must be planned now for optimal implementation as ZEV adoption ramps up in the coming years.

### 2.2 A Building Strategy that includes EV charging infrastructure

Canada has legislated a commitment to reach net-zero emissions by 2050. Transportation electrification is essential to reaching that goal and charging infrastructure in our built environment is necessary for the transition.

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<sup>1</sup> An EV Ready parking features an adjacent electrical outlet (e.g., a junction box or a receptacle), at which an EV charger can be installed in the future. EV Ready parking makes it much easier and lower cost to install an EV charging station in the future, compared to retrofitting all the requisite electrical infrastructure at the time that a Level 2 EV charger is installed. See EMC's Position Paper, [Making Parking EV Ready: Requirements for New Construction & Incentives for Existing Buildings](#), February 2022

Not only does creating net-zero emissions, climate resilient buildings support the economy on multiple fronts, making buildings EV-Ready will add to the increased economic activity and job creation, and will also help Canadians save even more money by facilitating the transition to EVs which are much cheaper to own and operate.

Integrating EV charging priorities building retrofits and codes also compliments actions addressing housing affordability issues, since home charging is the most practical option and costs less than public charging. Making buildings EV-Ready will help more Canadians transition to electric mobility and save more money.

At some point in the near future, EV charging infrastructure will have to be part of our buildings and it would be more efficient (lower cost and reduced environmental impact) to include EV-Ready installations while engaging in deep retrofits for energy efficiency. For New buildings, EV ready requirements should be defined in the building codes. The urgency of the necessary climate actions we need to undertake means that we do not have the time for a siloed building strategy that does not include the installations required for other sectorial actions, such as transportation electrification.

### 2.3 A National EV Strategy to inform other Federal Strategies

If Canada had a National EV Strategy, it would have been part of the list of federal strategies that influence the building strategy. The fact that EV charging considerations were not integrated into the Canada Green Building Strategy highlights the necessity for a National EV Strategy to ensure that the transition to electric mobility is part to all relevant federal policies, programs and strategies.

### 2.4 Integrating EV Charging to All Strategic Themes

All six strategic themes of the Canada Green Building Strategy should include some elements pertaining to the transition to electric mobility, notably plans for EV charging infrastructure.

- **Theme 1 – Leading by example:** Should include charging infrastructure retrofits for all government buildings, parking lots and depots and in federal funding programs.
- **Theme 2 – Mandating change:** Should include charging infrastructure requirements in building codes, standards and specifications.
- **Theme 3 – Enabling investment decisions:** Should include charging infrastructure in deep retrofit initiatives and support services,
- **Theme 4 – Growing Canada’s advantage in building practices, technology and building materials:** Should integrate charging infrastructure into standardized tools and guidelines, pilot programs and other actions.
- **Theme 5 – Training and incentivizing the future workforce:** Should include charging infrastructure installation in training programs for electricians and other building professions.
- **Theme 6 – Enabling informed actions:** Include charging infrastructure current installations, documented future needs and targets in data bank.

### 3 EMC Recommendations

We are listing below a selection of recommendations we identify as most relevant to the building sector. These recommendations are part of EMC's [2023 pre-budget recommendations](#) presented to the House of Commons' Standing Committee on Finance in October 2022, our [2030 EV Action Plan](#), an industry-led project intended to ensure Canada succeeds in the transition to electric mobility, and our position paper on [EV-Ready requirements for new and existing buildings](#) published in February 2022.

#### 3.1 EMC recommendations on EV Ready parking

- Require 100% EV Ready residential parking, 20-40% EV Ready workplace parking, 5-20% EV Ready for other non-non-residential parking and 100% EV Ready parking for fleet parking, in new developments. Local and Provincial governments have a golden opportunity to adopt EV Ready requirements for new construction. The Federal Government can adopt EV Ready requirements into the model National Energy Code for Buildings and the National Building Code.
- Make at least one million parking spaces in existing multifamily buildings EV Ready in the next 5 years through best practice incentive programs. We recommend the Federal Government fund an EV Ready Incentive Program, providing \$1-billion over five years to make at least one-million parking spaces in multifamily buildings EV Ready. Likewise, utilities, Provincial, and local governments all can support comprehensive EV Ready upgrades to existing multifamily buildings, workplaces and fleet facilities.
- EMC proposes the following program design principals for EV Ready parking:
  - **Provide program options that enable comprehensive EV Ready retrofits** – Programs should support 100% EV Ready retrofits to existing multifamily condominiums. Likewise, they should support existing multifamily rental and non-residential buildings to implement EV Ready parking to some of their parking (e.g. 10-100% of parking spaces). Programs should not specify specific charging equipment, load management equipment or explicit standards (protocols, geometries). Governments should leave these aspects of design to the market. Programs should also be flexible to new load sharing technologies as they become available on the market only after being fully certified by the proper certification authority.
  - **Meaningful incentives** – Incentive programs should initially fund at least 50% to 75% of the cost to make parking in existing multifamily buildings EV Ready. Providing substantial levels of funding will help encourage condominiums and other buildings to forgo incremental installation of a few EV chargers overtime, which can result in greater life-cycle expenses and barriers to EV adoption. EV Ready incentive values can be scaled down as local adoption increases, and 100% EV Ready upgrades are normalized.
  - **Explore financing opportunities** – Program administrators, the Canada Infrastructure Bank, and other stakeholders should explore financing opportunities that can reduce the one-time expense of EV Ready parking. This may be particularly valuable for the condominium sector.
  - **Support both the residential and non-residential sectors** – EV Ready residential parking is the greatest priority to enable EV adoption. However, EV 14 Ready workplace parking and fleet parking is likewise important to maximize EV adoption in the next decade and beyond.
  - **Impartial, expert guidance** – Multifamily condominiums in particular often face challenges to understand their options. Programs should provide impartial, expert guidance to building owners.

### 3.2 Other EMC recommendations on charging infrastructure for light-duty vehicles (LDVs)

- Set up clear charging infrastructure targets for LDVs in accordance with the [2022 NRCan report](#) on public charging infrastructure needs.
- Include EV charger installation or EV-readiness as part of energy efficiency programs to help Canadians who live in older houses (40 years and older) retrofit the electric infrastructure requirements for EV charging.

### 3.3 EMC recommendations on charging infrastructure for medium- heavy-duty vehicles (MHDVs)

- EMC recommends that the federal government establish a dedicated five-year grant-based incentive program to support the deployment of large-scale EV charging installations in the medium and heavy-duty segments, particularly in the truck sub-sector that is not considered under the current CIB program for electric buses and school buses. This program should support charging infrastructure deployment for MHD commercial and public fleets, including highway and en route fast chargers, and chargers in public and private depots. While the federal government recently launched the new Incentives for Medium and Heavy Duty Zero-Emission Vehicles (iMHZEV) Program to support the purchase of zero-emission medium- and heavy-duty vehicles, there is no complementary program specifically dedicated to supporting zero-emission MHDV charging infrastructure. This gap could be remedied by creating a funding program that would, at minimum, match the budgetary lifetime of the iMHZEV program, but on the infrastructure side of the deployment segment.
- The Government of Canada should establish clear targets for charging infrastructure installations devoted specifically to MHD EVs, alongside targets for vehicle adoption. To advance transportation electrification, electric infrastructure must be a forethought, not an afterthought. In addition, there is significant job creation potential linked to the charging infrastructure, including not only manufacturing of chargers, but also the design, installation and service of infrastructure (both hardware and software).
- Funding and low-cost capital for electrical utility infrastructure upgrades needed to support multi-MW charging: Medium and Heavy-Duty vehicles are critical to the Canadian economy; however, they are responsible for over 40% of national transportation emissions. The electrical infrastructure necessary for fast-charging MHD EVs is typically in the multimegawatt range, which often requires costly electrical infrastructure upgrades which will slow MHD EV uptake, particularly in provinces with capital constrained electric utilities. EMC's Utility Working Group, comprised of utilities across Canada, is eager to support transportation electrification. Access to funding and capital specific to electrical infrastructure upgrades necessary for transportation electrification would further enable utilities to assist in accelerating this energy transition.
- Electric Transit buses: We recommend that the federal government subsidizes 50% of the cost of new electric transit infrastructure that needs to be installed for electric buses and make the proposed program admissible with other federal and provincial programs
- Electric school buses: We recommend that the federal subsidize 50% of electric school bus infrastructure and make such an incentive program stackable with other federal and provincial programs to support cleaner commutes for students and Canada's school bus manufacturing industry.

### 3.4 EMC recommendation on a national electric mobility strategy

- Develop an integrated electric mobility strategy to achieve Canada’s climate and electrification targets in coordination with Canada’s First Nations, Inuit and Métis: We recommend the launch of a pan-Canadian EV Strategy that includes an EV Action Plan to accelerate EV adoption. Enact legislation requiring the federal government to (1) establish an EV strategy, and, (2) maintain and regularly update an EV action plan through 2035. Accountability measures, such as periodic audits, should be established. Considering that transportation electrification projects might impact First Nation’s, Inuit and Métis, we highly recommend collaboration as soon as possible in order to make this collaboration fruitful for all parties involved from environmental, social and economic points of views. As the national voice of electric mobility in the country, EMC can play a central role in the development of this strategy through a fund specifically dedicated to its development, writing and deployment in collaboration with all federal departments involved.

### 3.5 EMC recommendations on federal leadership

- Establish a Privy council office for electric mobility: Create a dedicated Privy Council Office to coordinate EV responsibilities across departments and advise the Prime Minister on progress being made towards achieving the government’s electrification goals. Centralized coordination and Prime Ministerial oversight will elevate the importance of this issue and ensure it receives the attention it deserves.
- Ensure federal fleets and buildings are 100% electric and EV ready by 2030: Government can lead by example and further increase domestic EV demand and investment by using its own purchasing power. Starting now, every vehicle purchased by the government should be electric, unless an electric option does not yet exist to meet a specific need. Canada should also start electrifying its owned and leased parking lots immediately to offer charging options to its fleets and employees.

If you have any questions on these recommendations, please feel free to contact us.

Best regards,



Daniel Breton,  
President and CEO  
Electric Mobility Canada – Mobilité Électrique Canada  
[daniel.breton@emc-mec.ca](mailto:daniel.breton@emc-mec.ca)  
(514) 883-9274  
[www.emc-mec.ca](http://www.emc-mec.ca)