ELECTRIC MOBILITY CANADA 20 YEARS ANS MOBILITÉ ÉLECTRIQUE CANADA

Electric Mobility Canada considerations on EV Charging Compatibility

Response to Transport Canada's Discussion Paper:

Electric Vehicle Charging Compatibility in Canada

June 2026

1. INTRODUCTION AND SUMMARY

Electric Mobility Canada (EMC) welcomes Transport Canada's initiative to develop federal guidance on electric vehicle (EV) charging compatibility. Charging inlet compatibility is foundational to consumer confidence, public safety, infrastructure efficiency, and the long-term success of EV adoption in Canada.

EMC emphasizes that Canada's EV ecosystem is rapidly converging toward North American charging standards, particularly the North American Charging Standard (NACS / SAE J3400). Federal guidance should reinforce this convergence and discourage the introduction of vehicles equipped with non-North American charging inlets that are incompatible with Canada's public charging network.

Of particular importance, compatibility expectations should apply at the point of market entry, including for imported vehicles and new market entrants. Experience in other jurisdictions shows that allowing incompatible charging inlets into the market creates persistent consumer harm, increases infrastructure costs, and undermines public investment in charging networks.

Federal guidance should prioritize system-level outcomes by protecting long-lived infrastructure assets, containing public and private costs, improving consumer clarity, and ensuring alignment with the North American EV market. Clear, explicit expectations on charging inlet compatibility will provide certainty for manufacturers, infrastructure providers, and consumers, while supporting a safe, efficient, and interoperable charging ecosystem across Canada.

2. EMC RESPONSES TO DISCUSSION PAPER QUESTIONS

2.1. From your organization's perspective, what role do you play in supporting EV charging compatibility in Canada, particularly for vehicle charging inlets? More specifically, from what lens are you approaching this topic and responding to the following questions (e.g., vehicle or auto parts manufacturer, standards organization, charging infrastructure industry, or consumer groups)?

EMC'S ROLE AND PERSPECTIVE

Electric Mobility Canada (EMC) is the national EV industry association representing organizations across the electric transportation ecosystem, including vehicle manufacturers, charging infrastructure providers, utilities, technology firms, fleet operators, and related service providers.

EMC approaches EV charging compatibility from a **system-level perspective**, where vehicle standards, charging infrastructure deployment, grid impacts, investment signals, consumer experience, and safety outcomes are all interdependent. EMC's primary interest is ensuring that the Canadian EV ecosystem remains functional, interoperable, cost-effective, and aligned with North American market realities.

2.2. How important is EV charging compatibility in Canada? What are your key considerations for ensuring that EV charging inlets are compatible with the existing public charging network in Canada? What are your key considerations if the EV charging inlet is incompatible with Canada's existing public charging network?

IMPORTANCE OF EV CHARGING COMPATIBILITY IN CANADA

EV charging compatibility is critically important for **consumer confidence, public safety, infrastructure efficiency, and investment certainty**. Charging inlet incompatibility with Canada's existing public charging network creates immediate and long-term risks, including:

- Limited or non-existent access to public fast charging for certain vehicles.
- Increased consumer costs and confusion associated with adapters.
- Heightened safety risks when uncertified or inappropriate adapters are used.
- Higher capital and operational costs for charging network operators.
- Lost revenue via reduced station utilization.
- Risk of stranded public and private infrastructure investments.
- Reduced vehicle resale value and long-term utility for consumers.

Key considerations to ensure compatibility include alignment with the charging connectors already deployed across Canada, the prevalence of AC and DC fast-charging standards on public networks (SAE J1772 and NACS for AC charging and CCS1 and NACS for DC fast charging), and the availability of certified solutions where transitional measures are required.

2.3. Recognizing that technology will continue to evolve, what factors should be considered to support alignment with charging connector and inlet standards currently used in North America (e.g., NACS/SAE J3400, CCS1)?

SUPPORTING ALIGNMENT WITH NORTH AMERICAN STANDARDS

While technology will continue to evolve, federal guidance should reflect the clear convergence underway in North America, particularly toward the North American Charging Standard (NACS / SAE J3400).

Key factors to consider include:

- Near-universal adoption of NACS by automakers producing vehicles for the Canadian and US markets by model year 2027.
- Industry consensus that fragmentation of inlet types undermines safety, affordability, and user confidence.
- The need for long equipment lifespans and backward compatibility in charging infrastructure.

- Reliance on secure, globally aligned communication protocols. NACS utilizes ISO 15118, a TLS-encrypted, PKI-based protocol that protects grid infrastructure and consumer financial data, unlike non-aligned foreign standards.

EMC recommends that federal guidance strongly encourage, and in specific contexts require, alignment with North American charging standards for vehicles sold or imported into Canada.

2.4. What key trends or developments in EV charging standards or technologies should be considered to support future compatibility and adaptability in North America and globally?

KEY TRENDS AND DEVELOPMENTS TO CONSIDER
Several trends are shaping future compatibility and adaptability:

- Consolidation toward single combined AC/DC vehicle inlets (NACS / SAE J3400).
- Increasing charging power levels and tighter safety tolerances.
- Greater reliance on software, communications protocols (e.g. ISO 15118 and OCPP), and smart charging features.
- Harmonization of standards across Canada and the US to support vehicle and infrastructure markets.

Globally divergent connector standards should not be accommodated at the expense of Canada's system integrity. Where international alignment is not feasible, vehicles entering the Canadian market should be adapted to North American standards rather than relying on alternative connector families.

2.5. What challenges or considerations exist in supporting consumer understanding and the safe use of EV charging connectors and inlets in Canada? Are there measures that could improve clarity and confidence for users (e.g., development of user guides, info sheets, awareness campaigns etc.)?

CONSUMER UNDERSTANDING AND SAFE USE
Consumer confusion remains a significant challenge, particularly as new market entrants introduce unfamiliar charging interfaces.

Key issues include:

- Inadequate disclosure at point of sale regarding charging compatibility.
- Overreliance on adapters without clear guidance or certification.
- Misunderstanding of AC versus DC charging access.

Measures that could improve clarity include:

- Clear federal guidance on acceptable charging inlet configurations.
- Standardized disclosures for vehicle charging compatibility.
- Consumer-facing information resources developed in collaboration with industry.
- Improved labeling and signage at charging stations.

While educational measures and standardized disclosures are helpful transitional tools, they cannot overcome fundamental hardware and software incompatibilities. Federal leadership in setting expectations for native inlet compatibility would significantly reduce downstream risks and is the only definitive way to eliminate consumer confusion.

2.6. What considerations should be taken into account regarding the use of adapters to support compatibility between vehicles and charging infrastructure (e.g., safety, reliability, certification such as ANSI/CAN/UL 2252)?

USE OF ADAPTERS
Adapters can play a transitional role, but they should not be treated as a substitute for proper inlet compatibility.

Considerations include:
- Adapters must meet recognized safety and certification standards such as ANSI/CAN/UL 2252.
- Certified adapters are significantly safer than third-party alternatives.
- Frequent or permanent reliance on adapters increases failure and misuse risks.
- Adapters to not resolve communication interoperability* limitations.

*Communication interoperability :
Beyond physical connector compatibility, adapters do not resolve underlying communication protocol differences between charging systems. North American standards (CCS1 and NACS) rely on Power Line Communication protocols, while other standards such as GB/T use Controller Area Network (CAN) communication. As a result, interoperability between these systems is not inherent and would require the use of a communication gateway to translate between protocols. This introduces additional layers of technical complexity, potential points of failure, and increased costs for both vehicle manufacturers and infrastructure operators. The need for such gateways further underscores that adapters cannot be considered a complete or reliable solution to compatibility challenges. True interoperability requires alignment at both the physical connector level and the underlying communication protocol level.

Federal guidance should thus clearly state that uncertified or non-OEM adapters pose safety concerns, that such adapters do not resolve communication interoperability, and that vehicles requiring adapters as their primary means of accessing public charging networks are not appropriately aligned with the Canadian ecosystem.

2.7. Are there any other considerations related to EV charging inlet compatibility that should be reflected in federal guidance?

ADDITIONAL CONSIDERATIONS
EMC strongly encourages Transport Canada to address imported vehicles equipped with non-North American charging inlets, particularly CCS2 and GB/T.

Experience in other jurisdictions demonstrates that allowing such vehicles into a North American charging ecosystem leads to:

- Chronic consumer dissatisfaction
- Increased infrastructure costs
- Long-term interoperability challenges

To avoid repeating those outcomes, federal guidance should clearly state that vehicles sold or imported into Canada are expected to be compatible with the existing and planned public charging network, using North American connector standards.

3. ADDITIONAL SYSTEM-LEVEL CONSIDERATIONS FOR FEDERAL GUIDANCE

3.1. Import controls and pre-market compatibility expectations

Federal guidance should explicitly address vehicles entering the Canadian market through import pathways, including new OEM entrants and vehicles imported under special or expedited programs. Compatibility considerations should apply at the point of market entry, not solely after vehicles are sold to consumers.

Experience in other jurisdictions demonstrates that allowing vehicles equipped with non-North American charging inlets to enter the market creates persistent consumer harm and infrastructure challenges that are difficult and costly to reverse. Clear compatibility expectations at the import stage would provide greater certainty for manufacturers, importers, and consumers, while preventing downstream safety and interoperability issues.

3.2. Infrastructure efficiency and public cost containment

Charging infrastructure is capital-intensive and long-lived, often supported by public funding at federal and provincial levels. Introducing or accommodating multiple incompatible charging inlet standards undermines infrastructure efficiency and increases costs for charging operators, utilities, and governments.

Federal guidance should recognize that maintaining a coherent and interoperable charging ecosystem is essential to protecting public investments, avoiding redundant infrastructure deployment, and ensuring timely network expansion. Compatibility should therefore be treated as a **core system efficiency objective**, not solely a vehicle-specific attribute.

3.3. Asset lifespan mismatch between vehicles and charging infrastructure

Charging infrastructure assets are designed to operate over decades, while vehicle models, particularly from new or emerging manufacturers, may have significantly shorter market lifespans. Decisions that require infrastructure operators to accommodate incompatible vehicle charging inlets risk locking the system into long-term inefficiencies driven by short-term vehicle market dynamics.

Federal guidance should explicitly acknowledge this mismatch and prioritize compatibility decisions that reflect infrastructure asset lifetimes rather than temporary or transitional vehicle configurations.

3.4. Consumer protection beyond first ownership

Incompatible charging inlets affect not only initial purchasers, but also secondary owners and the broader used-vehicle market. Vehicles with limited or unreliable access to public charging will experience accelerated depreciation, reduced resale value, and lower interprovincial mobility.

Guidance that emphasizes upfront compatibility expectations would support long-term consumer protection, market transparency, and fairness across ownership cycles.

3.5. Clarity for new market entrants and emerging OEMs

As Canada's EV market diversifies, clear and unambiguous guidance is particularly important for new or low-volume OEMs that may be less familiar with North American charging standards and infrastructure realities.

Federal guidance should minimize interpretive ambiguity and clearly articulate expectations regarding charging inlet compatibility. This would reduce compliance risk for manufacturers while preventing corrective action after vehicles have already entered the market.

3.6. North American regulatory and market alignment

Charging inlet compatibility should be framed as part of broader North American market integration. Canada's EV market is deeply interconnected with that of the United States through supply chains, charging networks, and vehicle usage patterns.

Federal guidance that reinforces alignment with North American charging connector standards would support trade efficiency, regulatory coherence, and consumer confidence across borders.

CONTACT INFORMATION

Electric Mobility Canada
www.emc-mec.ca | info@emc-mec.ca

Daniel Breton, President and CEO
Daniel.breton@emc-mec.ca

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