ELECTRIC MOBILITY CANADA
ACCELERATING ELECTRIC TRANSPORTATION

MOBILITÉ ÉLECTRIQUE CANADA
ACCÉLÉRER L'ÉLECTRIFICATION DES TRANSPORTS

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Federal Pre-Budget Submission

FOR THE 2017 FEDERAL BUDGET

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Accelerating the Deployment of Transportation Electrification in Canada Executive Summary

Electric Mobility Canada (EMC) is pleased to present its recommendations for the 2017 budget. EMC is the only national organization in Canada dedicated exclusively to the acceleration of electric transportation in all modes of transportation, and representing the complete value chain of this industry. The recommendations of its second Roadmap for Accelerating the Deployment of Electric Vehicles in Canada (2016 to 2020)[1] are to make electric vehicles (EV) better known, more accessible and affordable, for individuals, fleets, car sharing companies, and public transit. They provide concrete options to contribute to the nation's economic growth, while doing their active part to tackle climate change. These recommendations are also part of our Submission to Environment Canada on Clean Growth and Climate Change (June 2016).

Following the launch of EMC's Roadmap, the federal government announced the allocated investment to electric vehicles and alternative transportation fuel infrastructure of $62.5M for the next two years, an important first step. Leading provincial governments involved in transportation electrification, and stakeholders, recognize that a federal contribution, in 2017 and in the longer term, would add a significant leverage to move from an early adopter's market to a mass market.

EMC's 2017 Federal Pre-Budget Recommendations:

1. To offer a federal financial incentive to EV buyers, of $3,000, to make a significant impact on EV adoption, as observed in the US;
2. To offer to employers a federal incentive to support workplace charging as the second most important location for charging, after home charging;
3. To finance the purchase and installation to a minimum of 150 direct current fast charging (DCFC) stations to complete a national EV highway;
4. To reach all Canadians, to raise public awareness for EVs by launching a National Awareness Campaign, implementing a National Resource Centre, and a Test Driving Program;
5. To support the Canadian transit and EV industry through targeted investment in electrification of fleets for buses, school buses, taxis, carsharing, for the best technology for each application, and dedicated to not only large cities, but medium and small communities, as well, and to dedicate targeted investments in research, development, and demonstration, including the arrival of autonomous vehicles, to leverage on soon to be available technologies, and count on rapidly evolving transposition of technology to light and medium weight transportation.

The Roadmap for Accelerating the Deployment of Electric Vehicles in Canada (2016 to 2020) provides annual budgets, with close to $125M for the next two years. EMC looks forward to working with the government on this important file in the future.

[1] Document available at https://emc-mec.ca/wp-content/uploads/EMC-EV-Roadmap_Final-Report.pdf

Accelerating the Deployment of Transportation Electrification in Canada

Introduction

In Canada, among approximately 15.4 million people who regularly commute, 12.0% use public transit as their primary mode of travel. Over 12 million Canadians prefer using cars during their journey to work: 74% of commuters drive a private automobiles, while another 5.4% ride as passengers[2].

Support to make electric vehicles (EV) better known, more accessible and affordable, improvements in the availability and efficiency of public transit, incentives for mode shifting (away from solo-car rides towards auto-share, public transit and active transportation) would provide Canadians with concrete options to do their part to tackle climate change.

EMC proposes a series of policies taking into account the following considerations:

- Until 2022, when cost parity is expected between electric vehicles and internal combustion engine (ICE) vehicles, this most important transition period will demand pragmatic successful policies in the short term, based on experience in advancing the electrification of transport in many countries, and to move from an early adopter's market to a mass market;
- To engage Canadians through their contribution to climate change by choosing EVs now as an innovative and fun to drive technology;
- To insure the complementary and consistent contributions and collaborations from all stakeholders: federal, provincial, municipal as well as public and private entities, including fleets;
- To support the Canadian transit and EV industry through targeted investment in electrification of fleets for buses, school buses, taxis, carsharing, for the best technology for each application, and dedicated to not only large cities, but medium and small communities, as well, and to dedicate targeted investments in research, development, and demonstration, including the arrival of autonomous vehicles, to leverage on soon to be available technologies, and count on rapidly evolving transposition of technology through range increase at competitive costs to light and medium weight transportation.

EVs contribute to stimulate a green economy. Moreover, EVs are cheaper to run, and require less maintenance and will help Canadians to save money and reduce emissions. On average, a dollar saved at the gas pump and spent on other goods and services can generate a significant multiplier on jobs. Unlike the fossil fuel supply chain, the majority of new demand created by fuel cost savings goes to local services, a source of diverse, bedrock jobs that are less likely to be outsourced.

[2] Statistics Canada. (2013). NHS in Brief: Commuting to Work—National Household Survey (NHS), 2011. (Catalogue no. 99-012-2011003). Labour Statistics Division: Turcotte, M. Government of Canada.

EV technology is changing the automotive industry. Its predicted evolution with more EV models and longer ranges will help increase EV adoption. Despite this, it is imperative to implement short-term measures to accelerate the deployment of EVs, and to improve Canadians' understanding of EVs so that they may consider buying an EV now.

1. Financial Incentives for EV Buyers

There is strong evidence, both in Canada and in peer countries, that rebates to offset the higher upfront cost of EVs are an effective means of accelerating EV use. Direct incentives to EV buyers have proven to be a strong and necessary measure to increase EV adoption, not only in Canada but in many jurisdictions such as Norway and the US. For example, in Canada, three provinces currently offer EV rebates, and 97% of all EVs sold in Canada last year were purchased there.

Therefore, all Canadian provinces should adopt some form of financial incentives for EV buyers, for individuals or businesses. Since only three provinces have for the moment offered incentives, it is recommended that the federal government offer a $3,000 additional incentive to any provincial incentive offered at a minimum of $3,000.

The select transportation-related actions of the Ontario Climate Change Action Plan includes the elimination of HST for EVs. With the support of EMC, Ontario will work with the federal government to explore ways to provide full HST relief to purchasers of new battery electric vehicles, with the objective of introducing this relief by 2018.

2. EV Workplace Infrastructure

The availability of charging infrastructure is a key factor to accelerate EV adoption. Since roughly 90% of charging occurs overnight – when the EV is parked at home – the availability of home charging is critically important, and usually taken care of when buying an EV. The importance of residential charging is closely followed by workplace charging, and then by public charging locations. More support is needed for employers to implement workplace charging for which very few programs exist for now. When considering that the second most important location for charging is at work, the driver's "range confidence" will be enhanced therefore increasing the utilization factor. It is recommended to offer a federal incentive to employers for workplace charging of a maximum of $3,000 incentive, resulting in a maximum of $3,000 when combined with any offered provincial incentive, for Level 2 smart charging stations.

As an example, the US DOE[3] has created a Workplace Charging Challenge enlisting stakeholder organizations as ambassadors to promote and support workplace charging. Ambassadors, including "clean cities" coalitions across the country, are organizations that are knowledgeable about local incentives, best practices for

[3] http://energy.gov/eere/vehicles/workplace-charging-challenge-ambassadors

workplace charging, and other aspects of plug-in electric vehicle (PEV) community readiness.

3. DC Fast Charging

As for fast charging locations in urban areas and along key highways, there are many initiatives, public and/or private, underway, even though a robust business case is still to be determined. However, there is a need for the federal government to complete the deployment of fast charging on national highways in areas where no deployment is being planned for now. After the deployment of the 70 first DCFC stations in the current RFP, it is recommended that the federal government continue to support the purchase and installation to a minimum of 150 direct current fast charging (DCFC), based on the study for the Canadian Council of Ministers of the Environment (CCME). The current report indicates a larger number of DC fast charging locations required, even along inter-city corridors. However, 150 stations was considered to be a minimal number (over and above existing DC fast charging locations).

4. Raising Public Awareness of EVs

Polling shows that relatively few drivers know about the EVs available today, or about the benefits—economic and environmental—of driving them. We can promote transportation electrification as a tangible, readily available, good for Canada, and "techy" key feature for Canadians to play an active role in the fight against climate change.

The necessity to implement a clear, neutral, and routine communication and education strategy on EVs at a national scale is considered a major priority and supported by all stakeholders. Unfortunately, this element is definitely lacking. This strategy is based on three complementary and intertwined measures:

i. An EV Awareness Campaign addressing key barriers/opportunities (emotional gratification, economics, environmental benefits, etc.). The recommendation is to develop and implement a national outreach campaign, in support of the other two awareness measures, through modern and effective means (web, social media, testimonials, etc.);

ii. A central reliable source for a one-stop shop offering trustworthiness and consistency. It would be principally a national comprehensive Internet portal on EVs. It will be the primary centre where Canadians go to get unbiased information and education on EVs, serving as a hub and relay to all other web sites;

iii. A Test and Trial Program, aimed at provinces with EV incentives, designed to get a larger number of customers to test-drive an electric car with the support of dealers, EV owners associations, and other trial offers. Such a

program would be a one-stop shop for providing complete EV information to Canadians interested in EVs.

5. Support to the Canadian EV industry

There are other modes of transport that appear to be excellent candidates for electrification in Canada and which should be the subject of demonstrations projects and key support (car sharing, taxi fleets, school buses, mining, intelligent infrastructure, etc…). Second, autonomous vehicles and their capacity to change the way we travel need a specific attention, including facilitating legislations from trials by governments. Third, the energy storage opportunities that EVs can provide through V2G and V2H, and their secondary battery applications, will add significant value to the arrival of EVs.

Furthermore, the support to the Canadian transit and EV industry through targeted investment in electrification of fleets for buses, taxis, carsharing, financing to the best technology for each application, and dedicated to not only large cities, but medium and small communities, is important. As well, to dedicate targeted investments in research, development, and demonstration, is crucial to leverage on soon to be available technologies, and count on rapidly evolving transposition of technology through range increase at competitive costs to light and medium weight transportation.

These actions will support the growth of clean jobs related to transportation electrification in Canada.