2016 PRE-BUDGET CONSULTATIONS

SUBMISSION TO THE HOUSE OF COMMONS STANDING COMMITTEE ON FINANCE

by

ELECTRIC MOBILITY CANADA

February 19, 2016

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Introduction and Context

Electric Mobility Canada (EMC) is the only national membership–based not-for-profit organization dedicated exclusively to the promotion of electric mobility as a readily available and important solution to Canada's energy and environmental issues[1].

Natural Resource Canada (NRCan) mandated EMC to develop a National roadmap on Transportation Electrification, based on a broad consultation with Canadian stakeholders. The following recommendations from this roadmap have been discussed and presented to NRCan, and are to be considered in the upcoming budget to support key federal policies, to reduce greenhouse-gas emissions or adapting to climate change, by supporting "green" infrastructure, and funding of electric vehicle, in all areas such as individual transportation, car sharing and public transit.

A budget of near $50M is recommended for the next year, leading to a total budget of near $200M for the next 3 to 5 years.

Summary of Recommendations

The attributes of electric vehicles (EVs) are well documented all over the world, and represent a readily available option for drivers now. EVs make sense for several reasons: they are cheaper to run than a traditional car and their maintenance costs are very low. They also produce low local emissions and therefore make important contributions to the reduction of Greenhouse Gases in transportation, since most of our electricity is generated from non-fossil fuel sources, through a predictable price of electricity. Canada is home to some of the leading companies in the EV industry and charging technology and their businesses will prosper with the growth of EVs.

The support of the federal, and all governments is crucial to accelerate the deployment of EVs in Canada. With close to 18,500 EVs on the road, the place for a strong national policy is even more relevant to move from an early adopter market to a mass market as in other jurisdictions. In the context where Canada has nearly 2 times fewer EVs per inhabitant than our American neighbours, EMC is convinced that this opportunity needs to be addressed now and by all stakeholders. Since many actions are already implemented in the provinces of BC, Ontario, and Quebec, the enclosed recommendations are complementary or offer an important leverage to the adoption rate of EVs in Canada.

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[1] EMC has approximately 140 members: private sector companies engaged in the sale or distribution of electric vehicles, components and services, for all modes of surface transportation; electricity providers; private sector and government fleets; related associations, research centres and labor organizations; government agencies and individual supporters.

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 the short-term recommended measures to accelerate the deployment of EVs, and to improve Canadians' understanding of EVs so that they may consider buying an EV now.

a) Raising Public Awareness of EVs

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, to 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, through a national comprehensive Internet portal on EVs, 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.

EMC will collaborate very closely with the EV manufacturers to increase awareness at the dealerships.

b) Financial Incentives for EV Buyers

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. Therefore, all Canadian provinces should adopt some form of financial incentives for EV buyers, for individuals or businesses. Since only three provinces are currently offering incentives and in order to significantly increase EV adoption, it is recommended that the federal government offers a $3,000 additional incentive to any provincial incentive offered at a minimum of $3,000.

c) EV Infrastructure

The availability of charging infrastructure is a key factor to accelerate EV adoption. Since roughly 90% of charging occurs overnight, at home – the availability of home charging is 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 that the federal government offers an 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.

d) 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. It is recommended that the federal government take charge of purchasing and installing a minimum of 150 direct current fast charging (DCFC) stations to complete a National EV highway. A study for the Canadian Council of Ministers of the Environment (CCME) in developing a 'Business Case' for investing in DCFC infrastructure across Canada 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) that would be required in order to meet the inter-city travel needs of Canadian EV drivers.

e) Car Sharing

The sharing economy is extending to all forms of assets, especially those of higher value and low utilization, such as automobiles. Numerous studies are forecasting a 600% growth in car sharing globally between 2013 and 2020.
The design of an economically sustainable EV car sharing concept/business model depends on the sharing usage and costs of the supply and installation of charging stations, the costs of electricity, as well as the costs of permits and parking under different provincial and municipal governments and public utilities. It is recommended to discuss further a 3-year pilot under the current mandate to be continued with already identified stakeholders of a large city in order to finalize and test this new business model.

f) Green Licence Plate and Other Related Programs

The implementation of a "green license plate" that provides EV drivers certain perks is a simple and effective way to support all low carbon vehicles, and can lead to many advantages, to be bestowed on the occupants such as preferential parking, HOV lane access, reduced/no toll rates, etc., while bringing attention to EVs. The policy can be rolled back as the number of EVs increases.

g)Government Exemplarity

All governments should have their own plan of actions to increase EV adoption to promote EVs to their employees and to include EVs in their own fleet. The federal government should take a leading role and invite provincial governments to do the same. As part of a massive new federal transportation bill passed by the US Congress in early November 2015, the General Services Administration is now required to install electric chargers for all federal employees where they work. The employees will be charged a fee to cover the cost of the program.[2]

h) Technology, R&D and Pre-Commercialization

There is significant opportunity to coordinate and bring innovative clusters and commercial capacity across Canada in the new auto parts supply chain and to support the development of Canadian intellectual property, for components related to zero emission and low emission vehicles, including electric and fuel cell propulsion.

An Electric Vehicle Innovation Consortium (EVIC) would aim to support pre-competitive industry-academic collaborations based on the trusted innovation model demonstrated by the Consortium for Research and Innovation in Aerospace in Quebec (CRIAQ). Participants would include federal and provincial governments, private sector and academia. A re-allocation of funds from existing programs could serve to ensure that provinces and industry contribute equal amounts.

i) Building Codes

The latest National Building Code is the 2015 revision which does not explicitly cover standards or practices related to EVs. With the involvement of the National Research Council (NRC) and the Canadian Standards Association (CSA), the basic recommendation is to amend the National Building Code and the Canadian Electrical Code to require at least the roughing-in (electrical upgrade and civil access to eventual outlets) for charging EVs in all new buildings, including condominiums and apartment blocks. The second recommendation is to seek amendments to the building codes to ensure that a minimal percentage (%) of parking spaces in condo and apartment buildings enable EV charging.

j) Public Transit

Canadian bus builders are already active in the design and testing of electric buses (or e-buses), with the support of public authorities. While Canada can be proud of these important initiatives, the current implementation of new technologies in

[2] Source: Ecomento – November 10, 2015.

urban transit fleets is almost non-existent, with transit authorities typically not wanting to buy innovative technologies until they have been fully demonstrated, and the economic and financial barriers have been assessed. After sharing the results of the very few ongoing demonstrations projects, it is recommended to appraise the adequacy of e-buses on their routes with moderate levels of precision, and to determine the complementary demonstration projects that would be needed to cover most of the routes to electrify a complete fleet of buses. It will include the major financial support to be determined to multiple urban transit agencies and bus manufacturers for complementary demonstration projects of full size transit buses and the related charging infrastructure.

EMC will pursue discussions with important stakeholders, such as the Canadian Urban Transit Association, to determine a concrete action plan for the electrification of urban transit buses in Canada.

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Overview

Table 1 provides an overview of the high-priority recommendations, their expected uptakes and estimated costs for the period 2016-2020.

Table 1 – Financial Summary of Recommendations to Increase EV uptake

	Recommendations	**Expected Uptake** **High, Medium, Low**	**Total costs** **High, Medium, Low(*)**
1.	Raising public awareness for EVs	High	Medium
2.	Financial Incentives for EV Buyers	High	High
3.	EV Infrastructure-Workplace	High	High
4.	DC Fast Charging	High	Medium
5.	Car sharing pilot	Medium	Low
6.	Green License plate and related programs (HOV lanes, free parking…)	Medium	Low
7.	Government exemplarity	Medium	Medium
8.	Technology, R&D, and Pre-Commercialization	Commercialization	Low (reallocated budget)
9.	Building codes	Long term High	Low
10.	Public Transit • Segmentation and targeted demos for Buses	High	Low

(*)Low costs: under $5M
Medium costs: between $5M and $20M
High costs: over $20M

Budget Overview

Federal Budgets for implementation of measures (in $M)

Year	**2016**
Raising awareness	$3.0
Federal incentive of $3,000 per vehicle	$35.1
Federal incentive	
• Workplace infrastructure	$7.5
• DCFC	$1.0
TOTAL	$46.6

A budget of $250,000 is also necessary to pursue the car sharing project, and the Public Transit project.