

Committee on Transportation and the Environment

Bill 104

An Act to increase the number of zero-emission motor vehicles in
Québec in order to reduce greenhouse gas and other pollutant
emissions

Special consultations and public hearings

ELECTRIC MOBILITY CANADA'S MEMOIR

Wednesday August 17, 2016

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1. Introduction

Electric Mobility Canada (EMC) is a national membership-based not-for-profit organization dedicated exclusively to the promotion of electrification of all modes of transportation, as a sustainable solution to Canada's energy and environmental goals. Its 140 members represent the entire value chain of the EV industry: companies engaged in the sale or distribution of electric vehicles, components, batteries and/or charging networks and systems, consultants, energy providers, EV driver associations, universities and colleges, end users and fleet managers.

Following the publication of its Roadmap for Accelerating the Deployment of Electric Vehicles in Canada (2016-2020)¹ in March 2016, mainly describing our policy aimed at supporting the EV demand, the Board of Directors established an integrated supply and demand policy in order to accelerate the EV adoption. The memoir is based on this policy.

2. Summary of Electric Mobility Canada's Supply and Demand Policy

The strategy to increase demand is the top priority to address before imposing additional requirements on the supply side.

The introduction of regulations should not be considered without analyzing the adequacy of demand policies adapted to each jurisdiction, and without an extensive review on how it will impact the sector as a whole.

EMC's objective for a supply and demand side policy is a reasonable and a balanced legislation.

EMC would intervene to help determine the successful conditions of a regulation such as a ZEV mandate that could help increase EV sales by:

- Growing demand
- Planning a smooth transition period, taking into account the existing and predicted market share
- Promoting the introduction of new EV models
- Increasing sales of existing EV models available in Canada
- Avoiding a shock in the market.

¹ Source : https://emc-mec.ca/wp-content/uploads/EMC-EV-Roadmap_Final-Report.pdf

3. Pursuing a growing demand

For many years, the Government of Quebec has introduced a series of measures to support the EV demand. Here are the prominent measures that were put in place:

- Financial incentives when buying an EV
- Financial incentives when buying and installing a charging station at home or at work
- Hydro-Québec's mandate for the structured deployment of a public charging station network
- Important increase of the number of Level 2 and fast charging stations

Over and above the continuity in the existing measures, the latest version of the 2015-2020 Transportation Electrification Action Plan introduced or will soon introduce additional measures that have proven to stimulate demand such as access to HOV lanes, changes to the building code, and a first communication plan.

To move from an early adopter's market to the beginning of a mass market, all these conditions supporting demand should be pursued and communicated in a reassuring and longer term plan, be constantly reevaluated and adapted to the future market of potential buyers.

A positive EV experience - More and more Communication and Awareness

A significant increased effort in communication and awareness is considered essential in all jurisdictions. EMC's national roadmap describes very well the three recommended actions to attract the attention of prospective buyers to consider buying an EV today: a national campaign to raise attention on EVs, to facilitate test drives, and to provide a complete, neutral and easily accessible information to finalize their purchase process.

Once the attraction, the interest, and the available information is accessible to a future buyer, the quality of the consumer experience is the last step to support strongly the decision to have another EV on the road. The buyer's experience at the dealers is monitored and some improvements are regularly identified, and are deployed. A systematic approach, and modern tools to standardize this approach are more and more available.

To achieve the significant increase in EV sales to attain the objective of 100,000 EVs on the road by 2020, set by the Government, all of the important barriers need to be addressed in an optimized approach, including in the near future:

- More workplace charging
- Facilitating multi-unit residential charging and in apartment buildings
- A concrete and targeted action plan for fleets and municipalities

- More public DCFCs
- Managed cost of charging (especially peak loads)

The role of utilities

Utilities have a unique and critical role in supporting this infrastructure. And keeping the overall cost of charging infrastructure down will require the utility to have the ability to manage the charging in many (not all) applications.

EMC members are following the orientation taken in California for the deployment of infrastructure. In California, the role of utilities has significantly evolved in time and can be summarized as follow:

- Regulatory entities asked about the role of utilities in EV infrastructure.
- Utilities are explicitly disallowed from being involved in EV infrastructure. EV infrastructure is dramatically below levels need for EV goals.
- Regulator revisits role of utilities. Determines overall rate-payer benefit. Utilities may submit applications to support EV infrastructure.

Recently, demonstration projects to support EV infrastructure from utilities in California have accepted. Therefore, the utilities will have the ability to rate-base at least some of the investments in infrastructure.

The particularities of the Quebec market

The Quebec EV market stands out compared to other provinces, as a leader in EV sales, representing a large portion of the Canadian market, with nearly 50 % of Canadian sales (a proportion of 55% of PHEVs vs 44 % in Canada). The choice of an EV is influenced by the longer distances to travel and the cold climate in Quebec. These results, although the most important in Canada, represent close to 0.8 % of all Quebec automobile sales.

4. Increasing supply

Among the winning conditions to increase the number of EVs being sold, and once demand is well supported by a series of proven measures, the scope of the supply side is important.

The objective of Bill 104 is to stimulate the supply of low emission and ZE vehicles to allow Quebec consumers' access to a greater number and a wider range of pluggable vehicles, which are the cleanest and the most technically advanced on the market. For the future EV buyer, the advantages of having more supply are:

- a greater number of models to better satisfy the scope of needs
- availability of EVs at the dealership for the consumer to test drive and get to know the EVs better, with a minimum inventory (at least one EV of each model available) at each of the certified dealers
- comparable inventory and delivery delays in line with level of demand.

Therefore, no demand for an EV should be constrained by a lack of availability. The challenge remains to balance the supply in line with the demand in order to not create an untapped demand and not to have to manage excess inventory when compared to usual best practices.

A recent study called "Ease of Purchasing EVs in Canada"², done by FleetCarma for Environment Canada on the 2015-2016 available EV models, makes the following assessments:

- The Canadian EV inventory demonstrates that the OEMs and their dealers are holding a slightly lower level of inventory than for ICEs, with an average of 48 days' supply, compared to 50-100 days' supply for other vehicles. Some dealerships had zero EVs on the lot at any given time.
- For the moment, in Canada, as in the US, incentives and other measures drive demand, demand drives sales, sales drive inventory, with or without a ZEV mandate.
- The sales related to EV models available in the US, and not available in Canada represent 14% of current sales in the US.

The auto industry is committed to increased electrification – model offerings and sales continue to increase as well as additional future product announcements. There are currently over 16 plug-in electric vehicles available to consumers.³

There have been several manufacturers announcing a number of new PEV products for 2017 and in upcoming years, with further cost reduction and vehicle battery/range/utility technology improvements to meet mainstream customer utility needs and affordability.

² Study available upon request

³ Source: <http://oee.nrcan.gc.ca/transportation/tools/fuelratings/atv-2015-5cyc.cfm>

5. Winning conditions for Supply and Demand

EMC engaged in the analysis of studies in order to better understand the winning conditions of more developed markets. One of the most important, recent and global supply and demand studies has been completed by the International Council on Clean Transportation (ICCT)⁴, a recognized entity. It states that the top electric-vehicle adoption cities tend to have some combination of:

- more electric vehicle promotion actions
- greater charging infrastructure per capita
- greater consumer incentives
- greater model availability

Among the seven leading electric vehicle-deployment cities, five are in California (a ZEV state), and six have attractive consumer incentives. Manufacturers are targeting these markets and making more electric vehicles more readily available, and, as a result, EV sales are increasing.

Along with highlighting the leaders (cities in California), this analysis also helps identify gaps and differences across various cities:

- Atlanta (non ZEV state) has high EV incentives, average availability, and high market share
- Seattle (non ZEV state) has low incentives, average availability, and high market share
- New York (ZEV state) have adopted many promotion actions and have high EV model availability, but have less charging infrastructure and state subsidies, resulting in lower market share
- Denver (non ZEV state) has high incentives but low model availability, resulting in lower market share.
- Many electric vehicle markets appear to be held back by limited electric vehicle model availability.

Following these combinations, the market share observed in ZEV mandate states and non ZEV mandate states can vary significantly. The current “travel provision” in the current ZEV mandates can disrupt the analysis of state by state results.

The combination of promotion, incentives, infrastructure and availability is the best method to increase EV sales. The absence of any of these ingredients seems to have a significant impact on EV sales. Also, there is no conclusive method for evaluating untapped demand by EMC or any other entity to date. The availability and awareness of more EV models should help increase sales.

⁴ See Attachment 1 on page 10.

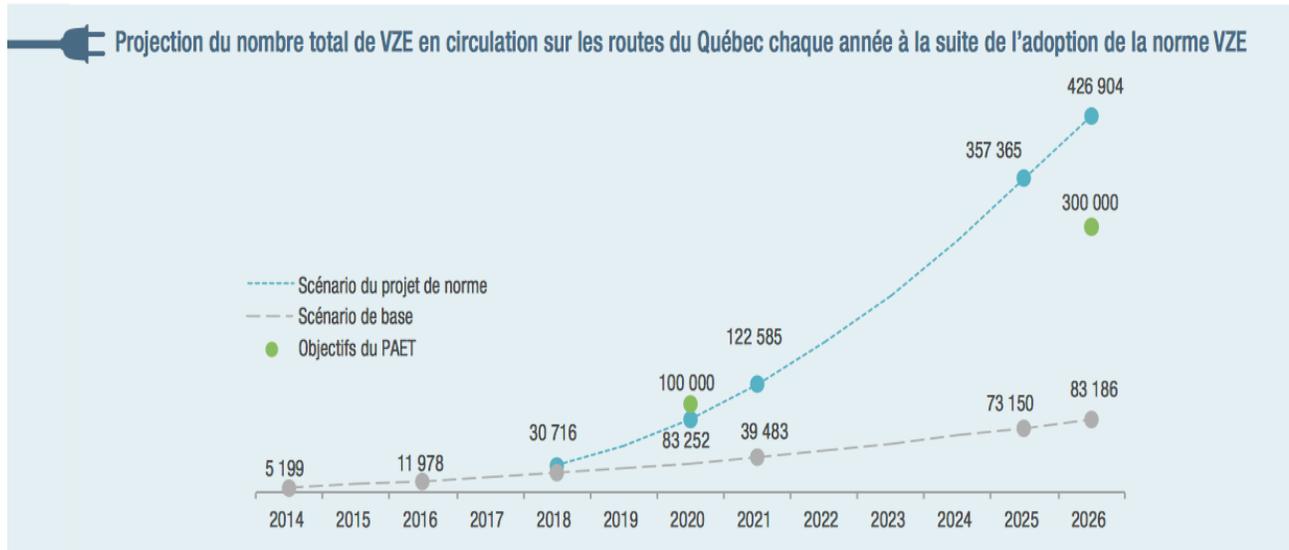
6. A legislation adapted to the Quebec context

In some American states, a ZEV regulation has been implemented and updated for many years now. While being based on the 2018 American version of the bill, the following principles should guide the government of Quebec in drafting its own bill in order to reflect the specificities of the Quebec market:

- Consider that this is a first implementation in Quebec, taking into account the existing and short term predicted market share for a smooth transition
- Based on the US parameters, to calibrate equitably the quantitative parameters to represent adequately the Quebec market, such as
 - The minimum number of vehicles sold, of all models, representing the trigger for the application of the legislation
 - The applicable credits for new vehicles sold in 2016, 2017, and 2018 before the introduction of the bill
- Regularly monitor the impact of all supply and demand attributes, to make sure that the actions to remove barriers are adequate, by establishing key performance indicators, such as:
 - The analysis of results of the action plan in terms of number of EVs in multi dwellings, apartment buildings, households, etc...
 - The degree of knowledge of EVs in the population
 - The geographic and access coverage of the deployment of workplace and public charging, considering the location of EVs
 - The level of inventory corresponding to demand of EVs in urban, semi urban, and rural areas
 - The incentives vs the price of EVs
- Review regularly the parameters of bill 104. In an emerging market like EVs, the conditions supporting supply and demand should be constantly analyzed, reevaluated and adapted to the future market of potential buyers.

Preliminary Targets

The following preliminary targets has been published recently.



Source: <http://www.mddelcc.gouv.qc.ca/changementsclimatiques/vze/feuille-vze-enbref.pdf>

In 2015, sales represented close to 0.7 % of new vehicles sold. The preliminary targets of EV sales are:

- 14 533 in 2018, or 3.4 % of sales
- 30 194 in 2020, or 6.9 % of sales
- 70 609 in 2025, or 15.5 % of sales

All the successful conditions of continued support in all measures to increase demand, with the available of supply, will be necessary to achieve these targets.

Electric Mobility Canada, with the support of its members, will continue to compare, monitor, and analyze the evolution of sales to determine the best practices for all provinces. We will be pleased to share this information.

Attachment

Excerpt from the International Council on Clean Transportation Report⁵

Electric vehicle promotion actions, charging infrastructure, and electric vehicle share of new vehicles in 2014 in the 25 most populous US metropolitan areas (2014 electric vehicle registration data provided by IHS automotive)

Assessment of leading electric vehicle promotion activities in United States cities – July 2015

The research reveals several key findings that could be helpful in understanding electric vehicle policy actions and deployment patterns. Across these 25 cities, there was an average of a dozen electric vehicle promotion activities, and plug-in electric vehicles accounted for 1.1% of new automobiles in 2014, which is about 40% greater than the nationwide electric vehicle share. The seven cities with the highest electric vehicle share in 2014 — San Francisco, Atlanta, Los Angeles, San Diego, Seattle, Portland, and riverside—had 2 to 7 times the average US electric vehicle share. **The top electric-vehicle adoption cities tended to have some combination of more electric vehicle promotion action, greater charging infrastructure per capita, greater consumer incentives, and greater model availability.** Along with highlighting the leaders, this analysis also helps identify gaps in the promotion actions across various cities. For example, cities like New York have adopted many promotion actions and have high electric vehicle model availability, but have less charging infrastructure and state subsidies; on the other hand, cities like Denver have high incentives but low model availability. Many cities' electric vehicle markets appear to be held back by limited electric vehicle model availability.

Among the seven leading electric vehicle-deployment cities, five are in states that have adopted California's Zero emission Vehicle program, and six have attractive consumer incentives. Manufacturers are targeting these markets and making more electric vehicles more readily available, and electric vehicle sales are up as a result.

⁵ Source : <http://www.theicct.org/leading-us-city-electric-vehicle-activities>

LEADING ELECTRIC VEHICLE PROMOTION ACTIVITIES IN U.S. CITIES

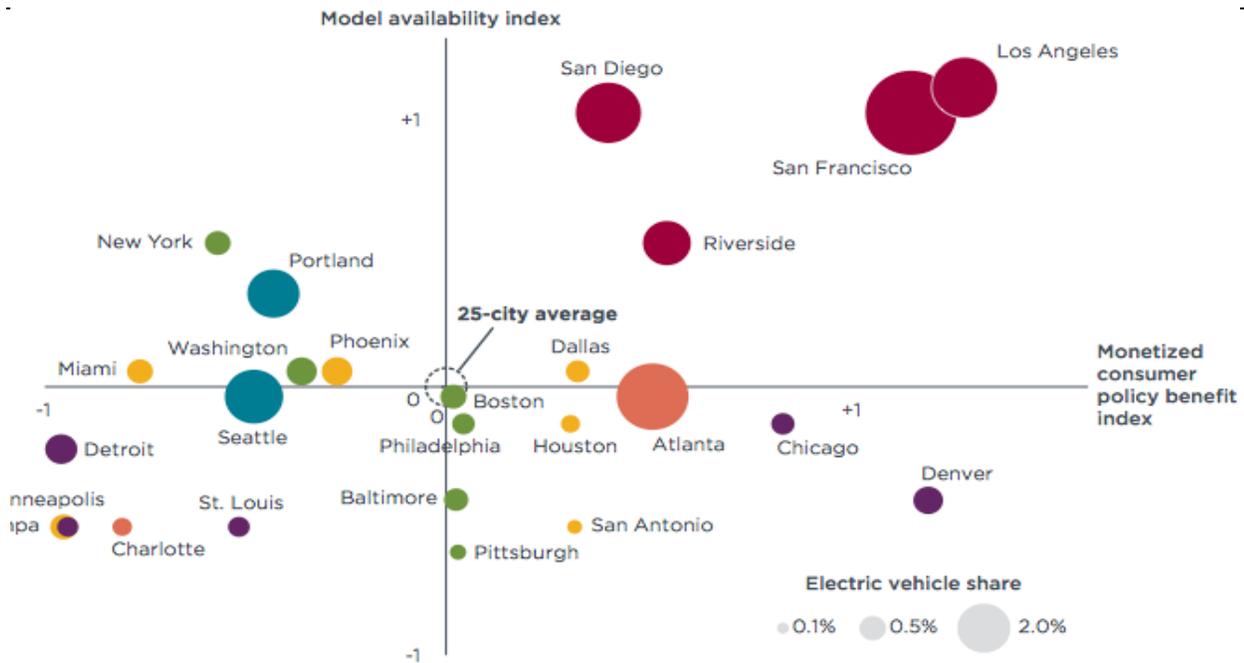
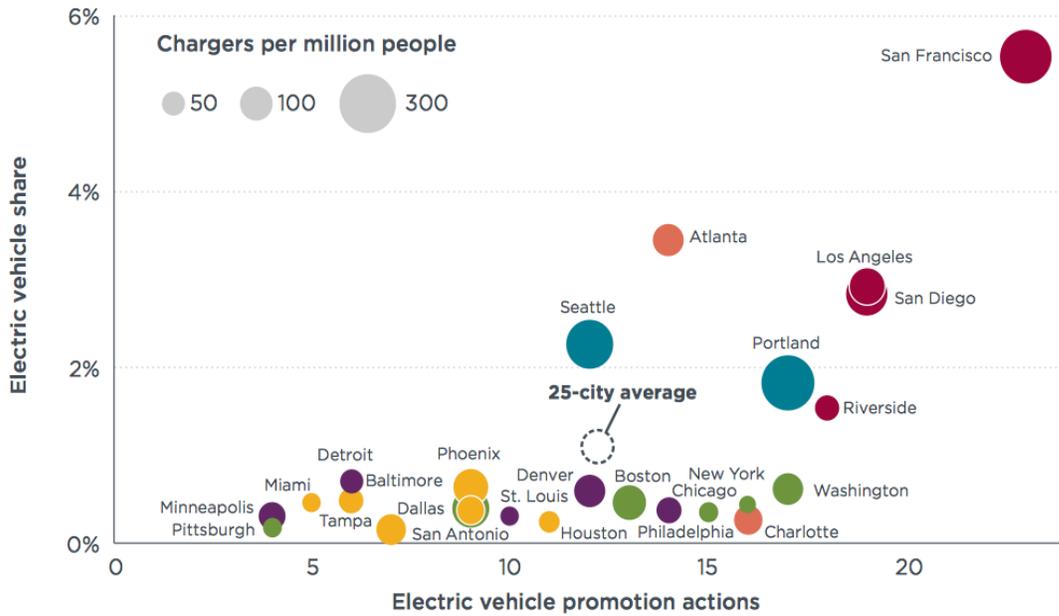


Figure 14. Electric vehicle model availability, monetized policy benefit, and new electric vehicle shares in the 25 most populous U.S. metropolitan areas

As shown in the upper-right quadrant, the four California cities have substantially greater electric vehicle model availability and greater consumer policy benefits than the average. Cities in the upper-left quadrant have high model availability but offer relatively few consumer policy incentives. Cities in the lower-right quadrant, including Atlanta, Chicago, and Denver, experienced relatively low model availability. The cities in the lower-left quadrant have low model availability and low consumer policy incentives.

