



Position paper of Electric Mobility Canadaⁱ on the justification for public financial incentives for electric transport

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Electric vehicles and electrification of transport in general today benefit from important public financial support. By way of example, provincial government offer up to \$8,500 dollars each to buyers of electric vehicles and up to \$2,000 for those installing EV charging stations. Governments at the national, provincial and municipal levels also manage several programs aimed at EV research and development and demonstration projects. This level of financial support is considered high by some but is nonetheless essential to the development of the sector – a sector that contributes positively to economic development and pollution reduction in this country.

Indeed, the development of electric vehicles involves promoting a pro-environmental product versus its gasoline or diesel powered counterparts. This market is now one of the most competitive conventional vehicles and is based on over a century of research and development and fierce competition between manufacturers. Political and financial support thus becomes essential to the emergence of electric vehicles.

Several individuals have recently questioned the need for public investment in the area of electric vehicles. Without necessarily doubting the merits of electrification of transportation, these individuals emphasize other priorities in the current budgetary context. They also argue that the key beneficiaries of the incentives are the major automobile manufacturers, whose operations are primarily based outside Canada. Therefore, the financial aid for the purchase of vehicles represents capital flowing out of the country.

The purpose of this paper is to highlight the tangible short, medium and long term benefits related to electrification of transportation, thereby explaining the merits of public policies intended to support the electrification of transport.

Policies linked to other technologies

Above all, it should be noted that the public support given to electric vehicles is not exceptional as numerous other non-transportation-related technologies are already benefiting from government assistance, both at the provincial and federal levels in Canada. Other examples in the area of energy efficiency include energy efficient heating systems, certified windows and water flow systems that are subsidized. In

addition, various past and current auto industry support programs, unrelated to clean technology, indirectly benefit these same auto manufacturers.

It should be noted that the International Monetary Fund estimates that fossil energy is subsidized to the height of \$800 per Canadian annually.ⁱⁱ

We are not questioning the merits of these support programs but mention them simply to illustrate that support for the purchase of electric vehicles is not exceptional.

Societal Relevance

Financial incentives available upon purchase of an electric vehicle are an important measure to support electrification of transportation. These incentives are up to \$ 8,500 in Ontario or \$8,000 in Quebec. These incentives contribute to making electric vehicle prices competitive and, in some instances, lowering the overall life cycle cost compared to a conventional vehicle. In addition, these financial incentives provide the extra "boost" to early technology adopters, thereby increasing the number of electric vehicles on our roads, providing greater visibility to the technology, and providing critical real life feedback to manufacturers. The increase in sales is essential for increasing economies of scale in production, lowering electric vehicle prices, further contributing to increasing their competitiveness).

Another important point concerns the reduction of GHG emissions and particulate matter. Environment Canada estimates that the transportation sector is responsible for 22% of Canada's GHG emissions. In provinces blessed with important hydroelectric production, this percentage is even higher. Local benefits in terms of public health are an obvious result of reduction in air pollution. In addition, emission reductions directly induce savings for society. Indeed, it is now accepted that many petroleum-related costs are not borne by producers but by society (and thus result in increased tax payments). For example, we can cite the management of ecological disasters associated with the extraction and transport of hydrocarbons. Beyond the monetary cost of these operations, many benefits are more difficult to quantify, such as the economic value of devastated environments or lives lost. GHG emissions have a present and future societal costs resulting from increased health care costs and loss of agricultural productivity as examples. To quantify the relevance of policies to reduce GHG emissions, policymakers have adopted a tool called Social Cost of Carbon. The figure adopted by Environment Canada is approximately \$25/ton GHG (it should be noted that experts generally consider this value as very conservative that it could increase rapidly in the coming years. For comparison, the City of New York estimates that it saves \$250/year for every tree planted) Taking the example of Quebec, CO² emissions are estimated for an electric vehicle at about 14 tons, throughout his life, including its manufacturing. For comparison, traffic on North American roads has average emissions of 110 tons per vehicle. Thus, taking only into account the social cost of carbon, the introduction of an electric vehicle allows the reduction of nearly 100 tons of greenhouse gases and thus, saving about \$ 2,500 for society (or, in the worst case scenario, more than 25% of government assistance granted to the vehicle buyer!). While Quebec's

example is particularly significant because of the preponderance of hydropower, it should be noted that in general, the level of provincial aid granted to the electric vehicle is correlated with cleanliness of local electricity production.

Economic and political relevance

At this level, two major arguments are particularly well known. First, the advent of the electric vehicle will severely reduce oil imports. The current monetary value of these imports will turn into a gain in activity for the provincial electricity suppliers and therefore largely benefit the economic development of Canada. This also addresses the country's energy sufficiency goals. Today our transportation needs, and a big part of our economy, are directly dependent on oil imports. This point weakens our position in international politics and leaves us to the whims of geopolitical events beyond our control. Without being alarmist, this has important consequences in the medium and long-term and needs our attention. We acknowledge that certain Canadian provinces have important petroleum reserves. Without questioning the environmental impacts of their exploitation, we should remember that these resources belong to the provinces and not Canada. For example, Ontario, Quebec and British Columbia do not produce oil and represent 75% of the Canadian population. These provinces can benefit from strategies that reduce their dependence on petroleum.

In addition, two other major points should be noted. While public support indirectly benefit foreign manufacturers, the economic issues faced by the Canadian auto industry are nonetheless very important and support for electric transportation will enable our auto companies to compete in the global market. First, the major auto manufacturers have assembly plants in Canada. Chrysler, Ford, GM, Honda and Toyota are well settled in Ontario and thus create jobs in Canada. Secondly, there are approximately 900 companies manufacturing auto parts in Canada. They employ 105,000 people for an annual turnover of \$ 34 billions. Thus, support for the purchase of electric vehicles will directly benefit these companies and indirectly the Canadian economy. It is worthy to note that the automotive sector already enjoys strong political support through the initiatives of Auto21 and Automotive Partnership Canada (both federally funded).

Finally, it is extremely simplistic to limit the electrification of transportation to light duty vehicles. Do not forget public transport, river and ocean freight, aviation or, recreational vehicles. In these markets, Canada has several areas in which the transition to electric mobility is in progress. (Bombardier's variety of electric transport vehicles is certainly the best example).

In conclusion, government support for the electrification of transport is a necessity for the development of technologies. They provide direct benefits to the Canadian economy, both in terms of electrical utilities and limiting oil imports while maintaining and creating jobs in the area. In addition, the electric vehicle will bring substantial benefits in terms of public health and will result in concrete monetary savings to individuals and fleets. Finally, if the electric vehicle market proves effective and relevant to the consumer, aid for the purchase will be outweighed by the benefits to society. If however, the sale of electric vehicles proves

disappointing, the financial support will not be paid.

In this respect, Electric Mobility Canada supports unconditionally public initiatives and financial support for the electrification of transportation. These incentives should be as high as possible to limit the carbon imprint of light duty vehicles and should exceed the cost of remission reductions in similar proportions. Support programs should be extended to other types of mobility (electric bikes and scooters, for example).

ⁱ Electric Mobility Canada is a 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 emerging energy and environmental issues. EMC is now Canada’s premier clean transportation industry association. Our membership includes:

- Private sector companies engaged in the sale or distribution of vehicles or components or the delivery of professional services. These members represent all modes of surface transportation from bicycles to trains.
- Providers of electric energy at the provincial and local levels
- Managers of fleets from private sector companies, governments agencies and others
- Related associations, societies, research centres, labour organizations
- Individual supporters

ⁱ International Monetary Fund, « Energy subsidy reform: lessons and implications », 2013
<http://ecoopportunity.net/2013/04/fossil-fuel-subsidies-nearly-800-per-canadian-says-the-imf/>

ⁱⁱ International Monetary Fund, « Energy subsidy reform: lessons and implications », 2013
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