Cheryl Blundon
Director of Corporate Services and Board Secretary
Newfoundland and Labrador
Board of Commissioners of Public Utilities
120 Torbay Road, Suite E-210
St. John's, Newfoundland and Labrador, A1A 2G8

Via e-mail to cblundon@pub.nl.ca

July 05, 2023

RE: **Newfoundland Power Application for Electric Vehicle Load Management Pilot Project - 2023-06-02**

Intervenor Submission – Drive Electric NL

Good day Ms. Blundon,

Following Drive Electric NL's request on June 19th for intervenor status, we are providing the following intervenor submission in response to the application noted above.

We appreciate the opportunity for Drive Electric NL to contribute towards this application. Please do not hesitate to contact me directly with any questions.

Jon Seary
Drive Electric NL
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Drive Electric NL
Intervenor Submission

Newfoundland Power Application for Electric Vehicle Load Management Pilot Project - 2023-06-02

Drive Electric NL's Unique Interest in the Matter

Drive Electric NL represents the rapidly growing number of electric vehicle owners of Newfoundland and Labrador. Drive Electric NL's founders, senior staff, and the DENL Advisory Board have acquired years of practical electric vehicle experience through the daily use of their electric vehicles, including winter operation, long distance travel, and towing.

The founders of Drive Electric NL attend a wide variety of electric vehicle conferences and presentations on EVs, and meet regularly with other EV groups across Canada. Both founders serve on the board of EV Society, a national EV advocacy organization with 30 chapters across Canada.

While Drive Electric NL does not profess to be experts on regulatory issues, we do possess a wealth of knowledge and experience that comes only with years of EV ownership and use. This experience is complimented with an ongoing effort to understand the needs of the province's driving public in order to provide EV understanding to the ratepayers of the province.

First-hand EV ownership experience is a must for sound planning and proper policy development. It is important to fully understand how EVs are used in a variety of ways for everything from charging station design and placement, to EV fleet use, to EV sales practices.

Just as no one would build a kitchen without some experience with cooking, decisions regarding EV adoption and policy need to be made in consultation with experienced EV owners, especially with local ownership knowledge. Having non-EV owners debate and develop EV policy is inefficient and has proven costly to correct later.

Adoption curve for EVs in Newfoundland and Labrador

While some non-EV owners doubt the adoption rate of EVs, the vast majority of those who work within the EV industry recognize the adoption is 1) inevitable, and 2) transitioning more quickly than many expect. This conclusion is based on some simple points:

- Consumers strive for savings on fuel. This is demonstrated with the effort consumers make to fill up before a fuel price increase;
- The cost to drive an EV averages approximately 1/8th the cost to drive a similar gas vehicle per km;
- Many EVs with rebate factored in cost below the average MSRP of gas vehicles in Canada; and
- Many EV owners are driving electric for the environmental benefits in an effort to reduce their contribution to climate change and air pollution.

A quick look at other emerging technologies such as digital cameras, smartphones, and streaming video services show the swift and severe impact a new technology can have on long-established and profitable companies. Even with a high-price point for entry or when new infrastructure investment is required, the adoption of new technology that provides lower ongoing cost and less maintenance is inevitable.

Adding to the rapidity of this change is efforts by both levels of government to encourage EV adoption. The Government of Canada's ZEV mandate means that by 2035, 100% of new vehicles sold in Canada will be electric. Similar efforts are being implemented in the U.S. with changes to emissions targets by the EPA. To encourage EV adoption, the Government of Canada provides a purchase rebate of $5000 on most models and the Government of NL a rebate of $2500 on all EV models.

A number of NL companies have realized EV adoption has increased their competitiveness by lowering energy and maintenance costs of their fleet vehicles. One DENL member company has gone further, implementing their own $4000 EV purchase rebate for their employees. They recognized the one time cost saved each employee an equivalent of a $4000-$8000 perpetual salary raise, helping with job satisfaction and employee retention.

While it may make sense to compare the anticipated adoption curve in NL to other regions further along in EV adoption, it has to be considered the selection of EVs has increased significantly as well. There are now 82 EV models listed as available in Canada from 18 manufacturers.[1] Electric trucks and delivery vans are now available. With most manufacturers offering 1-2 EV models, brand loyal customers are more likely to switch to EV. Consumers now have more options to fit a larger range of needs, enabling options for EV adoption that didn't exist just a year ago.

[1] **https://tc.canada.ca/en/road-transportation/innovative-technologies/zero-emission-vehicles/light-duty-zero-emission-vehicles/eligible-vehicles**

Finding the right information

Many companies in the automotive sector are struggling to catch up to those who foresaw the EV transition, developed technology, and secured supply chains. Others see their entire business model set to be drastically changed or eliminated as the need to run and maintain gas engines evaporates. Frequently we see information that implies EVs are impractical, charging is difficult, etc, in an effort to dissuade prospective buyers and maintain the status quo. It is important to ensure information on EV adoption is coming from sources with actual practical knowledge.

Drive Electric NL is a registered not-for-profit, who provides EV ownership information to encourage electric vehicle adoption. Drive Electric NL keeps abreast of industry developments, and compliments this knowledge with actual EV ownership experience. This experience is both first hand and from a wide variety of owners with a range of vehicles.

In 2022, EV Society of Canada (of which Drive Electric NL is a chapter member) conducted a nation-wide survey of Canadian EV owners on a variety of EV ownership subjects. This survey appears to be the only one of its kind to date, and provides many of the answers that are needed for Newfoundland Power's load management pilot.

While the EV Society survey results are not public, the most significant point made from the survey is EV owners are very satisfied with their EVs: 100% of EV owners indicated their decision to switch to an electric vehicle is permanent – there is no returning to a gas powered vehicle.

EV owner demographics and charging habits

Many EV owners and soon-to-be owners visit the Drive Electric Resource Centre in St. John's and are attending EV shows we hold across the province. They match a typical cross section of buyers of similarly priced gas vehicles, with ages ranging from mid-20s to mid-80s. While we are not asking for specific information, anecdotal evidence shows a wide variety of employment circumstances, with many owners being simply cost-conscious about the operating cost of their vehicle and concerns for the environmental impact of running a gas powered vehicle. This cross section is reflected in discussions amongst EV owners in Drive Electric NL's social media.

The vast majority of EV owners charge at home, and those living in condominiums are beginning to request charging for their residences as well. Drive Electric NL has been requested to provide technical guidance to management boards of a number of multi-unit residence buildings (MURBs). As more EV owners become tenants, many non-EV owners are realizing their resale value is affected by the ability to offer charging for all residents.

EV owner demographics and charging habits, continued

An informal survey of DENL members indicated they plug in to charge at when arriving home at the end of the work day, with the expectation of being fully charged the following morning. Occasionally some will require their vehicle once more before parking for the night, and want to charge it before that trip. All members indicated that a financial incentive to offset their charging costs would influence their charging habits, recognizing the effort to delay charging later in the evening would be simple to do and have little impact on their daily use.

In looking at time of day use rates (TOD) for EV owners in Ontario, customers of Toronto Hydro with an EV that consumes an average 400 KWh/month could save between $50 and $90 per month when using overnight charging rates.[2] We suggest this would serve as a good guide for a reasonable incentive amount to encourage charging at times when it's best for the electricity system.

Helping EV owners understand the potential environmental benefits from overnight charging could also be a powerful motivator for participation.

Home charging equipment

The Drive Electric Resource Centre stocks and sells Level 2 chargers. In the last 12 months, 116 chargers were sold with a per unit cost from $750.00 to $1250.00+HST. All of the charger models sold are smart chargers, with the ability to connect to the internet and allow the owners to monitor and control usage and generate reports of their use. In many cases, we expect that potential participants for Newfoundland Power's program will already own an internet connected 'smart' charger.[3]

Tesla owners can use the chargers sold by the Resource Centre with a small adapter that comes with their vehicles, but many choose to install the Tesla specific charger. The plug on the Tesla charger fits Tesla vehicles without an adapter and includes a button to trigger open the car's charging port.

[2] Ontario Energy Board bill calculator, residential: https://www.oeb.ca/_html/calculator/en/electricity/res/#Compare

[3] A number of EV owners will install a 240v receptacle and charge with the portable Level 2 charger that comes with many EVs. This is a cheaper option as they do not have to buy a charger, but is difficult to make weatherproof without a special cover. Some owners will charge using a standard 120v receptacle with the portable Level 1 charger that comes with many EVs. This will work for EVs that have low daily mileage. This option is common with EV owners who rent or live in a building without Level 2 charging installed.

Conclusion

The proposed Electric Vehicle Load Management Pilot Project is a program for EV owners, and it is important that EV owners are included with its development process.

As a registered not-for-profit EV advocacy organization, Drive Electric NL brings a unique perspective to this process. In addition to our years of practical experience through the daily use of electric vehicles, including winter operation, long distance travel, and towing, we interact with local EV owners on a daily basis. This experience is complimented with an ongoing effort to understand the needs of the province's driving public in order to provide EV understanding to the ratepayers of the province.

While some non-EV owners doubt the adoption rate of EVs, the vast majority of those who work within the EV industry recognize the adoption is both inevitable and occurring more quickly than many expect. Lower cost of ownership helped by purchase incentives and carbon taxes on fuel, combined with federal mandates for EV adoption will continue to drive EV adoption at a rapid pace in Newfoundland and Labrador. As these vehicles are steadily added to the grid load, it is critical this load is managed to ensure it does not become an unnecessary burden on the province's electric infrastructure.

In our experience, EV owners and soon-to-be owners visiting the Drive Electric Resource Centre in St. John's match a typical cross section of buyers of similarly priced gas vehicles, with ages ranging from mid-20s to mid-80s. These individuals have a wide variety of employment circumstances, with many owners being simply cost-conscious about the operating cost of their vehicle and the environmental impact of running a gas powered vehicle.

Drive Electric NL and the Drive Electric Resource Centre are viewed as the trusted source of EV adoption information. We believe approaching EV owners in this environment to discuss best charging habits would contribute to successful program delivery.

Recommendations

We support Newfoundland Power's application for the Electric Vehicle Load Management Pilot Project, with the following recommendations:

1. In absence of implementing time-of-day rates, an equivalent monetary incentive to manage EV charging times would be most effective.
2. EV owners will need an option to opt-out of the program should their charging needs change.
3. Education on the program and its benefits needs to reach EV owners, future owners, automobile dealers and fleet managers. This effort will be critical in order to be successful and needs to be budgeted accordingly.
4. EV owners will want to know what measures to follow to ensure their charging habits have the least impact on the grid and the environment, especially to ensure long-term sustainability of electricity supply in the province.
5. Avoid "corporate speak" in the messaging. Engage local representation and make it a community effort to achieve buy-in.

Drive Electric NL is the trusted source for EV information in the province. In addition to the Drive Electric Resource Centre in St. John's, we frequently conduct EV events and EV training sessions for many groups both in St. John's and across the province. We are happy to work with Newfoundland Power to make use of our resources, knowledge and expertise to ensure a successful program delivery.