

D Barry Kirkham, QC*
Duncan J Manson*
Daniel W Burnett, QC*
Ronald G Paton*
Karen S Thompson*
Harley J Harris*
Kari F Richardson*
James W Zaitsoff*
Jocelyn M Bellerud*
Sarah M Pélouquin**

Robin C Macfarlane*
Alan A Frydenlund, QC**
Harvey S Delaney*
Paul J Brown*
Gary M Yaffe*
Jonathan L Williams*
Paul A Brackstone**
Pamela E Sheppard*
Katharina R Spatzl
Steffi T Boyce

Josephine M Nadel, QC*
Allison R Kuchta*
James L Carpick*
Patrick J Haberl*
Heather E Maconachie
Michael F Robson*
Scott H Stephens*
George J Roper*
Sameer Kamboj

James D Burns*
Jeffrey B Lightfoot*
Christopher P Weafer*
Gregory J Tucker, QC*
Terence W Yu*
James H McBeath*
Edith A Ryan*
Daniel H Coles*
Patrick J O'Neill

OWEN BIRD
LAW CORPORATION

PO Box 49130
Three Bentall Centre
2900-595 Burrard Street
Vancouver, BC
Canada V7X 1J5

* Law Corporation
* Also of the Yukon Bar
** Also of the Ontario Bar

Carl J Pines, Associate Counsel*
Rose-Mary L Basham, QC, Associate Counsel*
Jennifer M Williams, Associate Counsel*
Hon Walter S Owen, QC, QC, LLD (1981)
John I Bird, QC (2005)

Telephone 604 688-0401
Fax 604 688-2827
Website www.owenbird.com

Direct Line: 604 691-7557
Direct Fax: 604 632-4482
E-mail: cweafer@owenbird.com
Our File: 23841/0179

June 6, 2018

VIA EMAIL – LES.MACLAREN@GOV.BC.CA

The British Columbia Ministry of Energy, Mines
and Petroleum Resources
Electricity and Alternative Energy Division
PO Box 9314, Stn Prov Govt
Victoria, BC V8W 9N1

Attention: Mr. Les MacLaren, Assistant Deputy Minister

Dear Sirs/Mesdames:

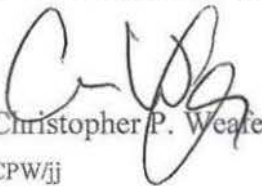
Re: British Columbia Utilities Commission Inquiry into the Regulation of Electric
Vehicle Charging Service ~ Project No. 1598941

We are counsel to the Commercial Energy Consumers Association of British Columbia (the
“CEC”). Attached please find the CEC’s Response to the BC Ministry of Energy, Mines and
Petroleum Resources Information Request with respect to the above-noted proceeding.

If you have any questions regarding the foregoing, please do not hesitate to contact the
undersigned.

Yours truly,

OWEN BIRD LAW CORPORATION


Christopher P. Weafer
CPW/fj

cc: Ministry of Energy, Mines and Petroleum Resources
Atten: Shannon Craig, Shannon.craig@gov.bc.ca
cc: BCUC – Atten: Patrick Wruck, Commission Secretary
cc: Registered Interveners
cc: CEC

**COMMERCIAL ENERGY CONSUMERS ASSOCIATION
OF BRITISH COLUMBIA (“CEC”)**

**CEC Response to British Columbia Ministry of Energy,
Mines and Petroleum Resources (“MEMPR”) Information
Request No. 1**

**British Columbia Utilities Commission - Inquiry into the Regulation
of Electric Vehicle Charging Service
Project No. 1598941**

June 6, 2018

CEC RESPONSE TO MEMPR INFORMATION REQUEST #1

**British Columbia Utilities Commission - Inquiry into the Regulation of Electric Vehicle
Charging
Project No. 1598941**

1.0 Reference: Exhibit C24-2, p. 1 CEC Membership Representation

Charging station requirement projections

On pages 30 and 92 of Exhibit C24-2, the Commercial Energy Consumers Association of BC presents tables outlining EV charging station requirement projections for 2020 to 2040.

1.1 Please explain the meaning of the terms “Capacity L2,” “Capacity DCFC” and “Coverage (highway) DCFC.”

Response:

Capacity L2 refers to the number of Level 2 charging ports required to meet EV charging demand. Capacity DCFC refers to the number of DCFC charging stations required to meet EV charging demand. Each DCFC charging station is assumed to have approximately 4 individual ports on average, as derived from Table E-2 of the NREL’s Electric Vehicle Infrastructure Analysis.¹

Coverage (highway) DCFC refers to DCFC stations that are installed for the purpose of increasing the effective range of EVs, rather than meeting charging demand.

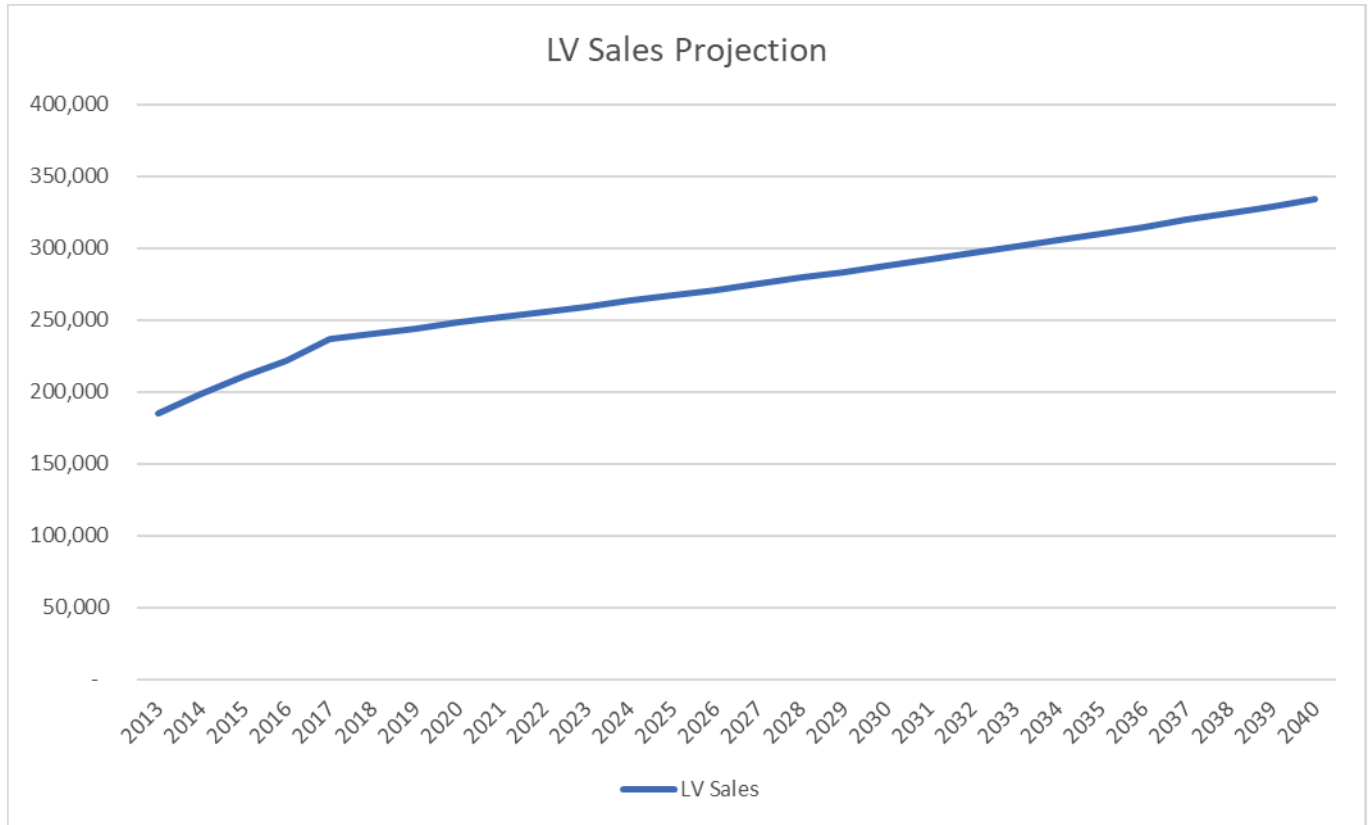
1.2 Please describe the assumptions used to estimate the annual requirement projections for each of the three categories of EV charging station. Was modeling software used in this analysis? If so, please provide the name of the software used.

Response:

Within the CEC model, both Coverage L2 port and Coverage DCFC station projections are derived from the same set of assumptions. It assumes a growth rate in BC’s driving age

¹ Office of Energy Efficiency and Renewable Energy. (2017). National Plug-In Electric Vehicle Infrastructure Analysis. U.S. Department of Energy.

population derived from BC Stats data², and an accompanying growth in light vehicle (LV) sales derived from StatsCan data.³

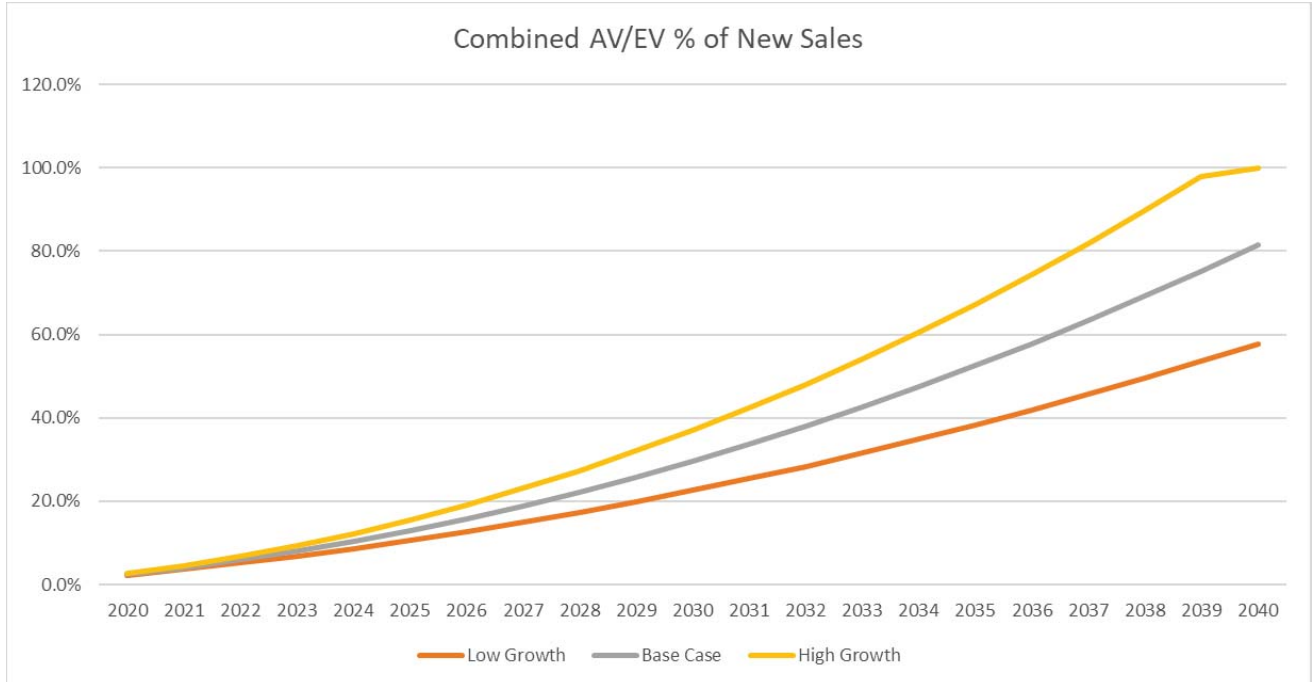


The percentage of LV sales that are personal EVs is derived from NREL data while the percentage of LV sales that are shared autonomous vehicles (AVs) (which are assumed to be electric) is derived from the CEC’s body of knowledge on AV, including McKinsey & Company’s report “Automotive revolution – perspective towards 2030”.⁴ Both projections feature 3 scenarios, as expressed in the CEC response to questions in BCUC – CEC 1.6.2.

² BC Stats. (2017, July). Population Projections. Retrieved from <https://www2.gov.bc.ca/gov/content/data/statistics/people-population-community/population/population-projections>

³ Statistics Canada. (2018, June 5). New motor vehicle sales. Retrieved from <http://www.statcan.gc.ca/tables-tableaux/sum-som/101/cst01/trade36j-eng.htm>

⁴ McKinsey & Company. (2016). Automotive revolution – perspective towards 2030.



Microsoft Excel was the only software used in the preparation of CEC’s Capacity L2 and Capacity DCFC requirements.

The Coverage (highway) DCFC requirement is derived from assumptions made by the NREL on the recommended distance between highway DCFC stations. The CEC model assumes that approximately 70 km between stations is sufficient.

1.3 The table on page 92 suggests that all 112 of the required Coverage (highway) DCFC stations will need to be constructed in 2020. Have existing DCFC stations located on provincial highways been considered in developing the projections? If no, why not?

Response:

The CEC model assumes that a major hurdle in EV adoption is “range anxiety”, which describes the perception that EVs are inferior to ICE vehicles due to their inability to leave established EV networks. This assumption is partly derived from SFU survey findings, as described in the report “Electrifying Vehicles: Insights from the Canadian Plug-in Electric Vehicle Study”.⁵

If the BC government intends to pursue a strategy that maximizes EV adoption rates, then the CEC model assumes that Coverage DCFC stations should be installed as soon as possible. The CEC model assumes that this may occur in 2020, though the CEC acknowledges that logistical difficulties may cause a longer deployment time.

⁵ Simon Fraser University. (2015). Electrifying Vehicles: Insights from the Canadian Plug-in Electric Vehicle Study. Vancouver.

The CEC model does not currently acknowledge the existing 30 Phase 1 DCFC stations in its estimate, as the CEC was unable to find documentation on the spacing between these stations and the number of plugs present during its research.

However, adjustment for existing stations should be made and the CEC can amend its model to reflect the existing DCFC charging station implementation.

The CEC intends to implement such an amendment to its model forthwith.

1.4 Please explain why the Coverage (highway) DCFC category requirement remains constant from 2020 to 2040 despite the projected increase in EV sales.

Response:

The Coverage (highway) DCFC station projection remains consistent because it is intended to provide EV drivers access to the entirety of BC's highway network rather than meet charging demands. Given the nature of highway travel, many routes' DCFC stations will be unused for long periods even after widespread EV adoption.

The CEC acknowledges that certain high-use routes may require additional DCFC stations as adoption rates increase, though this is not explicitly accounted for in the CEC model.

The CEC model could be amended to add DCFC charging stations according to a parameter based on number of EVs to DCFC charging station requirements for highways and urban areas as may be required.

The CEC intends to implement such an amendment to its model forthwith.

1.5 Please identify how many DCFC chargers are expected at each of the 112 highway site locations.

Response:

In accordance with the NREL study, the CEC model assumes approximately 6 plugs at Coverage (highway) DCFC stations.