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VIA E-FILE

October 3, 2019

Attention: Mr. Fred James
British Columbia Hydro and Power Authority
333 Dunsmuir Street,
Vancouver BC V6B 5R3

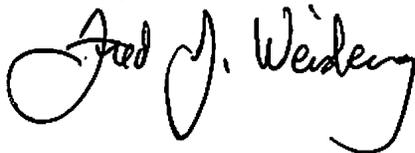
Dear Mr. James:

**RE: British Columbia Hydro and Power Authority
Project No. 1599004
Application to Amend Net Metering Service under Rate Schedule 1289
Net Metering Ratepayers Group
Information Request No. 2 to BC Hydro**

In accordance with the Regulatory Timetable established by British Columbia Utilities Commission Order G-217-19A (Exhibit A-10-1), we enclose Net Metering Ratepayers Group (NMRG) Information Request No. 2 to BC Hydro.

If further information or clarification is required, please contact the writer.

Yours truly,



Fred J. Weisberg
Barrister & Solicitor
Weisberg Law Corporation
Counsel to the Net Metering Ratepayers Group

NET METERING RATEPAYERS GROUP
INFORMATION REQUEST NO. 2 TO BRITISH COLUMBIA HYDRO and POWER AUTHORITY

October 3, 2019

BC Hydro Application to Amend Net Metering Service under Rate Schedule 1289

14.0 Topic: SIZE OF GENERATING FACILITY

Reference: Exhibit B-3, PDF 66 – BCUC 1.5.2.

Preamble: BCUC IR 1.5.2 requested:

"Please quantify the "cost-shifting" to non-participants by illustrating the cost recovery from the following hypothetical customers, including a breakdown and an illustrative example of the bill that the customer would pay in each billing cycle: i) an average SGS customer non-NM customer; ii) a hypothetical average SGS customer who offsets 50% of his/her own consumption with NM generation within each billing cycle; iii) a hypothetical average SGS customer who offsets 100% of his/her consumption within each billing cycle."

BCH Response included:

"Figure 1 below shows the actual net generation (outflow) pattern of 409 Residential (RS 1101) Net Metering customers in fiscal 2016. As shown, **these outflows have high seasonal variability, peaking in summer and approaching zero in winter**. Therefore, it would not be meaningful to estimate bills for scenarios where a Net Metering customer offsets either 50 per cent or 100 per cent of their consumption, in each billing cycle, as suggested in the question. Rather, illustrative bills are presented for Net Metering customers who offset either 50 per cent or 100 per cent of their consumption over the entire year, assuming that their generation follows the pattern shown in Figure 1 below." (emphasis added)

14.1 Do the graphs and explanations in this response reflect only net metering **solar** profiles? Please explain.

14.2 Is approximately 80% of net metering excess power in winter generated by hydro facilities rather than solar? Please explain.

14.3 Does BC Hydro's use of solar profiles in this context skew the results of BC Hydro's analysis? Would the results of BC Hydro's analysis be significantly different if net metering excess power output from hydro rather than solar was given appropriate weighting?

14.4 Please confirm that the "409 residential customers in the Program served under RS 1101" as the basis for BC Hydro's actual average cost-shifting analysis for fiscal 2016 excluded any consideration of the five largest net metering excess power producing hydro generation facilities.

14.5 Would the inclusion of the five largest net metering excess power producing hydro generation facilities in BC Hydro's actual average cost-shifting analysis for fiscal 2016 have significantly changed the results?

14.6 Please provide a revised version of BC Hydro's response to BCUC 1.5.2 that fully reflects the inclusion of the five largest net metering excess power producing hydro generation facilities.

15.0 Topic: PRICE OF SURPLUS ENERGY

Reference: Exhibit B-3, PDF 125 – BCUC 10.1.

Preamble: The response states in part:

"In BC Hydro's view, now that the SOP has been indefinitely suspended..."

15.1 For clarity please confirm that the Standing Offer Program (SOP) has not been cancelled, expired or otherwise terminated.

15.2 Is the most accurate characterization of the current status of the SOP that BC Hydro has suspended any new applications to the SOP? Please explain.

15.3 Please confirm that to give effect to BC Hydro's "indefinite suspension" of the SOP it has delivered written notice to each of its EPA (under the SOP only) counterparties to advise of that those EPAs are indefinitely suspended. If not confirmed, please explain why BC Hydro would not provide such notice to its EPA counterparties.

15.4 Please confirm that BC Hydro has in no way suspended its rights or obligations or purported to suspend the rights and obligations of its counterparties, in any of the EPAs currently under the SOP. If the rights or obligations of either BC Hydro or its counterparties with EPAs under the SOP have been suspended or are purported to be suspended has that resulted in any current litigation or disputes? Please explain.

15.5 Please confirm that some of the Energy Purchase Agreements (EPAs) under the SOP have 40-year terms and expressly allow for further negotiations and potential renewals and other EPAs are index linked.

15.6 Given the remaining terms of a number of EPAs under the SOP please confirm that it will be necessary for BC Hydro to continue the SOP for at least another 35 years. Please also confirm that if negotiations with EPA counterparties resulted in one or more renewal the SOP will necessarily stay in effect for more than another 35 years.

15.7 Please confirm that approximately 20% of all of BC Hydro energy acquisitions are achieved acquired through EPAs under the SOP. If 20% is incorrect please provide the correct percentage.

16.0 Topic: PRICE OF SURPLUS ENERGY

Reference: Exhibit B-3, PDF 127-128 – BCUC 1.10.2 and PDF 201-202 – BCUC 1.15.7.

Preamble: The first referenced response states in part:

“As discussed further in BC Hydro’s response to BCUC IR 1.10.1, now that the Standing Offer Program (SOP) has been indefinitely suspended, the SOP price should no longer be used as a basis for the Energy Price;”

The second referenced response states in part:

“As stated in BC Hydro’s response to BCUC IR 1.10.1, now that the Standing Offer Program has been indefinitely suspended, the Energy Price should be re-evaluated and updated accordingly.”

16.1 In the responses to BCUC 1.10.2 and 1. 15.7 why did BC Hydro omit the qualifying phrase "in BCH's view" when referring back to BCUC 1.10.1 stating that the SOP has been indefinitely suspended?

16.2 Does the SOP price remain in effect for the remaining terms of the EPAs under the SOP? Please describe the process steps required for BC hydro to change the SOP price if it wishes to do so.

17.0 Topic: PRICE OF SURPLUS ENERGY

Reference: Exhibit B-3, PDF 128 – BCUC 1.10.2

Preamble: BC Hydro’s response to BCUC 1.10.2 states in part:

"The value of energy delivered to BC Hydro by customers in the Program **does not necessarily differ** among resource types:"

17.1 Please confirm that the value of energy delivered to BC Hydro by customers in the Net Metering Program **does or may differ** among resource types.

17.2 Please identify and discuss the variables that will affect or determine the value of energy delivered to BC Hydro by customers in the Net Metering Program such that it differs among specific resource types.

17.3 For each resource type provide specific examples of how the variables identified in response to NMRG 17.2 above will result in different values of energy delivered to BC Hydro by customers in the Net Metering Program.

17.4 As a general proposition will excess energy generated by net metering solar facilities tend to have more variation in its value than excess energy generated by net metering hydro facilities? Please explain.

18.0 Topic: PRICE OF SURPLUS ENERGY

Reference: Exhibit B-3, PDF 127 – BCUC 1.10.2.

Preamble: BC Hydro’s response to BCUC 1.10.2 states in part:

"BC Hydro does not have any meaningful way to measure losses, ancillary services, or system capacity associated with excess generation from customers in the Program."

18.1 Please explain further how losses, ancillary services and system capacity issues are “associated” with excess generation from customers in the Program.

18.2 Does BC Hydro already have or could it acquire new itron smart meters?

18.3 Do meters and or other equipment from itron or other vendors provide solutions to measure losses, ancillary services, or system capacity associated with excess generation from customers in the Program? Please explain and discuss why any obstacles to those solutions can’t be overcome by BC Hydro, separately addressing each of: measuring losses; ancillary services; and system capacity issues.

18.4 In the context of BC Hydro’s apparent challenges with measuring losses, ancillary services, or system capacity associated with excess generation from customers in the Program please comment on the following statement from the itron website at [Learn More](https://www.itron.com/na/solutions/who-we-serve/electricity) <https://www.itron.com/na/solutions/who-we-serve/electricity> :

“Make solar work

Integrating renewable energy sources like solar and wind makes accurate energy demand forecasting more important than ever. Itron’s forecasting framework and software accurately predicts the load volatility caused by intermittent resources—and equips utilities to schedule reserve generation much more cost effectively.”

18.5 Apart from smart meter or other technological solutions, please confirm that all Net Metering customers necessarily have bi-directional metering.

18.5 Without bi-directional metering how would it be possible for BC Hydro to accurately calculate how much to charge and pay/credit Net Metering customers?

18.6 Are losses an essential part of the calculations used by BC Hydro to operate its system?

18.7 In what specific ways does do losses “associated” with excess generation from customers in the Program create any unique challenges?

19.0 Topic: PRICE OF SURPLUS ENERGY

Reference: Exhibit B-3, PDF 137 – BCUC 1.11.2

Preamble: BC Hydro’s response to BCUC 1.11.2 states in part:

“To provide capacity benefits, BC Hydro requires the resource to be reliably generating when needed which is typically during the system evening peak in the winter. More than 98 per cent of all customers in the Program have solar photovoltaic Generating Facilities. These resources do not provide capacity benefits because they do not have generation in winter evenings.”

19.1 Please reconcile the statement in the Preamble with BC Hydro’s statement in response to BCUC 1.10.2.1 that "The value of energy delivered to the grid by customers in the Program does not necessarily differ among resource types".

19.2 Please confirm that energy generated with hydro facilities by customers in the Program does provide capacity benefits, and quantify those benefits.

19.3 Why did BC Hydro’s response not identify and discuss those capacity benefits from hydro facilities rather than focusing on solar facilities?

19.4 Why did BC Hydro’s response focus on the number of Net Metering customers (e.g. 98%) rather the percentage of excess generated energy by resource type?

19.2 Do 1.2% of Net Metering customers, comprising 16 hydro plants, produce 80% of the total excess power? If not, provide the correct percentage of excess power produced by those customers.

19.3 Please confirm that excess power from those Net Metering hydro plants, which makes up the 80% of the total excess power in the Program, has the same firm/long run qualities as BC Hydro's other hydro resources. If not, please explain.

20.0 Topic: PRICE OF SURPLUS ENERGY

Reference: Exhibit B-3, PDF 143-151 – BCUC 1.12.3 Attachment 1 Table of Total Daily Net Generation Supplied to BC Hydro by NM Customers in 2018

20.1 Why do both the graphs and the table in response to BCUC 1.12.3 show no hydro production at all for one day every week in High Load Hours (HLH)?

20.2 What is the basis for BC Hydro's assumption of zero production days each week for hydroelectric generation?

21.0 Topic: PRICE OF SURPLUS ENERGY

Reference: Exhibit B-3, PDF 174 – BCUC 1.14.2.

Preamble: Although the BCUC 1.14.2 was clear in requesting: "Please compare NM customers' generation and consumption patterns as observed by BC Hydro. *Please include data by rate class and by generation source*, respectively." (emphasis added) the response appears to reflect only the solar profile.

21.1 Please provide an additional set of the graphs provided but show only Net Metering hydroelectric excess generation, which accounts for 80% of total Net Metering excess generation.

22.0 Topic: Price Typically Received by BC Hydro for Net Metering Generation

Reference: Exhibit B-5, PDF 608 – NMRG 1.5.2

Preamble: BC Hydro's response to NMRG 1.5.2 states in part:

"The flow of electric power on a distribution feeder is governed by system impedances, the amount and location of load on the feeder, and the amount and location of generation on the feeder. The shortest physical distance is not always the shortest electrical distance. As the load and generation is constantly changing,

it is not practical to determine the exact path the electric power generated by a customer in the Program takes on the BC Hydro distribution system.”

22.1 Please assume an example that shows a typical single distribution line being fed at one end by a BC Hydro substation and at the other end having a Net Metering generator who is producing the average amount of excess energy with 100 houses in between that have a typically average demand load (e.g. 2kw) and that the load is steady as if a snapshot of time were to be taken. Demonstrate in detail with calculations and graphic aids how the flow of power would not flow from the nearest source of generation to the nearest load, including the magnitude of flows from both BC Hydro substation and Net Metering plant to the houses.

22.2 Assume the same scenario described in 22.1 above and provide a map showing distance and the most likely flow of power to meet the most probable typical loads found in a typical residential situation would be served by both typical BC Hydro substation and typical Net Metering customer who is producing excess.

23.0 Topic: Not Specified in BCOAPO et al IR

Reference: Exhibit B-5, PDF 224 – BCOAPO et al 1.7.2

Preamble: BC Hydro claims that it “... does not track Surplus Energy Payments on monthly basis.”

23.1 Does BC Hydro not track Surplus Energy Payments on a monthly basis by choice or because it is unable to do so. If the latter, please explain in detail why tracking Surplus Energy Payments on a monthly basis.

23.2 Doesn't calculation of annual Surplus Energy Payments necessarily involve tracking Surplus Energy Payments on a monthly basis? Please explain.

24.0 Topic: Energy Price

Reference: Exhibit B-5, PDF 294, 296-297 – BCSEA 1.9.1

Preamble: The response states in part: "BC Hydro has not determined the degree to which aggregate generation from customers in the Program can be relied upon over the long-term and, to date, has not considered the potential energy contribution from customers in the Program to be sufficiently large to include in our long term planning.”

24.1. Has BC Hydro chosen not to determine the degree to which aggregate generation from customers in the Program can be relied upon over the long-term? If not, could BC Hydro make that determination if directed to by the BCUC? What obstacles may prevent BC hydro from making that determination?

24.2. What potential energy contribution from customers in the Program would BC hydro consider sufficiently large to include in its long-term planning?

25.0 Topic: Transitional Provisions

Reference: Exhibit B-5, PDF 317 – BCSEA 1.13.6

Preamble: BC Hydro states: “The Net Metering Program is not an energy procurement program.”

25.1 Please confirm that BC Hydro has never promoted the Net Metering Program as an energy procurement program.