

Fred James

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October 24, 2019

Mr. Patrick Wruck Commission Secretary and Manager Regulatory Support British Columbia Utilities Commission Suite 410, 900 Howe Street Vancouver, BC V6Z 2N3

Dear Mr. Wruck:

RE: Project No. 1599004

British Columbia Utilities Commission (BCUC or Commission)

British Columbia Hydro and Power Authority (BC Hydro)

Application to Amend Net Metering Service under Rate Schedule (RS) 1289

(Application)

Responses to BCUC and Interveners Information Request No.2

BC Hydro writes in compliance with Commission Order No. G-217-19A to provide its responses to Commission and Interveners Information Request No. 2 as follows:

Exhibit B-7	Responses to Commission IRs (Public Version)
Exhibit B-8	Responses to Interveners IRs (Public Version)
Exhibit B-8-1	Responses to Interveners IRs (Confidential Version)

BC Hydro is filing the response to SJOMAN 2.2.1 confidentially with the Commission. BC Hydro confirms that an explanation for the request for confidential treatment is provided in the public version of the IR response. BC Hydro seeks this confidential treatment pursuant to section 42 of the *Administrative Tribunals Act* and Part 4 of the Commission's Rules of Practice and Procedure.

BC Hydro notes that it has declined to answer questions related to the terms and conditions of Standing Offer Program ("SOP") agreements, and questions related to the program volumes related to the SOP, as these questions are outside of the scope of the Application.

October 24, 2019
Mr. Patrick Wruck
Commission Secretary and Manager
Regulatory Support
British Columbia Utilities Commission
Responses to BCUC and Interveners Information Request No.2



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For further information, please contact Chris Sandve at 604-974-4641 or by email at bchydroregulatorygroup@bchydro.com.

Yours sincerely,

Fred James

Chief Regulatory Officer

cs/tl

Enclosure

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24.0 A. GENERAL

Reference: GENERAL

Exhibit B-5, Net Metering Ratepayers Group (NMRPG) Information Request (IR) 11.3 CleanBC Report, pp. 5, 62

Policy consideration

CleanBC Report states on page 5 "Our strategy reduces GHG emissions by shifting away from fossil fuels and towards clean and renewable energy." It further states on page 62:

Results of this focused review will inform a broader review that identifies key B.C. and North American trends, like the falling cost of renewables and alternative visions for BC Hydro's long-term role... Incorporating these findings and the strategic direction set by CleanBC, BC Hydro will prepare a new Integrated Resource Plan to incorporate new objectives and develop a new path forward for electricity in B.C.

In response to NMRPG IR 11.3, British Columbia Hydro and Power Authority (BC Hydro) stated that "BC Hydro is not proposing to limit the number of participating customers, the total kW of capacity or the number of applicants accepted into the Program annually."

2.24.1 Please elaborate on how the proposed changes to the Net Metering Program contained in the Application are aligned with current government policy.

RESPONSE:

As discussed in BC Hydro's response to BCUC IR 1.10.1, as a result of the Government of B.C.'s Comprehensive Review of BC Hydro, BC Hydro indefinitely suspended the Standing Offer Program (SOP) in February 2019. In BC Hydro's view, now that the SOP has been indefinitely suspended, the SOP price should no longer be used as a basis for the Energy Price and the Energy Price should be re-evaluated and updated to reflect the market price.

As discussed in BC Hydro's response to BCUC IR 1.10.5, the proposed update to the Energy Price aligns with BC Hydro's recent adoption of the market price as a conservative interim assumption for evaluating energy during surplus and deficit periods.

Lastly, the proposed amendments in the Application also align with BC Hydro's objective to maintain the Program as a load offset program.

https://blog.gov.bc.ca/app/uploads/sites/436/2019/02/CleanBC_Full_Report_Updated_Mar2019.pdf

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25.0 A. GENERAL

Reference: GENERAL

Exhibit B-3, British Columbia Utilities Commission (BCUC) IR 18.4; Exhibit B-5, City of Fort St. John IR 1.2.1

Future reporting

BC Hydro stated in response to BCUC IR 18.4 that "BC Hydro intends to review its assumptions with regards to the growth and inclusion of Net Metering in resource planning in its next Integrated Resource Plan."

BC Hydro elaborated in response to City of Fort St. John IR 1.2.1 that "Any future applications by BC Hydro with regards to Rate Schedule 1289 would be informed by, and consistent with, BC Hydro's approved Integrated Resource Plan."

2.25.1 Please discuss whether BC Hydro would be amenable to filing a Net Metering evaluation report by February 2021, to coincide with the timing of the Integrated Resource Plan filing.

RESPONSE:

BC Hydro is amenable to filing a Net Metering Evaluation Report by February 2021. BC Hydro proposes that, in addition to the topics covered in previous Net Metering Evaluation Reports, this report include an analysis of cost shifting to non-participants resulting from the Program.

BC Hydro proposes that this report be filed by the end of October 2020 to help inform the 2021 Integrated Resource Plan and any potential future amendments to Rate Schedule 1289.

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Reference: SURPLUS ENERGY

Exhibit B-3, BCUC IR 5.1, 5.2, 3.5 Cost-shifting to non-participants

In response to BCUC IR 5.1, BC Hydro provided three ways cost-shifting occurs between net-metered and other customers:

- The Energy Price paid to the Net Metering Customers is greater than the value BC Hydro receives from excess generation;
- Net Metering Customers Still Require Energy on Demand; and
- Net Metering Customers Accumulate a Generation Account Balance to Reduce Subsequent Bill(s).

In response to BCUC IR 5.2, BC Hydro stated:

To calculate the extent to which BC Hydro recovers its cost to serve Residential (RS 1101) customers in the Program, BC Hydro compared its cost of service with revenue from customers in the Program and the value of generation delivered to BC Hydro's system from those customers. This analysis was completed for 409 RS 1101 Net Metering Program Participants, with the following generation sources: 396 solar photovoltaic, three hydro, one hydro and solar photovoltaic, six wind, two wind and solar photovoltaic, and one biogas.

Further, BC Hydro provided Table 8 below:

Table 8 Actual Average Cost Shifting Per Residential (RS 1101) Net Metering Customer in Fiscal 2016

	ВС	Hydro Cost of Service	
Α	Energy-related Costs	0.031 (\$/kWh) * 6,041,355 kWh provided by BC Hydro	\$187,866
В	Demand-related Costs	12.82 (\$/kW/month) * 36,366 kW / month provided by BC Hydro	\$466,212
С	Customer-related Costs	140 (\$/year/account) * 409 accounts	\$57,230
D	Program Administration Costs	175 (\$ / year / account) * 409 accounts	\$71,575
E	Total Costs to Serve	E = A + B + C + D	\$782,905
BC Hydro Revenues and Avoided Costs			
F	BC Hydro Revenues Received	Electricity Bill Revenues less Surplus Energy Payments	\$474,342
G	Value to BC Hydro of Net Metering Generation Delivered	0.031 (\$/kWh) * 1,612,480 kWh Delivered to BC Hydro	\$50,148
Н	Total Revenues and Value Received	H = F + G	\$524,472

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	Cost Shifting			
ı	Average Residential Net Metering Revenues to Cost Ratio	I=H/E	68%	
J	Average Residential Non Net Metering Customer Revenue to Cost Ratio	Per BC Hydro's Fiscal 2016 Fully Allocated Cost of Service Study	91%	
K	Actual Average Cost-shifting Per Account	J = E * (J - I) / 409 accounts	\$456 / year	

In response to BCUC IR 3.5, BC Hydro stated that there are 637 customers on the Net Metering program as of F2016.

2.26.1 Please provide a breakdown of the calculation of line F in Table 8 above.

RESPONSE:

Line F in Table 8, described as "Electricity Bill Revenues less Surplus Energy Payments" was calculated as the sum of all individual line items of customer bills over the period analyzed. These data were obtained directly from BC Hydro's billing system. As the results of Line F were calculated directly from BC Hydro's billing system data there were no intermediate or "breakdown" calculations.

Individual line items of customer bills include records of:

- Payments to BC Hydro for the Basic Charge and Energy Charges associated with service under RS1101 (i.e., net energy was positive);
- Payment to BC Hydro for the Basic Charge only (i.e., net energy was negative and the customers is accumulating a generation credit); or
- Payment from BC Hydro to the customer (Surplus Energy Payments made BC Hydro to the customer for their Generation Account Balance).

Total Surplus Energy Payments in fiscal 2016 to the accounts included in the analysis were \$90,508.

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- Net Metering Customers Accumulate a Generation Account Balance to Reduce Subsequent Bill(s).

In response to BCUC IR 5.2, BC Hydro stated:

To calculate the extent to which BC Hydro recovers its cost to serve Residential (RS 1101) customers in the Program, BC Hydro compared its cost of service with revenue from customers in the Program and the value of generation delivered to BC Hydro's system from those customers. This analysis was completed for 409 RS 1101 Net Metering Program Participants, with the following generation sources: 396 solar photovoltaic, three hydro, one hydro and solar photovoltaic, six wind, two wind and solar photovoltaic, and one biogas.

Further, BC Hydro provided Table 8 below:

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In response to BCUC IR 3.5, BC Hydro stated that there are 637 customers on the Net Metering program as of F2016.

2.26.2 Please provide a breakdown and discussion of the cost shifting in Table 8 by the three means of cost-shifting identified in response to BCUC IR 5.1.

RESPONSE:

The Actual Average Cost-Shifting per Rate Schedule 1101 account of \$456/year in fiscal 2016 shown in Table 8 of BC Hydro's response to BCUC IR 1.5.2 can be broken down as follows:

- a) Approximately one third was the result of Surplus Energy Payments paid to customers in the Program at the Energy Price (9.99 cents per kWh), which exceeded BC Hydro's embedded cost of energy (3.1 cents per kWh). This type of cost shifting is being mitigated by the update to the Energy Price proposed in the Application;
- b) Approximately one third was the result of customers in the Program reducing their electricity bills payable under Rate Schedule 1101 by accumulating a Generation Account Balance under the terms of Rate Schedule 1289, while still requiring BC Hydro's electrical service on demand, and in particular, during BC Hydro's peak demand period, which occurs in winter evenings. This type of cost shifting is expected to have increased since fiscal 2016 due to the increased average size of customer generation; and
- c) Approximately one third was the result of Program Administration Costs being recovered from all ratepayers. On a per account basis this type of cost shifting is expected to decrease as fixed Program administrative costs are spread over an increased number of Program participants.

The proposed update to the Energy Price is only intended to mitigate the cost shifting associated with Surplus Energy Payments (i.e., bullet a above). The remaining cost shifting resulting from the Program (i.e., paragraph b and paragraph c above) is not being mitigated through the Application.

BC Hydro will be undertaking additional cost shifting analysis through its next Net Metering Evaluation Report and will engage with customers in the Program and other stakeholders to identify possible solutions to any remaining cost shifting. This work may inform future applications to the BCUC.

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In response to BCUC IR 5.2, BC Hydro stated:

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2.26.3 Please explain whether the calculation in Table 8 includes all net metering customers under RS 1101 for fiscal 2016 or a subset.

RESPONSE:

The calculation in Table 8 includes all net metering accounts that took service under Rate Schedule 1101 for fiscal 2016 for which a complete and reliable data set could be obtained. The only accounts that were excluded were those for which there were data limitations (e.g., a full year of complete electricity data was not available).

The final data set consisted of 409 of a total of 640 Rate Schedule 1101 customers in the Program in fiscal 2016. The estimated average cost shifting per account is applicable to all Rate Schedule 1101 customers in the Program in fiscal 2016.

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In response to BCUC IR 3.5, BC Hydro stated that there are 637 customers on the Net Metering program as of F2016.

- 2.26.3 Please explain whether the calculation in Table 8 includes all net metering customers under RS 1101 for fiscal 2016 or a subset.
 - 2.26.3.1 If all net metering customers are not included, please calculate the average cost-shifting per account using all net metering customers under RS 1101. If the calculation is not possible, please explain why not.

RESPONSE:

The results shown in Table 8 provide a representative estimate of actual average cost shifting per account in fiscal 2016 for all customers in the Program that took service under Rate Schedule 1101.

As stated in BC Hydro's response to BCUC IR 2.26.3, the calculation in Table 8 includes all net metering accounts that took service under Rate Schedule 1101 for fiscal 2016 for which a complete and reliable data set could be obtained. The only accounts that were excluded were those for which there were data limitations (e.g., a full year of complete electricity data was not available).

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- 2.26.3 Please explain whether the calculation in Table 8 includes all net metering customers under RS 1101 for fiscal 2016 or a subset.
 - 2.26.3.2 Please discuss the impact of including all RS 1101 net metering customers in the calculation of the average cost-shifting per account.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 2.26.3.

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In response to BCUC IR 3.5, BC Hydro stated that there are 637 customers on the Net Metering program as of F2016.

2.26.4 Please provide an actual cost-shifting analysis for customers served on Small General Service (RS 13XX), and any for other rate schedules with net metering customers, if possible.

RESPONSE:

An actual cost-shifting analysis for customers served on Small General Service and any other rate schedules with customers in the Program would take several months to complete.

However, BC Hydro is able to provide the following discussion of our expectations with regards to cost-shifting from customers in the Program to non-participating customers.

For customers in the Program in the integrated areas, cost shifting per account is expected to be greatest for customers taking service under Rate Schedule 1101 (Residential Service), followed by Rate Schedule 13XX (Small General Service). This is primarily because:

- BC Hydro's analysis indicates that customers in the Program that take service under Rate Schedule 1101 rely on BC Hydro service for electricity during BC Hydro's system peak, which means they still impose demand related costs. BC Hydro expects similar circumstances for Small General Service Customers; and
- Under the terms of Rate Schedule 1289, any net generation (outflow) from customers in the Program offsets the Energy Charge under the Rate Schedule under which the Customer is receiving service from BC Hydro. Therefore, the value that customers in the Program receive from BC Hydro for their net generation (outflow) is directly related to the magnitude of the Energy Charge of the rate schedule under which the customer takes service.

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Fiscal 2019 Energy Charges are shown below for the main rate schedules under which customers in the Program take service. As shown, Energy Charges are highest under Residential Rate Schedule 1101 and Small General Service RS13XX Rate Schedules:

- ▶ Residential Rate Schedule 1101 Step 2 Energy Charge: 14.17 ¢/kWh, Step 1 Energy Charge: 9.45 ¢/kWh;
- ► Small General Service Rate Schedule 13XX Energy Charge: 12.53 ¢/kWh;
- ▶ Medium General Service Rate Schedule 15XX Energy Charge: 9.68 ¢/kWh; and
- ► Large General Service Rate Schedule 16XX: 6.06 ¢/kWh.

BC Hydro expects that, all else equal, cost shifting will be lower for customers in the Program that take service under Rate Schedule 15XX (Medium General Service) and Rate Schedule 16XX (Large General Service), which have Demand Charges, than it will be for customers in the Program that take service under Rate Schedule 1101 (Residential Service) or under Rate Schedule 13XX (Small General Service).

Cost shifting for customers in BC Hydro's non-integrated areas may differ substantially from customers in the integrated areas. BC Hydro has not undertaken an analysis of cost-shifting for the non-integrated areas and is unable to comment on its magnitude or direction at this time.

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Reference: SURPLUS ENERGY

Exhibit B-3, BCUC IR 5.1, 5.2, 3.5 Cost-shifting to non-participants

In response to BCUC IR 5.1, BC Hydro provided three ways cost-shifting occurs between net-metered and other customers:

- The Energy Price paid to the Net Metering Customers is greater than the value BC Hydro receives from excess generation;
- Net Metering Customers Still Require Energy on Demand; and
- Net Metering Customers Accumulate a Generation Account Balance to Reduce Subsequent Bill(s).

In response to BCUC IR 5.2, BC Hydro stated:

To calculate the extent to which BC Hydro recovers its cost to serve Residential (RS 1101) customers in the Program, BC Hydro compared its cost of service with revenue from customers in the Program and the value of generation delivered to BC Hydro's system from those customers. This analysis was completed for 409 RS 1101 Net Metering Program Participants, with the following generation sources: 396 solar photovoltaic, three hydro, one hydro and solar photovoltaic, six wind, two wind and solar photovoltaic, and one biogas.

Further, BC Hydro provided Table 8 below:

Table 8 Actual Average Cost Shifting Per Residential (RS 1101) Net Metering Customer in Fiscal 2016

	ВС	Hydro Cost of Service	
Α	Energy-related Costs	0.031 (\$/kWh) * 6,041,355 kWh provided by BC Hydro	\$187,866
В	Demand-related Costs	12.82 (\$/kW/month) * 36,366 kW / month provided by BC Hydro	\$466,212
С	Customer-related Costs	140 (\$/year/account) * 409 accounts	\$57,230
D	Program Administration Costs	175 (\$ / year / account) * 409 accounts	\$71,575
Е	Total Costs to Serve	E = A + B + C + D	\$782,905
	BC Hydro	Revenues and Avoided Costs	
F	BC Hydro Revenues Received	Electricity Bill Revenues less Surplus Energy Payments	\$474,342
G	Value to BC Hydro of Net Metering Generation Delivered	0.031 (\$/kWh) * 1,612,480 kWh Delivered to BC Hydro	\$50,148
Н	Total Revenues and Value Received	H = F + G	\$524,472

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	Cost Shifting		
ı	Average Residential Net Metering Revenues to Cost Ratio	I=H/E	68%
J	Average Residential Non Net Metering Customer Revenue to Cost Ratio	Per BC Hydro's Fiscal 2016 Fully Allocated Cost of Service Study	91%
K	Actual Average Cost-shifting Per Account	J = E * (J - I) / 409 accounts	\$456 / year

In response to BCUC IR 3.5, BC Hydro stated that there are 637 customers on the Net Metering program as of F2016.

2.26.5 For each rate schedule that has net metering customer enrolment, please provide details of the trend of cost-shifting per account for each year since 2015 to the most recently available data by rate schedule. If details are unavailable, please explain any challenges to provide such information and provide a high-level overview of the trend.

RESPONSE:

BC Hydro has not analyzed cost shifting for each rate schedule under which Program customers take service, for every year since 2015. Conducting this analysis would require at least six months of analytical effort by a cost of service specialist. As discussed in BC Hydro's response to BCUC IR 2.25.1, BC Hydro proposes to file a Net Metering Evaluation Report by the end of October 2020 that would include an analysis of cost shifting to non-participants resulting from the Program.

Some factors expected to impact cost shifting from 2015 to date in BC Hydro's integrated areas would include increases in the number Program participants and increases in the amount of Program energy generation. Both of these factors would be expected to increase the magnitude of cost shifting from Program customers to non-participants.

The primary reason this would be expected to occur is because customers in the Program are able to accumulate a Generation Account Balance and use it to reduce subsequent bills. When a customer generates more electricity than they need at a point in time, that net generation (outflow) is recorded in the customer's Generation Account. The Generation Account Balance is then applied as a credit to reduce bills payable for electrical service under the rate schedule that the customer takes service.

Under the terms of Rate Schedule 1289, customers in the Program can avoid paying up to 100 per cent of the Energy Charges for electrical service from BC Hydro. BC Hydro relies on revenue from Energy Charges to recover Demand,

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Energy and Customer related costs. While net generation from customers in the Program reduces BC Hydro's energy related costs to serve Program customers, it does not reduce the Customer related costs and only reduces Demand related costs if the customer's net generation coincides with a peak period. This is generally not the case for solar photovoltaic generation, which is the generation type of 98 per cent of participants in the Program.

While customers can avoid Energy Charges under Rate Schedule 1289, they cannot avoid Demand or Basic Charges, under the Rate Schedule that the customer takes service.

For customers in the Program taking service under Rate Schedule 13XX (Small General Service), Rate Schedule 15XX (Medium General Service) and Rate Schedule 16XX (Large General Service), BC Hydro expects that cost shifting will be reduced but not eliminated by the changes in these rate designs arising from BC Hydro's 2015 Rate Design Application. These changes increased either the Basic (Small General Service) or Demand (Medium General Service and Large General Service) Charges and reduced the Energy Charges.

BC Hydro's cost of service in the non-integrated areas differs materially from costs in the integrated areas. BC Hydro is unable to comment on the extent of cost shifting, or trends in cost shifting for customers in the Program in non-integrated areas absent specific analysis which cannot be completed within the time provided for responses to this round of information requests.

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- 2.26.5 For each rate schedule that has net metering customer enrolment, please provide details of the trend of cost-shifting per account for each year since 2015 to the most recently available data by rate schedule. If details are unavailable, please explain any challenges to provide such information and provide a high-level overview of the trend.
 - 2.26.5.1 Please discuss the reasons for the trend identified above.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 2.26.5.

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Reference: PRICE OF SURPLUS ENERGY

Exhibit B-3, BCUC IR 5.3; Exhibit B-5, BC Community Solar

Coalition (BCCSC) IR 6.3

Net Metering Program as a load offset program

In response to BCUC IR 5.3, BC Hydro stated:

Objective 1 is "Maintain the Program as a load offset program so that customers can generate their own electricity to reduce their supply from BC Hydro."

BC Hydro elaborated in response to BCCSC IR 6.3 that:

BC Hydro believes that the purpose of the Program is to be a load offset program that provides customers with opportunities to offset their own load. The Program is not intended to allow customers to generate energy with the objective of selling that energy to BC Hydro, similar to an IPP.

2.27.1 Please explain when "the purpose of the Program is to be a load offset program" as referenced above was established as one of the objectives of the Net Metering program.

RESPONSE:

The purpose of the Program to be a load offset program dates back to the inception of the Net Metering Program.

When evaluating the 50 kW capacity limit in its Reasons for Decision appended to BCUC Order No. G-26-04 related to BC Hydro's original Net Metering Application dated November 2003, the BCUC noted that:

"A 50 kW system is consistent with the intent of net metering to allow individual customers to meet all or part of their electricity demand....Further, and more importantly to net metering tariff design from a regulatory perspective, limits to system size are intended to reduce the potential magnitude of cost-shifting to non-participating customers." (emphasis added)

Further, when evaluating capacity limits above 50 kW in its original Net Metering Monitoring and Evaluation Report dated June 1, 2005, BC Hydro noted that:

"In many instances the load will be much smaller than the generation which defies the Net Metering purpose of offsetting load." (emphasis added)

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Exhibit B-3, BCUC IR 5.3; Exhibit B-5, BC Community Solar

Coalition (BCCSC) IR 6.3

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BC Hydro believes that the purpose of the Program is to be a load offset program that provides customers with opportunities to offset their own load. The Program is not intended to allow customers to generate energy with the objective of selling that energy to BC Hydro, similar to an IPP.

- 2.27.1 Please explain when "the purpose of the Program is to be a load offset program" as referenced above was established as one of the objectives of the Net Metering program.
 - 2.27.1.1 If the above-mentioned objective was not established at the inception of the Net Metering Program, please elaborate on the timing, circumstance, any public consultation process conducted, and regulatory review process to introduce this objective.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 2.27.1.

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Reference: PRICE OF SURPLUS ENERGY

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Objective 1 is "Maintain the Program as a load offset program so that customers can generate their own electricity to reduce their supply from BC Hydro."

BC Hydro elaborated in response to BCCSC IR 6.3 that:

BC Hydro believes that the purpose of the Program is to be a load offset program that provides customers with opportunities to offset their own load. The Program is not intended to allow customers to generate energy with the objective of selling that energy to BC Hydro, similar to an IPP.

2.27.2 If the objective of the Net Metering Program to offset load has been in place prior to the date of the application filed on April 20, 2018, please explain why BC Hydro did not amend the language tariff to align with the program objective until its application dated April 20, 2018.

RESPONSE:

The growth of the Program, coupled with the increase in applications for Oversized Generating Facilities, and the resulting cost shifting to non-participating customers, prompted BC Hydro to propose more specific provisions to enforce the original intent of the Program.

As described in section 2.2 of the Application, some customers began significantly oversizing their generation as compared to their load. While this was technically not contrary to Rate Schedule 1289, it was clearly at odds with the original intent of the Program to provide an opportunity for customers to offset all or a portion of their load.

The intent of the proposed changes outlined in section 2 of the Application is to provide BC Hydro with a mechanism to enforce the original intent of the Program as a load offset program.

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Since the inception of the Program, Rate Schedule 1289 has included language in the Availability clause that indicates the intent of the Program is for customers to "generate electricity to serve all or part of their electricity requirements".

In the Tariff sheets effective March 10, 2004, the Availability clause stated the Program was available to customers "...who install a Generating Facility to serve all or part of their electricity requirements...".

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28.0 C. ANNIVERSARY DATE

Reference: ANNIVERSARY DATE

Exhibit B-3, BCUC IR 8.3

Optimal and Flexible Anniversary Date

In response to BCUC IR 8.3, BC Hydro stated:

BC Hydro does not foresee issues with regards to customers in the Program selecting an Anniversary Date that reduces opportunities to apply their Generation Account Balance to reduce their supply from BC Hydro, provided that:

- The Energy Price reflects the value of the energy received by BC Hydro, as outlined in BC Hydro's response to BCUC IR 1.10.2; and
- Customers are only able to change their Anniversary Date once, which
 prevents customers from requesting multiple changes to their
 Anniversary Date to take advantage of fluctuations in the Energy Price.
- 2.28.1 Please elaborate on why, in BC Hydro's view, it is desirable to limit changes to customers' Anniversary Date such that customers do not take advantage of fluctuations in the Energy Price.

RESPONSE:

The intent of the Program is to provide a simple way for customers to offset their load. Allowing customers to choose their Anniversary Date once, enables customers to select an Anniversary Date that maximizes their opportunity to apply their Generation Account Balance to reduce the amount of electricity they purchase from BC Hydro.

If customers were able to change their Anniversary Date on multiple occasions, they would likely to do so when the Energy Price exceeds the rate they are charged under their applicable Rate Schedule. This would encourage customers to use the Program as a way to generate revenue from the sale of electricity to BC Hydro, rather than to offset their load. In BC Hydro's view, this is counter to the intent of the Program.

In addition, allowing customers to make multiple changes to their Anniversary Date would introduce design and administrative complexity.

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Reference: PRICE OF SURPLUS ENERGY

Exhibit B-3, BCUC IR 12.5.3

Currency risk

In response to BCUC IR 12.5.3, BC Hydro stated that "BC Hydro does not directly address currency risk associated with the proposed Energy Price; however, given the amount of energy and the degree of price variation from currency exchange fluctuations, BC Hydro expects the associated

risk to be minimal."

2.29.1 Please explain how BC Hydro manages currency risk for its

overall energy portfolio.

RESPONSE:

BC Hydro manages US foreign exchange risk on a company-wide basis. US foreign exchange risk associated with specified items is managed within a Foreign Exchange (FX) Risk Limit, as identified in BC Hydro's Board-approved Treasury Risk Management Policy. The FX Risk Limit applies to a forward-looking 24 month timeframe and specified US currency exposure items, and is managed using only the approved risk management products as outlined in the Policy.

As the energy purchases associated with excess energy under the Program are negligible compared to the overall BC Hydro corporate USD cash flows, the currency risk is negligible and BC Hydro does not specifically manage this currency risk.

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Reference: PRICE OF SURPLUS ENERGY

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risk to be minimal."

- 2.29.1 Please explain how BC Hydro manages currency risk for its overall energy portfolio.
 - 2.29.1.1 Please explain whether the same approach would be used to manage exchange rate risk associated with compensation for Surplus Energy under the Net Metering Program. If not, please elaborate on how currency risk would be managed for Surplus Energy.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 2.29.1 where we explain that as the energy purchases associated with excess energy under the Program are negligible compared to the overall BC Hydro corporate USD cash flows, the currency risk is negligible and BC Hydro does not specifically manage this currency risk.

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Reference: PRICE OF SURPLUS ENERGY Exhibit B-3, BCUC IR 12.8

Implementation of Energy Price

BC Hydro stated in response to BCUC IR 12.8 that:

BC Hydro expects to complete the calculation of the updated Energy Price in early

January of each year... The updated Energy Price would be reflected on customer bills with an effective date of January 1. Bills would be settled once the updated Energy Price is reflected in our billing system.

2.30.1 Please clarify how, and at what Energy Price, the bill would be settled for Net Metering customers who have chosen an Anniversary Date that is between January 1 and a date prior to when BC Hydro has completed the calculation of the updated Energy Price in January each year.

RESPONSE:

For Net Metering customers who have chosen an Anniversary Date that is between January 1 and a date prior to when BC Hydro has completed the calculation of the updated Energy Price, BC Hydro will delay the annual reconciliation until the first billing period after the updated Energy Price becomes available. BC Hydro expects these circumstances would apply to a minimal number of customers.

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Reference: PRICE OF SURPLUS ENERGY Exhibit B-3, BCUC IR 1.1.1 Eligibility for transitional price

entered the Program after April 20, 2018."

BC Hydro explained in response to BCUC IR 1.1.1 that "customers whose Net Metering applications were accepted after April 20, 2018 are likely to have minimal Surplus Energy Payments going forward... BC Hydro expects that the update to the Energy Price will have a minimal impact to any applications which have been accepted since April 21, 2018. Accordingly, BC Hydro does not believe it is necessary to provide a transitional Energy Price to customers who

2.31.1 Please compare the advantages and disadvantages of offering a transitional Energy price to customer who have been accepted into the Net Metering program prior to April 29, 2019 and prior to April 20, 2018 as proposed in the Application.

RESPONSE:

The advantage of offering a transitional Energy Price to customers who have been accepted into the Program prior to April 20, 2018 as proposed in the Application is that it prevents further cost shifting to non-participating customers relative to a transitional Energy Price offered to customers who have been accepted into the Program prior to April 29, 2019.

While offering a transitional Energy Price to customers who have been accepted into the Program prior to April 29, 2019 would make the transitional Energy Price available to a broader group of existing customers, BC Hydro does not believe this is necessary because:

- Customers with accepted applications between April 20, 2018 and April 29, 2019 were required to have an estimated Annual Energy Output that did not exceed their estimated Annual Load. Accordingly, these customers would be expected to have minimal Surplus Energy Payments going forward; and
- The 2018 Amendment Application indicated that BC Hydro would be undertaking a broader review of the Program.

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2.31.2 Please explain, in BC Hydro's view, whether there are any issues with implementing a transitional Energy Price for customers who have been accepted into the Net Metering program prior to April 29, 2019.

RESPONSE:

BC Hydro does not expect any issues with implementing a transitional Energy Price for customers who have been accepted into the Program prior to April 29, 2019.

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Reference: PRICE OF SURPLUS ENERGY

Exhibit B-1, Appendix E, pp. 10-11; Exhibit B-3, BCUC IR 15.1,

15.1.1

Justification for transition rate

BC Hydro stated in response to BCUC IR 15.1 that the 5-year transition period proposed "strikes the right balance between transitioning to an Energy Price that more fairly allocates the benefits and costs of the Program between participating and non-participating customers and mitigating the impact of the change to existing customers in the Program by providing notice to those customers."

BC Hydro explained in response to BCUC IR 15.1.1 that "BC Hydro did not specifically seek input from existing or potential Net Metering customers on the alternatives identified in BC Hydro's response to BCUC IR 1.15.1. Rather, BC Hydro proposed Option 1 in the Engagement Survey and used the written comments received in response to that proposal to develop the alternatives."

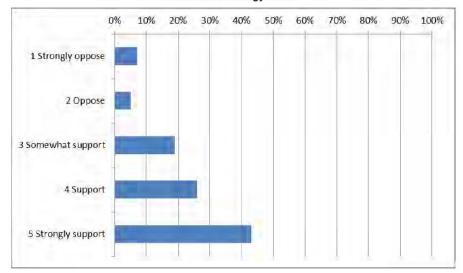
BC Hydro includes the following on pages 10 to 11 in Appendix E to the Application:

BC Hydro is considering a grandfathering provision for existing net metering customers. Please indicate your support for the following proposal:

 Grandfather existing customers for a period up to five years and commit to review the grandfathering provision after the selected term expires.

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Figure E-10 Engagement Survey Results – Transitional Energy Price



2.32.1 Please elaborate on the rationale to provide further notice to existing customers by way of the proposed transitional period, in addition to the notice provided to customers as part of BC Hydro's stakeholder engagement and the BCUC review process to review the proposed changes to the Net Metering program in the Application.

RESPONSE:

The proposed transitional Energy Price would end on April 30, 2024, which is five years after the date that BC Hydro filed the Application. BC Hydro believes that a transition period should be provided to mitigate the impact to existing customers in the Program and that this transition period should start from the time that the update to the Energy Price was officially proposed by BC Hydro.

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Exhibit B-1, Appendix E, pp. 10-11; Exhibit B-3, BCUC IR 15.1,

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 Grandfather existing customers for a period up to five years and commit to review the grandfathering provision after the selected term expires.

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Transitional Energy Price

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

1 Strongly oppose

2 Oppose

3 Somewhat support

5 Strongly support

Engagement Survey Results -

Figure E-10

2.32.2 Please elaborate on how BC Hydro determined that the proposed transition period "strikes the right balance", including a discussion on the metrics to determine the appropriate amount of cost shifting on non-participating customers during the transition period versus the amount of notice required for existing customers.

RESPONSE:

In determining the five-year transition period, BC Hydro was attempting to balance Bonbright's fair apportionment of costs criteria against the rate stability criteria.

BC Hydro did not rely on metrics to determine the appropriate amount of acceptable cost shifting during the transition period. Rather, BC Hydro is attempting to put forward a solution that addresses the cost shifting associated with the Energy Price while providing customers in the Program with a notice period to soften the financial impact of the change.

In past decisions, the BCUC has recognized a need to soften the financial impacts to customers of changes to rates. For example, In the BCUC's January 2017 Decision related to BC Hydro's 2015 Rate Design Application (BCUC Order No. G-5-17), the BCUC ordered a phase out period of the E-Plus rate to soften the bill impacts for E-Plus customers.

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Reference: PRICE OF SURPLUS ENERGY

Exhibit B-1, Appendix E, pp. 10-11; Exhibit B-3, BCUC IR 15.1,

15.1.1

Justification for transition rate

BC Hydro stated in response to BCUC IR 15.1 that the 5-year transition period proposed "strikes the right balance between transitioning to an Energy Price that more fairly allocates the benefits and costs of the Program between participating and non-participating customers and mitigating the impact of the change to existing customers in the Program by providing notice to those customers."

BC Hydro explained in response to BCUC IR 15.1.1 that "BC Hydro did not specifically seek input from existing or potential Net Metering customers on the alternatives identified in BC Hydro's response to BCUC IR 1.15.1. Rather, BC Hydro proposed Option 1 in the Engagement Survey and used the written comments received in response to that proposal to develop the alternatives."

BC Hydro includes the following on pages 10 to 11 in Appendix E to the Application:

BC Hydro is considering a grandfathering provision for existing net metering customers. Please indicate your support for the following proposal:

 Grandfather existing customers for a period up to five years and commit to review the grandfathering provision after the selected term expires.

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1 Strongly oppose
2 Oppose
4 Support
5 Strongly support

Figure E-10 Engagement Survey Results – Transitional Energy Price

2.32.3 Please discuss the effectiveness of the one question presented in the engagement survey in understanding customer's preference and need for grandfathering.

RESPONSE:

The question regarding grandfathering was included in the Engagement Survey to gauge support for the specific provision that BC Hydro was considering. In BC Hydro's view, the results indicate general support for BC Hydro's proposal.

In addition, 252 written comments were provided in response to the subsequent question: "Do you have any additional comments or suggestions about grandfathering for existing customers?" These comments are summarized in section 1.3.5 of Appendix E of the Application. The responses indicated that participants were primarily concerned about the ability of existing customers to recover their initial investment and/or supportive of maintaining the current Energy Price for existing customers for a longer or indefinite period.

Responses to both questions provided sufficient insight into customer preferences for BC Hydro to include its proposed transitional Energy Price in the Application. As discussed in BC Hydro's response to BCUC IR 1.15.1, in BC Hydro's view, a five-year transitional Energy Price appropriately balances the feedback received against the objective of transitioning to an Energy Price that more fairly allocates the benefits and costs of the Program between participating and non-participating customers.

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33.0 E. OTHER TARIFF CHANGES

Reference: OTHER TARIFF CHANGES

Exhibit B-3, BCUC IR 6.3 Capacity factor calculation

In response to BCUC IR 6.3, BC Hydro stated:

If a customer were to propose a Generating Facility that uses a clean or renewable resource that is not specified under the "Annual Energy Output" section, BC Hydro would determine the appropriate capacity factor on a case by case basis and would seek an amendment to the tariff to include the applicable additional information.

2.33.1 Please explain whether BC Hydro is proposing to include

language in the tariff that allows

BC Hydro to determine the appropriate capacity factor on a case by case basis if a customer were to propose a Generating Facility that uses a clean or renewable resource that is not specified under the "Annual Energy Output" section.

RESPONSE:

BC Hydro is not proposing to include language in the tariff that would allow BC Hydro to determine the appropriate capacity factor on a case by case basis if a customer were to propose a Generating Facility that uses a clean or renewable resource that is not specified under the "Annual Energy Output" section.

The capacity factors provided in the tariff address commercially-available generation categories that use a clean or renewable resource. We expect customers will propose other emerging technologies (e.g., tidal or ocean) very rarely. As a result, it is unlikely to be burdensome for BC Hydro to address a customer proposal for an eligible Generating Facility that is not specified under the "Annual Energy Output" section by seeking an amendment to the tariff.

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33.0 E. OTHER TARIFF CHANGES

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- 2.33.1 Please explain whether BC Hydro is proposing to include language in the tariff that allows
 BC Hydro to determine the appropriate capacity factor on a case by case basis if a customer were to propose a Generating Facility that uses a clean or renewable resource that is not specified under the "Annual Energy Output" section.
 - 2.33.1.1 If yes, please provide the proposed language to include in the RS 1289 tariff and specify which section of the rate schedule it would be included under.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 2.33.1.

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2.33.1 Please explain whether BC Hydro is proposing to include

language in the tariff that allows

BC Hydro to determine the appropriate capacity factor on a case by case basis if a customer were to propose a Generating Facility that uses a clean or renewable resource that is not specified under the "Annual Energy Output" section.

2.33.1.2 If not, please explain why not.

RESPONSE:

Please refer to BC Hydro's response to BCUC IR 2.33.1.

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34.0 F. CUSTOMER AND STAKEHOLDER ENGAGEMENT

Reference: CUSTOMER AND STAKEHOLDER ENGAGEMENT

Exhibit B-3, BCUC IR 20.5 Stakeholder consultation

In response to BCUC IR 20.5, BC Hydro stated:

The webinars held on March 18, 2019 and on April 1, 2019 and the Engagement Survey completed by April 9, 2019 represent all of the stakeholder consultation that has taken place after April 2018, following BC Hydro's Net Metering Amendment Application.

2.34.1 Please explain the reasons why no stakeholder consultation was undertaken between April 2018 and March 2019.

RESPONSE:

BC Hydro did not conduct stakeholder consultation with regards to the Program in April 2018 and May 2018 because the 2018 Amendment Application was being considered by the BCUC during that time.

BC Hydro did not conduct stakeholder consultation from June 2018 to February 2019 because Phase One of the Government of B.C.'s Comprehensive Review was underway and was considering changes to the Standing Offer Program. As discussed in section 1.4.3 of the Application, the Energy Price has historically been generally consistent with the price paid under the Standing Offer Program. Accordingly, BC Hydro believed that it would be more productive to conduct stakeholder consultation once Phase One of the Government of B.C.'s Comprehensive Review concluded.