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March 12, 2020

VIA ELECTRONIC MAIL

British Columbia Utilities Commission
6th Floor, 900 Howe Street
Vancouver, B.C. V6Z 2N3

Attention: Patrick Wruck, Commission Secretary and Manager, Regulatory Support

Dear Sirs/Mesdames:

Re: British Columbia Hydro and Power Authority Application to Amend Net Metering Service under Rate Schedule 1289 ~ Project No. 1599004

We are counsel to the Commercial Energy Consumers Association of British Columbia (the "**CEC**"). Attached please find the CEC's Final Submissions with respect to the above-noted matter.

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/jj
cc: CEC
cc: BC Hydro
cc: Registered Interveners

COMMERCIAL ENERGY CONSUMERS ASSOCIATION OF BRITISH COLUMBIA

FINAL SUBMISSIONS

British Columbia Hydro and Power Authority Application to Amend Net Metering Service under Rate Schedule 1289
Project No. 1599004

March 12, 2020

Commercial Energy Consumers Association of British Columbia

British Columbia Hydro and Power Authority Application to Amend Net Metering Service under Rate Schedule 1289 ~ Project No. 1599004

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COMMERCIAL ENERGY CONSUMERS ASSOCIATION OF BRITISH COLUMBIA

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1. The Commercial Energy Consumers Association of BC ("**CEC**") represents the interests of customers consuming energy under commercial tariffs in applications before the BC Utilities Commission ("**BCUC**" or "**Commission**").

2. BC Hydro and Power Authority ("**BC Hydro**" or the "**Utility**") applies under Sections 59 to 61 of the *Utilities Commission Act* ("**UCA**") to amend Rate Schedule 1289 ("**RS 1289**") which provides Net Metering Service to BC Hydro's residential and commercial customers.[1]

3. The CEC has participated in the proceeding and provides the following submissions for the Commission's consideration.

I. SUMMARY POSITION

4. The CEC recommends that the Commission approve the application but avoid increasing the proposed exemption to 10kW.

5. The CEC recommends that the Commission consider whether or not a further reduction to the paid Energy Price to reflect wheeling costs and line losses could obviate the need for annual energy output maximums.

6. The CEC recommends that the Commission request BC Hydro to re-evaluate the Energy Price to determine the value of energy received reflecting all costs, time of day and seasonal values.

II. INTRODUCTION

7. RS 1289 provides an opportunity for residential and commercial customers to safely generate clean electricity for their own use.

8. There are approximately 1851 Net Metering customers connected to BC Hydro's grid as of March 1, 2019,[2] of which 18 are located in Non-Integrated Areas.[3]

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[1] BC Hydro Final Submissions page 1

[2] Exhibit B-8, BCOAPO 2.25.1

[3] Exhibit B-8, BCOAPO 2.29.1

9. As of March 1, 2019, the installed capacity of customer Generating Facilities in the Program was 13.39 MW.[4]

10. To date, BC Hydro has not considered the potential energy contribution from customers in the Program to be sufficiently large to include in its long-term planning but will review its assumptions in the next Integrated Resource Plan.

11. The CEC submits that depending on the expected growth of the net metering program it will be important to identify its role in long term planning.

12. BC Hydro seeks approval for the following amendments to RS 1289:

    a) Limit RS 1289 eligibility to those customers proposing a Generating Facility with an estimated Annual Energy Output no greater than 110 per cent of their estimated Annual Load. The amendment will provide BC Hydro with the discretion to deny applications that propose a Generating Facility sized to significantly exceed a customer's historical or estimated Annual Load.

    b) Assign all RS 1289 customers a default Anniversary Date of March 1, and permit customers to choose their own date one time. The option to choose an anniversary date permits customers to maximize the amount of Annual Load they are able to offset.

    c) Change the Energy Price that BC Hydro pays to the customer for the balance remaining in their generation account at the customers' Anniversary Date. BC Hydro proposes an Energy Price based on the daily average Mid-C prices for the previous calendar year. The intent is to align the price paid with the value received for the net excess generation.

    d) Retain the existing price paid to customers of 9.99 cents per kWh for all customers with accepted Net Metering Applications as of April 20, 2018 for a period of five years. This 'Transitional Energy Price' is provided to mitigate the impact of the Energy Price change.

    e) Introduce various minor amendments to improve clarity, maintain the safety of the Program and reflect current Program practices.[5]

13. In BC Hydro's view, key outcomes of the amendments will be to:

> "Ensure the Program remains as a 'load offset program' and improve opportunities for customers to offset electricity consumption;
>
> Improve fairness between participating and non-participating customers by reducing cost-shifting;
>
> Mitigate the impacts of the change through the Transitional Energy Price;

[4] Exhibit B-5, BCCSC 1.3.1

[5] BC Hydro Final Submissions page 2-3

> Improve RS 1289 to better reflect existing program practices and improve the clarity and simplicity of the Program."[6]

14. The CEC notes that while residential customers provide about 72% of the Net Generation (in 2018) they provide about 48% of the outflow during winter peak hours.

15. Conversely, General Service customers provide about 28% of the Net Generation overall, but about 52% of the outflow during winter peak hours.

16. The following table provides a breakdown of 2018 net generation (outflow) by rate class for customers in the Program.

Rate Class	2018 Net Generation (Outflow) (kWh)
Residential	4,917,508
Small General Service	1,682,674
Medium General Service	217,229
Large General Service	27,104
Total	6,844,515

[7]

17. The table below provides the total amount of net generation (outflow) supplied during peak hours by rate class.

Rate Class	2018 Net Generation (Outflow) during winter peak hours (kWh)
Residential	53,073
Small General Service	56,286
Medium General Service	11
Large General Service	0
Total	109,370

[8]

18. The CEC is of the view that the contribution made by those General Service customers contributing outflow during winter peak hours can be considered to have a higher value than that typically contributed by Residential customers.

[6] BC Hydro Final Submission page 5

[7] Exhibit B-8, BCOAPO 2.24.1

[8] Exhibit B-8, BCOAPO 2.24.2

III. OUTPUT LIMITATION

19. Under the current tariff a customer's estimated Annual Load must be equal to or greater than the estimated Annual Energy Output of their Generating Facility (i.e. estimated Annual Energy Output cannot be greater than 100% of estimated Annual Load).[9]

20. The proposed RS 1289 requires that, at the time of a customer's Net Metering Application, the Generating Facility's Annual Energy Output not exceed 110% of the Annual Load. The purpose of this requirement is to support the objective of maintaining the Program as a Load Offset program.[10] BC Hydro will exempt Generating Facilities with a capacity size of 5kWh or less.[11]

21. In BC Hydro's opinion, allowing Oversized Generating Facilities results in the Program being more akin to an energy procurement program rather than a load offset program. As BC Hydro has suspended the Standing Offer Program, it is not appropriate for the Program to essentially become a replacement energy procurement program by allowing Program customers to intentionally install Oversized Generating Facilities.[12]

22. BC Hydro proposed the increase from 100% to 110% to provide additional flexibility to customers.

23. BC Hydro also proposes that:

- Customers with a Generating Facility less than 5kWh are exempted from the 110% output maximum;
- Customers with customers can increase the size of their generating facility at any time as their historical load data allows; and
- Customers who purchase new equipment, such as an Electric Vehicle, to increase the size of the Generating Facility by an amount determined by BC Hydro (without additional historical load data).

24. BC Hydro has clearly stated that the original intent of the Program was to provide customers with the opportunity to 'offset their electricity consumption'.

25. BC Hydro outlines several pieces of evidence which demonstrates the original intent in their Final Argument at pages 11-12 of their Final Argument, which the CEC submits provides sufficient justification.

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[9] Exhibit B-5, CEC 1.9.1

[10] Exhibit B-8, BCOAPO 2.16.2

[11] BC Hydro Final Argument page 11

[12] Exhibit B-8, BCSEA 2.23.1

26. The CEC also considers that the evidence of cost-shifting discussed below (Change in Energy Price) supports the need to manage the payments being delivered to customers.

27. As noted above, BC Hydro proposes to establish an exemption threshold of 5kW.

5 kW Exemption from Output Limitation

28. The output limitation exemption is intended to 'balance the objectives of having a simplified process for a large number of potential customers with small facilities and providing a safeguard against the installation of generating facilities that are sized to be significantly greater than a customer's load.[13]

29. Customers with facilities below 5kW represent about half the net metering customers, while customers between 5kW and 10kW represent about another 35 per cent.[14]

Nameplate Capacity	Number of Customers	% of Customers
≤ 5kW	955	51.59
>5kW ≤ 10 kW	657	35.49
>10 kW, ≤ 25 kW	189	10.21
>25 kW, ≤ 50 kW	34	1.84
>50kW	16	0.86
Total	1851	

[15]

30. In its Final Argument, BC Hydro acknowledges the position of the Canadian Solar Industry Association ("**CanSIA**") Peace Energy A Renewable Energy Cooperative ("**PEC**") and Riverside Energy Systems ("**Riverside Energy**") who propose that the threshold should be increased to 10 kW.[16]

31. These interveners consider that since a 10kW system will not exceed the consumption of an average household this size of system should also be exempt from the screening process. This would negate the need to review over 80% of the applications, thus

[13] BC Hydro Final Argument page 14-15

[14] BC Hydro Final Argument page 14-15

[15] Exhibit B-1, page 15

[16] BC Hydro Final Argument page 15

increasing efficiency, accessibility, and creating a streamlined and transparent process for participation.[17]

32. BC Hydro notes that amending the Energy Price so that it better reflects the value of excess generation to BC Hydro would mitigate the implication of an increased threshold (i.e. 10 kW) with regards to maintaining the load offset intent of the Program and avoiding cost impacts to non-participating customers. They are therefore amenable to an increase in the threshold value to 10kW conditioned on the change to the Energy Price.[18]

33. The CEC agrees that changing the Energy Price will be key in mitigating the cross-subsidization but points out that BC Hydro's stated purpose was to ensure that the Program was used only to 'offset' load. Removing the threshold for all systems up to 10kW does not support the concept of only offsetting load, as all customers currently operating below the 5kW could theoretically increase to 10kW; meaning that they would be doing much more than offsetting their load.

34. In response to BCUC 1.3.1, BC Hydro provides the following table breaking down of the Surplus Energy Payments.

Amount Range ($)	Number of Customers	% of Overall Participants	Total Amount in Range ($)	% of Total Surplus Energy Payments	≤ 5 KW		>5, ≤ 10 kW		>10, ≤ 25 kW		>25, ≤ 50 kW		>50 kW	
					# cust.	($)	# cust.	($)	# cust.	($)	# cust.	($)	# cust.	($)
0	1,079	81.25	0	0	667	0	319	0	71	0	12	0	10	0
≤ 100	96	7.23	4,141	1	71	2901	20	940	5	299	0	0	0	0
>100, < 500	113	8.51	28,251	9	34	6888	56	13,900	22	7,147	1	315	0	0
≥ 500, ≤ 1,000	20	1.51	12,741	4	2	1235	7	4,467	9	5,535	2	1,504	0	0
> 1,000, ≤ 6,000	15	1.13	35,652	11	1	1361	1	1,159	7	14,341	6	18,791	0	0
28,000 – 74,000	5	0.38	243,573	75	0	0	0	0	0	0	2	70,760	3	172,815
Total	**1,328**	**100**	**324,358**	**100**	**775**	**12,385**	**403**	**20,466**	**114**	**27,322**	**23**	**91,368**	**13**	**172,815**

[19]

35. This table demonstrates that the >5 kW < 10 kW accounted for $20,466 of surplus energy payments which is slightly more than that from the < 5kW amount of $12,385, and a little less than the amount for customers in >10 < 25 kW category of $27,322.

36. All of these combined are significantly lower than the 2 customers included >25 < 50 kW category of $91,368 and the 3 customers included for the >50kW capacity systems totalling $172,815.

37. In the CEC's view, it would be reasonable for the Commission to consider if the key issue is mitigating the potential cross-subsidization or ensuring that the Program remains as a load 'offset' program.

[17] BC Hydro Final Argument page 15

[18] BC Hydro Final Argument page 15

[19] Exhibit B-3, BCUC 1.3.1

38. To the extent that the key issue is mitigating the size of cross-subsidization then an adequate change in the Energy Price such that it reflects the real value of the energy being provided to BC Hydro would be more appropriate. If the amount being paid to net metering participants truly reflects the value to BC Hydro it begs the question as to why a threshold is needed at all, or if it could be established at some significantly greater threshold such as the >50kW.

39. As shown below under Market Price, the Mid-C price proposed does not account for transmission losses or wheeling, which are significant. The CEC considers that there may be additional costs for building out the network to accommodate net metering.

40. If the intent is to avoid cross-subsidization, these factors should be accounted for.

41. To the extent that the key issue is maintaining the Program at no more than a 'load offset' level, then it is clear that establishing a maximum threshold 'exemption' at any system size is inappropriate.

42. The CEC notes that the majority of systems are under 5kW and that both <5kW systems and <10kW systems do already have surplus energy payments.

43. Eliminating the maximum threshold up to 10kW enables all those customers with lower consumption to significantly exceed their load. Such an exemption will not 'prevent oversized generating facilities'[20] as intended by BC Hydro for all those customers who have less consumption than that provided for by the 10kW system.

44. It is contrary to the concept of maintaining a 'load offset' program to eliminate the load offset criteria for more than half the participants.

45. The CEC submits that it is appropriate for the Commission to avoid establishing opportunities for residential customers that are unfairly limited to commercial customers, and to avoid increased subsidization to residential customers by commercial customers when the R:C ratios are already well above 1.

46. Removing thresholds at a particular level in order to benefit residential sized participants while maintaining a 110% maximum threshold for larger enterprises that may well be commercial, could result in increased cross-subsidization.

47. The CEC notes that residential net metering has experienced significantly more growth than commercial net metering, accounting for 1510 out 1851 customers in 2019.[21] The CEC expects that the relative growth in residential can be expected to continue.

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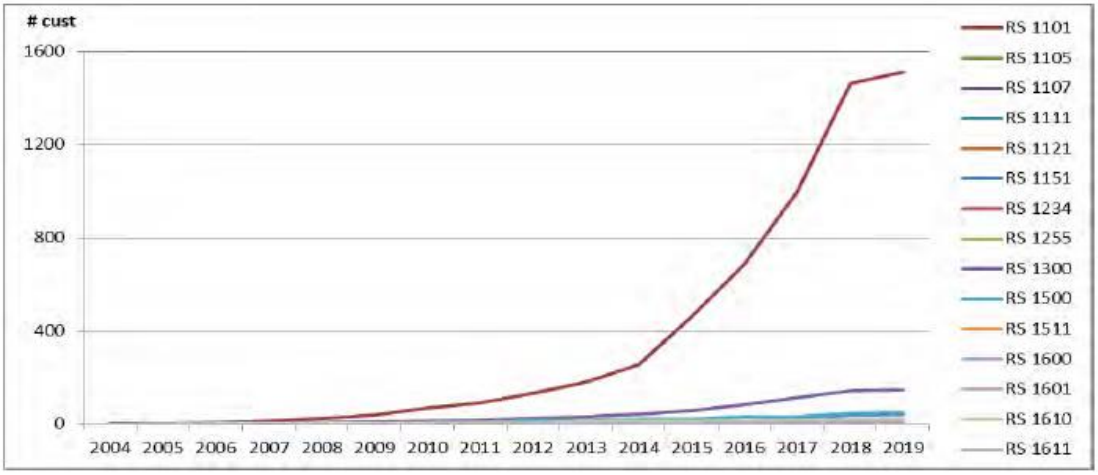
[20] Exhibit B-1, page 6

[21] Exhibit B-5, CEC 1.2.1

The chart below provides the number of customers in the Program by rate class from 2004 to March 1, 2019:



[22]

48. As noted above, it is also likely that the commercial energy output is of more value to BC Hydro than that obtained from residential output because of its availability during winter peak. As such, it is reasonable for BC Hydro to provide increased opportunities for commercial customers rather than for residential customers.

49. The CEC submits that it would be preferable for the Commission to eliminate the maximum threshold for all participants and rely on an appropriate Energy Price that is properly decremented to reflect costs and value to BC Hydro, or alternatively to maintain the maximum threshold of 110% for all participants.

50. The CEC provides further discussion on the proposed change in Energy Price below.

IV. DEFAULT ANNIVERSARY DATE

51. BC Hydro proposes amendments that would assign customers a default anniversary date of March 1st and provide customers with the opportunity to choose their own anniversary date on time.[23] Customer credits and consumption are essentially banked throughout the year and tallied on the anniversary date.

52. The proposed amendments are expected to benefit all participants.[24]

53. BC Hydro outlines the reasons why it would be inappropriate to allow customers to change their anniversary date in BCUC 2.28.1.

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[22] Exhibit B-5, CEC 1.2.1

[23] BC Hydro Final Argument page 16

[24] BC Hydro Final Argument page 17

54. The CEC has reviewed the evidence relating to the proposed change in anniversary dates and supports BC Hydro's position.

V. CHANGE IN ENERGY PRICE

55. BC Hydro proposes a reduction in Energy Price (to market price) in order to better reflect the value of energy to BC Hydro.

56. As noted in BC Hydro's Final Argument, there are several reasons for the proposed reduction.

57. BC Hydro is currently in surplus, the potential contribution is insufficient to include in long term planning, a forecast market price is used in long term planning, excess generation does not have a value that exceeds that of the market price and other factors.[25]

58. The CEC submits that BC Hydro has well established a justification for reducing the energy payment.

Surplus Energy Payments are Significant

59. There was a total of $324,358 in surplus energy payments and 3,246,827 kWh of electricity purchased through surplus energy payments in F2018.[26]

60. Overall, the vast majority of customers receive no surplus energy payment, while a small number (256) received a payment of less than $500.[27]

61. The CEC notes that substantive numbers of 'small payments' arising from increases in the number of participants can create significant costs for BC Hydro over time.

62. There were five customers who received surplus energy payments between $28,000 and $74,000 in fiscal 2018, all of whom had hydroelectric generating facilities.[28] Three were customers on RS 1101 (residential), while there were two customers on RS 1300 (commercial).

[25] BC Hydro Final Argument page 21-22

[26] Exhibit B-1, page 5, Table 1

[27] Exhibit B-1, page 17

[28] Exhibit B-5, CEC 1.7.5

Cust. ID	Rate	Size	F2015		F2016		F2017		F2018		F2019	
		(kW)	Bill ($)	Surplus Energy Payment ($)	Bill ($)	Surplus Energy Payment ($)	Bill ($)	Surplus Energy Payment ($)	Bill ($)	Surplus Energy Payment ($)	Bill ($)	Surplus Energy Payment ($)
1	1101	100	60	44,691	64	46,117	67	58,541	69	73,008	71	72,066
2	1300	100					85	60,156	116	59,095	124	58,130
3	1101	50	60	41,263	64	41,880	68	41,221	69	41,994	71	41,910
4	1101	100	57	3,483	64	4,088	68	10,214	69	40,711	71	50,150
5	1300	50	75	30,390	82	32,837	86	32,428	119	28,764	124	26,937

[29]

63. The CEC submits that these few surplus payment amounts are significant and there is no reason to expect that these figures are outliers, as most of the payments have been consistent over a period of time, with the exception of customer 4, whose payment has increased rapidly from $3,483 in F2015 to $40,711 by F2019.

64. In CEC 1.7.3, BC Hydro estimates the cost-shifting that occurs from non-participants to participants to be in the order of $230,000.[30]

65. In CEC 2.27.1, BC Hydro provides the estimated cost shifting occurring as a result of the surplus energy payments to the five customers identified above. This cost-shifting amounted to $77,188.3 in F2015 rising to $164,627.3 in F2019.

66. The CEC submits that the existing surplus energy payments to all participants, and particularly the five customers, are significant in that they have amounted to $614,852.88 over the five year period and can reasonably be expected to increase over time.

67. BC Hydro expects that absent an update to the Energy Price, cost shifting associated with Surplus Energy Payments would increase as participation continues to grow, the bulk of which will likely be in the residential rate class.[31]

[29] Exhibit B-5, CEC 1.7.5

[30] Exhibit B-5, CEC 1.7.3

[31] Exhibit B-8, City of Fort St. John 2.6.1

Schedule (RS) 1289

RS	Years															
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1101	3	4	5	13	23	39	68	91	133	181	258	463	685	997	1,463	1,510
1105							1	1	2	3	4	4	8	13	18	19
1107						1	1	1	1	1	2	2	2	3	4	4
1111									11	14	14	15	15	15	15	15
1121					1	1	1	1	1	1	1	1	2	2	2	2
1151	1	1	1	1	1	1	1	2	3	4	6	13	14	22	41	42
1234										1	1	1	4	7	7	7
1255										1	1	2	2	3	5	5
1300	1	2	2	3	5	9	12	17	25	31	42	60	86	115	145	149
1500		1	1	1	1	1	2	8	16	19	21	22	31	34	49	50
1511										1	1	1	1	1	1	1
1600						2	3	3	7	8	9	10	13	17	20	20
1601		1	1	1	1	2	2	2	2	2	2	2	2	2	2	2
1610			2	2	3	4	5	6	8	12	13	14	14	16	16	16
1611									1	2	3	4	5	6	9	9
Total	5	9	12	21	35	60	96	132	210	281	378	614	884	1,253	1,797	1,851

[32]

68. The CEC submits that they are appropriately curtailed.

There is General Cost Shifting

69. As noted above, BC Hydro is clear that there is general cost shifting occurring from non-participating customers to participating customers.[33]

70. Total estimated cost shifting for Residential (Rate Schedule 1101) Program customers in fiscal 2016 was in the order of $291,840.[34] Cost shifting associated with customers in the Programs serviced under Rate Schedule 1101 is expected to increase as the number of customers in the Program serviced under RS 1101 increases.[35]

71. BC Hydro was unable to provide analysis for customers served on other rate schedules within the time frames required[36], but believes it is reasonable to expect there is cost shifting from all customers in the Program in BC Hydro's integrated areas to some extent because

- all of the rate schedules under which customers in the Program take service rely to a varying extent on Energy Charges to recover Demand related costs of service;

[32] Exhibit B-5, CEC 1.2.1

[33] Exhibit B-3, BCUC 1.5.2

[34] Exhibit B-8, CEC 2.24.1

[35] Exhibit B-8, CEC 2.24.1.2

[36] Exhibit B-8, CEC 2.24.2

- under the terms of RS 1289, customers in the Program can avoid paying Energy Charges; and

- the predominant type of generation for customers in the Program is solar photovoltaic which does not result in Demand-related cost savings.

72. As BC Hydro's costs of service substantially differ in the non-integrated areas compared to the integrated areas, further work is required to understand whether cost shifting from customers in the Program to non-participants is occurring in the non-integrated areas.[37]

73. BC Hydro would expect cost-shifting to be greatest for customers with photovoltaic generation which is not coincident with the system peak. Cost shifting may be lower for customers in the Program that take service under a rate schedule with a Demand Charge and for customer with generation that is coincident with BC Hydro's peak system.[38]

	Revenue to Cost Ratios				
Rate Class	**F2014 Actual** (%)	**F2016 Forecast** (%)	**F2016 Actual** (%)	**F2017 Actual** (%)	**Percentage Point Change (F2016 Actual to F2017 Actual)** (%)
Residential	92.9	93.3	90.8	93.2	2.4
GS < 35 kW	123.5	111.9	122.6	123.6	1.0
MGS	119.5	117.2	123.5	115.1	-8.4
LGS	101.5	101.3	103.9	103.9	0.0
Irrigation	90.3	87.6	95.1	89.5	-5.6
Street Lighting – BC Hydro Owned	129.4	173.6	183.6	198.4	14.8
Street Lighting – Customer Owned		104.8	101.8	95.1	-6.7
Transmission	97.3	102.6	98.8	95.4	-3.4
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

[39]

[37] Exhibit B-8, CEC 2.24.4

[38] Exhibit B-8, CEC 2.24.2

[39] Exhibit B-8, CEC 2.24.3

Market Energy Price as the Basis for Revised Energy Price

74. A customer's Generation Account Balance is first applied against subsequent bill(s) at the customer's tariffed rate. The Energy Price only applies to the remaining Generation Account Balance at the customer's Anniversary Date.[40]

75. BCUC 1.10.2 and 1.12.4 provide a rationale for the market energy price.

76. BC Hydro's proposed amendments to the Energy Price are intended to mitigate the cost-shifting associated with Surplus Energy Payments, but many do not entirely do so. The value of specific net generation (outflow) received by BC Hydro will vary depending on various factors such as time of delivery, location of the customer etc. BC Hydro notes that developing an Energy Price that incorporates these elements would add considerable complexity and would not be consistent with the principle of simplicity.[41]

77. BC Hydro does not intend to adjust the rate for line losses and wheeling charges to maintain a simple and easy approach.[42]

78. The CEC notes that accounting for Line losses and particularly wheeling charges would significantly reduce the value of the Energy Price.

> **Annual Average Mid-C Price (2018): USD $30.76/MWh.**
>
> **Line Losses: (1.9% x USD $30.76/MWh) = USD $0.58/MWh.**
>
> **Wheeling Charges: USD $5.16/MWh.**
>
> **Total Cost for 2018 (USD): $0.58 + $5.16 = USD $5.74/MWh.**
>
> **2018 Exchange Rate = 1.2957 CAD/USD**
> **(source: https://www.bankofcanada.ca/rates/exchange/annual-average-exchange-rates/).**
>
> **Total Cost for 2018 (CAD): $5.74 x 1.2957 = CAD $7.44/MWh ($0.00744/KWh).**

[43]

79. Even though such adjustment might better reflect the value to BC Hydro of excess energy, BC Hydro argues it would still not fully reflect the value of that energy to BC Hydro because BC Hydro cannot determine the exact time the outflow from a customer contributed to their excess generation.[44]

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[40] Exhibit B-8, BCOAPO 2.22.2

[41] Exhibit B-8, BCSEA 2.23.3

[42] Exhibit B-8, CEC 2.28.1

[43] Exhibit B-5, CEC 1.15.4.

[44] Exhibit B-8, BCSEA 2.23.4

80. The CEC accepts that the Mid-C is well established as an appropriate proxy for Market Value in the Electric Tariff but submits that it should be decremented to reflect the actual value to BC Hydro.

81. The CEC notes that net generation (outflow) from customers in the Program is not firm and continuous[45], and under the terms of RS 1289, customers in the Program are not obligated to generate electricity.[46]

82. Additionally, much of the energy supplied is provided when it is not required by BC Hydro, as demonstrated in the BCOAPO IR series 2.21-2.22.

83. Customers in the Program still require energy from BC Hydro on demand but typically have lower load factors compared to non-participants.[47] BC Hydro provides evidence in BCOAPO 2.18.1 that residential customers in the Net Metering program typically have a lower load factor than non-participating residential customers.

Table 1 Load Factors in Fiscal 2016 for Net Metering Customers that take Service under RS 1101, compared to all RS1101 Customers

Group	Mean (%)	Median (%)	Minimum (%)	Maximum (%)
Net Metering taking service under RS1101	14	13	1	58
All Residential (RS1101)	20	17	0	86

[48]

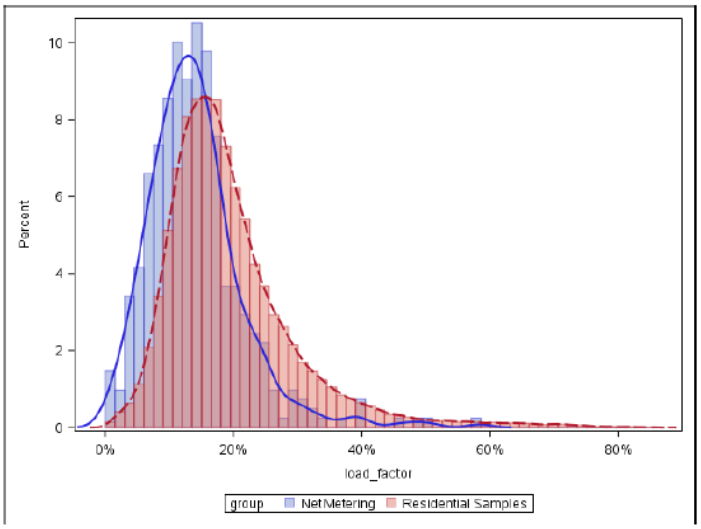
[45] Exhibit B-8, City of Fort St. John 2.5.1

[46] Exhibit B-8, City of Fort St. John 2.5.1

[47] Exhibit B-8, BCOAPO 2.18.3

[48] Exhibit B-8, BCOAPO 2.18.1

Figure 1: Distribution of Load Factor in Fiscal 2016 for Net Metering Customers that take Service under RS 1101, compared to all RS 1101 Customers



[49]

84. The seasonal profile of solar generation, the coordination of BC Hydro's system peak demand vs. solar peak generation and the intermittency of solar generation are all important considerations when determining the role and fit of solar energy in long term planning.

85. Long-term planning involves determining the appropriate mix of resources, such as supply, demand or other grid assets, in order to optimize the system as a whole.

86. While BC Hydro has significant storage hydro resources, generation that is seasonal, intermittent or not aligned with BC Hydro's system peak demand can limit BC Hydro's overall system flexibility, creating additional costs for ratepayers.[50]

87. The CEC notes that there are costs related to system upgrades for net metering connections.[51] BC Hydro has paid a total of $28,000 in upgrades related to Net Metering over the past five years.[52]

88. Overall, the CEC submits that the energy delivered from net metering customers should be assessed to determine its actual value to BC Hydro.

89. Given the likely increase in net metering, the CEC recommends that the Commission request BC Hydro to provide an in-depth study of the value of net metering energy to BC

[49] Exhibit B-8, BCOAPO 2.18.1

[50] Exhibit B-8, BCCSC 2.12.1

[51] Exhibit B5, CEC 1.18.2

[52] Exhibit B-5, CEC 1.18.1

Hydro such that surplus payments can be established at a correct value, and not result in subsidization from non-participants.

Customer Impact

90. As the Program is intended to be a load offset program, BC Hydro believes that the primary financial consideration for customers with regards to capital investments required to participate in the Program should be the value they expect to receive from the ability to offset their own consumption.[53]

91. The CEC agrees with this position.

VI. TRANSITIONAL ENERGY PRICE

92. BC Hydro proposes maintain the current Energy Price of 9.99 cents per kWh for five years for customers with accepted applications as of April 20, 2018.

93. Customers with an original application accepted as of April 20, 2018 who subsequently apply to expand their existing Generating Facilities would be eligible for the Transitional Energy Price (during the transitional energy price period) provided the expansion meets the eligibility requirements including the maximum Annual Energy Output threshold of 110%.[54]

94. As the proposed amendments in the Application would also not allow oversized generating facilities to participate in the Program, 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 entered the Program after April 20, 2018.[55]

95. BC Hydro considered various options as outlined in BCUC 1.15.1.

96. In BC Hydro's view, the proposal 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. In the Engagement Survey, 69 per cent of participants expressed support for this option[56], although BC Hydro did not present the other alternatives.[57]

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[53] Exhibit B-8 BCOAPO 2.31.1

[54] Exhibit B-8, BCOAPO 2.33.2

[55] Exhibit B-3, BCUC 1.1.1

[56] Exhibit B-3, BCUC 1.15.1

[57] Exhibit B-3, BCUC 1.15.1.2

97. BC Hydro will monitor the impact of the changes proposed in the Application so that further measures may be considered based on the actual impact to existing customers.[58]

98. The CEC agrees that it is reasonable for BC Hydro to offer a transition period in order to avoid causing significant disturbance to existing customers.

99. The CEC agrees that 5 years is an appropriate duration.

VII. OTHER AMENDMENTS

100. The CEC has reviewed the evidence related to the Other Amendments and submits they are reasonable.

VIII. STAKEHOLDER ENGAGEMENT

101. BC Hydro conducted stakeholder engagement and provided notice of the webinars and Engagement Survey to all customers in the Program, including those with applications pending who consented to receive Program updates.[59]

102. BC Hydro has not undertaken any additional discussions with customers beyond the webinars and Engagement Survey.

103. BC Community Solar Coalition appears to take issue with the methodology of the survey.[60]

104. The CEC has reviewed the evidence and submits that the stakeholder engagement has been adequate.

IX. REPORTING

105. BC Hydro plans to include a detailed analysis on cost shifting in its next Net Metering evaluation report. BC Hydro is amenable to including an analysis in future evaluation reports should the BCUC determine it would be of value.[61]

106. The CEC notes that the Market Energy Price does not recover the costs of wheeling or line losses, and the Program is expected to continue to grow. There are costs related to system upgrades for net metering connections.[62]

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[58] Exhibit B-3, BCUC 1.15.2

[59] Exhibit B-8, City of Fort St. John 2.4.3

[60] Exhibit B-8, BCCSC question 2.10.9

[61] Exhibit B-8, CEC 2.31.1

[62] Exhibit B5, CEC 1.18.2

107. The CEC is of the view that it would be appropriate for BC Hydro to ensure that a detailed analysis identifies the true value of energy that is delivered to BC Hydro from net metering.

X. CONCLUSION

108. The CEC recommends that the Commission approve the application but avoid increasing the proposed exemption to 10kW.

109. The CEC recommends that the Commission consider whether or not a further reduction to the paid Energy Price to reflect wheeling costs and line losses could obviate the need for annual energy output maximums.

110. The CEC recommends that the Commission request BC Hydro to re-evaluate the Energy Price to determine the value of energy received reflecting all costs, time of day and seasonal values.

ALL OF WHICH IS RESPECTFULLY SUBMITTED

David Craig

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