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August 2, 2016

Ms. Laurel Ross
Acting Commission Secretary
British Columbia Utilities Commission
Sixth Floor – 900 Howe Street
Vancouver, BC V6Z 2N3

Dear Ms. Ross:

**RE: Project No. 3698781
British Columbia Utilities Commission (BCUC or Commission)
British Columbia Hydro and Power Authority (BC Hydro)
2015 Rate Design Application (2015 RDA)
Additional Information Pertaining to Exhibit B-31
BC Hydro's Rebuttal Evidence to BCOAPO
Revised Response to CEC Information Request (IR) 2.97.2**

BC Hydro writes to provide a response to an informal request by BCOAPO regarding additional details of BC Hydro's rebuttal evidence (Exhibit B-31), which may be of interest to other participants in the RDA process.

At page 5, line 25 to page 6, line 3 of Exhibit B-31, BC Hydro quantifies the potential rate impact of the proposed Essential Services Usage Block (**ESUB**) rate. BCOAPO's request was to provide an explanation of that evidence. That explanation is provided in Attachment 1.

In its preparation for the RDA oral hearing BC Hydro discovered a table had inadvertently been omitted from its response to CEC IR 2.97.2 (Exhibit B-23). We attach a revised response to that IR with this letter.

For further information, please contact Gordon Doyle at 604-623-3815 or by email at bhydroregulatorygroup@bhydro.com.

Yours sincerely,



(for) Tom Loski
Chief Regulatory Officer

pm/ma

Enclosures (2)

Copy to: BCUC Project No. 3698781 (2015 RDA) Registered Intervener Distribution List.

ESUB Rate – Estimated Impacts to Non-Participating Customers

In BC Hydro's rebuttal evidence to the British Columbia Old Age Pensioners' Organization's et al. evidence (Exhibit B-31), we estimated that the ESub rate will increase bills by about 1.5 per cent for most non-participating customers if the revenue loss is apportioned to both steps (Scenario A); and up to a maximum of 3 per cent for non-participating customers depending on the amount of step 2 energy used if the revenue loss is apportioned to step 2 only (Scenario B). The BCOAPO enquired informally about how BC Hydro came up with the 1.5 per cent and 3 per cent estimates, and we agreed to provide a written response. Since the requested information may be of interest to other participants, we are putting it on the record of the proceeding.

Scenario A: Loss Revenue from ESub Re-distributed to Step 1 and Step 2 in Equal Proportions

Typical Non-participating customers are forecasted to experience bill increases of 1.5 per cent over the bills under the status quo rate. This is modelled by applying the ESub and Status Quo rates to the same analysis sample used in Exhibit B-1, Chapter 5 and then assessing the bill differences. The cause of this difference is due to the changes in the Step 1 and Step 2 rates at 1.57 per cent and 1.53 per cent, respectively, to maintain revenue neutrality (recovering the same revenue target as status quo). The rates are shown in Table A below.

Table A Comparison of F2017 Revenue Neutral Rates: Status Quo vs. ESub Scenario A

Estimated Tariff Rates	Status Quo (Proposal)	Rate with ESub Scenario A	Difference (%)
ESUB (c/kWh)		4.42	<i>4 cents less than Step 1</i>
Step 1 (c/kWh)	8.29	8.42	1.57
Step 2 (c/kWh)	12.43	12.62	1.53
Basic (\$/day)	0.1835	0.1835	0

Scenario B: Loss Revenue from ESUB Re-distributed to Step 2

Non-participating customers are forecasted to have the same bills as status quo if the consumption is below the step 1/2 threshold, but would increase to a maximum of 3 per cent if consumption is beyond that level. This is due to the 3 per cent change in the step 2 rate to maintain revenue neutrality, while the step 1 rate is held at the status quo level, as indicated in Table B below.

Table B Comparison of F2017 Rates: Status Quo vs. ESUB Scenario B

Estimated Tariff Rates	Status Quo (Proposal)	Rate with ESUB Scenario B	Difference (%)
ESUB (c/kWh)		4.29	<i>4 cents less than Step 1</i>
Step 1 (c/kWh)	8.29	8.29	0
Step 2 (c/kWh)	12.43	12.80	3.0
Basic (\$/day)	0.1835	0.1835	0

Key Modelling Parameters

The ESUB rate is modelled to be revenue neutral to the target revenue as indicated in Exhibit B-1, Appendix H-1A, Table H-1A-1. In addition, the following assumptions are used:

A	Total Residential Accounts	1,764,253	Exhibit B-1, Appendix H-1A, Table H-1A-1 on Page 5
B	Low income accounts as a proportion of total accounts	10%	Estimated from 2014 REUS Sample, combined with F2015 billing data
C	Estimated Low income accounts	176,425	A x B
D	Average consumption of low income customers (kWh)	6,672	Estimated from 2014 REUS Sample, combined with F2015 billing data
E	Total kWh of Low income accounts	1,177,109,602	C x D (Assume all low income accounts participate in ESUB)
F	ESUB-priced kWh	666,196,563 (57%)	Proportions estimated from 2014 REUS sample combined with F2015 billing data, and then multiplied by (E) to estimate low income kWh at ESUB, Step 1, and Step 2
G	Step 1 kWh	228,406,734 (19%)	
H	Step 2 kWh	282,506,304 (24%)	

Percentages shown are rounded to the nearest percent. BC Hydro use all decimal places to estimate load at each step.

97.0 Topic: RESIDENTIAL

Reference: Exhibit B-5, CEC 1.39.1 and Exhibit B-1, Appendix C-3B, Page 137 of 609

1.39.1 Please provide an overview of any evidence that BC Hydro has with respect to the relationship between the magnitude of the difference between the Step 1 energy rate and the Step 2 energy rate and the responsiveness of customers to the RIB rate?

RESPONSE:

As noted in the 2013 RIB Evaluation Report (Exhibit B-1, Appendix C-3B, page 139 of 609), customers who correctly identified the inclining block rate as the method that BC Hydro uses for charging their household's consumption of energy and who said it serves as an incentive to manage their use of it were asked how the rate acts as a motivator. Among these customers, the single largest segment – 33 per cent – reported that the difference between the Step 1 and Step 2 prices acts as an incentive to their household to manage its consumption of electricity.

Table 3.14. Extent that the Perceived Rate Structure Provides an Incentive to Manage Electricity

	Don't know	No incentive at all	Minor incentive	Major incentive	Total major + minor incentive
Total 100% ⇨	17%	18%	37%	28%	65%
Customers contacts who believed their electricity consumption is charged on an inclining block rate					
Total 100% ⇨	6%	16%	46%	33%	79%
Customers contacts who believed their electricity consumption is charged on a flat rate					
Total 100% ⇨	9%	26%	35%	31%	66%
Customer contacts who believed their electricity consumption is charged on a declining block rate					
Total 100% ⇨	10%	29%	31%	30%	61%
Customer contacts who did not know how their electricity consumption is charged					
Total 100% ⇨	64%	9%	14%	13%	27%

Row totals may not total 100% due to rounding of values and/or missing values.

For the one-half of all customer contacts who correctly understood that their household's consumption of electricity is charged on an inclining block rate, a total of 79 per cent of them believed the method serves as either a 'major incentive' (33%) or a 'minor incentive' (46%) to their household to manage its use of electricity. The balance of these individuals were more likely to feel that the method serves 'no incentive at all' (16%) rather than to be without an opinion (6%).

2.97.2 Please calculate the percentage of the total number of customers that reported the difference between the Step 1 and the Step 2 rates as the incentive to manage household consumption.

ORIGINAL RESPONSE:

Of customers who were aware of the RIB rate, 79 per cent reported that the rate served as an incentive to manage their electricity use. Of these customers, 33 per cent reported that the difference between the Step 1 and Step 2 prices incents their household to manage electricity. As shown below, this corresponds to 13 per cent of total customers who demonstrated awareness of the RIB rate and reported the difference between Step 1 and Step 2 price incents their household to manage their electricity consumption.

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Question D7 of the Residential Rate Survey (refer to Exhibit B-1 Appendix C-3B page 203 of 609 for the Residential Rate Survey Instrument) asked: “Which one of the following statements/scenarios best describes how the stepped rate incents your household to manage its consumption of electricity (check only one)?”

The survey question required respondents to select only one option, even though the respondents may not have considered the options to be mutually exclusive. The price differential is inherently linked to the absolute Step 1 and Step 2 prices as well as the consumption threshold between the tiers. The range of results observed for responses to question D7, combined with the fact that most customers who were aware of the RIB rate reported that it did provide an incentive to manage their use of electricity, suggest that the combined effect of the various elements of the RIB rate may provide a greater motivating effect than any single element on its own.

REVISED RESPONSE:

The revision to this IR response arise from the discovery of a table that had inadvertently been omitted from its response to CEC IR 2.97.2 in BC Hydro's preparation for the RDA oral hearing. The table is now included in the revised response below.

Of customers who were aware of the RIB rate, 79 per cent reported that the rate served as an incentive to manage their electricity use. Of these customers, 33 per cent reported that the difference between the Step 1 and Step 2 prices incents their household to manage electricity. As shown below, this corresponds to 13 per cent of total customers who demonstrated awareness of the RIB rate and reported the difference between Step 1 and Step 2 price incents their household to manage their electricity consumption.

Question D7 of the Residential Rate Survey (refer to Exhibit B-1 Appendix C-3B page 203 of 609 for the Residential Rate Survey Instrument) asked: “Which one of the following statements/scenarios best describes how the stepped rate incents your household to manage its consumption of electricity (check only one)?”

The survey question required respondents to select only one option, even though the respondents may not have considered the options to be mutually exclusive. The price differential is inherently linked to the absolute Step 1 and Step 2 prices as well as the consumption threshold between the tiers. The range of results observed for responses to question D7, combined with the fact that most customers who were aware of the RIB rate reported that it did provide an incentive to manage their use of electricity, suggest that the combined effect of the various elements of the RIB rate may provide a greater motivating effect than any single element on its own.

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Not previously aware of the RIB rate		50%
Previously aware of the RIB rate	D7: Which one of the following statements/scenarios best describes how the stepped rate incents your household to manage its consumption of electricity (check only one)?	
	Difference between Step 1 and 2 prices incents our household.....	13%
	Lower, Step 1 price on its own incents our household.....	8%
	No incentive....	8%
	Consumption threshold on its own incents our household.....	6%
	Higher, Step 2 price on its own incents our household....	6%
	Stepped rate does not incent my household in any of these particular ways....	5%
	Don't know or skipped.....	4%
	Sub-total	50%
Total	100%	