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Utilities Commission

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August 20, 2018

Sent via eFile

FORTISBC INC. 2017 COST OF SERVICE ANALYSIS & RATE DESIGN EXHIBIT A-14

Mr. William J. Andrews,
Barrister & Solicitor
1958 Parkside Lane
North Vancouver, BC V7G 1X5
wjandrews@shaw.ca

Re: FortisBC Inc. – 2017 Cost of Service Analysis and Rate Design Application – Project No. 1598939 – Information Request No. 1 to BCSEA-SCBC

Dear Mr. Andrews:

Further to British Columbia Utilities Commission Order G-101-18, enclosed please find British Columbia Utilities Commission Information Request No. 1 to BC Sustainable Energy Association and Sierra Club BC. In accordance with the regulatory timetable, please file your responses no later than Monday, September 10, 2018.

Sincerely,

Original signed by Ian Jarvis for:

Patrick Wruck
Commission Secretary

/jo

Attachment

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FortisBC Inc.
2017 Cost of Service Analysis and Rate Design Application

INFORMATION REQUEST NO. 1 TO BCSEA-SCBC

1.0 **Reference:** **RESIDENTIAL CONSERVATION RATE**
Exhibit C2-6, pp. 1, 6, 10-14; FortisBC Inc. (FBC) 2011 Residential Inclining Block (RIB) Rate Application proceeding; FBC Final Argument, pp. 8, 9; FBC 2016 Long Term Electric Resource Plan and Long Term Demand Side Management Plan Decision, p. 21
Long-run marginal cost

Page 1 of BC Sustainable Energy Association and the Sierra Club of BC's (BCSEA-SCBC) evidence states: "The long-run marginal cost (LRMC) of new supply is the appropriate referent for the Tier 2 energy rate."

1.1 Please explain in detail why the LRMC of new supply is considered the appropriate referent for the Tier 2 energy rate.

1.2 Please explain other methods for establishing the Tier 2 energy rate and the pros and cons of each alternative method compared to using the LRMC of new supply.

1.2.1 As part of the above response, please discuss the applicability and/or feasibility of each alternative method for FBC.

Page 6 of BCSEA-SCBC's evidence states: "While the BCUC, in its information requests, had explored the possibility of capping the Tier 2 rate at the LRMC, FBC argued against doing so."

On page 8 of FBC's Final Argument in the FBC 2011 RIB Rate proceeding, FBC stated the following:

> The Company has noted that, under specifically defined conditions, economic efficiency is maximized (in the long run) where price equals long run marginal cost. Therefore, if price is either higher or lower than long run marginal cost, efficiency will not be maximized. However, given FortisBC's current cost structure and existing rates, pricing the block 2 rate at LRMC fails the test of workability.

1.3 In consideration of FBC's current approved cost structure and existing rates, please explain whether BCSEA-SCBC considers pricing the block 2 rate at LRMC, based on BCSEA-SCBC's calculation of LRMC, to meet the "test of workability". Please provide justification for this response and explain all assumptions.

FBC further stated the following on page 9 of its Final Argument in the 2011 RIB Rate proceeding:

> Further, when making consumption-related decisions, residential customers are far more likely to look at the block 1 and block 2 rates, and the difference between them, than they are to relate the block 2 rate to any specific measure of LRMC. Conservation will be driven by customer consideration of the differential between block 1 and block 2 rates whether or not the block 2 rate is above or below the LRMC value.

1.4 Please discuss whether BCSEA-SCBC considers the above statement to be accurate that residential customers are "far more likely to look at the block 1 and block 2 rates, and the difference between them, than they are to relate the block 2 rate to any specific measure of LRMC."

Page 10 of BCSEA-SCBC's evidence states the following:

> One plausible approach for allocating DCE [Deferred Capital Expenditure] among customer classes would be in relation to their contribution to the coincident peak (CP). According to the COSA, the residential class in 2016 accounted for 45.7% of CP, and in 2017 for 47.3%. Using the average of these two values (46.5%) results in a preliminary estimate of $38.40/kW-yr (2017$) for the residential portion of DCE.

1.5 Please explain the rationale for allocating DCE based on customer classes' contribution to the CP.

1.6 Please provide the supporting calculations for the $38.40/kW-yr residential portion of DCE.

On page 11 of BCSEA-SCBC's evidence, FBC's full LRMC (after transmission and distribution losses) is calculated to be $129.71 per megawatt hour (MWh) and this amount is stated to be only 16.9 percent less than the Tier 2 energy price of $156.17 per MWh.

BCSEA-SCBC presents a different LRMC calculation on page 13 of its evidence in the amount of $149.87 per MWh.

1.7 Please explain which of BCSEA-SCBC's calculated LRMCs (i.e. $129.71 per MWh or $149.87 per MWh) it considers to be more appropriate as the referent for FBC's Tier 2 energy price at the present time.

BCSEA-SCBC further states on pages 12–13 of its evidence:

> While this inference was not explicitly drawn by either FBC or the Commission, the implication of the decision in G-117-18 to accept the recommended portfolio plan only through 2024 is to increase the unadjusted LRMC (albeit calculated over a shorter period) to $114 (2015$).

1.8 Please confirm, or explain otherwise, that the BCUC made no determination nor made any comment on the impact of its rejection of FBC's portfolio A4 beyond 2024 on FBC's calculation of the LRMC in the 2016 Long Term Electric Resource Plan and Long Term Demand Side Management Plan Decision (2016 LTERP & LT DSM Decision).

On page 21 of the FBC 2016 LTERP & LT DSM Decision, the BCUC stated that it is "not persuaded of the benefit of including DSM in the estimate of FBC's LRMC, and encourages FBC to consider revising its LRMC calculation method in its next LTERP filing."

1.9 In consideration of the BCUC's statement regarding including DSM in the estimate of LRMC, as provided in the above preamble, please discuss the appropriateness of using either $99.28 ($2017) or $117.90 (2017$) as the basis for calculating FBC's full LRMC.

BCSEA-SCBC states the following on page 15 of its evidence:

> If, however, at the end of the day, this approach resulted in the two rates being equal –

and hence numerically identical to a flat rate – this would still be preferable to a return to a flat rate, since, should LRMC increase in the future, it would be a simple matter to adjust the RCR to reflect those new avoided costs, without having to recommence the rate design process from scratch.

On page 14 of its evidence, BCSEA-SCBC provided a table prepared by FBC in response to BCUC Information Request (IR) 38.8 but sorted by the Tier 2 rate and including a 19th variant based on FBC's response to BCUC IR 38.12. BCSEA-SCBC states the following related to the table:

> The first option listed – Option 7(ii) – has a Tier 2 rate of 13.37c/kWh, just 3% higher than the full avoided cost of $129.71/MWh derived in section 2.1.1. One can thus assume that the corresponding Tier 1 rate would be only slightly greater than the 10.85c/kWh found in that same variant and that the ratio Tier 2/Tier 1 would only be slightly lower than the 23% premium therein.

1.10 In the event that the Tier 2 rate was adjusted to reflect new avoided costs, as calculated by BCSEA-SCBC, please calculate the resulting impact to Tier 1 and to the threshold in order to ensure the same revenue requirement recovery is achieved.

1.11 In a scenario where the LRMC decreases in the future, please discuss whether BCSEA-SCBC would consider it appropriate to adjust the Tier 2 rate downward to reflect the new avoided costs.

1.11.1 If yes, and in the event that the gap between the Tier 1 and Tier 2 rate is reduced, please discuss how this would impact conservation signals.

1.12 Please explain if BCSEA-SCBC considers the primary objective of designing a two-tiered rate to be aligning the Tier 2 energy rate with the LRMC, regardless of how such alignment impacts the differential between the Tier 1 and Tier 2 rates and the threshold.

1.13 Under a scenario where the LRMC was used as the referent for the Tier 2 energy rate, please explain the triggers which would indicate how often the Residential Conservation Rate (RCR) would need to be (should be) adjusted to reflect changes to the LRMC. For example, would the trigger occur when the LRMC has moved by more than +/- 5 percent, +/-10 percent, or would there be a different trigger?

1.14 Please discuss the possibility that the marginal cost of new supply could change from time to time for any utility, for example, as a result of changes in technology, construction costs or marginal cost of market purchases.

1.14.1 If so, how does BCSEA-SCBC recommend that FBC should monitor its LRMC of new supply? What are the costs/benefits of such an exercise?

2.0 Reference: RESIDENTIAL CONSERVATION RATE
Exhibit B-8, BCUC IR 4.3, 35.2.1
Conservation

In response to BCUC IR 4.3, FBC referenced a 2015 study by Faruqui et al. FBC included the following conclusion on the effect of flattening rates on consumption:

> The specifics of the rate design change, the nature of the evaluation methodology and the values of the assumed price elasticities. Of these, the specifics of the rate design change matter the most. Whether or not an IRB encourages consumption will depend on the distribution of customer usage across the tiers and the magnitude of the price changes across tiers. Paradoxically, if a large share of consumption is concentrated in the lower tiers that are going to face higher prices under a flatter IBR, then a revenue

neutral rate change that 'flattens' the tiers might lead to additional conservation.

In response to BCUC IR 35.2.1, FBC provided a table showing that as a result of moving to the proposed flat rate (assuming no increase to the customer charge), 76.4 percent of FBC customers will experience a bill increase.

2.1 In consideration of the conclusions referenced in the 2015 study by Faruqui et al, please discuss whether, and to what extent, it is reasonable to expect that the 76.4 percent of customers who will experience a bill increase under the flat rate may make efforts to reduce their consumption (and therefore increase conservation).

3.0 **Reference: RESIDENTIAL CONSERVATION RATE**
Exhibit B-8, BCUC IR 3.3
Rate design principles

In response to BCUC IR 3.3, FBC stated the following:

> Generally speaking, inclining block rate structures may provide better price signals for energy conservation for some segments of residential customers, but provide less desirable results in terms of other rate design considerations such as customer awareness and understanding, cost causation or rate and revenue stability.

FBC further evaluated the RCR compared to a flat rate structure using the Bonbright rate design principles in response to BCUC IR 3.3.

3.1 Please provide a similar evaluation of the RCR compared to a flat rate structure in consideration of the Bonbright rate design principles.

3.2 Please explain if BCSEA-SCBC prioritizes Bonbright Principle 3 (i.e. price signals that encourage efficient use and discourage inefficient use) over other principles.

3.2.1 If no, please explain why continuing with the RCR as opposed to moving to a flat rate structure would not result in prioritization of Bonbright Principle 3.

3.2.2 If yes, please explain why priority should be given to Bonbright Principle 3 and why such prioritization is reasonable in consideration of FBC's specific circumstances.

4.0 **Reference: RESIDENTIAL CONSERVATION RATE**
Exhibit C3-7, p. 5; Exhibit B-8, BCUC IR 3.4; Exhibit B-1, p. 62
RCR design

In the evidence filed by the Anarchist Mountain Community Society & Regional District Okanagan-Similkameen (AMCS/RDOS), it states the following on page 5:

> A properly designed two-tier RIB Rate must be cost-based, using the following design principles:
>
> 1. Tier 1 Rate equal to the Flat Rate;
> 2. Tier 2 Rate equal to the marginal cost of new supply; and
> 3. Threshold(s) set so that each customer has some consumption in Tier 2 but not so much as to be unable to avoid a bill increase by improving energy efficiency,

4.1 Please explain whether BCSEA-SCBC considers that each of the above three RIB rate design principles are required for a properly designed two-tier RIB Rate. For each of the three principles, please explain why or why not.

AMCS/RDOS further states on page 5 of its evidence that "The correct implementation of a RIB Rate requires setting different thresholds for different customers to reflect the differences in the ways that electricity is used."

4.2 Please discuss whether it is reasonable to implement a RIB Rate using different consumption thresholds, as contemplated by AMCS/RDOS in its evidence.

4.2.1 If yes, please explain how such a RIB Rate could be implemented, using FBC's specific costs and residential consumption data provided in this proceeding (and in consideration of BCSEA-SCBC's calculation of FBC's LRMC).

4.3 Please describe the pros and cons of a RIB Rate design based on a fixed consumption threshold versus a RIB Rate design based on different thresholds (such as the design contemplated by AMCS/RDOS), and explain which approach is likely more appropriate for FBC's residential customers.

In response to BCUC IR 3.4, FBC stated: "there is a high degree of variation in such things as dwelling type, size and location, occupancy, as well as load characteristics related to the types and size of connected appliances and the overall energy efficiency of the dwelling… In part, the high degree of variability noted above supports a flat rate as opposed to an inclining block rate…"

4.4 Please explain whether BCSEA-SCBC considers that a high degree of variability (or lack of homogeneity) among residential customers is better accommodated by a flat rate or a RIB rate and why.

On page 62 of the FortisBC Inc. 2017 Cost of Service Analysis and Rate Design Application, FBC states the following:

> Certain customers have expressed that the absence of natural gas service means that a less expensive means (as compared to electricity) of providing space and water heating is unavailable. This leads to higher than average consumption, which in turn leads to higher bills.

AMCS/RDOS states on page 5 of its evidence that "The most important residential consumption factor, by far, is whether the home uses electricity, rather than other fuels, for space and water heating, which together account for 78% of a typical home's energy consumption."

4.5 Please discuss whether BCSEA-SCBC considers customer end-use, and in particular the situation where a residential customer is reliant on electricity for space and water heating, to be an important consideration when designing residential rates.

4.5.1 If yes, please explain what rate design options should be explored by FBC to address the issue of the impact of the RCR on customers who are reliant on electricity for space and water heating.

5.0 **Reference: OPTIONAL TIME OF USE RATES**
Exhibit C2-6, p. 32; Exhibit B-8, BCUC IR 92.1.1
Other jurisdictions

In its response to BCUC IR 92.1.1 FBC stated the following:

> None of the Canadian jurisdictions included in our review of rates had mandatory TOU rates in place for distribution rates. Based on our experience, there are more jurisdictions where optional TOU rates exist compared to mandatory TOU rates**. California is the leader in requiring**

mandatory TOU rates; however, their utility structure is much different than many other regions.

FBC is also aware of the jurisdictional study provided by BC Hydro in its March 2017 workshop or Module 2 RDA, where it has discussed that half of the U.S. utilities surveyed had some form of TOU rates with the majority being optional TOU rates. [emphasis added]

BCSEA-SCBC states on page 32 of Exhibit C2-6 that

Some other jurisdictions are implementing optional residential TOU rates. Notably, in California, all three large investor-owned utilities will offer a variety of complex TOU options to all residential customers as of January 1, 2019.

5.1 Please clarify if BCSEA-SCBC's statement on page 32 of Exhibit C2-6 that "[n]otably, in California, all three large investor-owned utilities will offer a variety of complex TOU options to all residential customers as of January 1, 2019" refers to optional or mandatory TOU options, or both.

5.1.1 If the answer to the preceding IR includes optional TOU options, please reconcile this to the statement made by FBC in its response to BCUC IR 92.1.1 that "California is the leader in requiring **mandatory** TOU rates." [emphasis added]

5.2 In BCSEA-SCBC's view, what studies should be conducted by FBC, if any, in order to explore other optional or mandatory Time-of-Use (TOU) rates?

5.3 Is BCSEA-SCBC aware of any other jurisdictions with TOU rates that have comparable energy and climate environments to BC? If so, please identify the jurisdiction(s) and how they are comparable to FBC and provide details of the TOU rates programs in place (both optional and mandatory).

6.0 **Reference: OPTIONAL TIME OF USE RATES**
Exhibit C2-6, p. 4 and 32
Pilot programs

On page 32 of Exhibit C2-6 BCSEA-SCBC states that a "better approach [to FBC's optional TOU rates proposal] would be to implement an **optional** TOU pilot program, perhaps confined to a specific geographical area, other otherwise constrained, in order to develop a knowledge base with respect to how customer behaviour would change under such a rate." [emphasis added]

On page 4 of Exhibit C2-6 BCSEA-SCBC states that "[i]t is recommended that FBC carry out a review of potential DR mechanisms, in order to determine the best path forward to reduce its peak demand."

6.1 Please discuss the pros and cons of implementing an optional versus a mandatory pilot program for TOU rates in the context of FBC.

6.2 Please provide examples of TOU rate pilot programs carried out in other jurisdictions and the stated objectives of each program, where available. For each program identified, please discuss the similarities and differences to the FBC context, based on the evidence presented on the record in this proceeding.

6.3 Please clarify if BCSEA-SCBC recommends that FBC conduct both a pilot program regarding optional TOU rates and a review of potential demand response mechanism at the same time.

7.0 **Reference: OPTIONAL TIME OF USE RATES**
Exhibit C2-6, pp. 4 and 33–35; Appendix A
Demand response study

On page 33 of Exhibit C2-6 BCSEA-SCBC states that a "TOU, whether optional or mandatory, is just one of the policy tools collectively known as Demand Response (DR). Other important DR tools include critical peak pricing (CPP) and related measures, as well as dispatchable measures such as direct load control or "smart" DR." Further, on page 34 of its evidence BCSEA-SCBC includes Figure 1 with a grouping of DR resources.

Page 4 of Exhibit C2-6 states that "[i]t is recommended that FBC carry out a review of potential DR mechanisms, in order to determine the best path forward to reduce its peak demand."

7.1 Please provide details of the nature of the review/study regarding potential demand response mechanisms that BCSEA-SCBC recommends should be conducted by FBC.

7.1.1 In BCSEA-SCBC's view, are there any factors specific to FBC that indicate there are specific demand response tools presented in Figure 1 of Exhibit C2-6 that would be appropriate for FBC to consider in a review/study? If so, please identify the relevant factors, the specific demand response tool that each factor relates to and why.

7.1.2 Please provide details of the most useful data to collect and analyses to conduct in order assess each of the specific demand response tools identified in the preceding IR in the context of FBC.

7.2 In BCSEA-SCBC's view and based on the evidence on record in this proceeding, please identify the specific issues/constraints with FBC's current and future peak demand that should be addressed in a review of potential demand response mechanisms.

7.3 Please identify the specific, potential benefits for FBC and its customers of conducting a review of potential demand response mechanisms.

7.3.1 Please discuss if the costs of conducting a review of potential demand response mechanisms could outweigh the specific, quantifiable benefits of such a review for FBC and its customers and explain why or why not.

8.0 **Reference: OPTIONAL TIME OF USE RATES**
Exhibit C2-6, p. 33; Appendix A, Synapse Energy Economics: Best Practices In Utility Demand Response Programs, p. 8
Demand response tools in other jurisdictions

On page 33 of Exhibit C2-6 BCSEA-SCBC states that "[v]ery recently, HQ Distribution announced that it would implement both Critical Peak Pricing (CPP) and Critical Peak Credit (CPC) programs for its domestic and small business customers." Further, on page 35 BCSEA states that:

> In developing this program, HQD mandated the firm Ad Hoc Recherche to consult its clientele using focus groups and interviews, with respect to three options: CPP, CPC and TOU rates. Among domestic customers, it found greatest interest in the CPP and CPC options. The TOU option was not retained because interest in it was limited to households with electric vehicles and those with "smart home" technologies already installed.

8.1 Please discuss the similarities and differences in the energy and climate environment for Hydro-Québec (HQ) Distribution as compared to FBC.

8.2 Please discuss the specific factors for HQ Distribution and its energy and climate environment, including but not limited to issues and constraints with its peak demand, that make CPP and CPC appropriate demand response tools.

8.2.1 Please discuss if the factors identified above in relation to HQ Distribution are also applicable to FBC and explain why or why not.

8.3 Is BCSEA-SCBC aware of any other jurisdictions that have comparable energy and climate environments to BC that have conducted studies of demand response tools? If so, please identify the jurisdiction(s) and how they are comparable to FBC and provide details of specific demand response tool studies conducted.

Page 8 of Appendix A states that "Every jurisdiction has its own unique characteristics for power supply and demand profile, which shape both the need and potential for demand response." It goes on to list the primary features in Quebec and further states that "[t]hese features combine to produce an environment in which demand response can play a more central role in the HQD's supply planning than it would play in other jurisdictions."

8.4 In BCSEA-SCBC's view, please identify and discuss any characteristics specific to FBC for power supply and demand profile that indicate a need and potential for demand response.