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May 18, 2017

Industrial Customers Group
c/o #301 – 2298 McBain Avenue
Vancouver, BC V6L 3B1

Attention: Mr. Robert Hobbs

Dear Mr. Hobbs:

Re: FortisBC Inc. (FBC)

Project No. 3698896

2016 Long Term Electric Resource Plan (LTERP) and Long Term Demand Side Management Plan (LT DSM Plan)

Response to the Industrial Customers Group (ICG) Information Request (IR) No. 2

On November 30, 2016, FBC filed the Application referenced above. In accordance with the British Columbia Utilities Commission Order G-197-16 setting out the Regulatory Timetable for the review of the Application, FBC respectfully submits the attached response to ICG IR No. 2.

If further information is required, please contact Joyce Martin at 250-368-0319.

Sincerely,

FORTISBC INC.

Original signed:

Diane Roy

Attachments

cc (email only): Commission Secretary
Registered Parties

1. Reference: Exhibit B-7, ICG IR 1.2

System Losses

1.1. Please provide a list of the non-industrial transmission connected loads?

Response:

FBC's response to ICG IR 1.2 was incorrect and has been refiled in an erratum filed on May 18, 2017 (Exhibit B-7-1).

FBC has two non-industrial, transmission connected customers, Nelson Hydro (Rate Schedule 41, which is exclusive to Nelson Hydro) and a large commercial (Rate Schedule 30) customer. It is FBC's practice to not identify individual customers by name.

1.2. Please separate the losses shown in Table 1 into estimated Transmission and Distribution components, and please describe the basis of the estimate. For instance, describe the demarcation point that separates transmission losses from distribution losses.

Response:

FBC estimates that the transmission losses represent between 1-3 percent of gross load and distribution losses represent between 5-7 percent of gross load, based on a very high level estimate. Any further refinement of this estimate will be considered as part of FBC's next cost of service analysis.

1.3. The component of Transmission losses, what is the most appropriate method to assign a portion to transmission connected loads and a portion to distribution connected loads? Is the assignment based on a pro-rata calculation, or some alternate method?

Response:

Losses are attributed to various customer classes based on service voltage and an engineering estimate.

2. Reference: Exhibit B-7, ICG IR 2.2

DSM Scenario Consultation

2.1. For the Actual Energy Savings shown, were these savings confirmed after the incentive was implemented? If so, please provide the forecasted energy savings associated with the incentive prior to the implementation of the incentive. If not, why not?

Response:

For the purposes of clarifying this question, FBC interprets "implementation of the incentive" to mean "payment of the incentive". Yes, the savings were confirmed prior to the final, second part, of the incentive payment.

FBC technical advisors work with the customer to determine the project's savings estimate when a project is first initiated. The savings reported in the referenced IR response were confirmed prior to the final incentive payments being made and were based on actual energy savings, as determined according to FBC's Measurement and Verification (M&V) protocols.

FBC does not report project savings forecasts as they may not be directly comparable to final project savings due to changes the scope of the project.

3. Reference: Exhibit B-7, ICG IR 1.4.4

Self-generator eligibility

3.1. Please confirm whether the calculation of the incentive for a self-generation customer is to be trued up to actual or realized savings?

Response:

Confirmed. The incentive is to be trued up to realized savings.

3.2. Please comment on whether the forecast sales to a self-generation customer used for rate- making purposes can be used to estimate incentives for a self-generation customer.

Response:

Forecast sales to a self-generation customer can be used to estimate incentives for a qualifying DSM project subject to the DSM program terms and conditions. This includes the true-up referred to in response to ICG IR 2.3.1 and assumes that forecast sales (less the trued-up DSM project savings) materialize as planned.

4. Reference: Exhibit B-2, BCUC IR 1.12.1

DG market barriers and mitigation approaches

"With respect to the Commission's comment in the FBC 2016 Net Metering Reasons for Decision regarding the purchase of IPP power, the Company notes that the lack of specific program(s) in this regard does not prevent FBC from acquiring the output of either IPPs or self-generators, which it has done in the past, and continues to do if such a purchase is appropriate relative to other available resource options."

4.1. Does FBC have a pro-forma or specimen contract for the purchase of output from IPPs or self- generators? If so, please provide a copy. If not, why not?

Response:

No, FBC does not have a pro-forma or specimen contract for the purchase of output from IPPs or self-generators because FBC does not have a significant number of these contracts and each contract was negotiated bilaterally at different times and under different conditions.

5. Reference: Exhibit B-2, BCUC IR 1.12.4.2

DG market barriers and mitigation approaches

"The Company currently purchases unplanned deliveries to the FBC system during periods when an existing self-generating customer is supplying energy to the FBC system, but does not have an export schedule to a third party in place, and anticipates that it will file an EPA containing the terms of this arrangement. FBC did not include this in the Action Plan because it is not a new resource acquisition."

5.1. Please provide the terms and conditions associated with the purchase of the referenced unplanned deliveries.

Response:

FBC is unable to respond because the specific pricing, terms and conditions of individual supply agreements are confidential.

5.2. Please provide the volumes of purchased unplanned deliveries since 2011, and provide FBC's forecast of such purchases for the next 5 years. If FBC has not forecast any purchases, why not?

Response:

Please refer to the table below for the volumes of purchased unplanned deliveries since 2011.

Year	Unplanned Deliveries (MWh)
2011	2,002
2012	2,911
2013	2,075
2014	11,143
2015	3,634
2016	3,296

FBC forecasts combine IPP purchases and unplanned deliveries and does not produce separate forecasts for each. The unplanned deliveries in 2014 are anomalous; FBC's forecast of combined IPP purchases and unplanned deliveries is estimated at approximately 3,400 MWh per year for the next five years.

6. Reference: Exhibit B-2, BCUC IR 1.22.3

Transmission Project CPCNs/Long Term Capital Plan

"In the event of a single contingency outage of the existing GFT T1 161/63 kV transformer, the loads in the Grand Forks and Christina Lake areas must be supplied via two existing 63 kV transmission lines. In this operating configuration, these lines must be operated in parallel to keep voltages in the area within acceptable limits during winter peak. Based on the current condition of these lines, FBC does not believe that this operating configuration provides adequate reliability. Additionally, as load in the area increases, this configuration may not be an option to maintain voltages within acceptable limits."

6.1. Please provide the load trend for the referenced loads for the last 10 years, and provide a forecast for the next five years.

Response:

The load trend for the last 10 years, and the load forecast for the next five years are provided in the following tables:

Table 1: Historical Peaks (Grand Forks and Christina Lake area)

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Load (kVA)	49,658	49,977	*36,389	33,318	30,801	**N/A	31,997	32,570	30,239	33,021

* In 2009, the peak load decreased substantially and as expected due to FBC transferring load west of Grand Forks to the new Kettle Valley substation. Additionally, an industrial sawmill customer was shut down in this timeframe.

**2012 metering data for Grand Forks Terminal is not available

Table 2: Peak Load Forecast (Grand Forks and Christina Lake area)

Year	2017	2018	2019	2020	2021
Load (kVA)	33,892	34,137	34,308	34,506	34,678

6.2. How much of the forecasted load growth can be met through targeted or intensified DSM measures?

Response:

For clarity, as noted in the preamble, the system limitations associated with providing adequate voltage to Grand Forks-area customers through the inherently unreliable 63 kV transmission lines are issues that FBC faces even at existing load levels. It is not expected that any practicable level of targeted or intensified DSM measures would result in a localized peak load reduction of several megawatts to maintain an ongoing level of reliability for the Grand Forks and Christina Lake areas consistent with historical performance.

Please also refer to the response to BCUC IR 1.23.2.1.

7. Reference: Exhibit B-2, BCUC IR 1.34.3

Deferred Capital Expenditure Value

7.1. Please explain why FBC's Deferred Capital Expenditure (DCE) value is so much different than BC Hydro's.

Response:

The DCE values are different because the methodology employed by FBC and BC Hydro differs, as do the underlying inputs, namely required network reinforcements that inform the stream of infrastructure investments anticipated over the planning horizon.

The DCE study that was included in FBC's 2017 DSM Expenditure Schedule Application describes the Marginal Cost methodology used to derive FBC's DCE value and why it is the appropriate methodology for FBC to select. It estimates the avoided capital costs for an incremental MW based on the average of forecast investments, on a present value basis. The result is a "global" avoided transmission and distribution cost used to evaluate DSM programs on a portfolio level, and not to be used for specific DSM or for targeted distribution programs.

Based on filings in its 2017-2019 RRA, BC Hydro used a Scenario-based Estimation approach, which was one of the alternative methods described in FBC's DCE study. The methodology BCH selected is based on a comparison of growth related network infrastructure investments with and without demand-side management activities. This methodology considers the sectoral mix of DSM savings (residential, commercial and industrial) relative to the sectoral mix of the load by area. Timing of the DSM savings along with timing of infrastructure needs based on load is also factored into the analysis. The net present value of the reduction in transmission and distribution capital expenditures can then be applied to the DSM initiatives on a levelized cost basis.

7.2. Please separate FBC's DCE into Transmission and Distribution components. Please reconcile these components with the forecast capital expenditures shown in the response to BCUC IR 21.1.

Response:

Based on FBC's forecast growth-related capital transmission and distribution expenditure schedules, the DCE study included in FBC's 2017 DSM Expenditure Application found the levelized transmission and distribution DCE values to be $67.03 per kW-year and $12.83 per kW-year respectively in 2015 dollars.

The DCE study describes the Marginal Cost methodology used to derive FBC's DCE value. Only those forecast capital expenditures related to transmission and distribution "growth" components were used in FBC's DCE calculation, whereas the Table shown in the response to BCUC IR 1.21.1 includes non-growth components such as Protection & Control and Telecommunications. Additionally, the Table shown in the response to BCUC IR 1.21.1 incorporates updates to project timing and estimated expenditures that were made since the completion of the DCE study. As such, the DCE transmission and distribution components cannot be readily reconciled against the updated forecast capital expenditures.

8. Reference: Exhibit B-2, BCUC IR 1.51.1.2

Co-ordination

"FBC is an autonomous integrated electrical utility that is responsible for its own resource planning, including this LTERP application currently under consideration, and determining its appropriate level of DSM activity."

8.1. Please comment on whether BC Hydro assessment of an appropriate level of DSM activity is more likely to be aligned with provincial government policies than is FortisBC. For example, is FortisBC willing to provide the same level of incentives to its self-generation customers as does BC Hydro to its self-generation customers?

Response:

FBC is unable to comment on BC Hydro's assessment of an appropriate level of DSM activity and whether it is more aligned with provincial government policies.

In the 2012-13 RRA and ISP Decision (G-110-12) the Commission Panel stated "*…BC Hydro and FortisBC are different utilities, operating in different contexts. The Commission Panel is not prepared to direct FortisBC to implement the same DSM programs as BC Hydro, particularly in the industrial sector where the customer base is very different."*

FBC's level of incentives to its self-generation customers will be unique to FBC and its different operating context.

9. Reference: Exhibit B-2, BCUC IR 1.52.2

Self-generator eligibility

"For example, if a customer self-supplies 50% of their electricity from self-generation, or a third party, and the remaining 50% from the utility then only 50% of the electricity savings from the energy efficiency measure (s) incented by the utility are realized by the utility."

9.1. Please confirm that it is FBC's view that "financial incentives in proportion to the share of potential energy savings to the Company" should be calculated based on the percentage of annual self-supply of the self-generator's annual load requirements? If so, please provide an example of such calculation assuming annual load requirements are 100 MWh, annual self- generation is 50 MWh, and annual savings from the energy efficiency measure are forecast to be 25 MWh.

Response:

Not confirmed. To clarify, as noted in Section 5.2 of the 2016 LT DSM Plan, customers with self-generation may be eligible for DSM programs and "financial incentives [are provided] in proportion to the share of potential energy savings to [realized by] the Company [FBC]."

Using the assumptions provided, where the load requirement of the customer is 100 MWh, of which 50 MWh is self-supplied, the DSM incentive would be based on the portion of the 25 MWh savings that is reflected in a reduction of energy supplied by FBC.

9.2. Please comment on whether FortisBC will provide an incentive to a self-generation customer, on the same basis as any other customer, whenever the total annual energy purchases from FortisBC exceed the total energy savings from the DSM measure? In not, please explain?

Response:

The Company's DSM incentives are not dependent on the portion of a customer's consumption from self-generation. The Company will evaluate each DSM measure independently to determine how much of the DSM project's energy savings will be realized by the Company and adjust the incentive accordingly.

For example, Customer A, importing a small demand of electricity 50% of the time, will be evaluated differently than Customer B, importing a large quantity of electricity only 10% of the time, even if the overall annual energy consumption is the same. The rationale is that for an

identical DSM project, the DSM project with Customer A could realize more savings to the Company than the DSM project with Customer B. This example assumes that the energy savings from the DSM project are less than the amount imported from the Company, during periods of import, by either customer.

10. Reference: Exhibit B-2, BCUC IR 1.52.2.1

Self-generator eligibility

"FBC understands that BC Hydro does not reduce DSM incentives for self-generators as long as the customer continuously imports power from the utility (i.e. the project does not result in full load displacement). BC Hydro does not provide DSM incentives to customers who self-generate the entirety of their load or where a DSM project would result in the customer self-generating the entirety of their load. For example, independent power generating facilities are not eligible for BC Hydro DSM incentives for efficiency projects conducted within their facilities."

10.1. Please comment on whether FortisBC is willing to adopt BC Hydro's standards in accordance with FortisBC's understanding of those standards as stated above? If not, please explain why not?

Response:

No. Please refer to the response to ICG IR 2.8.1.

10.2. Please comment on whether Celgar has an independent power generating facility as referenced in the final sentence above?

Response:

In the referenced IR response, FBC intended "independent power generating facilities" to equate to Independent Power Producers (or IPPs), which it considers to be facilities solely engaged in the production of power without an associated load. As a self-generating industrial customer, Celgar does not meet this definition.

11. Reference: Exhibit B-9, Shadrack IR 1.17.ii

Imbalance Methodology

"In this situation, FBC was attempting to purchase a relatively small volume of 10 MW in order to meet forecast demand plus a reasonable buffer, which is typically 15 to 30 MW, depending on the hour. Actual load for the hour was such that the 10 MW was not required to meet load, and therefore it did not cause an imbalance on the FBC system. Had it caused an imbalance, it would not have resulted in a forced shut down of any customer's electricity supply, as FBC has contractual methods of dealing with any imbalance transfer with BC Hydro."

11.1. Please describe the contractual methods of dealing with any imbalance transfer with BC Hydro.

Response:

Please refer to the response to CEC IR 2.33.2.

11.2. What are the time, duration, volume and other restrictions associated with the referenced methods of dealing with imbalance?

Response:

There are no time, duration or volume restrictions under FBC's Imbalance Agreement with BC Hydro. The main restriction on the Imbalance Agreement is that any use of imbalance transfers is unauthorized. FBC must use reasonable commercial measures to avoid any such imbalances and cannot rely on or plan on the use of imbalance energy as a resource for meeting its system requirements.