May 11, 2011

Mr. Dennis Swanson  
Director, Regulatory Affairs  
Regulatory Affairs Department  
FortisBC Inc.  
Suite 100, 1975 Springfield Road  
Kelowna, BC V17 7V7

Dear Mr. Swanson:

Re: FortisBC Inc.  
Project No. 3698628/Order G-68-11  
Residential Inclining Block Rate Application

Further to Commission Order G-68-11, which established an Initial Regulatory Timetable with respect to the above noted Application, enclosed please find Commission Information Request No. 1. In accordance with the Regulatory Timetable, please file your responses electronically with the Commission by Tuesday, June 7, 2011 in accordance with the Commission’s Document Filing Protocols, effective May 16, 2005.

Yours truly,

Alanna Gillis

cms  
Enclosure
1.0 Reference: Exhibit B-1, Executive Summary, p. 2

FortisBC states: “The Company proposes to implement the RIB rate between six and nine months after receiving a Commission decision.”

1.1 Assuming that a Commission decision is rendered by the end of November 2011 and a new RIB rate is ready to be implemented by mid-2012, what would be FortisBC’s proposals regarding:

(a) the date to review, and if necessary, apply for re-pricing the Block 2/Block 2 ratios in the application? and

(b) the date by which it will report to the Commission and stakeholders on the annual and cumulative conservation savings, avoided costs and customers’ bill impact relating to the new RIB rate?

2.0 Reference: Exhibit B-1, Section 2.1 FortisBC Committed to Conservation, p. 4

FortisBC states: “Through its demand side management (DSM) programs, the Company has many initiatives designed to influence energy consumption by encouraging customers to improve energy efficiency, reduce electricity use, change the time of use, or use a different energy source.”

2.1 Will the proposed inclining block rate structure become a part of PowerSense DSM?

2.1.1 Please describe how FortisBC proposes to recover the expenditures, for example, implementation costs that would be incurred.

2.2 If this RIB rate initiative is part of FortisBC’s DSM, please provide a table comparing the annual estimated energy conservation (please use the price elasticity scenario of 0.05/0.10 to estimate energy savings), expenditures, total resource cost test result and other performance measurements of this RIB rate initiative with the major initiatives in the PowerSense portfolio.

2.3 According to FortisBC, its PowerSense DSM programs have yielded impressive energy savings of 300 GWh since its creation in 1989. If the proposed RIB rate structure is accepted for implementation, where will the potential conservation attributable to this initiative come from?

3.0 Reference: Exhibit B-1, Section 2.1 FortisBC Committed to Conservation, p. 4

FortisBC states: “The options discussed in this application consider that the relative level of rates charged for the consumption of electricity can themselves have an impact on a customer’s consumption habits. [...] In all cases, the price for energy consumed in the upper block (see the discussion in section 5) is greater than the current flat rate energy price and represents a real rate increase over current charges.”
In footnote 1 on p. 4, FortisBC quoted a response to an IR from the 2009 COSA and RDA Application. When asked if real rate increases are a form of “rate DSM”, FortisBC responded that it believed that real rate increases result in reduced energy consumption. That IR defined a real rate increase as any rate increase that exceeds the general rate of inflation or CPI.

3.1 Please comment if FortisBC’s belief that the relative rate levels charged for electricity use can impact consumption habits stems from a literature review on the subject of customers’ consumption habits? or FortisBC’s own internal research? Please provide references to the literature or research results in your response.

3.2 Please confirm if FortisBC agrees with the above definition of “real rate increase”. If not, please explain why not.

3.3 If so, please show that the Block 2 rate in all 18 options is greater than the current flat rate by at least the general rate of inflation or CPI for 2011 in order to conclude that the Block 2 rate represents a real rate increase over current charges in all cases.

3.4 Regarding the Block 2 rate, please confirm that, for all options except options 15 and 18, the Block 2 rate decreases from the current flat rate and that between 20.8% and 39.3% of customers will face absolute rate decreases as 100% of their consumption will be charged under the Block 2 rate (see Exhibit B-1, Table 7-2, p. 22).

3.5 While it is inevitable that, in fulfilling the revenue neutral requirement, the lower block rate in a RIB rate structure will fall below the current flat rate, please comment on whether a rate design that only sends decreasing price signals to up to 40% of customers can be considered a form of “rate DSM”, motivating all customers to conserve energy.

3.6 In the second statement in the preamble above, please provide a detailed explanation as to whether FortisBC is referring to ‘natural conservation’ as a result of real price increase or ‘DSM conservation’ as a result of rates designed with the view to conserve electricity.

4.0 Reference: Exhibit B-1, Section 2.2 Structure of the Application, p. 5

FortisBC states: “The Company is aware that numerous potential variants of the rate exist. Those included in the application however are restricted to those that best maintain provincial consistency, accomplish the objectives set out in section 3, and that are not fraught with implementation issues.”

4.1 Please clarify whether “maintaining provincial consistency” means consistency with the Province’s legislative and regulatory framework as described in Section 2.5 or with BC Hydro’s RIB Rate pricing policy.

4.2 BC Hydro implemented a RIB Rate in October 2008. With two and a half years of experience in the province in the area of RIB rates, does FortisBC still believe that it could be fraught with implementation issues?

4.3 Would the RIB rate better prepare FortisBC for eventual Time of Use (TOU) and Critical Peak Pricing (CPP) rate design?

5.0 Reference: Exhibit B-1, Section 2.3 Approval Requested, p. 5

FortisBC states: “In this application, FortisBC is applying under sections 58-61 of the Utilities Commission Act, R.S.B.C. 1996, c.473, as amended, for BCUC approval of its proposed RIB rate. The RIB rate is
intended to be the default, mandatory rate for all residential customers who are not taking service under FortisBC’s Time-of-Use (TOU) option, rate schedule 2A. The FortisBC recommended rate is described in section 8 of this application.”

5.1 Please confirm that FortisBC is seeking approval on the following two distinct requests:

a. A proposed RIB rate, consisting of the following four components: 1) customer charge of $28.93 per billing period (unchanged from the current level); 2) Block 2 rate of 7.828 cents per kWh; 3) Block 2 rate of 11.272 cents per kWh; and 4) a threshold of 1,600 kWh per two-month billing period; and

b. A pricing principle that will apply to FortisBC’s proposed RIB rate until Fiscal 2015 as follows: 1) customer charge exempted from revenue requirement rate increases but subject to rebalancing adjustments; 2) Block 2 rate increased by an amount equal to the sum of the general revenue requirement increase and any rebalancing adjustments; and 3) Block 2 rate calculated residually to recover the balance of the general revenue requirement and any rebalancing adjustments. To be clear, a pricing principle refers to the manner in which general rate increases are applied to the three pricing elements of the RIB rate, namely the customer charge, the Block 2 rate and the Block 2 rate.

5.2 Please comment if the above RIB rate design has considered the impact on other rate classes, e.g., whether the other rate classes will be held harmless in the event of lower consumption in the residential class.

6.0 Reference: Exhibit B-1, Section 2.4 FortisBC COSA and RDA and Order G-156-10, pp. 5-6; and October 19, 2010 Commission Decision on 2009 Rate Design and Cost of Service Analysis, p. 51

Implementation of RIB and TOU Rates

In this Application, FortisBC states that the RIB rate is intended to be the default, mandatory rate for all residential customers who are not taking service under FortisBC’s Time-Of-Use (TOU) option rate schedule 2A.

The October 2010 Decision on FortisBC COSA and RDA made reference to FortisBC’s plans to introduce mandatory time-based conservation rates for all metered customer classes once electric usage interval data is made available through the implementation of the AMI.

6.1 Please provide an estimate of the percentage of total residential customers that will, on implementation of the RIB rate, be covered by this proposed default RIB rate.

6.2 Please provide the data on the number of TOU customers, by rate class and their total energy consumed, for the last five years (2006 to 2010).

6.2.1 Please provide the estimated annual savings in energy and demand capacity through existing TOU rates.

6.3 In BC Hydro’s 2008 RIB Rate application, on page 2 of 9 of its Appendix C (see Exhibit A2-1), which presented Utility Survey Results, only one out of 88 utilities surveyed in Canada, US, Europe and Asia has a TOU structure as the default residential tariff. Does FortisBC have any more up-to-date information or comment regarding TOU as default tariff? If so, please provide the information.
6.4 In the recent BC Hydro’s application with the Commission, BC Hydro stated that it was developing a TOU rate applicable on a voluntary basis to residential customers following the implementation of its Smart Metering and Infrastructure Program (BC Hydro RIB Rate Re-Pricing Application, p. 9). It also stated in a response to Information Request that BC Hydro is not obliged in law to have TOU rate (BC Hydro RIB Rate Re-Pricing Application, Exhibit B-2, BCOAPO 1.4.2). Is it still the intention of FortisBC to introduce TOU rates as mandatory to replace the proposed RIB rate in this Application?

7.0 Reference: Exhibit B-1, Section 2.5 Legislative and Regulatory Framework, pp. 7-8

The 2007 Energy Plan lists in some detail, the future energy efficiency and conservation initiatives which include exploring new rate structures to use less electricity or use less at specific times.

7.1 Is FortisBC a summer peaking utility, winter peaking utility, or both? Please provide FortisBC’s monthly peak by rate class, in both chart and tabular format.

7.2 Has FortisBC considered different inclining block rates for different seasons of the year (peak vs. non-peak) when creating options? Why or why not?

7.3 Has FortisBC considered different thresholds for different seasons of the year (winter vs. summer) in its RIB rate design? Why or why not?

8.0 Reference: Exhibit B-1, Section 3.2 RIB Rate Objectives, p. 10; and Section 8 Analysis and Recommendation, p. 23

Customer Bill Impact

FortisBC states on p. 10: “In addition to the Bonbright criteria, FortisBC evaluates the RIB options using the following metrics. 1. Customer Bill Impact – Consistent with Bonbright principle 6, customer bill impacts while unavoidable, should not be unreasonable either to individual customers or groups of customers. FortisBC considers customer bill impact to be a key consideration and constraint when evaluating the various RIB options that have been modelled.” (Emphasis added)

FortisBC again states on p. 23: “Customer Bill Impacts – Customer bill impacts, while unavoidable, should not be unreasonable.”

8.1 Please explain what FortisBC means by “bill impacts that are not unreasonable” and illustrate your explanation using the information under “Maximum Bill Impact” and “Percentage of Customers with Bill Increases > 20%” in Table 7-2: Residential Inclining Block Rate Option Comparison (p. 22).

8.1.1 In particular, of the 18 options listed in Table 7-2, please list all the options for which FortisBC considers the bill impacts not to be “unreasonable” and explain why.

8.2 Please describe any initiatives that FortisBC has planned or considered in order to mitigate the impact of new rate structures on low-income households in its service area.

8.3 In B.C. Ministerial Order No. 271 Demand Side Measures Regulation (Exhibit A2-2, p. 4), a public utility’s plan portfolio is adequate for the purposes of section 44.1 (8) (c) of the Act only if the plan portfolio includes, among others, a demand-side measure intended specifically to assist residents of low-income households to reduce their energy consumption. Please comment if any such DSM program has been implemented with a view to help low-income families under a mandatory RIB rate.
9.0 Reference: Exhibit B-1, Section 3.2 RIB Rate Objectives, p. 10; and Section 8 Analysis and Recommendation, p. 23

Efficient Price Signals

FortisBC states on p. 10: “In addition to the Bonbright criteria, FortisBC evaluates the RIB options using the following metrics. 2. Efficient Price Signals – The RIB rate allows the utility to introduce price signals that reflect the increased marginal cost of electricity. Low consumption customers are incentivized to avoid increasing consumption into the second block, while customers with consumption in the second block have an increased incentive to decrease consumption to lower their overall energy costs.” (Emphasis added)

9.1 Given that a RIB rate allows the utility to introduce price signals that reflect the increased marginal cost of electricity as per the statement above, please explain why FortisBC has used no information regarding its marginal cost of electricity to establish the Block 2 rate when designing its RIB rate.

9.2 Does FortisBC agree with the following statement: “The Block 2 rate should be more reflective of, while not exceeding, the full cost of new electricity supply.”? If not, please explain why not.

9.3 Please clearly explain how the marginal cost of electricity is defined and assessed at FortisBC. If formulas are involved, please provide them along with a detailed explanation.

9.4 What is the estimated annual rate of increase for FortisBC’s marginal cost of electricity for the period 2012 to 2015?

9.5 When FortisBC states “Low consumption customers are incentivized to avoid increasing consumption into the second block”, does FortisBC mean that RIB price signals still work efficiently even though up to 40% of customers may not face the higher-priced energy?

9.6 For example, FortisBC’s preferred option 8 results in 27.2% of customers never facing the Block 2 rate of 11.272 cents per kWh. Option 8 also sets the Block 2 rate at 7.828 cents per kWh, a 14% decrease over the current flat rates of 9.090 cents per kWh. Also, with FortisBC’s proposed pricing principle, it is only in 2014 that the Block 2 rate would exceed the current flat rate (see Table 8-3: Impact of Rate Increases on RIB Rate Options, p. 26).

9.6.1 Does FortisBC agree that the above scenario could effectively send the wrong price signals (i.e., an absolute price decrease) to over one quarter of its customers during the first three years of the RIB rate? If not, please explain why not.

FortisBC states on p. 23: “In determining the RIB rate to select from the available options, the Company compared the results against the general rate setting guidelines (as outlined in section 3.1) and more specifically, the RIB rate objectives noted in section 3.2. There are: [...] 2. The rate must be structured with efficient price signals. In practice, the differential between the Block 2 and Block 2 rates must be sufficient to provide a meaningful signal to incent conservation behavior.” (Emphasis added)

9.7 Please explain why, from Section 3.2 to Section 8, FortisBC stopped considering the notion that “efficient price signals” are “price signals that reflect the increased marginal cost of electricity” in favour of using only the notion that “the differential between the Block 2 and Block 2 rates must be sufficient to provide a meaningful signal to incent conservation behavior”.

9.8 In FortisBC’s view, what percentage difference level would be considered sufficient between the Block 2 rate and the Block 2 rate? Please provide justification.
9.9 Does FortisBC agree that another objective of efficient price signals is to minimize the magnitude and duration of rate decreases when implementing the RIB rate? If not, please explain why not.

9.10 Does FortisBC agree with the statement that “as many customers as possible should see the Block 2 rate?” If not, please explain why not.

10.0 Exhibit B-1, Section 5.1 The Revenue Requirement Constraint, p. 15

FortisBC states: “Except for those options that include exempting the customer charge from future rate increases (except for rebalancing adjustments) as part of the structure, FortisBC proposes to apply future general revenue requirement rate increases (excluding rebalancing) as follows: Customer charge: exempt from revenue requirement rate increases (but subject to rebalancing adjustments)”.

10.1 In the above statement, FortisBC proposes to exempt the customer charge from revenue requirement rate increases in all options. Please reconcile this statement with the pricing principles of scenarios E-G and F-H presented on pp. 25-26.

FortisBC proposes to apply future revenue requirement rate increases (excluding rebalancing) such that Customer Charge will be exempt from revenue requirement rate increases but subject to any rebalancing adjustments. Block 2 will be adjusted by an amount equal to the sum of the general revenue requirement increase and any rebalancing adjustments. Block 2 will be adjusted by an amount sufficient to recover the balance of the general revenue requirement and any rebalancing adjustments.

10.2 Please confirm that the increase in Block 2 rate will always be greater than the increase in Block 2 rate given the proposed methodology.

11.0 Reference: Exhibit B-1, Section 5.2 Options for Inclining Block Rates, p. 15

11.1 Commission Order G-72-11 approved an across-the-board rate increase of 8.0% for BC Hydro, effective May 1, 2001. Please describe the implications of these rate increases on FortisBC’s various proposals, as well as on the preferred option 8.

12.0 Reference: Exhibit B-1, Section 5.2.1 Customer Charge, pp. 15-16

FortisBC states: “[..] a customer charge based on cost causation principles was found to be $28.74 per month. At the current level of $28.22 per two month billing period, the customer charge presently collects just under 44 per cent of the amount required by strict adherence to cost causation principles.”

12.1 Please provide the formula used by FortisBC to arrive at the 44 percent figure.

FortisBC indicates that it has three options modelled as part of the application but only discussed the following two: 1) Reduction through an exemption from future rate increases; and 2) customer charge reduced to $21.50 per billing period.

12.2 What is the third option modelled by FortisBC for the customer charge? Please provide the modelling results of this third option.

FortisBC states: “As the Commission has determined that the RIB application will include a reduction in the customer charge, the level at which the charge is set becomes somewhat arbitrary.”

FortisBC also states: “It should be noted that lowering the customer charge has a bill impact very similar to that of a RIB rate – lower consumption customers pay less, and higher consumption customers pay
more.”

12.3 Please explain why FortisBC believes that the level at which the customer charge is set becomes arbitrary, especially in light of the impact that lowering the customer charge is likely to have on the other two pricing elements of the RIB rate.

12.4 Is it true that by lowering the customer charge, there is more flexibility to increase the Block 2 and Block 2 rates, and all other things being equal and on a revenue neutral basis, there is potential to increase energy savings from customers? Please illustrate your answer.

12.4.1 If the above is not true or true only under certain conditions, please explain your answer.

12.5 Please explain how the $21.50 level for the customer charge was selected.

12.6 Given the impact of a lower customer charge on the other pricing elements of the RIB rate, did FortisBC model other customer charge levels and perform sensitivity analyses of the Block 2 and 2 rates to changes in the customer charge level? If so, please provide them. If not, please explain why not.

12.7 Please replicate Table 7-2 by analyzing a customer charge set at $15.00 per billing period. This modelling should yield 9 additional options (three threshold levels and three customer impact criteria).

FortisBC states: “As can be seen in Table 8-2, a reduction in the initial level of the customer charge drives significant increases in the level of the Block 2 and Block 2 rates.”

12.8 Please clarify which Table presented such information, since Table 8-2 on p. 25 presents the Forecast Residential Rate Increase for the years 2012 to 2015.

12.8.1 When comparing options 1 through 9 to options 10 through 18 (by pair), Table 7-2 (p. 22) shows that reducing the customer charge to $21.50 from $28.93 systematically results in a lower Block 2 rate. Please reconcile this with the statement that a reduction in the initial level of the customer charge drives significant increases in the Block 2 rate.

12.8.2 In Table 8-3 (p. 26), it is impossible to compare options 2 and 8 (customer charge of $28.93) with options 11 and 17 (customer charge of $21.50) to assess the impact of an initially lower customer charge on the evolution of the Block 2 and Block 2 rates because FortisBC applied different pricing principles when modelling these options. Please explain why FortisBC did not apply all four pricing principles to the four screened options. Also please discuss how one can compare the results presented in Table 8-3 across the four options given the above.

13.0 Reference: Exhibit B-1, Section 5.2.2 Threshold Level, p. 17

Based on the information from customer billing data from 2009 and 2010, FortisBC is using threshold values of 2,100 kWh, 1,600 kWh and 1,350 kWh to investigate the RIB rates.

13.1 Since a billing period under the residential rate schedule is two months, there would be six billing periods in a year. Please describe how the mean and median consumption values are calculated. Are they based on all the billing periods within a year or based on all customers in a billing period?
13.2 Please explain why FortisBC has chosen to model a threshold option set at “85% of the median level”.

13.3 Considering that FortisBC purchases the majority of its energy under BC Hydro’s RS 3808, please demonstrate that the proposed threshold values allow equal access to Heritage energy for both FortisBC and BC Hydro ratepayers? Please also provide a detailed explanation for why these threshold values could be considered to be in the public interest.

13.4 What is the proportion of FortisBC’s residential customers who use: (i) electric heating; (ii) electric cooling; and (iii) both? Please describe:

13.4.1 the mean consumption of ‘accounts who do not use electrical heating’ as compared to 2,100 kWh.

13.4.2 the mean consumption of ‘accounts who use electrical heating’ as compared to 2,100 kWh.

13.4.3 the mean consumption of ‘accounts who use electrical cooling system’ as compared to 2,100 kWh.

13.4.4 the mean consumption of ‘accounts who do not use electrical cooling system’ as compared to 2,100 kWh.

13.5 Does FortisBC agree that a single threshold value in RIB rate design does not capture energy savings where there are seasonal fluctuations in consumption? If not, please explain why not.

13.6 Please provide billing period comparisons (mean and median consumption) for the years 2006 and 2010 by completing the following Table and specifying the months for each billing period:

<table>
<thead>
<tr>
<th>Billing Period</th>
<th>Mean Consumption</th>
<th>Median Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2006</td>
<td>2010</td>
</tr>
<tr>
<td></td>
<td>2006</td>
<td>2010</td>
</tr>
<tr>
<td>Billing Period 1</td>
<td></td>
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<tr>
<td>Billing Period 2</td>
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<td></td>
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<tr>
<td>Billing Period 3</td>
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<tr>
<td>Billing Period 4</td>
<td></td>
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<tr>
<td>Billing Period 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Billing Period 6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13.7 For the two years 2006 and 2010, please provide the frequency distributions of the number of customers with increments of 20% (plus and minus) from the median consumption (larger increments may be used for the upper bound). Please provide the information in tabular and chart format. Please use the Table below:

<table>
<thead>
<tr>
<th>Block Usages</th>
<th>Number of Customers [2006]</th>
<th>Number of Customers [2010]</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 320 kWh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>320 – 640 kWh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>kWh Range</td>
<td>640 – 960 kWh</td>
<td>960 – 1280 kWh</td>
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<tr>
<td>-------------------</td>
<td>--------------</td>
<td>---------------</td>
</tr>
<tr>
<td></td>
<td>1,600 – 1,920 kWh</td>
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<td></td>
<td>1,920 – 2,240 kWh</td>
<td></td>
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<td>...</td>
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</tr>
<tr>
<td></td>
<td>3,520 – 3,840 kWh</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Higher than 20% increments</td>
<td></td>
</tr>
<tr>
<td></td>
<td>...</td>
<td></td>
</tr>
</tbody>
</table>

14.0 **Reference:** Exhibit B-1, Section 5.2.3 Block Rates, p. 17-18

FortisBC states: “The customer impact criterion is expressed in terms of the percentage of residential customers who will experience an annual rate impact due solely to the implementation of the RIB option of less than 10 per cent. The 10 per cent figure is generally accepted to represent the threshold of “rate shock”, though it is not an official position of the Commission. [...] FortisBC has specified three levels of permissible customer impact. These are:

1. 90% of customers will see a RIB related increase of less than or equal to 10%;
2. 95% of customers will see a RIB related increase of less than or equal to 10%; and
3. 100% of customers will see a RIB related increase of less than or equal to 10%.”

BC Hydro, in its 2010 RIB Rate Re-Pricing Application, discusses the bill impact threshold that it has used for rate design purposes for a number of years. That is, BC Hydro has used a bill impact of the class average rate change (CARC) plus 10% (CARC + 10%) on the single most adversely impacted customer as a limiting factor in its rate design models.

14.1 Please confirm whether the above three customer impact criteria are respectively equivalent to:

1. 10% of customers will see an annual rate impact higher than CARC + 10%;
2. 5% of customers will see an annual rate impact higher than CARC + 10%; and
3. The single most adversely impacted customer will see an annual rate impact equal to CARC + 10%.

If the statements are not equivalent, please explain why not.

14.2 Please explain why two levels of customer impact are designed so that 5% or 10% of customers will face an annual rate impact greater than the generally accepted rate shock threshold of 10%.

15.0 **Reference:** Exhibit B-1, Section 5 Options

In creating RIB rate options for analysis, FortisBC used two levels of Customer Charges, three threshold levels, and three customer impact criteria, creating 18 combinations of Block 2 and Block 2 rates for evaluation.
15.1 Holding constant two factors: (A) 90% see <10% criterion and (B) two levels of Customer Charges; please replicate Table 7-2 by analyzing a threshold of 1,500 kWh per billing period.

16.0 Reference: Exhibit B-1, Section 6 Methodology, p. 18-19

FortisBC states: “For each option, the sales forecast of 1.26 million kWh was broken down between Block 2 and Block 2 using historic billing data.”

16.1 In the FortisBC’s 2011 Revenue Requirement Negotiated Settlement Agreement (Order G-184-10), FortisBC agreed to revise its residential load forecast to 1,261 GWh from 1,259 GWh. At the level of precision used by FortisBC to calculate the Block 2 and 2 rates (i.e., at the 5th decimal), how different would the calculations for the Block 2 and 2 rates be if FortisBC used the Commission-approved 1,261 GWh instead?

16.2 Please clarify how FortisBC calculated the Block 2 and 2 rates from the information presented in the Methodology section, in particular Table 6-1: Block Consumption by Threshold. Please provide all the mathematical formulas used in this optimization problem, clearly identify all the variables used and indicate the values used for each of the known variables. Please also provide your working spreadsheet containing your modelling.

FortisBC states: “The first analysis ... This provides information on the bill impact at different usage levels.”

16.3 Please provide the results from this first analysis, using the Table provided below and also provide a chart of the numbers of customers under each discrete usage blocks. Please also clarify whether the “bill impact at different usage levels” is bi-monthly or annual. For ease of use and presentation, please provide this information in a working spreadsheet.

<table>
<thead>
<tr>
<th>Usage Blocks</th>
<th>Number of customers</th>
<th>Number of bills</th>
<th>Average consumption</th>
<th>Bill amounts under current flat rate</th>
<th>Bill amounts under RIB Option 1</th>
<th>% Bill increase from current flat rate to RIB Option 1</th>
<th>...</th>
<th>Bill amounts under RIB Option 18</th>
<th>% Bill increase from current flat rate to RIB Option 18</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 500 kWh</td>
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<td></td>
<td></td>
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<tr>
<td>500 – 1,000 kWh</td>
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<tr>
<td>Please add all other usage blocks used by FortisBC in the analysis</td>
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</tbody>
</table>

Usage

Bill

Amounts

Under RIB

Option

1

% Bill increase

from current flat rate to RIB Option 1

...
16.4 What is the frequency distribution of low-income customers in the Table above?

16.5 What is the frequency distribution of low-income customers by dwelling type? by heating source?

FortisBC states: “In order to determine the annual impact on different customer segments, a representative sample of customers was used. [...] The survey data was collected from 871 customers in the FortisBC service area and reflects a representative sample of FortisBC customers. The customers from the survey were matched up with actual billing data to provide the kWh per billing period for the entire year. This allowed for the calculation of bills under current rates and RIB rates for all six billing periods for each of the customers in the sample.

To ensure that the sample data represented the customers proportionally, an additional sampling of large usage residential customers was added and the sample was increased to 906 customers. Demographic data was not available for these additional customers.” (Emphasis added)

16.6 Please explain how FortisBC segmented its customers in different group in this second analysis. How different is this segmentation from the first analysis?

16.7 Which sampling selection criteria were used in the Residential End-Use Survey (REUS) to ensure the 871 customers “reflected a representative sample of customers”? Please also provide the specific references (i.e., page numbers) to the supporting documentation.

16.8 FortisBC noted that the REUS sample is a representative sample of FortisBC customers. In that case, please clarify the rationale to add an additional 35 large-usage customers to the sample.

16.8.1 How does FortisBC define “large-usage customers”? Please provide the bi-monthly and annual thresholds (kWh) above which a customer is classified as “large-usage”.

16.9 Please clarify the statement “The original sample of 871 customers provides a statistically significant sample of all customers. This sample size reflects a 95 per cent level of confidence with a 6.6 per cent margin of error.”

16.9.1 Can you clarify in relation to which specific variables the sample of 871 customers is statistically significant (e.g., consumption level or any other features and patterns)?

16.9.2 How has the addition of 35 customers to the original sample improved FortisBC’s confidence level (from 95 per cent) or reduce the margin of error (from 6.6 per cent)?

16.9.3 Please fill in the following Table:

<table>
<thead>
<tr>
<th>Usage Blocks</th>
<th>Percentage of customers in each block from the sample of 871 customers</th>
<th>Percentage of customers in each block from the sample of 906 customers</th>
<th>Percentage of customers in each block for the total population of residential customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 500 kWh</td>
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<tr>
<td>500 – 1,000 kWh</td>
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</table>
Please add all other usage blocks used by FortisBC in the analysis

FortisBC states: “The summary of this analysis shows the average per cent increase in the annual bill for each discrete usage block. The total percent of customers that fall into that usage block are also presented.”

16.10 Please provide the summary of the analysis referenced above.

16.11 Please complete the following Table and provide a chart of the numbers of customers under each discrete usage blocks. For ease of use and presentation, please provide this information in a working spreadsheet.

<table>
<thead>
<tr>
<th>Usage Blocks</th>
<th>Number of customers</th>
<th>Number of bills</th>
<th>Average consumption</th>
<th>Bill amounts under current flat rate</th>
<th>Bill amounts under RIB Option 1</th>
<th>% Bill increase from current flat rate to RIB Option 1</th>
<th>Bill amounts under RIB Option 18</th>
<th>% Bill increase from current flat rate to RIB Option 18</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 500 kWh</td>
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<td>500 – 1,000 kWh</td>
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<td>Please add all other usage blocks used by FortisBC in the analysis</td>
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17.0 Reference: Exhibit B-1, Section 7 Evaluating the Options, p. 20

FortisBC states: “As noted above, in order to evaluate the impact of a rate option on customer bills, the Company used a representative random sample of its direct residential customers.”

17.1 Please clarify which representative sample of customers FortisBC used to evaluate the impact of a rate option on customer bills – the sample of 871 customers or 906 customers. Were the “large-usage customers” taken into account when FortisBC evaluated the options?
FortisBC states on p. 20 that “For each of the 18 options, the evaluation factors listed in Table 7-1 below have been determined. [...] The information is useful to compare outcomes against the criteria listed in section 2". (Emphasis added)

FortisBC states on p. 10 that “In addition to the Bonbright criteria, FortisBC evaluates the RIB options using the following metrics”. These metrics are Customer Bill Impact, Efficient Price Signals and Promotion of Conservation.

17.2 Please confirm that the criteria are those listed in section 3.2 and not section 2.

17.3 Please explain the relationship between the Evaluation Criteria in Table 7-1 and the criteria listed in section 3.2.

17.3.1 If the first five evaluation factors are sub-criteria of the metric “Customer Bill Impact”, please explain, for each of these sub-criterion, what is deemed a bill impact that is “not unreasonable” as indicated on p. 10.

17.3.2 In Table 7-1, which evaluation factor is related to the metric “Efficient Price Signals”? Please explain.

In Table 7-1, FortisBC states: “The conservation impact of a RIB rate option is the estimated reduction in both consumption and demand that is attributable to the implementation of the given RIB rate option.” (Emphasis added)

17.4 Please confirm that Sections 7.1 and 7.2, as well as the last column of Table 7-2 entitled “Conservation Impact”, relate to the estimated reduction in consumption (measured in kWh).

17.5 Please also provide the estimated reduction in demand (or capacity) measured in kW with the supporting analysis.

17.6 How will this estimated reduction in demand impact FortisBC’s need for power purchase? Please discuss.

18.0 Reference: Exhibit B-1, Section 7.2 Elasticity Options, p. 21

Conservation Impacts

FortisBC states: “The Company is of the opinion that arriving at a precise level of conservation owing to the RIB rate will not be determinative in the decision to either implement such a rate, or have a significant bearing on the rate option chosen.”

18.1 Please provide the basis for arriving at the opinion above, in particular the latter part of the sentence “or have a significant bearing on the rate option chosen”.

18.2 Do you agree that a RIB rate is a form of conservation rate that can play a key role in FortisBC's strategy seeking to “effectively double the current DSM resource acquisition rate in order to meet the Provincial Government’s objective” (p. 4)? If you disagree, please explain why.

18.3 Please provide FortisBC’s annual target levels for residential DSM for each year from 2011 to 2015 and discuss how a RIB rate could help achieve those target levels.

FortisBC states: “The Company further contends that it is reasonable to assume that different elasticity values apply to consumption above and below the threshold level of consumption. This difference in elasticity results from the assumption that customers are more inclined to respond to a price that is
above the current flat rate.”

18.4 Since there is no direct link between the threshold level and the current flat rate, please clarify the second sentence.

18.4.1 Does FortisBC agree that the second sentence should instead read “This difference in elasticity results from the assumption that higher usage customers are more inclined to respond to a price increase than lower usage customers.”

FortisBC states: “In Table 7-2, the conservation impacts of three elasticity scenarios are shown in the last three columns. The numbers reflect the percentage decrease in total residential consumption assuming elasticity values as shown above and below the consumption threshold.”

18.5 Please explain why FortisBC does not have a better appreciation of its price elasticity of demand for electricity and must use three elasticity scenarios.

18.6 How were the price elasticity values above and below the threshold level for each of the three scenarios chosen? Has FortisBC carried out any research or reviewed the research results based on experience among utilities that have implemented RIB rates? If so, please provide the research results. If not, please explain why not.

18.7 Given the significant difference between the price elasticities used in each scenario, which in turn results in a threefold increase in conservation estimates from scenarios 1 to 3, please assign a probability to each scenario and explain your answer.

18.8 In the first scenario (p. 22), did FortisBC mean .05/.10 instead of .05/.010? If not, please explain why the price elasticity above the threshold is inferior to that below the threshold.

19.0 Reference: Exhibit B-1, Table 7-2: Residential Inclining Block Rate Option Comparison, p. 22

19.1 Under the column “Annual Breakeven kWh”, the annual breakeven level is identical within the following groups of options: 1 to 3, 4 to 6 and 10 to 12. However, the breakeven point differs within the following group of options: 7 to 9, 13 to 15 and 16 to 18. Please ensure the results are correct. If they are, please explain them. If they are not, please correct them and explain them.

19.2 Please provide the conservation impact of the last three columns in kWh, in addition to percentage. How do these estimates compare with FortisBC’s DSM objective for its residential class of customers for the year 2011?

19.3 Under the column “Conservation Impact”, when options 1, 7 and 4 are compared (or alternatively options 2, 8 and 5 or options 3, 9 and 6), please clearly explain the counter-intuitive result that conservation is the highest when the threshold is set at 2,100 kWh (rather than 1,350 kWh), when the highest percentage of customers (78.7%) are better off under the 2,100 threshold (rather than under the 1,350 threshold), when the lowest percentage of customers have consumption in the second block at least once (60.7% versus 79.2%) and when the lowest percentage of load is billed in Block 2 (26.4% versus 43.3%).

20.0 Reference: Exhibit B-1, Section 8 Analysis and Recommendation, pp. 23-24

Screening Criteria

FortisBC states: “An initial screening of the options was undertaken in order to reduce the number requiring further analysis. The screening was based on the difference between the block rates and the
**total residential load that would be billed in the second block.** Table 8-1 below shows the results of the initial screening.” (Emphasis added)

20.1 Please explain why FortisBC only used these two screening criteria (as shown in Table 8-1) while it stated that “the Company compared the results against [...]more specifically, the RIB rate objectives noted in Section 3.2.” Commission Staff notes that three, rather than two, metrics are presented in Section 3.2 to evaluate options.

20.2 Please justify the choice of using these two specific screening criteria. How are they superior to other screening criteria?

20.3 Please explain why FortisBC did not use a “Customer Bill Impact” criterion, as measured by variables such as “Maximum Bill Impact” and “Percentage of Customers with Bill Increases > 20%”, to perform the screening analysis shown in Table 8-1.

21.0 Reference: Exhibit B-1, Section 8 Analysis and Recommendation, pp. 23-27

**Pricing Principles**

FortisBC states: “The four options that remain after the initial screening were subjected to an additional suitability test. While the initial rate levels are informative on their own, each of the three factors listed at the beginning of section 8 must also be applied when anticipated rate increases over the coming years are considered.” (Emphasis added)

The beginning of section 8 (p. 23) lists the following three factors:

“1. Customer Bill Impacts – Customer bill impacts, while unavoidable, should not be unreasonable;

2. The rate must be structured with efficient price signals. In practice, the differential between the Block 2 and Block 2 rate must be sufficient to provide a meaningful signal to incent conservation behavior; and

3. Promotion of Conservation – Working in concert with the objective above, each pricing option will be evaluated on the estimated impact to the aggregate load of the residential customer class.” (Emphasis added)

21.1 While Table 8-3 includes information on the differential between the Block 2 and the Block 2 rates, there is no analysis provided on either customer bill impacts or conservation impacts over the period 2011-2015 regarding scenarios A to H. Please provide the analysis performed by FortisBC as stated above.

21.2 Please complete the following Table for scenarios A to H:

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<td>Maximum bill impact</td>
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<td>-10.0%</td>
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</table>

(Notes: Commission Staff expects completed Tables that will be similar to Tables 1 and 2 in Exhibit B-1 of the BC Hydro RIB Rate Re-Pricing Application submitted to the Commission on December 21, 2010. FortisBC can use bill impact ranges that differ from the Table above to suit their specific modelling, as long as the ranges are relatively small.)

21.3 For each of the scenarios A to H, please provide a graph covering the 2011-2015 period that would include for each year: 1) natural conservation (i.e., conservation induced by the general rate increases applied to the class absent any rate structure change); 2) RIB Rate conservation (i.e., incremental conservation induced by changing elements of the rate structure from one year to the next); and 3) total conservation. Please use the price elasticity scenario of 0.05/0.10 to estimate energy savings.

21.4 Table 8-2 shows the forecast residential rate increases for 2012 to 2015. Please use these anticipated residential rate increases (i.e., class average rate change or “CARC”) to model a scenario where the single most adversely impacted customer would face a bill impact of CARC + 10%. Please respond to questions 21.2 and 21.3 for this scenario.

21.5 Given FortisBC’s statement on p. 10 that “the RIB rate allows the utility to introduce price signals that reflect the increased marginal cost of electricity”, please discuss why the issue of capping the Block 2 rate at the level of the marginal cost of electricity was not explored when modelling the four pricing principles.

FortisBC states for scenarios E and G that “the general and rebalancing increases were applied equally across the basic charge and Block 2 rate components with the Block 2 rate increased by an amount sufficient to recover the remaining required revenue”.

21.6 Please confirm that in scenarios E and G, the Block 2 rate is also augmented by the general and rebalancing increases due to the revenue requirement constraint.

22.0 Reference: Exhibit B-1, Table 8-3: Impact of Rate Increases on RIB Rate Options, p. 26

22.1 For each of the scenarios A to H, as well as the CARC + 10% scenario, please provide a graph covering the 2011-2015 period that would include: 1) the Block 2 rate; 2) the Block 2 rate; 3) the current flat rate (increased by the forecast residential rate increase for 2012-2015); and 4) the marginal cost of electricity (current and estimated for 2012-2015). Please ensure the numerical value for all data points appear on the graph or provide them in tabular form.

22.2 For the two pricing principles that freeze the Block 2 rate, Table 8-3 shows that the Block 2 rate is frozen at levels lower than the current flat rate for the entire period (scenarios B, D, F and H). Considering that between 21% and 28% of residential customers never see the Block 2 rate, at least in 2011 (see Table 7-2), please explain why FortisBC chose to model pricing principles that would send the wrong price signals (i.e., an absolute price decrease) to about one quarter of its
customers over the next 5 years.

23.0 Reference: Exhibit B-1, Section 8, p. 26
Options A and C

FortisBC considers Option A and C in Table 8-3 as the best options and selected Option C (Option 8) as its preferred option.

23.1 For the period 2012 to 2015, please provide the following for each of the two options:

(a) the number of customers who will be taking service under the proposed mandatory RIB rate;

(b) the number of customers who will (i) never in the bi-monthly billing periods go over the threshold; (ii) be billed under the Block 2 rate at least once, twice, three times, four times and five times; (iii) always in the bi-monthly billing periods be billed under the Block 2 rate.

(c) the bill impact for each group of customers described in question (b) above

(d) the estimated savings

23.2 In FortisBC’s view, how many of its current DSM programs will be impacted by the implementation of the RIB rate? What are the indirect benefits in terms of additional savings?

24.0 Reference: Exhibit B-1, Section 9 Demographic Impact of Alternatives, p.28; and Table 9-1: Impact of Options by Income Level and Heating Fuel Choice, p. 29

FortisBC states: “As part of the data analysis required to evaluate the various RIB rate options, FortisBC was able to integrate information gathered as part of the 2009 REUS. The use and inclusion of this data was described in section 6.

Table 9-1 compares the impact of different rate options on two key demographic customer traits – income level and heating fuel choice.”

24.1 Given that FortisBC notes on p. 19 that “demographic data was not available for these additional [35 large usage] customers”, please confirm that Table 9-1 only covers the 871 customers surveyed for the 2009 REUS and for which income data and heating fuel choice was collected.

24.2 If indeed Table 9-1 does not include the additional 35 large usage customers for which “demographic data was not available”, how did FortisBC assess the impact of the 18 Options on those large usage customers, by income level and by heating fuel choice. Where has this analysis been presented?

24.3 From Table 9-1, it is not possible to know what percentage of residential customers fall into each category. Please provide the shares of residential customer in the “electric heat” and “other heat” categories, as well as the shares of residential customers in each of the income category.

FortisBC states: “For example, although the sample data shows that 41 per cent of electric heat customers will see an annual bill increase, on average, those increases are 4.5 per cent or less under any of the options considered.”

24.4 To which option does the statement above apply? Please provide the data that supports the statement that “on average, those increases are 4.5% or less under any of the options
considered”.

FortisBC states: “Similarly, while 14 per cent and 23 percent of customers in the <$20,000 and $20,000-$40,000 income categories respectively will experience an annual bill increase, the average customer in these categories will see bills decrease between 0.8 per cent and 6.7 per cent under any of the options.”

24.5 What are, on average, the bill increases that will be faced respectively by the 14% and 23% of customers in the <$20,000 and $20,000-$40,000 income categories? Please provide the supporting data.

24.6 Please provide the supporting data to the statement that “the average customer in these categories will see bills decrease between 0.8 and 6.7% under any of the options”.