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June 7, 2011

Via Email
Original via mail

Ms. Alanna Gillis
Acting Commission Secretary
BC Utilities Commission
Sixth Floor, 900 Howe Street, Box 250
Vancouver, BC V6Z 2N3

Dear Ms. Hamilton:

**Re: FortisBC Inc. (FortisBC) Residential Inclining Block (RIB)
Responses to British Columbia Utilities Commission (BCUC) Information
Requests**

Please find attached FortisBC's responses to Information Requests received from the BCUC.

If further information is required, please contact the undersigned at (250) 717- 0890.

Sincerely,

A handwritten signature in black ink, appearing to be "DS", with a horizontal line underneath.

Dennis Swanson
Director, Regulatory Affairs

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 1

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 1/Block 2 ratios in the application? and

Response:

Under the FortisBC RIB proposal, the determination of the block 1 and block 2 rates is formulaic. Approval of a customer charge, threshold consumption level and customer bill impact will yield only one set of rates. The rates can be filed within one month of a decision and implemented for June 1, 2012, reflecting any increase that may occur in the intervening period.

(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?

Response:

The Company believes that at least one full year of data will need to be collected prior to it being able to report on customer bill impacts. If the Commission orders a progress report on the RIB outcomes, it should include data to the end of 2013 and be filed during the first quarter of 2014. It should be noted, that the Company may be able to provide an estimate of conservation savings and avoided costs based on applying an estimate of demand elasticity, however it would be impossible to report actual conservation savings due to the fact that FortisBC cannot measure how much incremental energy customers might have used if a RIB rate had not been in place.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 2

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

RIB Rate and DSM

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?

Response:

FortisBC does not currently intend that the RIB rate become part of the PowerSense program, although the reduced residential load may allow residential PowerSense expenditures to be reduced.

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

Response:

Costs associated with the implementation of the RIB are being collected in a deferral account as approved by Commission Order G-24-11.

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.

Response:

Please see the response to BCUC IR1 Q2.1.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 3

1 2.3 According to FortisBC, its PowerSense DSM programs have yielded impressive
2 energy savings of 300 GWh since its creation in 1989. If the proposed RIB rate
3 structure is accepted for implementation, where will the potential conservation
4 attributable to this initiative come from?

5 **Response:**

6 Please see the response to BCUC IR1 Q2.1.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 4

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

Relative Levels of Rate Charges

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.

Response:

The belief that relative rate levels charged for electricity can affect consumption stems from the economic principle of the price elasticity of demand, and not from any specific research.

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

Response:

FortisBC agrees that a "real rate increase" is any rate increase that exceeds the general rate of inflation or CPI.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 5

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.

Response:

As shown in Table BCUC IR1 Q3.3 below, the block 2 rates in each of the options contained in Table 7-2 (Exhibit B-1, p. 22), are greater than the current flat energy rate by an amount greater than CPI.

Table BCUC IR1 Q3.3
Comparison of Flat Energy Rate and Block 2 Rate

Option	Block 2 Rate	Residential flat energy rate as at May 1, 2011	Difference between current flat rate and proposed Block 2 Rate	March 2011 Total CPI*
1	0.12208	0.09090	34.31%	3.30%
2	0.11138	0.09090	22.53%	3.30%
3	0.10039	0.09090	10.43%	3.30%
4	0.13641	0.09090	50.07%	3.30%
5	0.11618	0.09090	27.81%	3.30%
6	0.10055	0.09090	10.61%	3.30%
7	0.12584	0.09090	38.43%	3.30%
8	0.11272	0.09090	24.01%	3.30%
9	0.10012	0.09090	10.14%	3.30%
10	0.12121	0.09090	33.34%	3.30%
11	0.11066	0.09090	21.74%	3.30%
12	0.10001	0.09090	10.02%	3.30%
13	0.13341	0.09090	46.77%	3.30%
14	0.11488	0.09090	26.38%	3.30%
15	0.10050	0.09090	10.56%	3.30%
16	0.12421	0.09090	36.64%	3.30%
17	0.11152	0.09090	22.69%	3.30%
18	0.10016	0.09090	10.19%	3.30%

* Total CPI percentage change over 1 year as reported by Bank of Canada for March 2011

Regardless of whether the block 2 rates can be defined as a real rate increase as defined in the question, it is expected that there will be some conservation effects resulting from block 2 since

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 6

1 it is higher than both the block 1 rate and the current flat rate. Conservation behaviour is not
2 motivated only by real rate increases, but by other factors such as the relative price of substitute
3 fuels such as natural gas.

4 3.4 Regarding the Block 1 rate, please confirm that, for all options except options 15
5 and 18, the Block 1 rate decreases from the current flat rate and that between
6 20.8% and 39.3% of customers will face absolute rate decreases as 100% of
7 their consumption will be charged under the Block 1 rate (see Exhibit B-1, Table
8 7-2, p. 22).

9 **Response:**

10 Confirmed. With the exception of Rate Options 15 and 18, each of the RIB rates in Table 7-2
11 features a block 1 rate lower than the equivalent flat rate.

12 Under the assumption that consumption levels do not change, any customer who has no
13 consumption in the second block will have lower bills under the RIB rate (with the exception of
14 Options 15 and 18). Under the scenarios presented in Table 7-2, this will be between 20.8 per
15 cent and 39.3 per cent depending on the Option.

16 3.5 While it is inevitable that, in fulfilling the revenue neutral requirement, the lower
17 block rate in a RIB rate structure will fall below the current flat rate, please
18 comment on whether a rate design that only sends decreasing price signals to up
19 to 40% of customers can be considered a form of "rate DSM", motivating all
20 customers to conserve energy.

21 **Response:**

22 FortisBC agrees that it is difficult to characterize a rate design that sends lower price signals to
23 some customers as "rate DSM". The argument that a RIB rate is a form DSM for customers with
24 consumption entirely within block 1 appears to be that they are motivated to keep consumption
25 low and avoid block 2.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 7

1 3.6 In the second statement in the preamble above, please provide a detailed
2 explanation as to whether FortisBC is referring to 'natural conservation' as a
3 result of real price increase or 'DSM conservation' as a result of rates designed
4 with the view to conserve electricity.

5 **Response:**

6 FortisBC believes natural or price-induced reductions in consumption will result from real price
7 increase as well as decreases in the price of goods that are substitutes, and increases in the
8 price of goods that are complements. It would be reasonable to define "rate DSM" to be the
9 reduction in consumption from the introduction of rates consciously designed to decrease
10 consumption.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 8

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.

Response:

Provincial consistency in this context refers to implementing a rate similar, though not necessarily identical, to that of BC Hydro. Specifically, the rate was designed to have a single threshold and two rate blocks.

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?

Response:

The statement regarding potential variants as they relate to implementation issues was meant to reference the structures of the various forms of possible RIB rates and not the size nor price of the blocks. It was meant to include items such as multiple block thresholds, heating vs. non-heating rates and other more complex inclining block structures. Implementation becomes increasingly complex as the number of variations within a rate increases. Selecting a rate with multiple thresholds, additional blocks or any other form of customer segmentation would be relatively more complex than the options examined. Implementation issues relate primarily to the individual utility's billing system and, in this regard, BC Hydro's experience would be of little benefit.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 9

1 4.3 Would the RIB rate better prepare FortisBC for eventual Time of Use (TOU) and
2 Critical Peak Pricing (CPP) rate design?

3 **Response:**

4 FortisBC does not believe that the implementation of a RIB rate eases the introduction of time-
5 based rates. The Company further believes that the interim nature of the RIB rate, being
6 effective between the current flat rate and the implementation of any time-based rates will
7 create difficulties for the transition. As stated by the Company during the 2009 Cost of Service
8 Analysis and Rate Design Application ("2009 COSA and RDA") process, FortisBC is concerned
9 that customer confusion may result from the implementation of the two rate types in fairly quick
10 succession.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 10

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 1 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

Response:

Confirmed, FortisBC is seeking approval for the RIB rate option as proposed in the Application (as described in BCUC IR1 Q5.1, item a above) which includes the treatment of future rate increases (as described in BCUC IR1 Q5.1, item b below). The Company considered both elements to be part of the same proposal and did not contemplate separating them. They can, however, be implemented separately.

- 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 1 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 1 rate and the Block 2 rate.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 11

1 **Response:**

2 Confirmed, with the understanding that a general revenue requirement increase would include
3 any general rate increase that affects all classes including any flow-through of an increase in BC
4 Hydro power purchase costs.

5 5.2 Please comment if the above RIB rate design has considered the impact on other
6 rate classes, e.g., whether the other rate classes will be held harmless in the
7 event of lower consumption in the residential class.

8 **Response:**

9 The RIB rate design has not incorporated any elasticity impacts in the 2011 proposed RIB rate.
10 This is placing additional risk on all FortisBC customers since any revenue shortfall resulting
11 from the RIB rate will be recovered from all customers in the following year. As FortisBC files a
12 load forecast and revenue requirement each year, changes seen in response to the RIB rate will
13 be incorporated in the following year's forecast and will impact the required rate increase for all
14 classes.

15 In addition, the Company believes that as it implements conservation rates and customer
16 behaviour changes in response to those rates, it could result in an over- or under-collection of
17 the Company's revenue requirement. Therefore the Company anticipates proposing (in its
18 upcoming Revenue Requirements Application) a deferral and flow-through mechanism for
19 revenue variances to eliminate the effect of any such over- or under-collection.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 12

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.

Response:

Over 99 per cent of residential customers will be covered by the proposed default RIB rate. Rate Schedule 2A TOU customers are not covered under the proposed RIB rate since TOU rates also encourage conservation.

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).

Response:

Please refer to the tables below.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 13

Table BCUC IR1 Q6.2a
TOU Usage by Rate Class and Year

	Commercial	Industrial	Irrigation	Residential
	(kWh)			
2006	610,396	-	490,863	186,838
2007	1,480,564	5,789,574	472,205	599,314
2008	1,675,265	23,037,966	187,149	2,683,980
2009	2,091,710	27,603,156	179,204	2,766,134
2010	2,130,312	20,415,654	181,723	3,017,012

Table BCUC IR1 Q6.2b
TOU Customer Count by Rate Class and Year

	Commercial	Industrial	Irrigation	Residential
2006	6	-	3	10
2007	14	1	3	125
2008	15	1	3	146
2009	20	1	3	146
2010	22	1	3	117

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

Response:

FortisBC estimated in its 2009 COSA and RDA on page 23, Section 3.1, that TOU rates have the effect of reducing peak demand by 5.7 per cent during the "critical peak hour" and energy use by 6.0 per cent annually.

Using the percentage savings above, the TOU customer energy use from the previous question and assuming a 50 per cent load factor yields the following energy and demand savings.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 14

Table BCUC IR1 Q6.2.1a
TOU Estimated Energy Savings

	Commercial	Industrial	Irrigation	Residential
	(kWh)			
2006	38,961	-	31,332	11,926
2007	94,504	369,547	30,141	38,254
2008	106,932	1,470,508	11,946	171,318
2009	133,513	1,761,904	11,439	176,562
2010	135,977	1,303,127	11,599	192,575

Table BCUC IR1 Q6.2.1b
TOU Estimated Capacity Savings

	Commercial	Industrial	Irrigation	Residential
	(MW)			
2006	0.01	-	0.01	0.00
2007	0.02	0.08	0.01	0.01
2008	0.02	0.32	0.00	0.04
2009	0.03	0.38	0.00	0.04
2010	0.03	0.28	0.00	0.04

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 15

1 6.3 In BC Hydro's 2008 RIB Rate application, on page 2 of 9 of its Appendix C (see
2 Exhibit A2-1), which presented Utility Survey Results, only one out of 88 utilities
3 surveyed in Canada, US, Europe and Asia has a TOU structure as the default
4 residential tariff. Does FortisBC have any more up-to-date information or
5 comment regarding TOU as default tariff? If so, please provide the information.

6 **Response:**

7 FortisBC believes that time based rates provide conservation benefits which are at minimum as
8 good as a RIB rate while simultaneously providing customers with more of an opportunity to
9 conserve, thus reducing their total cost of electricity.

10 6.4 In the recent BC Hydro's application with the Commission, BC Hydro stated that
11 it was developing a TOU rate applicable on a voluntary basis to residential
12 customers following the implementation of its Smart Metering and Infrastructure
13 Program (BC Hydro RIB Rate Re-Pricing Application, p. 9). It also stated in a
14 response to Information Request that BC Hydro is not obliged in law to have
15 TOU rate (BC Hydro RIB Rate Re-Pricing Application, Exhibit B-2, BCOAPO
16 1.4.2). Is it still the intention of FortisBC to introduce TOU rates as mandatory to
17 replace the proposed RIB rate in this Application?

18 **Response:**

19 It remains the position of FortisBC that time-based conservation rates offer the best alternatives
20 to flat rates for the Company and its customers. Should a RIB rate be mandated by the
21 Commission, it is currently the Company's intention to introduce some suite of time-based rates
22 to complement the RIB rates, likely on a voluntary participation basis.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 16

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

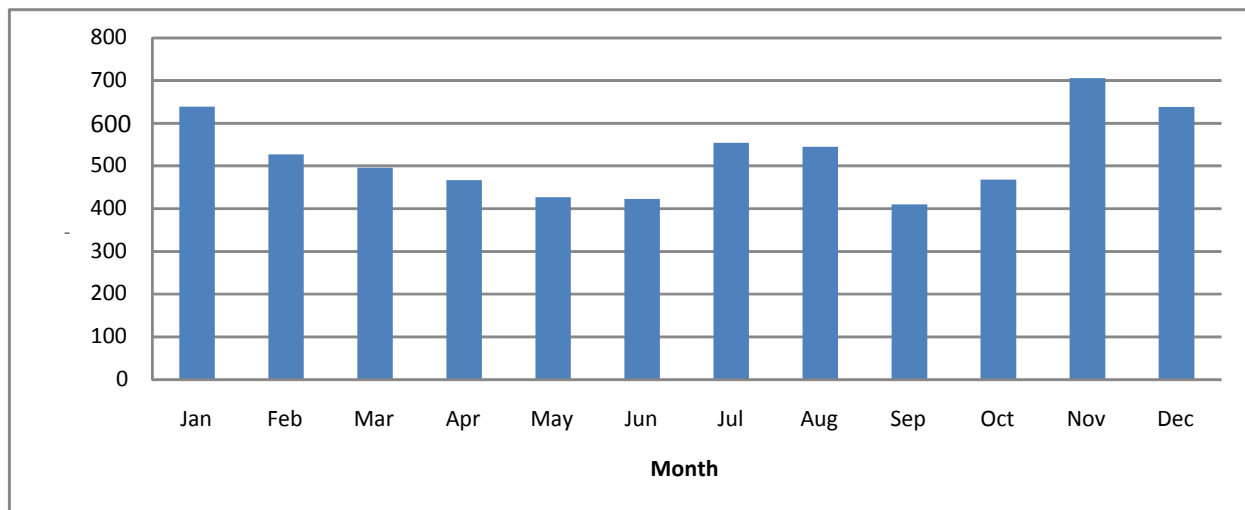
The 2007 Energy Plan lists in some detail, the future energy efficiency and conservation initiatives which include exploring new rate structures to use less electricity or use less at specific times.

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.

Response:

FortisBC experiences peaks in both the summer and the winter. From an overall power supply perspective, the winter peak is the primary peak. However, due to local conditions and the differences in equipment ratings between summer and winter, in certain instances the summer peak can be the critical peak. The Company does not collect coincident peak information by customer rate class. The overall system peaks by month for 2010 are presented in Figure 7.1 and Table 7.1.

**Figure BCUC IR1 Q7.1
2010 System Peaks by Month**



FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 17

Table BCUC IR1 Q7.1
2010 System Peaks by Month

Month	Peak (MW)
Jan	639
Feb	527
Mar	496
Apr	467
May	427
Jun	423
Jul	554
Aug	545
Sep	410
Oct	468
Nov	706
Dec	638

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?

Response:

FortisBC did not consider the implementation of any RIB rate variant that did not provide for provincial consistency as discussed in the response to BCUC IR1 Q4.1.

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?

Response:

FortisBC did not consider implementing a RIB rate that had a seasonal component as provincial consistency was sought as discussed in the response to BCUC IR1 Q4.1.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 18

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).

Response:

In FortisBC's consideration, bill impacts that are not unreasonable is a subjective criteria, the evaluation of which is informed by concurrently examining both "Maximum Bill Impact" and "Percentage of Customers with Bill Increases > 20%". The Company did not apply a set amount for either metric. Rather, after the results of the various RIB rate options were known, they were assessed for extreme outcomes that would disqualify them from consideration. In the opinion of the Company, none of the options presented in Table 7.2 would be excluded from consideration based on an unreasonable bill impact criterion.

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.

Response:

Please see the response to BCUC IR1 Q8.1 above.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 19

1 8.2 Please describe any initiatives that FortisBC has planned or considered in order
2 to mitigate the impact of new rate structures on low-income households in its
3 service area.

4 **Response:**

5 FortisBC does not plan to introduce new initiatives specifically to mitigate the impact of new rate
6 structures on low-income households, but expects to provide a variety of measures through its
7 PowerSense demand side management ("DSM") program.

8 FortisBC will continue to provide low income households with energy saving kits ("ESKs") and
9 distribute them directly to qualified customers, primarily through low-income service providers
10 like food banks and low-income housing groups.

11 In collaboration with the provincial government and other public utilities, FortisBC has applied to
12 provide a low-income direct installation program which includes basic and some more extended
13 energy conservation measures. The program will employ screening tools to determine which
14 measures are appropriate and cost effective for each application. (It is expected the measures
15 will primarily be insulation of ceilings and attics and draft-proofing, as well as Compact
16 Fluorescent lighting products. Energy Star bathroom fan(s) will likely be installed to address
17 ventilation concerns. Other types of measures, such as window replacement, would only be
18 considered in situations where the home had very poor windows or for individual replacement of
19 broken or damaged units.)

20 A direct-install Lighting program, similar in execution to the LiveSmart Small Business lighting
21 program, is expected be instituted for common area lighting of corridors, stairwells, lobbies etc.

22 8.3 In B.C. Ministerial Order No. 271 Demand Side Measures Regulation (Exhibit A2-
23 2, p. 4), a public utility's plan portfolio is adequate for the purposes of section
24 44.1 (8) (c) of the Act only if the plan portfolio includes, among others, a demand-
25 side measure intended specifically to assist residents of low-income households
26 to reduce their energy consumption. Please comment if any such DSM program
27 has been implemented with a view to help low-income families under a
28 mandatory RIB rate.

29 **Response:**

30 Please see the response to BCUC IR1 Q8.2.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 20

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 incented 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.

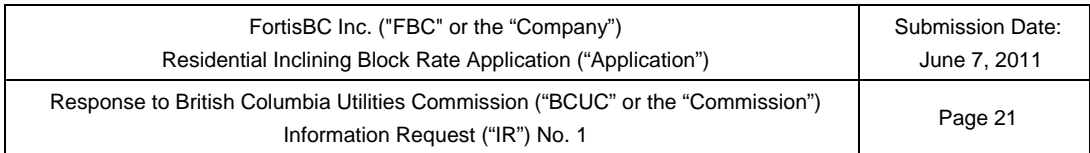
Response:

FortisBC proposed a RIB rate whereby the level of the rates in block 1 and block 2 are determined by setting a customer bill impact, threshold level and customer charge. FortisBC did not explore the option of using the long-run marginal cost of electricity to set the rates. This does not however invalidate the observation that the RIB rate better reflects the concept of a higher cost of power on the margin. The statement was not intended to convey that the pricing would be set relative to the actual long-run marginal cost. Rather, and in a more generic sense, FortisBC acknowledges that the long-run marginal cost of power is higher than the average cost, and a higher block 2 rate reflects this fact.

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.

Response:

In the FortisBC RIB rate proposal, the higher price for power in the second block is intended to reflect the increasing cost of electricity as consumption increases, however it is not directly linked to an actual long-run marginal cost figure. The Company has not proposed a cap on the block 2 rate.



4 **Response:**

5 The marginal cost of the RIB program for 2012 to 2015 is the change in power purchase
6 expense divided by the change in gross load, as explained in detail in Table BCUC IR1 Q9.3
7 below. Since no capacity savings were assumed for the RIB program, the only change is to the
8 Company's energy requirements. The majority of this change will be met through changes in the
9 Company's purchase of power purchase agreement ("PPA") power from BC Hydro although
10 there will also be minor changes in the Company's market energy purchases and surplus sales.

Table BCUC IR1 Q9.3

Power Purchase Expense				
With RIB Program	2012	2013	2014	2015
Gross Load after DSM and other Customer Savings (GWh)	3,502	3,543	3,577	3,599
Total Power Purchase Expense (\$000)	90,984	98,821	107,589	140,985
With No RIB Program				
Gross Load after DSM and other Customer Savings (GWh)	3,505	3,552	3,591	3,619
Total Power Purchase Expense (\$000)	91,102	99,186	108,245	141,982
Variance				
Power Purchase (\$000)	119	366	656	997
Gross Load after DSM and other Customer Savings (GWh)	3.1	8.6	14.3	20.3
Marginal Cost of RIB Program (\$/GWh)	\$ 38,042	\$ 42,407	\$ 45,748	\$ 49,155

The values in Table BCUC IR1 Q9.3 represent what, in the opinion of the Company, is appropriate for the RIB rate comparison. FortisBC also has for its DSM programs a blended long-term avoided power purchase cost. Please see the excerpt below from the draft 2012 FortisBC Demand Side Management Plan. This value could also serve as a proxy for FortisBC's long term marginal cost.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 22

3.2.1 Updated Avoided Power Purchase Costs

The blended long-term avoided power purchase costs were updated, based on the portion of energy procured from BC Hydro. The CDPR determined the levelized BC Hydro avoided energy costs to be \$154.15 per MWh, and the 2011 Market Assessment was used to determine the Company's long-term marginal energy costs as \$73.80 per MWh. These are firm energy prices, inclusive of capacity benefits. The resulting blended cost of \$92.25, is used to determine the benefits of the programs.

Table 3.2.2: Long-Term Avoided Power Purchase Costs

Component	Source	Long-term Avoided Cost	Proportion	Blended
Energy (\$/MWh)	BC Hydro 2007 CPR 2011 Market report ⁴	\$154.15 \$73.80	28% 72%	\$92.25

- 1
- 2 9.4 What is the estimated annual rate of increase for FortisBC's marginal cost of
- 3 electricity for the period 2012 to 2015?
- 4 **Response:**
- 5 Please see the response to BCUC IR1 Q9.3 above. The RIB marginal costs from Table BCUC
- 6 IR1 Q9.3 increase year over year as follows:
- 7 2012 to 2013 11.5 per cent
- 8 2013 to 2014 7.9 per cent
- 9 2014 to 2015 7.4 per cent

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 23

1 9.5 When FortisBC states "Low consumption customers are incented to avoid
2 increasing consumption into the second block", does FortisBC mean that RIB
3 price signals still work efficiently even though up to 40% of customers may not
4 face the higher-priced energy?

5 **Response:**

6 Under FortisBC's preferred option, given current consumption patterns, it is estimated that 72.8
7 per cent of customers will be billed in the second block at least once. The quoted statement is
8 intended to simply say that customers at or below the threshold level of consumption will be
9 incented to maintain any behaviour that has resulted in low consumption and to not adopt usage
10 habits that would lead to consumption in the second block.

11 9.6 For example, FortisBC's preferred option 8 results in 27.2% of customers never
12 facing the Block 2 rate of 11.272 cents per kWh. Option 8 also sets the Block 1
13 rate at 7.828 cents per kWh, a 14% decrease over the current flat rates of 9.090
14 cents per kWh. Also, with FortisBC's proposed pricing principle, it is only in 2014
15 that the Block 1 rate would exceed the current flat rate (see Table 8-3: Impact of
16 Rate Increases on RIB Rate Options, p. 26).

17
18 9.6.1 Does FortisBC agree that the above scenario could effectively send the
19 wrong price signals (i.e., an absolute price decrease) to over one quarter
20 of its customers during the first three years of the RIB rate? If not, please
21 explain why not.

22 **Response:**

23 FortisBC agrees that in accordance with generally accepted assumptions with respect to
24 elasticity, the relative price of a commodity will affect the level of demand. A lower price may
25 result in increased consumption for some customers. FortisBC respectfully submits that
26 whenever the lower block exceeds the current flat rate, any customer who uses less than the
27 threshold level will effectively be sent the wrong price signal; however, most RIB designs set the
28 lower block below the current flat rate.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 24

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 1 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 1 and Block 2 rates must be sufficient to provide a meaningful signal to incent conservation behavior".

Response:

FortisBC did not, and does not equate efficient price signals with rates that reflect the marginal cost of electricity. Section 3.2 of the Application states that the "RIB rate allows the utility to introduce price signals that reflect the increased marginal cost of electricity." In other words, the RIB rate provides a mechanism to charge higher prices for power as consumption increases. An efficient price signal provides an incentive for a customer to either lower consumption or refrain from increasing consumption. In order to do this, the differential between the block 1 and block 2 rates must be sufficient to affect customer behaviour. A price signal can be efficient at incenting conservation whether or not it reflects the marginal cost of electricity.

9.8 In FortisBC's view, what percentage difference level would be considered sufficient between the Block 1 rate and the Block 2 rate? Please provide justification.

Response:

The Company did not assign a specific percentage difference under which the differential was seen to be insufficient to impact behaviour. After the results of the analysis were known, the Company reviewed the outcomes and excluded the options where the differentials were, in the opinion of the Company, too high or too low to impact behaviour, relative to the other options.

To the best knowledge of FortisBC, there does not exist any research-based standard with which to judge the block differential, and the Company did not predetermine what the appropriate level would be. After producing the rate options, and comparing the results, the Company's view is that those options that have differentials greater than 60 per cent or below

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 25

1 20 per cent are also those options that have too high a maximum bill impact or too low a
2 conservation impact when compared to other, better alternative options.

3 9.9 Does FortisBC agree that another objective of efficient price signals is to
4 minimize the magnitude and duration of rate decreases when implementing the
5 RIB rate? If not, please explain why not.

6 **Response:**

7 In FortisBC's view, the only reason to implement a RIB rate, and therefore the objective of the
8 rate and all underlying criteria, is to incent customers to adopt behaviour that leads to an overall
9 decrease in consumption by a particular class of customers. FortisBC adopted a customer
10 impact criterion as the primary limiting factor in arriving at rates.

11 In all cases, minimizing the degree to which the block 1 rate is below the current flat rate
12 lessens the block differential and reduces the estimated conservation impact.

13 9.10 Does FortisBC agree with the statement that "as many customers as possible
14 should see the Block 2 rate?" If not, please explain why not.

15 **Response:**

16 FortisBC does not agree with the statement. Designing a RIB rate in order to maximize the
17 number of customers exposed to the second block would either compromise the Company's
18 customer impact criterion, or would necessitate the lowering of the threshold level below that
19 which is currently proposed. As can be seen by comparing Option 8 with Option 2 in Table 7-2,
20 forcing more load into the second block by lowering the threshold reduces the conservation
21 impact while negatively impacting customers.

22

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 26

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.

Response:

The Company agrees that the statement is in error and should read.

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: adjusted by an amount equal to the sum of the general revenue requirement increase and any rebalancing adjustments;

Block 1: adjusted by an amount equal to the sum of the general revenue requirement increase and any rebalancing adjustments; and

Block 2: adjusted by an amount sufficient to recover the balance of the general revenue requirement and any rebalancing adjustments.

Options A,B,C and D in Table 8.3, where the customer charge is frozen at current rates are subject only to rebalancing. Options E through H, where the customer charge drops to a starting point of \$21.50 are subject to both the general and rebalancing increases.

Please refer to Errata 1.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 27

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 1 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 1 rate given the proposed methodology.

Response:

FortisBC cannot confirm. The table below is derived from information in Table 8-3 in the Application showing data from Option C.

Table BCUC IR1 Q10.2

	2011	2012	2013	2014	2015
Customer Charge	28.93	29.65	30.34	30.34	30.34
Block 1 Rate	0.07828	0.08525	0.09079	0.09387	0.09998
Increase		0.00697	0.00554	0.00309	0.00610
Percentage Increase		8.90%	6.50%	3.40%	6.50%
Block 2 Rate	0.11272	0.12009	0.12603	0.12814	0.13541
Increase		0.00737	0.00594	0.00211	0.00727
Percentage Increase		6.54%	4.95%	1.67%	5.67%

It can be seen in this case that while in absolute dollar terms, the increase in the block 2 rate can be either larger or smaller than the change in the block 1 rate, it is always smaller on a percentage basis.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 28

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

2 11.1 Commission Order G-72-11 approved an across-the-board rate increase of 8.0%
3 for BC Hydro, effective May 1, 2001. Please describe the implications of these
4 rate increases on FortisBC's various proposals, as well as on the preferred
5 option 8.

6 **Response:**

7 An increase of 8.0 per cent for BC Hydro wholesale purchases will have an impact of 0.9 per
8 cent (annualized) for the Company's 2011 residential revenue requirements. Since the
9 proposed customer charges are fixed at various levels under the 18 options examined, the block
10 1 and block 2 energy rates would need to increase by an amount greater than 0.9 per cent.
11

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 29

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

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

6
7 12.1 Please provide the formula used by FortisBC to arrive at the 44 percent figure.

8 **Response:**

9 The comment in the Application was not intended to directly compare the 2009 COSA and RDA
10 based customer charge with the current (at time of filing) 2011 customer charge. At the time of
11 the 2009 COSA and RDA, the customer charge was \$24.26 on a bi-monthly basis. As a
12 percentage of the 2009 COSA and RDA based amount the customer charge was
13 $\$24.26/(\$28.74*2) = 42.2\%$

14 When the 2.5 per cent rebalancing adjustment is applied to the 2009 customer charge the
15 recovery becomes $(\$24.26*1.025)/(\$28.74*2) = 43.3\%$

16 Assuming that a COSA in 2011 would yield similar results, the current \$28.22 customer charge
17 is assumed to be collecting a similar percentage.

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

21
22 12.2 What is the third option modelled by FortisBC for the customer charge? Please
23 provide the modelling results of this third option.

24 **Response:**

25 FortisBC initially considered modeling a customer charge of \$7.50 per month. The results of this
26 option can be found in the following table.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 30

1

Table BCUC IR1 Q12.2

Criterion	Threshold	Customer Charge	Block 1 Rate	Block 2 Rate	Block Differential	Annual Breakeven kWh	% of customers better off	Maximum Bill Impact	% of Customers with Bill Increases > 20%	% of customers who have consumption in the second block at least once	% of load billed in Block 2	Conservation Impact (-lower/upper)		
												.05/.10	.10/.20	.20/.30
90% see <10%	1350	7.50	0.08671	0.11966	38.0%	13500	70.7%	30.0%	1.9%	79.2%	43.3%	-0.2%	-0.5%	-0.9%
95% see <10%	1350	7.50	0.09405	0.11004	17.0%	13000	68.8%	20.0%	0.0%	79.2%	43.3%	0.2%	0.3%	0.7%
100% see <10%	1350	7.50	0.10097	0.10097	0.0%	13000	68.8%	10.5%	0.0%	79.2%	43.3%	0.6%	1.1%	2.2%
90% see <10%	2100	7.50	0.09111	0.12847	41.0%	14000	72.5%	38.9%	2.7%	60.7%	26.4%	0.0%	0.0%	0.0%
95% see <10%	2100	7.50	0.09688	0.11238	16.0%	14000	72.5%	22.3%	0.2%	60.7%	26.4%	0.3%	0.7%	1.3%
100% see <10%	2100	7.50	0.10097	0.10097	0.0%	13000	68.8%	10.5%	0.0%	60.7%	26.4%	0.6%	1.1%	2.2%
90% see <10%	1600	7.50	0.08893	0.12183	37.0%	13500	70.7%	32.2%	1.9%	72.8%	36.6%	-0.1%	-0.2%	-0.4%
95% see <10%	1600	7.50	0.09539	0.11065	16.0%	13500	70.7%	20.6%	0.1%	72.8%	36.6%	0.2%	0.5%	1.0%
100% see <10%	1600	7.50	0.10097	0.10097	0.0%	13000	68.8%	10.5%	0.0%	72.8%	36.6%	0.6%	1.1%	2.2%

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 31

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.

Response:

The Company is of the opinion that setting the customer charge on any basis other than the results of a COSA means that the amount is without foundation and is therefore arbitrary.

12.4 Is it true that by lowering the customer charge, there is more flexibility to increase the Block 1 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.

Response:

All other things being equal, including the customer impact criterion, at each level of customer charge there will only be one set of rates that will collect the revenue requirement.

In referring to Options 1 and 10 from Table 7-2 in the Application, which holds all aspects of the rate constant other than the level of the customer charge, it can be seen that with a lower customer charge the block 1 rate increases, the block 2 rate decreases slightly and the rate differential also declines. The conservation impact change is negligible.

In addition to the limited impact on conservation that the paragraph above illustrates, the Company maintains that the collection of fixed costs through fixed charges, as well as the established need for revenue stability needs to be considered. Decreasing the customer charge and increasing the energy charges adds sales revenue volatility. FortisBC believes that its proposal provides an appropriate balance between the needs of the Company and the concerns customers may have with the level of the customer charge.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 32

1 12.4.1 If the above is not true or true only under certain conditions, please
2 explain your answer.

3 **Response:**

4 The above is true for all options examined in preparing the Application. However, due to the
5 increase in the per-kWh consumption rate associated with a decrease in the customer charge,
6 the breakeven point at which bills are lower with a lower basic charge happens sooner.

7 For example, all other things being equal, a customer being billed under scenario 10 from Table
8 7-2 (\$21.50 customer charge) will pay less than a customer being billed under Scenario 1
9 (\$28.93 customer charge) up to approximately 11,000 kWh annually.

10 Were the customer charge in Option 10 lowered to \$7.50, the customer will begin to see bills
11 higher than those under Option 1 after annual consumption of only 7,500 kWh.

12 12.5 Please explain how the \$21.50 level for the customer charge was selected.

13 **Response:**

14 The \$21.50 was selected to fall between the \$7.50 level discussed in the response to Question
15 12.2 and the third option of \$28.93 used in the Application. It is not derived as a result of any
16 specific measurable item.

17 12.6 Given the impact of a lower customer charge on the other pricing elements of the
18 RIB rate, did FortisBC model other customer charge levels and perform
19 sensitivity analyses of the Block 1 and 2 rates to changes in the customer charge
20 level? If so, please provide them. If not, please explain why not.

21 **Response:**

22 As discussed in the response to BCUC IR1 Q12.2 and Q12.5, FortisBC initially modeled
23 customer charges of \$7.50, \$21.50, and \$28.93. A specific sensitivity analysis was not applied
24 to the various levels to show impact on rate levels, however the impact of the different customer
25 charges presented in the Application can be gleaned from Table 7-2.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 33

- 1 12.7 Please replicate Table 7-2 by analyzing a customer charge set at \$15.00 per
2 billing period. This modelling should yield 9 additional options (three threshold
3 levels and three customer impact criteria).

4 **Response:**

- 5 Please refer to the table below.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 34

Table BCUC IR1 Q12.7

Option	Criterion	Threshold	Customer Charge	Block 1 Rate	Block 2 Rate	Block Differential	Annual Breakeven kWh	% of customers better off	Maximum Bill Impact	% of Customers with Bill Increases > 20%	% of customers who have consumption in the second block at least once	% of load billed in Block 2	Conservation Impact (-lower/upper)		
													.05/.10	.10/.20	.20/.30
1	90% see <10%	1350	15.00	0.07982	0.12053	51.0%	13500	70.7%	30.9%	1.9%	79.2%	43.3%	-0.6%	-1.2%	-2.4%
2	95% see <10%	1350	15.00	0.08759	0.11036	26.0%	13500	70.7%	20.3%	0.1%	79.2%	43.3%	-0.2%	-0.4%	-0.7%
3	100% see <10%	1350	15.00	0.09498	0.10068	6.0%	13500	70.7%	9.2%	0.0%	79.2%	43.3%	0.2%	0.4%	0.9%
4	90% see <10%	2100	15.00	0.08529	0.13135	54.0%	15500	77.3%	41.8%	2.7%	60.7%	26.4%	-0.3%	-0.6%	-1.2%
5	95% see <10%	2100	15.00	0.09164	0.11364	24.0%	15500	77.3%	23.5%	0.2%	60.7%	26.4%	0.0%	0.1%	0.2%
6	100% see <10%	2100	15.00	0.09643	0.10029	4.0%	13500	70.7%	9.8%	0.0%	60.7%	26.4%	0.3%	0.6%	1.2%
7	90% see <10%	1600	15.00	0.08237	0.12356	50.0%	14000	72.5%	33.9%	2.7%	72.8%	36.6%	-0.5%	-0.9%	-1.9%
8	95% see <10%	1600	15.00	0.08958	0.11108	24.0%	13500	70.7%	21.0%	0.1%	72.8%	36.6%	-0.1%	-0.1%	-0.3%
9	100% see <10%	1600	15.00	0.09604	0.09988	4.0%	13000	68.8%	9.4%	0.0%	72.8%	36.6%	0.3%	0.6%	1.1%

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 35

1 FortisBC states: "As can be seen in Table 8-2, a reduction in the initial level of the
2 customer charge drives significant increases in the level of the Block 1 and Block 2
3 rates."

4
5 12.8 Please clarify which Table presented such information, since Table 8-2 on p. 25
6 presents the Forecast Residential Rate Increase for the years 2012 to 2015.

7 **Response:**

8 The reference should be to Table 7-2. Please refer to Errata 1.

9 12.8.1 When comparing options 1 through 9 to options 10 through 18 (by pair),
10 Table 7-2 (p. 22) shows that reducing the customer charge to \$21.50 from
11 \$28.93 systematically results in a lower Block 2 rate. Please reconcile this
12 with the statement that a reduction in the initial level of the customer
13 charge drives significant increases in the Block 2 rate.

14 **Response:**

15 FortisBC intended the statement to convey the fact that a decrease in the customer charge will
16 result in an increase in the consumption related billing associated with total block 1 and block 2
17 charges. As noted, in absolute kWh charge terms, the block 1 rate increases and the block 2
18 rate decreases with a decrease in the customer charge.

19 12.8.2 In Table 8-3 (p. 26), it is impossible to compare options 2 and 8 (customer
20 charge of \$28.93) with options 11 and 17 (customer charge of \$21.50) to
21 assess the impact of an initially lower customer charge on the evolution of
22 the Block 1 and Block 2 rates because FortisBC applied different pricing
23 principles when modelling these options. Please explain why FortisBC did
24 not apply all four pricing principles to the four screened options. Also
25 please discuss how one can compare the results presented in Table 8-3
26 across the four options given the above.

27 **Response:**

28 The underlying principle that FortisBC applied to the customer charge is that, by Commission
29 direction, it should be lowered upon introduction of the RIB rate. The Company accomplishes
30 this in Options 2 and 8 by freezing the customer charge at its current levels which allows it to
31 decrease as a percentage of total billings over time.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 36

- 1 Options 11 and 17 include a basic charge that is introduced at a level substantially below the
- 2 current level. The Company did not consider an option where the customer charge was both
- 3 substantially lower *and* frozen.
- 4 The Company intends that the options be compared as presented as these are the variants that
- 5 have been put forward for consideration.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 37

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

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

5
6 13.1 Since a billing period under the residential rate schedule is two months, there
7 would be six billing periods in a year. Please describe how the mean and
8 median consumption values are calculated. Are they based on all the billing
9 periods within a year or based on all customers in a billing period?

10 **Response:**

11 The mean and median values were calculated using all bills during the year.

12 13.2 Please explain why FortisBC has chosen to model a threshold option set at "85%
13 of the median level".

14 **Response:**

15 The RIB rate approved for BC Hydro used a figure of 90 per cent of median consumption,
16 resulting in a first block size of 1,350 kWh bi-monthly. FortisBC chose to match the 1,350 kWh
17 first block size of BC Hydro, which is at 85 per cent of the FortisBC median bill level.

18 13.3 Considering that FortisBC purchases the majority of its energy under BC Hydro's
19 RS 3808, please demonstrate that the proposed threshold values allow equal
20 access to Heritage energy for both FortisBC and BC Hydro ratepayers? Please
21 also provide a detailed explanation for why these threshold values could be
22 considered to be in the public interest.

23 **Response:**

24 FortisBC does not purchase the majority of its energy under the BC Hydro PPA. Rather, its
25 energy requirements are met primarily through Canal Plant Agreement ("CPA") entitlements. Of
26 the remaining requirements, roughly equal portions are met by BC Hydro purchases and
27 Brilliant Dam contracts.

28 FortisBC is not in a position to assess the extent to which BC Hydro customers benefit from
29 access to Heritage energy; and, FortisBC customers only have access to Heritage energy
30 indirectly through the Company's blended resource portfolio and receive the benefits by class as

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 38

determined by the allocation of power supply costs in a COSA. The introduction of a RIB rate will not affect these basic realities.

In the opinion of the Company, the threshold values proposed in the Application cannot themselves be adjudged to be in the public interest or not. Rather, it is the RIB rate as a whole, of which the threshold values form a part, which the Commission will deem to be in the public interest if a RIB rate is approved.

FortisBC believes that the RIB rate as proposed, and as potentially set by the Commission is in compliance with the Utilities Commission Act, particularly Section 60 (1).

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

Response:

- (i) 38 per cent of FortisBC residential customers use electricity as the primary space heating source, with an additional 17 per cent using electricity as a secondary source;
- (ii) 50 per cent of FortisBC residential customers use electric space cooling;
- (iii) FortisBC does not have data on the proportion of customers that use electricity for both space heating and cooling.

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

Response:

The mean consumption for customers without electric space heating is 1,618 kWh.

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

Response:

The mean consumption for customers with electric space heating is 2,237 kWh.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 39

1 13.4.3 the mean consumption of 'accounts who use electrical cooling system' as
2 compared to 2,100 kWh.

3 **Response:**

4 The mean bi-monthly usage per customer with air conditioning is 2,244 kWh.

5 13.4.4 the mean consumption of 'accounts who do not use electrical cooling
6 system' as compared to 2,100 kWh.

7 **Response:**

8 The mean bi-monthly usage per customer without air conditioning is 1,854 kWh.

9 13.5 Does FortisBC agree that a single threshold value in RIB rate design does not
10 capture energy savings where there are seasonal fluctuations in consumption? If
11 not, please explain why not.

12 **Response:**

13 FortisBC agrees that in months where consumption is typically lower than average, a customer
14 may have 100 per cent of consumption in the first block without intentionally conserving power,
15 and may not make an effort to conserve power that is not rewarded with a lower rate.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 40

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:

	Mean Consumption		Median Consumption	
	2006	2010	2006	2010
Billing Period 1				
Billing Period 2				
Billing Period 3				
Billing Period 4				
Billing Period 5				
Billing Period 6				

Response:

Please refer to the below table.

Table BCUC IR1 Q13.6

	Mean Consumption		Median Consumption	
	2006	2010	2006	2010
	kWh			
Jan - Feb	2,672	2,916	1,923	2,120
Mar - Apr	2,236	2,254	1,586	1,645
May - Jun	1,583	1,729	1,178	1,304
Jul - Aug	1,507	1,623	1,166	1,236
Sep - Oct	1,446	1,567	1,125	1,230
Nov - Dec	1,912	2,130	1,404	1,580

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 41

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:

Block Usages	Number of Customers (2006)	Number of Customers (2010)
0 – 320 kWh		
320 – 640 kWh		
640 – 960 kWh		
960 – 1280 kWh		
1,280 – 1,600 kWh		
1,600 – 1,920 kWh		
1,920 – 2,240 kWh		
...		
3,520 – 3,840 kWh		
Higher than 20% increments		
...		

Response:

Table BCUC IR1 Q13.7

Block Usages	Number of Customers (2006)	Number of Customers (2010)
0 – 320 kWh	4,940	5,582
320 – 640 kWh	6,523	8,717
640 – 960 kWh	10,108	12,626
960 – 1280 kWh	10,959	13,066
1,280 – 1,600 kWh	10,249	11,477
1,600 – 1,920 kWh	8,858	9,681
1,920 – 2,240 kWh	7,270	7,845
2,240 – 2,560 kWh	5,903	6,266
2,560 – 2,880 kWh	4,709	4,977
2,880 – 3,200 kWh	3,760	3,786
3,200 – 3,520 kWh	2,939	2,876
3,520 – 3,840 kWh	2,423	2,262
3,840 – 4,500 kWh	3,704	3,094
4,500 – 5,550 kWh	3,135	2,538
5,500 – 7,000 kWh	2,014	1,514
> 7,000 kWh	1,687	1,575

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 42

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.

Response:

The statements are equivalent.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 43

1 14.2 Please explain why two levels of customer impact are designed so that 5% or
2 10% of customers will face an annual rate impact greater than the generally
3 accepted rate shock threshold of 10%.

4 **Response:**

5 FortisBC does not hold that the 10 per cent limit on increases is absolute and notes that by
6 applying the restriction only on increases associated with the rate design, any other increase
7 due to the revenue requirement or rebalancing will likely cause increases to exceed this level.

8 The Company desired to model a number of variations in order to examine their impact and
9 expected that there would be some customers with extremely high consumption who would fall
10 outside the 10 per cent threshold.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 44

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

2 **18 Options**

3 In creating RIB rate options for analysis, FortisBC used two levels of Customer Charges,
4 three threshold levels, and three customer impact criteria, creating 18 combinations of
5 Block 1 and Block 2 rates for evaluation.

6
7 15.1 Holding constant two factors: (A) 90% see <10% criterion and (B) two levels of
8 Customer Charges; please replicate Table 7-2 by analyzing a threshold of 1,500
9 kWh per billing period.

10 **Response:**

11 Please refer to the below table.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 45

Table BCUC IR1 Q15.1

Option	Criterion	Threshold	Customer Charge	Block 1 Rate	Block 2 Rate	Block Differential	Annual Breakeven kWh	% of customers better off	Maximum Bill Impact	% of Customers with Bill Increases > 20%	% of customers who have consumption in the second block at least once	% of load billed in Block 2	Conservation Impact (-lower/upper)		
													.05/.10	.10/.20	.20/.30
19	90% see <10%	1500	28.93	0.06942	0.12426	79.0%	14000	72.5%	34.6%	2.7%	72.4%	39.2 %	3.1%	6.1%	9.0%
20	90% see <10%	1500	21.50	0.07571	0.12341	63.0%	14000	72.5%	33.8%	4.2%	72.4%	39.2 %	2.8%	5.6%	8.2%

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 46

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 1 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 1 and 2 rates (i.e., at the 5th decimal), how different would the calculations for the Block 1 and 2 rates be if FortisBC used the Commission-approved 1,261 GWh instead?

Response:

The Commission-approved 1,261 GWh was the load forecast used within the RIB Application.

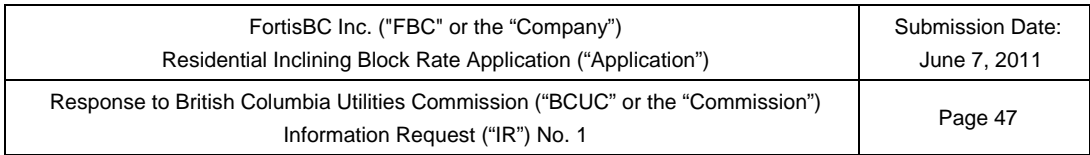
16.2 Please clarify how FortisBC calculated the Block 1 and Block 2 rates from the information presented in the Methodology section, in particular Table 6-1: Block Consumption by Threshold. Please provide all the mathematical formulas used in this optimization problem, clearly identify all the variables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

Response:

The spreadsheet is provided as Electronic Attachment BCUC IR1 Q16.2.

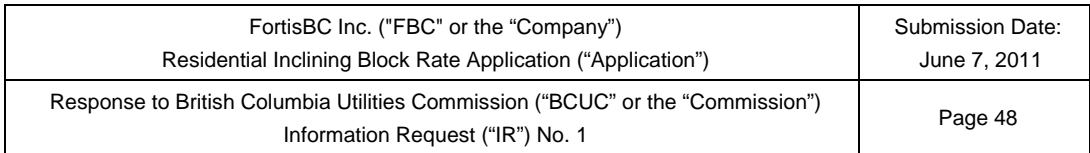
To develop the percentage of usage in each block, the following steps were taken for each threshold level. The calculations can be found in Tab "2011 Rates" in the cells A228 to V290.

1. Bills for 2010 were broken down into annual usage categories (i.e. 0-500, 500-100, etc). The number of customers and total kWh in each category were included;
2. For each category, the average usage per billing period was split between block 1 and 2, depending on the threshold;
3. For each category, the total kWh in each block was multiplied by the number of customers;
4. The kWh usage by block was then summed over all categories to get the total for the system. The usage was calculated on a percentage basis by block;



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.

[illegible]



2 The first analysis using bill impacts, rather than customer impacts, was rejected as it did not
3 meet the desired criteria. It did not link the bills together by customer and therefore the impact
4 on a given customer could not be determined. No additional analysis was done on a bill by bill
5 basis and therefore no impacts were ever calculated for the various RIB options included in the
6 Application.

8 Response:

12 **Table BCUC IR1 Q16.4**[illegible]

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 49

1 16.5 What is the frequency distribution of low-income customers by dwelling type? by
2 heating source?

3 **Response:**

4 As stated in response to BCUC IR1 Q16.4, FortisBC does not have income information for all of
5 its customers and therefore cannot provide a distribution by income-level for its billing data.
6 There is data available for the REUS sample of customers and the following table shows the
7 income data by usage level.

8 Please refer to the below table.

9 **Table BCUC IR1 Q16.5**

Income (\$)	Single-Family Homes	Other	Electric Heat	Other
< 20,000	4%	12%	10%	5%
20,000 – 40,000	26%	31%	30%	26%
40,000 – 60,000	22%	27%	23%	24%
60,000 – 80,000	21%	12%	18%	18%
80,000 – 120,000	18%	13%	12%	19%
>120,000	9%	4%	7%	8%
	100%	100%	100%	100%

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 50

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?

Response:

The sample of customers was completed independently and prior to this Application. Customers from the sample were linked by account number to usage in 2010. They were then segmented into annual usage categories starting with 0-500 kWh. In the first analysis, bills were segmented into usage categories starting with 0-100 kWh.

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.

Response:

FortisBC ensured that the consumption distribution of the 871 customers accurately represented the total customer population. This is illustrated in the following table.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 51

1

Table BCUC IR1 Q16.7

Annual Usage		Sample	All	Annual Usage		Sample	All
From	To			From	To		
kWh		% Cust		kWh		% Cust	
0	500	0.20%	1.60%	13,500	14,000	1.60%	1.80%
500	1,000	0.50%	1.30%	14,000	14,500	1.10%	1.70%
1,000	1,500	1.10%	1.40%	14,500	15,000	1.80%	1.60%
1,500	2,000	1.60%	1.70%	15,000	15,500	1.10%	1.50%
2,000	2,500	1.30%	1.90%	15,500	16,000	1.50%	1.40%
2,500	3,000	1.00%	2.20%	16,000	16,500	1.90%	1.40%
3,000	3,500	1.90%	2.60%	16,500	17,000	1.30%	1.20%
3,500	4,000	2.90%	2.90%	17,000	18,000	2.20%	2.20%
4,000	4,500	3.30%	3.10%	18,000	19,000	2.30%	1.90%
4,500	5,000	4.00%	3.40%	19,000	20,000	1.80%	1.70%
5,000	5,500	4.40%	3.50%	20,000	21,000	2.10%	1.50%
5,500	6,000	3.80%	3.60%	21,000	22,000	1.60%	1.30%
6,000	6,500	3.70%	3.40%	22,000	24,000	2.30%	2.10%
6,500	7,000	3.00%	3.50%	24,000	26,000	1.10%	1.60%
7,000	7,500	3.20%	3.50%	26,000	28,000	1.60%	1.20%
7,500	8,000	4.40%	3.20%	28,000	30,000	0.60%	1.00%
8,000	8,500	3.60%	3.10%	30,000	35,000	1.30%	1.50%
8,500	9,000	3.30%	3.00%	35,000	40,000	0.70%	0.80%
9,000	9,500	4.10%	3.00%	40,000	45,000	0.30%	0.50%
9,500	10,000	3.30%	2.80%	45,000	50,000	0.10%	0.30%
10,000	10,500	3.20%	2.60%	50,000	60,000	0.20%	0.40%
10,500	11,000	3.20%	2.50%	60,000	70,000	0.00%	0.20%
11,000	11,500	1.70%	2.40%	70,000	80,000	0.00%	0.10%
11,500	12,000	2.10%	2.20%	80,000	90,000	0.10%	0.10%
12,000	12,500	1.70%	2.20%	90,000	100,000	0.00%	0.10%
12,500	13,000	2.30%	2.00%	100,000	150,000	0.00%	0.10%
13,000	13,500	2.40%	1.90%	>150,000		0.00%	0.10%

2

3

4

5

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.

6

Response:

7

8

9

While the sample of customers is a representative sample for the purposes for which it was designed, when the sample was tied in to annual usage it had only one customer over 60,000 kWh per year. Because the RIB rate design has the largest impact on customers with the

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 52

largest use, it was determined that the sample was not sufficient to measure the impact on the largest FortisBC customers. By adding these 35 large-usage customers a better understanding of all of the impacts associated with the RIB rate design was gained.

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".

Response:

The additional sampling of large usage residential customers applied to customers with 60,000 kWh or more per year. This figure was used to capture an underrepresented group in the analysis. For a further discussion of high-use customer please refer to BCSEA IR1 Q4.1.

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."

Response:

Please see the responses to BCUC IR1 Q16.9.1, Q16.9.2 and Q16.9.3.

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)?

Response:

The sample was statistically significant on the basis of the number of customers in the sample relative to the number of customers, the mean annual use and the standard deviation for the entire residential class.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 53

1 16.9.2 How has the addition of 35 customers to the original sample improved
2 FortisBC's confidence level (from 95 per cent) or reduce the margin of
3 error (from 6.6 per cent)?

4 **Response:**

5 The addition of 35 customers would marginally reduce the margin of error at the 95 per cent
6 confidence level.

7 16.9.3 Please fill in the following Table:
8

Usage Blocks	Percentage of customers in each block from the sample of 871 customers	Percentage of customers in each block from the sample of 906 customers	Percentage of customers in each block for the total population of residential customers
0 – 500 kWh			
500 – 1,000 kWh			
Please add all other usage blocks used by FortisBC in the analysis			

9
10 **Response:**

11 Please see the following table.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 54

1

Table BCUC IR1 Q16.9.3

Annual Usage		Original Sample	Sample with Added Large Customers	Total System
From kWh	To kWh	% of Customers	% of Customers	% of Customers
0	500	0.2%	0.2%	1.6%
500	1,000	0.5%	0.4%	1.3%
1,000	1,500	1.1%	1.1%	1.4%
1,500	2,000	1.6%	1.5%	1.7%
2,000	2,500	1.3%	1.2%	1.9%
2,500	3,000	1.0%	1.0%	2.2%
3,000	3,500	1.9%	1.9%	2.6%
3,500	4,000	2.9%	2.8%	2.9%
4,000	4,500	3.3%	3.2%	3.1%
4,500	5,000	4.0%	3.9%	3.4%
5,000	5,500	4.4%	4.2%	3.5%
5,500	6,000	3.8%	3.6%	3.6%
6,000	6,500	3.7%	3.5%	3.4%
6,500	7,000	3.0%	2.9%	3.5%
7,000	7,500	3.2%	3.1%	3.5%
7,500	8,000	4.4%	4.2%	3.2%
8,000	8,500	3.6%	3.4%	3.1%
8,500	9,000	3.3%	3.2%	3.0%
9,000	9,500	4.1%	4.0%	3.0%
9,500	10,000	3.3%	3.2%	2.8%
10,000	10,500	3.2%	3.1%	2.6%
10,500	11,000	3.2%	3.1%	2.5%
11,000	11,500	1.7%	1.7%	2.4%
11,500	12,000	2.1%	2.0%	2.2%
12,000	12,500	1.7%	1.7%	2.2%
12,500	13,000	2.3%	2.2%	2.0%
13,000	13,500	2.4%	2.3%	1.9%
13,500	14,000	1.6%	1.5%	1.8%
14,000	14,500	1.1%	1.1%	1.7%
14,500	15,000	1.8%	1.8%	1.6%
15,000	15,500	1.1%	1.1%	1.5%
15,500	16,000	1.5%	1.4%	1.4%
16,000	16,500	1.9%	1.9%	1.4%
16,500	17,000	1.3%	1.2%	1.2%
17,000	18,000	2.2%	2.1%	2.2%
18,000	19,000	2.3%	2.2%	1.9%
19,000	20,000	1.8%	1.8%	1.7%

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 55

Table BCUC IR1 Q16.9.3 cont'd

20,000	21,000	2.1%	2.0%	1.5%
21,000	22,000	1.6%	1.5%	1.3%
22,000	24,000	2.3%	2.2%	2.1%
24,000	26,000	1.1%	1.1%	1.6%
26,000	28,000	1.6%	1.5%	1.2%
28,000	30,000	0.6%	0.6%	1.0%
30,000	35,000	1.3%	1.2%	1.5%
35,000	40,000	0.7%	0.7%	0.8%
40,000	45,000	0.3%	0.3%	0.5%
45,000	50,000	0.1%	0.1%	0.3%
50,000	60,000	0.2%	0.2%	0.4%
60,000	70,000	0.0%	0.7%	0.2%
70,000	80,000	0.0%	0.6%	0.1%
80,000	90,000	0.1%	0.2%	0.1%
90,000	100,000	0.0%	0.6%	0.1%
100,000	150,000	0.0%	1.2%	0.1%
150,000		0.0%	0.7%	0.1%

1
2

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

6
7 16.10 Please provide the summary of the analysis referenced above.

8 **Response:**

9 Please refer to the response to BCUC IR1 Q16.11.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 56

1 16.11 Please complete the following Table and provide a chart of the numbers of
2 customers under each discrete usage blocks. For ease of use and presentation,
3 please provide this information in a working spreadsheet.
4

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

5 **Response:**

6 Please refer to Electronic Attachment BCUC IR1 Q16.11.
7

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 57

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?

Response:

The sample of 906 customers was used, including the added large-usage customers, so that the impacts across all categories would be shown in the analysis.

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.

Response:

Confirmed. Please see Errata 1.

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

Response:

In Table 7-1, the first six Evaluation Factors relate to Customer Bill Impact as discussed in section 3.2, while the last item relates to Promotion of Conservation.

There are no Evaluation Factors listed in Table 7.1 that relate to Efficient Price Signals, also discussed in Section 3.2. Table 7-2 however does examine the resulting block 1 and block 2

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 58

1 rates and their differential. The Company considers that a price signal is present in all cases as
2 the block 2 rate is always higher. FortisBC did not assign an optimal rate differential or attempt
3 to gauge the efficiency of the price signal on that or any other basis.

4 17.3.1 If the first five evaluation factors are sub-criteria of the metric "Customer
5 Bill Impact", please explain, for each of these sub-criterion, what is
6 deemed a bill impact that is "not unreasonable" as indicated on p. 10.

7 **Response:**

8 The criteria were not evaluated individually in this manner. FortisBC examined the results of
9 each RIB option after the analysis was completed to gauge whether any produced results that
10 overall could be judged as unreasonable.

11 For example, if one looked at the "Maximum Bill Impact" in isolation, the result of Option 13 is a
12 maximum bill increase of 43.8 per cent. This would likely be seen as unreasonable however it
13 cannot be judged without considering that only 2.7 per cent of customers would see bill
14 increases above 20 per cent, and that 78.7 per cent of customers are better off overall.

15 17.3.2 In Table 7-1, which evaluation factor is related to the metric "Efficient
16 Price Signals"? Please explain.

17 **Response:**

18 Please see the response to BCUC IR1 Q17.3 above.

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

22
23 17.4 Please confirm that Sections 7.1 and 7.2, as well as the last column of Table 7-2
24 entitled "Conservation Impact", relate to the estimated reduction in consumption
25 (measured in kWh).

26 **Response:**

27 Confirmed.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 59

1 17.5 Please also provide the estimated reduction in demand (or capacity) measured in
2 kW with the supporting analysis.

3 **Response:**

4 Please refer to the response to BCUC IR1 Q17.6.

5 17.6 How will this estimated reduction in demand impact FortisBC's need for power
6 purchase? Please discuss.

7 **Response:**

8 Although the description of the criteria in Table 7-1 considers that there may be impact on
9 demand due to customer response to a RIB rate, the figures for conservation contained in Table
10 7-2 are only relevant to a reduction in kWh consumption. Please also refer to BCUC IR1 Q9.3.
11

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 60

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".

Response:

The decision to implement a RIB rate lies with the Commission. The Company has provided estimates of the conservation impact of the rate options but does not assert that for its preferred option the conservation potential alone justifies implementation of the rate.

The Company states on page 8 of the Application that;

FortisBC believes that the proposal for a RIB rate contained in this application is one component within a comprehensive demand reduction strategy that helps the Commission and the Province fulfill conservation goals. As compared to a flat rate, the RIB rate allows the utility to provide an incentive to reduce consumption by charging a higher rate for customers who have consumption above a certain threshold.

However, consideration of the Application and its conclusions should occur within the context that recognizes the regulatory impetus behind its filing. The Application was filed upon the Direction provided in BCUC Order G-156-10. Of its own volition, the Company would not have arrived at the conclusion that a RIB rate is preferred as a method of mitigating increasing demand.

The Company has provided conservation impacts of the RIB rates by using a range of elasticity values, intended only to demonstrate the relative range of savings should those values represent the response of customers. The Company takes no position on the likelihood or degree to which the conservation results will materialize while the RIB rate is in place and further cannot forecast annual conservation impacts with any degree of confidence.

The latter part of the referenced sentence intends to convey that should the Commission determine that a RIB rate is in the public interest, the variation in the conservation impact between the various options is small enough to not have much impact on the final determination of the rate option selected.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 61

1 18.2 Do you agree that a RIB rate is a form of conservation rate that can play a key
2 role in FortisBC's strategy seeking to "effectively double the current DSM
3 resource acquisition rate in order to meet the Provincial Government's objective"
4 (p. 4)? If you disagree, please explain why.

5 **Response:**

6 The 2011 FortisBC DSM plan is already expected to achieve conservation objectives without
7 any additional savings that may result from the implementation of the proposed RIB
8 rate. However, any reduced residential load that results from a RIB rate may allow residential
9 PowerSense expenditures to be reduced.

10 18.3 Please provide FortisBC's annual target levels for residential DSM for each year
11 from 2011 to 2015 and discuss how a RIB rate could help achieve those target
12 levels.

13 **Response:**

14 The Company's DSM targets have been set in a manner that does not require the support of a
15 RIB rate. However, it is possible that a RIB rate (or other types of conservation rates) could
16 reduce the DSM expenditures necessary to achieve the targets shown in the table below.

17 **Table BCUC IR1 Q18.3**
18 **FortisBC Annual DSM Savings Targets**

Year	DSM Savings (GWh)
2011	16.4
2012	16.1
2013	16.9
2014	19.5
2015	21.1

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 62

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.

Response:

Please see the response to BCUC IR1 Q18.4.1.

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**."

Response:

Other things being equal, price elasticity should be higher at higher consumption levels since electricity use will form a higher percentage of disposable income. Since the total cost of energy at the block 2 threshold level of consumption is higher than the current flat rate, block 2 consumption should be more price responsive than consumption priced at the flat rate.

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.

Response:

The range of values used for elasticity are thought to be representative of a reasonable range of short term price elasticity. The price elasticity of demand for electricity likely varies depending on the evaluation time frame.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 63

1 18.6 How were the price elasticity values above and below the threshold level for each
2 of the three scenarios chosen? Has FortisBC carried out any research or
3 reviewed the research results based on experience among utilities that have
4 implemented RIB rates? If so, please provide the research results. If not, please
5 explain why not.

6 **Response:**

7 The values were chosen based on the range of generally accepted elasticity values.

8 FortisBC did not carry out any significant research into price elasticity nor the experience of
9 utilities that have implemented RIB rates. This is because the Company is of the opinion that a
10 precise estimate of the conservation effects of a RIB rate will not be determinative in either the
11 decision to implement such a rate or have a significant bearing on the rate option chosen.

12 18.7 Given the significant difference between the price elasticities used in each
13 scenario, which in turn results in a threefold increase in conservation estimates
14 from scenarios 1 to 3, please assign a probability to each scenario and explain
15 your answer.

16 **Response:**

17 As stated in the response to BCUC IR1 Q18.5, the range of elasticities shown are intended to
18 be reflective of different time periods of RIB rate implementation. It is expected that price
19 elasticity will be less in the short term since customer response will be largely behavioural.
20 Price response is expected to increase over longer periods as customers choose more efficient
21 energy-consuming devices. Therefore, it is inappropriate to assign probabilities to the three
22 scenarios.

23 18.8 In the first scenario (p. 22), did FortisBC mean .05/.10 instead of .05/.010? If not,
24 please explain why the price elasticity above the threshold is inferior to that
25 below the threshold.

26 **Response:**

27 FortisBC did intend that the table heading read .05/.10. Please refer to Errata 1.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 64

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.

Response:

The results have been reviewed and are correct. The difference between the flat use bill and RIB bill is a function of the usage level, the customer charge, the block rates and the criteria for customer impact. Generally the breakeven point increases as the threshold increases and decreases as the criteria is more strict. Because the calculations are done in terms of usage categories rather than for each individual kWh level, the Company does not have the breakeven point in terms of an exact kWh number. The decrease due to the stricter criteria is not always large enough to change it from one usage category to another. In other cases the decline is such that it moves the breakeven point into another usage category. Electronic Attachment BCUC IR1 Q16.11 provides the level of detail by usage category, making it easier to see the full set of impacts rather than a single breakeven point.

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?

Response:

Please refer to the table below.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 65

1

Table BCUC IR1 Q19.2

	Block 1 Elasticity	Block 2 Elasticity	Block 1 Elasticity	Block 2 Elasticity	Block 1 Elasticity	Block 2 Elasticity
	-0.05	-0.10	-0.10	-0.20	-0.20	-0.30
Option	MWh Savings:	Percent Savings:	MWh Savings:	Percent Savings:	MWh Savings:	Percent Savings:
1	35,613	2.8%	71,227	5.6%	104,725	8.3%
2	23,388	1.9%	46,776	3.7%	68,775	5.5%
3	10,833	0.9%	21,665	1.7%	31,854	2.5%
4	41,871	3.3%	83,742	6.6%	122,372	9.7%
5	23,255	1.8%	46,510	3.7%	67,965	5.4%
6	8,876	0.7%	17,751	1.4%	25,940	2.1%
7	37,769	3.0%	75,537	6.0%	110,905	8.8%
8	23,591	1.9%	47,182	3.7%	69,274	5.5%
9	9,964	0.8%	19,927	1.6%	29,257	2.3%
10	35,161	2.8%	70,323	5.6%	103,975	8.2%
11	23,111	1.8%	46,221	3.7%	68,539	5.4%
12	10,953	0.9%	21,905	1.7%	32,787	2.6%
13	40,051	3.2%	80,103	6.4%	118,067	9.4%
14	23,001	1.8%	46,003	3.6%	68,237	5.4%
15	9,770	0.8%	19,539	1.5%	29,566	2.3%
16	36,664	2.9%	73,329	5.8%	108,359	8.6%
17	22,948	1.8%	45,897	3.6%	68,083	5.4%
18	10,668	0.8%	21,335	1.7%	32,021	2.5%

2

3

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

12 **Response:**

13 The elasticity impacts are a function of both the amount of kWh in each block and the rate
14 increase/decrease compared to the flat rate. Under options 1, 7 and 4 the rate increase is much
15 larger than under options 2, 8 and 5 or 3, 9 and 6. The block 2 rate increase is 134 per cent for
16 option 1, 138 per cent for option 7 and 150 per cent for option 4. The impact of the rate increase

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 66

1 outweighs the reduction in the amount of load facing block 2 in these cases, leading to higher
2 savings with a higher threshold.

3 Also, the calculations are based on the amount of load facing block 2, not the amount of load
4 billed at block 2. The amount of load facing block 2 represents the percentage of bills that are
5 above the threshold and see the block 2 rate as their marginal cost. This amount is 87.2 per
6 cent for the 1,350 threshold, 82.9 per cent for the 1,600 threshold and 71.4 per cent for the
7 2,100 threshold. This approach is the same as how BC Hydro calculated elasticity impacts.

8

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 67

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.

Response:

FortisBC believes that the conservation that may result from the implementation of a RIB rate will stem from customer reaction to the price signals inherent in the rate structure. These price signals are contained in the differential between the block 1 and block 2 rates.

It was felt that for the initial screening, it was sufficient to look at the two criteria and not to preclude any options based on the results of the specific conservation impact assumptions.

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

Response:

FortisBC identified the RIB block evaluation criteria early in its development of the RIB options and was consistent in their application throughout. A RIB rate is intended to be a conservation rate so it follows that criteria related to pricing that incents the desired behaviour would be used.

As FortisBC filed the Application as a result of a directive contained in Order G-156-10, and out of a general and ongoing concern that its customers rates are not unduly or unreasonably impacted, the customer bill impact criterion was used to design the RIB rate. As the mitigation of bill impact is built into the rate design, it is unnecessary to use it as a screening criterion.

The Company is aware that other screening criteria may be available; however it sought to be consistent in its application of principles throughout the process of arriving at a recommended option.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 68

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

5 **Response:**

6 Please see the response to BCUC IR1 Q20.2 above.

7

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 69

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 1 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 1 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.

Response:

Please see the response to BCOAPO IR1 Q16g.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 70

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

Bill Impact Range	F2011	F2012	F2013	F2014	F2015
> <=					
Maximum bill impact					
> ... <=					
...					
> ... <=					
...					
> 12.0% <=					
15.0%					
> 10.0% <=					
12.0%					
> 9.0%					
<=10.0%					
> 8.0% <=					
9.0%					
> 6.0% <=					
8.0%					
> 5.0% <=					
6.0%					
> 2.5% <=					
5.0%					
> 0.0% <=					
2.5%					
> -2.5% <=					
0.0%					
> -5.0% <= -					
2.5%					
> -10.0% <= -					
5.0%					

(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.)

Response:

FortisBC has already modeled several scenarios where the most adversely affected customer would see an increase of 10 per cent. Options 3, 6, 9, 12, 15 and 18, shown in Table 7-2 of the Application, include RIB options with a criteria that no customer sees an increase above 10 per

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 71

cent. This criteria is the same as what the BCUC defines as the class average rate change ("CARC") plus 10 per cent option. The six options differ in the customer charge and RIB threshold. After RIB impacts are implemented, the CARC would be applied to those 6 scenarios. The CARC, which includes both revenue requirement and rebalancing adjustments, is forecast to be 8.9 per cent for 2012, 6.5 per cent for 2013, 3.4 per cent for 2014, and 6.5 per cent for 2015. 100 per cent of customers would receive those increases in the subsequent years as FortisBC does not plan to phase in the RIB.

Percent bill impacts for options 3,6,9,12,15, and 18 can be found in the table filed in response to BCUC IR1 Q16.11.

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.

Response:

In the case of RIB rate conservation, the Company stated in its response to BCUC IR1 Q18.1 that;

The Company has provided conservation impacts of the RIB rates by using a range of elasticity values, intended only to demonstrate the relative range of savings should those values represent the response of customers. The Company takes no position on the likelihood or degree to which the conservation results will materialize while the RIB rate is in place and further cannot forecast annual conservation impacts with any degree of confidence.

The elasticity numbers used in the Application are meant to be long-term - they don't occur immediately. In the opinion of the Company, there is no useful method of estimating how much applies each year.

The conclusions regarding natural conservation are equally tenuous. FortisBC's experience indicates that despite annual rate increases in recent years, use per customer continues to rise. This leads to the conclusion that either the effects of elasticity are absent, or more likely, other behavioural or demographic factors are working in opposition to the assumed impact of "natural conservation". In either case, the Company has no estimates of the division of conservation impacts related to rate increases. Furthermore, even when looking, after the fact, at customer usage, one can only make estimates and assumptions of the impact that rates alone have had

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 72

1 on conservation. It is impossible to determine the actual impact because the amount of
2 electricity that customers may have used had the prices been different cannot be measured.

3 21.4 Table 8-2 shows the forecast residential rate increases for 2012 to 2015. Please
4 use these anticipated residential rate increases (i.e., class average rate change
5 or "CARC") to model a scenario where the single most adversely impacted
6 customer would face a bill impact of CARC + 10%. Please respond to questions
7 21.2 and 21.3 for this scenario.

8 **Response:**

9 Please refer to the table below.

10 **Table BCUC IR1 Q21.4**

	2011	2012	2013	2014	2015
Customer Charge	\$28.93	\$31.50	\$33.55	\$34.69	\$36.95
Block 1 Rate	\$0.0856	\$0.0932	\$0.0992	\$0.1026	\$0.1093
Block 2 Rate	\$0.1001	\$0.1090	\$0.1161	\$0.1201	\$0.1279
Threshold	1600	1600	1600	1600	1600
Percent Customers with Impacts in the Range of:					
-5.0% to -2.5%	53.1%	0.0%	0.0%	0.0%	0.0%
-2.5% to 0.0%	22.6%	0.0%	0.0%	0.0%	0.0%
0.0% to 2.5%	12.9%	0.0%	0.0%	0.0%	0.0%
2.5% to 5.0%	8.7%	0.0%	0.0%	100.0%	0.0%
5.0% to 7.5%	2.1%	0.0%	100.0%	0.0%	100.0%
7.5% to 10.0%	0.6%	100.0%	0.0%	0.0%	0.0%

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 73

1 21.5 Given FortisBC's statement on p. 10 that "the RIB rate allows the utility to
2 introduce price signals that reflect the increased marginal cost of electricity",
3 please discuss why the issue of capping the Block 2 rate at the level of the
4 marginal cost of electricity was not explored when modelling the four pricing
5 principles.

6 **Response:**

7 The referenced statement is only intended to act as a general acknowledgement that the cost of
8 supplying power increases as consumption rises. It was not meant to directly link FortisBC's
9 marginal cost of power to the RIB rate beyond that.

10 In order to provide a full answer to the question one would have to assume that using the
11 marginal cost to cap the block 2 rate was considered and then dismissed for some reason that
12 can be conveyed. FortisBC did not at any time give consideration to marginal cost pricing.

13 FortisBC states for scenarios E and G that "the general and rebalancing increases were
14 applied equally across the basic charge and Block 1 rate components with the Block 2
15 rate increased by an amount sufficient to recover the remaining required revenue".

16
17 21.6 Please confirm that in scenarios E and G, the Block 2 rate is also augmented by
18 the general and rebalancing increases due to the revenue requirement
19 constraint.

20 **Response:**

21 For all scenarios, including E and G, the block 2 rate is determined solely by dividing the
22 residual revenue remaining to be recovered after the customer charge and block 1 revenues are
23 determined, by the kWh expected to fall in the second block.

24 In all cases, including E and G, the revenue requirement and/or the rebalancing increase is
25 applied only to the customer charge and block 1 rate as required by the option in question.

26

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 74

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 1 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.

Response:

Please refer to the below graph and table.

Table BCUC IR1 Q22.1

	Rate Component	2011	2012	2013	2014	2015
A	Block 1 Rate	0.07526	0.08196	0.08729	0.09025	0.09612
	Block 2 Rate	0.11138	0.11903	0.12519	0.12761	0.13500
B	Block 1 Rate	0.07526	0.07526	0.07526	0.07526	0.07526
	Block 2 Rate	0.11138	0.12780	0.14093	0.14723	0.16231
C	Block 1 Rate	0.07828	0.08525	0.09079	0.09387	0.09998
	Block 2 Rate	0.11272	0.12009	0.12603	0.12814	0.13541
D	Block 1 Rate	0.07828	0.07828	0.07828	0.07828	0.07828
	Block 2 Rate	0.11272	0.13214	0.14766	0.15510	0.17292
E	Block 1 Rate	0.08197	0.08927	0.09507	0.09830	0.10469
	Block 2 Rate	0.11066	0.11630	0.12096	0.12213	0.12700
F	Block 1 Rate	0.08197	0.08197	0.08197	0.08197	0.08197
	Block 2 Rate	0.11066	0.12585	0.13811	0.14351	0.15674
G	Block 1 Rate	0.08449	0.09201	0.09799	0.10132	0.10791
	Block 2 Rate	0.11152	0.11648	0.12062	0.12124	0.12549
H	Block 1 Rate	0.08449	0.08449	0.08449	0.08449	0.08449
	Block 2 Rate	0.11152	0.12948	0.14396	0.15034	0.16599
CARC + 10% (Option 6)	Block 1 Rate	0.08743	0.09303	0.09693	0.10023	0.10674
	Block 2 Rate	0.10055	0.10699	0.11148	0.11527	0.12276
Flat Block	All kWh	0.09090	0.09672	0.10078	0.10421	0.11098
Marginal Cost	All kWh	0.03804	0.03804	0.04241	0.04575	0.04916

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 76

1 22.2 For the two pricing principles that freeze the Block 1 rate, Table 8-3 shows that
2 the Block 1 rate is frozen at levels lower than the current flat rate for the entire
3 period (scenarios B, D, F and H). Considering that between 21% and 28% of
4 residential customers never see the Block 2 rate, at least in 2011 (see Table 7-
5 2), please explain why FortisBC chose to model pricing principles that would
6 send the wrong price signals (i.e., an absolute price decrease) to about one
7 quarter of its customers over the next 5 years.

8 **Response:**

9 The Company chose to show the impact of applying rate increases in a number of fashions to
10 demonstrate the effect of doing so. This included different combinations of freezing both the
11 block 1 and customer charge rates. FortisBC does not have as its preferred rate an option that
12 does not increase the block 1 rate over time and does not believe that such a rate would be
13 appropriate.
14

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 77

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

Response:

Savings resulting from elasticity impacts as provided in Table 7-2 of the Application apply to the total level of consumption for the class and cannot be segregated by customer usage categories. Further, those savings are expected to occur upon the implementation of RIB rates and may take several years to achieve. FortisBC does not have any estimates of how they will differ in different years.

Please refer to the below tables for the responses to BCUC IR1 Q23.1a, b and c.

Table BCUC IR1 Q23.1a

Number of Customers - Option A					
Number of Bills in Block 2	2011	2012	2013	2014	2015
0	22,576	22,970	23,362	23,748	24,141
1	7,416	7,546	7,675	7,801	7,930
2	9,597	9,765	9,932	10,096	10,263
3	9,706	9,876	10,045	10,210	10,379
4	8,180	8,323	8,465	8,604	8,747
5	8,616	8,767	8,916	9,063	9,213
6	25,848	26,300	26,748	27,189	27,640
Total	98,810	100,538	102,253	103,939	105,661

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 78

Table BCUC IR1 Q23.1b

Number of Customers - Option C					
Number of Bills in Block 2	2011	2012	2013	2014	2015
0	30,210	30,738	31,263	31,778	32,305
1	10,143	10,320	10,496	10,669	10,846
2	9,597	9,765	9,932	10,096	10,263
3	9,161	9,321	9,480	9,637	9,796
4	8,943	9,099	9,255	9,407	9,563
5	7,961	8,101	8,239	8,375	8,513
6	22,794	23,192	23,588	23,977	24,374
Total	98,810	100,538	102,253	103,939	105,661

Table BCUC IR1 Q23.1c

Average Bill Impact - Option A					
Number of Bills in Block 2	2011	2012	2013	2014	2015
0	-12%	7%	5%	2%	4%
1	-12%	7%	5%	2%	5%
2	-8%	7%	5%	2%	5%
3	-5%	7%	5%	2%	5%
4	-2%	7%	5%	2%	5%
5	0%	7%	5%	2%	5%
6	11%	7%	5%	2%	6%

Table BCUC IR1 Q23.1d

Average Bill Impact - Option C					
Number of Bills in Block 2	2011	2012	2013	2014	2015
0	-10%	4%	5%	2%	4%
1	-9%	4%	5%	3%	5%
2	-6%	4%	6%	3%	5%
3	-3%	5%	5%	2%	5%
4	-1%	5%	5%	2%	5%
5	2%	5%	5%	2%	6%
6	14%	5%	5%	2%	6%

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 79

1 23.2 In FortisBC's view, how many of its current DSM programs will be impacted by
2 the implementation of the RIB rate? What are the indirect benefits in terms of
3 additional savings?

4 **Response:**

5 Other things being equal, customers with higher consumption should be more likely to
6 participate and customers with lower consumption less likely to participate. FortisBC does not
7 have readily available data that would indicate the consumption level of customers that have
8 participated in DSM programs in the past, nor does it have any information on other things that
9 may not be equal, such as the income and education levels of its DSM program participants.

10 The above factors make it difficult to predict the impact of RIB on DSM programs as a whole.
11 FortisBC expects a positive impact on DSM measures that result in significant energy savings,
12 such as heat pumps for customers that were previously using or are considering resistance
13 heating.

14

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 80

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.

Response:

Confirmed.

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?

Response:

As demographic data was not available for these customers they were not included in the further analysis.

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.

Response:

The results of the 2009 REUS indicate the following breakdown of customers.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 81

1

Table BCUC IR1 Q24.3

Demographic Trait	Percentage of Customers
Electric Heat	39.3%
Other Heat	60.7%
Income <\$20k	6.7%
Income \$20k-\$40k	27.8%
Income \$40k-\$60k	23.8%
Income \$60k-\$80k	17.9%
Income \$80k-\$120k	16.6%
Income >\$120k	7.3%

2

3 FortisBC states: "For example, although the sample data shows that 41 per cent of
4 electric heat customers will see an annual bill increase, on average, those increases are
5 4.5 per cent or less under any of the options considered."

6
7 24.4 To which option does the statement above apply? Please provide the data that
8 supports the statement that "on average, those increases are 4.5% or less under
9 any of the options considered".

10 **Response:**

11 From Table 9-1 in the Application, it can be seen that for the preferred Option (Option 8), 41 per
12 cent of customers would see an annual increase, while the simple average for all options is 40
13 per cent.

14 The average increases under all of the options can be seen in the table below which shows that
15 the maximum increase under any option is 4.5 per cent (Option 4).

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 82

1

Table BCUC IR1 Q24.4

Option	1	2	3	4	5	6	7	8	9
Flat Rate Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill
Bill Amount (\$)	1,396.19	1,448.99	1,430.86	1,412.25	1,459.10	1,431.13	1,409.52	1,452.22	1,431.19
Increase over Flat Rate Bill		3.8%	2.5%	1.2%	4.5%	2.5%	1.0%	4.0%	2.5%

Option	10	11	12	13	14	15	16	17	18
Flat Rate Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill
Bill Amount (\$)	1,396.19	1,443.31	1,425.45	1,407.42	1,451.84	1,426.23	1,406.35	1,445.73	1,425.38
Increase over Flat Rate Bill		3.4%	2.1%	0.8%	4.0%	2.2%	0.7%	3.5%	2.1%

2

3 FortisBC states: "Similarly, while 14 per cent and 23 percent of customers in the
4 <\$20,000 and \$20,000-\$40,000 income categories respectively will experience an
5 annual bill increase, the average customer in these categories will see bills decrease
6 between 0.8 per cent and 6.7 per cent under any of the options."

7
8 24.5 What are, on average, the bill increases that will be faced respectively by the
9 14% and 23% of customers in the <\$20,000 and \$20,000-\$40,000 income
10 categories? Please provide the supporting data.

11 **Response:**

12 Average bill decreases for customers in the below \$20,000 per year and \$20,000-\$40,000
13 income categories are shown below.

FortisBC Inc. ("FBC" or the "Company") Residential Inclining Block Rate Application ("Application")	Submission Date: June 7, 2011
Response to British Columbia Utilities Commission ("BCUC" or the "Commission") Information Request ("IR") No. 1	Page 83

1

Table BCUC IR1 Q24.5

	Option	1	2	3	4	5	6	7	8	9
	Flat Rate Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill
Income <\$20k										
Bill Amount (\$)	826.21	784.91	799.09	813.64	796.83	809.89	819.98	790.45	803.87	816.77
Decrease from Flat Rate Bill		-5.0%	-3.3%	-1.5%	-3.6%	-2.0%	-0.8%	-4.3%	-2.7%	-1.1%
Income \$20k-\$40k										
Bill Amount (\$)	1,087.54	1,046.26	1,060.43	1,074.99	1,045.99	1,064.47	1,078.73	1,046.88	1,062.14	1,076.81
Decrease from Flat Rate Bill		-3.8%	-2.5%	-1.2%	-3.8%	-2.1%	-0.8%	-3.7%	-2.3%	-1.0%

	Option	10	11	12	13	14	15	16	17	18
	Flat Rate Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill	RIB Bill
Income <\$20k										
Bill Amount (\$)	826.21	772.19	786.17	800.26	782.52	794.48	803.76	777.19	790.18	801.80
Decrease from Flat Rate Bill		-6.5%	-4.8%	-3.1%	-5.3%	-3.8%	-2.7%	-5.9%	-4.4%	-3.0%
Income \$20k-\$40k										
Bill Amount (\$)	1,087.54	1,042.70	1,056.67	1,070.76	1,042.58	1,059.50	1,072.63	1,043.50	1,058.26	1,071.48
Decrease from Flat Rate Bill		-4.1%	-2.8%	-1.5%	-4.1%	-2.6%	-1.4%	-4.1%	-2.7%	-1.5%

2

3

4 24.6 Please provide the supporting data to the statement that "the average customer
5 in these categories will see bills decrease between 0.8 and 6.7% under any of
6 the options".

7 **Response:**

8 Please see the response to BCUC IR1 Q24.5 above.

Electronic Attachment BCUC IR1 Q16.2
RIB RATE DESIGN OPTIONS MODEL

REFER TO LIVE SPREADSHEETS

Provided in electronic format only

(accessible by opening the Attachments Tab in Adobe)

Electronic Attachment BCUC IR1 Q16.11

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