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January 16, 2014

Via Email
Original via Mail

B.C. Sustainable Energy Association
c/o William J. Andrews, Barrister & Solicitor
1958 Parkside Lane
North Vancouver, B.C.
V7G 1X5

Attention: Mr. William J. Andrews

Dear Mr. Andrews:

**Re: FortisBC Energy Inc. (FEI) and FortisBC Inc. (FBC) (collectively the Companies)
Applications for Approval of a Multi-Year Performance Based Ratemaking Plan
for 2014 through 2018 (the Applications)
Information Request (IR) No. 1 to the B.C. Sustainable Energy Association and
the Sierra Club British Columbia (BCSEA)**

In accordance with the British Columbia Utilities Commission (BCUC or the Commission) Orders G-218-13 and G-219-13 in the above noted proceedings, the Companies respectfully submit the attached IR No. 1 to BCSEA on the Direct Testimony of John Plunkett and Paul Chernick (FEI Exhibit C4-8 and FBC Exhibit C8-9).

If further information is required, please contact the undersigned.

Sincerely,

**FORTISBC ENERGY INC. and
FORTISBC INC.**

Original signed by: Diane Roy

For: Diane Roy and Dennis Swanson

Attachments

cc (email only): Commission Secretary
Registered Parties

FortisBC Energy Inc. (FEI) and FortisBC Inc. (collectively the Companies) Applications for Approval of a Multi-Year Performance Based Ratemaking Plan for 2014 through 2018 (the Applications)	Submission Date: January 16, 2014
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- 1 multivariate regression model that predicts energy efficiency resource acquisition
2 costs per kWh of annual savings”
- 3 8.1 Please provide the model specification, i.e. the equation, used for the linear
4 regression.
- 5 8.2 Please clarify why California and New England were assigned their own
6 independent variables for this analysis.
- 7 8.3 Please confirm if this analysis accounted for time trends in the data,
8 heteroskedasticity, or serial correlation.
- 9 8.4 Please confirm that time trends in the data, heteroskedasticity and serial
10 correlation are common issues in linear regression that can lead to misleading
11 statistics.
- 12 **9.0 Reference: Exhibit C8-9, Direct testimony of John Plunkett and Paul Chernick,**
13 **Exhibit__JPPC-5 - Expanding Energy Efficiency Resource**
14 **Acquisition for FortisBC, Figure 3, page 8;**
15 **Exhibit C8-9, Direct testimony of John Plunkett and Paul Chernick,**
16 **Exhibit__JPPC-5 - Expanding Energy Efficiency Resource**
17 **Acquisition for FortisBC, Figure 1, page 4.**
18 **Exhibit C8-9, Direct testimony of John Plunkett and Paul Chernick,**
19 **Table 2, page 15.**
- 20 9.1 Please provide the model specification, i.e. equation, used to generate Figure 3.
- 21 9.2 The data presented in Figure 1 appears to indicate a linear relationship between
22 DSM budget expenditure per kWh of savings and the savings as a percent of
23 sales, not the polynomial function indicated in Figure 3. Please identify the
24 empirical basis for Figure 3.
- 25 9.3 Table 2 shows a budget range of \$0.07 - \$0.60 \$/kWh for the “top ten” states,
26 and a similar range of \$0.07 to \$0.57/kWh for the bottom ten states for electric
27 utilities. Please confirm if Mr. Plunkett and Mr. Chernick agree that this empirical
28 evidence indicates that there is no correlation between the unit cost of savings
29 (\$/kWh) and the Savings [target] as a per cent of Sales.

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1 ACEEE report, and provide specific references from the report to these gas
2 utilities and their programs for the residential heating equipment market. In the
3 table, for each of these programs, please provide the jurisdiction covered by the
4 program, the heating degree days for that jurisdiction, the equipment efficiency
5 eligibility requirement for the program, the regulated minimum efficiency level for
6 that specific type of equipment (the equivalent of British Columbia's Minimum
7 Equipment Performance Standards), the incentive amount, and the TRC result
8 for the program.

9 **13.0 Reference: Exhibit C4-8, Direct testimony of John Plunkett and Paul Chernick**
10 **page 29, lines 21-23.**

11 The FEU do not agree with the statement on page 29 of Exhibit C4-8 that the "FEU finds
12 that the incremental cost of high-efficiency equipment over minimum efficiency
13 standards for new equipment is too high to be cost effective."

14 13.1 Please explain the basis for the view that the FEU have found "that the
15 incremental cost of high-efficiency equipment over minimum efficiency standards
16 for new equipment is too high to be cost effective", and provide specific reference
17 to the evidence in this proceeding where this statement is made by the FEU.

18 **14.0 Reference: Exhibit C4-8, Direct testimony of John Plunkett and Paul Chernick**
19 **page 30, lines 6-8.**

20 "However, the big difference is the amount of money required – both total resources and
21 program budget – to get another \$103 in net benefits from early retirement over end-of-
22 life replacement."

23 14.1 Please provide the suggested program design, including energy savings,
24 incremental cost, net-to-gross ratio, and incentive and non-incentive costs
25 showing how the program budget would be smaller for an end-of-life replacement
26 program than for an early replacement program.

27 **15.0 Reference: Exhibit C4-8, Direct testimony of John Plunkett and Paul Chernick**
28 **page 30, footnote 8 and page 31, lines 1 and 2 and Exhibit C4-8-1,**
29 **Table 7: Cost-Effectiveness of Retrofit vs. Natural Replacement**
30 **Furnaces (Confidential)**

31 15.1 For Confidential Table 7 in Exhibit C4-8-1, please provide all assumptions, data
32 sources, calculations and a working spreadsheet that demonstrates the
33 calculated values. Please provide a summary table comparing your inputs to

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1 FEU inputs and provide the source or explanation for using a different value than
2 FEU. As Confidential Table 7 contains and is based on confidential information
3 from the FEU, the FEU request that this response be filed confidentially in
4 accordance with the Commission's Confidential Filing Practice Directive.

5 15.2 Please provide a copy of the reference cited in footnote 8: "Retrofit Economics
6 201: Correcting Common Errors in Demand-Side Management Cost-Benefit
7 Analysis" (J. Plunkett, R. Brailove and J. Wallach) *IGT's Eighth International
8 Symposium on Energy Modeling*, Atlanta, Georgia, April 1995.

9

10 **16.0 Reference: Exhibit C4-8, Direct testimony of John Plunkett and Paul Chernick**
11 **page 33, line 2.**

12 16.1 Please provide the heating degree days for the three utilities cited on page 33,
13 line 2 as achieving over 1% of sales.

14 **17.0 Reference: Exhibit C4-8, Direct testimony of John Plunkett and Paul Chernick**
15 **page 36**

16 17.1 Page 36 states that "FEU's projected costs are lower than both VT and MA on
17 the residential side." However, Table 12 shows a value of \$60.72/GJ/year for
18 FEU and a value of \$47.97/GJ/year for VT. Please explain this discrepancy.

19 17.2 Please define specifically which programs were included in the analysis for the
20 "Res" and "C&I" categories for FEU, VT and MA shown in Tables 12 and 13 on
21 page 36 of Exhibit C4-8.

22 17.3 Page 36 of Exhibit C4-8 states, "In the end, FEU's total portfolio projections come
23 in slightly under MA and above VT". Please clarify whether the values for FEU
24 provided in Tables 12 and 13 correspond with the Companies' proposed budget
25 and energy savings values, or whether the values provided in Tables 12 and 13
26 correspond with the suggested increase in expenditure and associated savings
27 of 60% in 2014, 80% in 2015 and 100% in each of 2016, 2017 and 2018.

28 **18.0 Reference: Exhibit C4-8, Direct testimony of John Plunkett and Paul Chernick**
29 **page 37, lines 15-19**

30 "With the historical and planned savings of industry leaders in mind, we used
31 professional judgment to project both how much annual incremental savings FEU could
32 achieve as a percentage of forecast sales, and how much they should be expected to
33 spend per annual GJ saved to achieve them."

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- 1 18.1 Please show the calculations undertaken to derive these values for incremental
2 savings, and the costs associated with these incremental savings, list all
3 assumptions, indicate at what point professional judgement entered into the
4 calculations, and explain the thought process behind each point of professional
5 judgement. If the values for incremental savings and costs were derived using a
6 spreadsheet, please also provide the fully functional working spreadsheet.
- 7 **19.0 Reference: Exhibit C4-8, Direct testimony of John Plunkett and Paul Chernick,**
8 **page 39 Table 14**
- 9 19.1 Please show the calculations behind the values provided in Table 14 on page 39
10 of Exhibit C4-8. Please list all assumptions, indicate at what point professional
11 judgement entered into the calculations, and explain the thought process behind
12 each point of professional judgement. If the values for cost-effectiveness were
13 derived using a spreadsheet, please also provide the fully functional working
14 spreadsheet. Please show the costs, benefits, net benefits and benefit-cost ratio
15 for the “residential” and “non-residential” categories.
- 16 19.2 Please define specifically what programs in have been included in the
17 “residential” and “non-residential” categories in Table 14.
- 18 **20.0 Reference: Exhibit C4-8, Direct testimony of John Plunkett and Paul Chernick**
19 **page 40, lines 13-14**
- 20 20.1 Please show the calculation used to derive the value of \$127 million shown at
21 lines 13 and 14 on page 40 of Exhibit C4-8. Please list all assumptions, indicate
22 at what point professional judgement entered into the calculations, and explain
23 the thought process behind each point of professional judgement. If the value
24 was derived using a spreadsheet, please also provide the fully functional working
25 spreadsheet.
- 26