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April 18, 2023

Commercial Energy Consumers Association of British Columbia
c/o Owen Bird Law Corporation
P.O. Box 49130, Three Bentall Centre
2900 – 595 Burrard Street
Vancouver, BC V7X 1J5

Attention: Christopher P. Weafer

Dear Christopher P. Weafer:

Re: FortisBC Energy Inc. (FEI)
Revised Renewable Gas Program Application – Stage 2 (Application)
Response to the Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1 on FEI's Rebuttal Evidence to the BC Sustainable Energy Association (BCSEA)

On December 17, 2021, FEI filed the Application referenced above. In accordance with the amended regulatory timetable established in Exhibit A-47, FEI respectfully submits the attached response to CEC IR No. 1 on FEI's Rebuttal Evidence to the BCSEA.

If further information is required, please contact the undersigned.

Sincerely,

FORTISBC ENERGY INC.

Original signed:

Sarah Walsh

Attachments

cc (email only): Commission Secretary
Registered Parties



FortisBC Energy Inc. (FEI or the Company) Revised Renewable Gas Program Application – Stage 2 (Application)	Submission Date: April 18, 2023
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1 **1. Reference: Exhibit B-62, Rebuttal to BCSEA A3**

Q3: Please summarize your response to EFG’s evidence.

A3: EFG makes three errors with respect to the inputs to its analysis which materially change the results. Specifically:

1. EFG has understated the capital costs for gas and electric water heaters.
2. EFG has overstated the gas connection cost for customers.
3. EFG inappropriately compares the average cost of RNG acquisition (incremental clean energy) to the rolled-in cost of clean electricity; the comparison should be the rolled-in cost of gas, including RNG, to the rolled-in cost of electricity.

After these input errors are corrected for, the results show that both RNG and electricity can be used to deliver heat to residential homes at similar overall costs.

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1.1 Please elaborate on the differences between a ‘rolled-in’ cost and the ‘average’ cost.

Response:

Please refer to the response to BCSEA IR1 27.2 Rebuttal.

1.2 Please explain whether comparing ‘average’ costs instead of ‘rolled in’ costs would be equally valid, and please explain why.

Response:

Please refer to the response to BCSEA IR1 25.4 Rebuttal.

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1 2. **Reference: Exhibit B-62, Rebuttal to BCSEA A7**

Q7: On page 4 of its evidence, EFG states that “the commodity cost of RNG is based on FEI’s average cost of acquiring RNG”. Is this the appropriate commodity cost to use in the analysis of the RNG Scenario?

A7: No, EFG has not based its analysis on FEI’s Renewable Gas Connections service as proposed. FEI’s proposal in its Application is that Renewable Gas Connections customers will pay the average cost of gas inclusive of RNG. Further, as discussed in the response to BCUC IR1 13.4 and 14.1 (Exhibit B-17), FEI does not consider a Renewable Gas Connections service based on the average cost of RNG to be viable.

FEI also notes that it is not an apples-to-apples comparison to compare the average acquisition cost of RNG to the rolled-in price of electricity. FEI’s marginal cost of acquiring Renewable Gas, including RNG, is higher than its average commodity costs, just as BC Hydro’s or FortisBC Inc.’s marginal cost of acquiring clean electricity is higher than its average electricity costs. For example, FEI estimates that a representative cost of firm power from a new hydroelectric dam would be \$0.16 per kWh, based on a simple scaling of the cost of power using BC Hydro’s estimated construction cost for the Site C dam. Please note that this cost estimate is conservative in that it does not include transmission or distribution costs.¹ This is higher than the BC Hydro Step 2 rate of \$0.1408 per kWh used by EFG in its analysis (which does include transmission and distribution costs).

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3 2.1 Please explain whether or not, in FEI’s view, it is likely that electricity costs will
4 increase significantly under high electrification scenarios, and which could exceed
5 \$0.16/kWh.

6 2.1.1 If yes, over what time period would this be likely to occur?

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8 **Response:**

9 Yes. As part of its Pathways Report, FEI conducted high-level rate modelling to understand the
10 proximate growth in energy rates to meet an 80 percent GHG reduction goal. Working with
11 Guidehouse, FEI estimated that electricity rates in a high electrification scenario could increase
12 to \$0.24/kWh. The growth in energy rates depends on the scope, speed and scale of GHG
13 emissions reductions targeted by government policy. FEI’s analysis with Guidehouse evaluated
14 the rate increase by 2050 of an 80 percent GHG reduction.

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18 2.1.2 If yes, would it be appropriate for cost comparisons to factor in estimates
19 for the future cost of electricity under electrification scenarios?

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1 **Response:**

2 Yes, this would be appropriate where complete and fully transparent information on costs
3 associated with electrification scenarios is available.

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7 2.1.3 If yes, please provide FEI's estimate of BCH electricity costs, including
8 distribution and transmission increases, that would accrue to the
9 consumer under such a scenario under a high electrification scenario.

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11 **Response:**

12 FEI has not conducted in-depth analysis of BC Hydro's transmission and distribution (T&D) costs
13 to customers since it does not have access to complete and fully transparent information
14 regarding such costs under electrification scenarios. However, FEI's high-level modeling of
15 electricity rates in the Pathways Report discussed in the response to CEC IR1 2.1 Rebuttal
16 BCSEA is inclusive of estimated Provincial T&D costs.

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1 **3. Reference: Exhibit B-62, Rebuttal to BCSEA A10**

Q10: Would any other changes be needed to EFG's RNG Scenario to include a forecast of rolled-in costs of RNG?

A10: Most of the gas cost components can remain fixed over the forecast period, as per the analysis provided by EFG. However, the cost of the carbon tax should match the planned increases to the carbon tax currently recommended by the government. For simplicity, FEI has used the expected carbon tax rates as on April 1 of each year, as being representative of the carbon tax for the whole year.

The carbon tax values and resulting total RNG costs to 2030 are presented below. Please note that the total RNG Cost in Table 2 is calculated by taking the nominal 2023 costs, as shown in Table 1 above, and discounting them back to 2022, as per EFG's original analysis. The resulting discounted values are carried forward through the entire forecast period, with the exception of the carbon tax which updates annually. As a result of this discounting, the total RNG Cost for 2023 in Table 2 is somewhat less than that shown in Table 1. After 2030, FEI considers that it is reasonable for the purposes of the analysis to have the costs of the carbon tax and RNG remain fixed.

Table 2: Forecast Carbon Tax and Rolled-in RNG Costs to 2030

Cost	2023	2024	2025	2026	2027	2028	2029	2030
Equivalent Cost of Carbon Tax per GJ	\$ 3.29	\$ 4.02	\$ 4.75	\$ 5.48	\$ 6.21	\$ 6.94	\$ 7.67	\$ 8.40
Total RNG Cost per GJ	\$ 15.54	\$ 16.27	\$ 17.00	\$ 17.73	\$ 18.46	\$ 19.19	\$ 19.92	\$ 20.65

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4 3.1 Please explain why FEI considers it reasonable to have the costs of the carbon tax
5 and RNG to remain fixed after 2030.

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7 **Response:**

8 Neither the federal nor the provincial governments have provided any indication of how the carbon
9 tax will change after 2030. Therefore, FEI believes that it would be speculative to propose
10 changes to the carbon tax in the analysis for the period after 2030.

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14 3.2 Please explain whether or not it would be a reasonable expectation to assume the
15 carbon tax will increase by 5% annually after 2030.

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17 **Response:**

18 The carbon tax is changing each year to reach a level of \$170 per tonne by 2030. The annual
19 increases of \$15 per tonne to reach \$170 per tonne are unrelated to a defined percentage change.
20 Regardless, FEI does not have a reasonable basis to predict increases to the carbon tax after
21 2030 for the reasons explained in the response to CEC IR1 3.1 Rebuttal BCSEA.

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1 **4. Reference: Exhibit B-62, Rebuttal to BCSEA A11 and**

A11: FEI has updated EFG's Excel based spreadsheet analysis filed in Confidential Exhibit C-11-1 to correct for the three inputs discussed above. The updated results for the RNG Scenario are provided in Table 3 below.

Table 3: NPV of Lifecycle Costs by End Use – Updated RNG Scenario

	Renewable Natural Gas Scenario	Electrification Scenario
Heating	\$20,439	\$24,201
Water Heating	\$10,053	\$9,399
Cooking	\$2,441	\$2,642
Drying	\$1,773	\$2,095
Gas Connection Costs	\$12	\$0
Gas Fixed Monthly Charges	\$2,066	\$0
Total	\$36,784	\$38,337

As shown in Table 3 above, when the analysis is corrected for the inputs discussed above, the combined capital and operating cost to the customer appears to be somewhat more favourable for the gas customer. However, the difference is not large, and as noted by EFG, the electricity analysis does not factor in BC Hydro's Step 1 rates,² nor do the capital costs account for differential tax treatment or incentives. However, the analysis demonstrates that the costs in the RNG Scenario and Electricity Scenario would likely be much closer for most homeowners than was suggested by EFG's evidence.

This finding is consistent with the response to BCUC IR1 13.7 which indicates that the NPV of the heating costs for the home with RNG priced equivalent to conventional natural gas is broadly similar to the heating costs of a home using electric heat pumps. In other words, both gas and electric systems can provide clean, low carbon energy to customers for a similar cost. As discussed in the response to BCUC IR1 17.1, however, rebates and subsidies tilt the playing field in favour of electricity, despite the relative cost parity that the analysis shows.

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4.1 Please provide the time period for the NPV analysis.

Response:

FEI used the same time period as was used by EFG, which is 20 years starting in 2023 (i.e., 2023 through 2042).

4.2 Is it fair to say that the Electrification Scenario costs are likely to be conservative in that they do not account for any electricity connection costs, nor Step 1 rates? Please explain.



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1 **Response:**

2 Yes. Adding in the electricity connection costs would increase the NPV of an electrical solution,
3 making the Electrification Scenario more costly than presented in EFG's analysis.

4 Please also refer to the response to BCSEA IR1 25.4 Rebuttal for a discussion of Step 1 and Step
5 2 rates.

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