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April 18, 2023

British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, B.C.
V6Z 2N3

Attention: Patrick Wruck, Commission Secretary

Dear Patrick Wruck:

Re: FortisBC Energy Inc. (FEI)

Revised Renewable Gas Program Application – Stage 2 (Application)

Response to the British Columbia Utilities Commission (BCUC) Information Request (IR) No. 1 on FEI's Rebuttal Evidence to Citizens for My Sea to Sky Society (MS2S) and the Brattle Group (Brattle)

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 BCUC IR1 on FEI's Rebuttal Evidence to MS2S and Brattle.

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

1.0 Reference: INTRODUCTION

Exhibit B-66, Section 1.1, A4, pp. 2–4

Evidence Prepared by Brattle

On pages 2 to 4 of Exhibit B-66, FEI states:

> […] FEI considers that Battle's evidence is largely consistent with that of FEI.
>
> […]
>
> FEI's evidence is aligned with Brattle's conclusion that under the proposed Renewable Gas Connections service, if the full cost of RNG [renewable natural gas] were imposed on new gas customers, the high customer cost impact would result in very little additional RNG demand through this offering. In fact, FEI has concluded that the Renewable Gas Connections service is not viable with a price higher than what FEI has proposed. Brattle's conclusion also aligns with FEI's survey results and FEI's position that RNG and conventional natural gas are substitutes and, therefore, have a relatively high cross-elasticity of demand. This means that if the price differential between RNG and conventional natural gas is more than a certain threshold, RNG demand would decrease. [*Footnotes omitted*]

1.1 Please confirm, or explain otherwise, that based on FEI's evidence and Brattle's evidence, there is not enough evidence to draw a conclusion on what price charged for RNG will provide the maximum revenue recovery from voluntary customers, under FEI's proposed Voluntary Renewable Gas offering, and mandatory customers from FEI's proposed Renewable Gas Connections service.

Response:

FEI concurs with the view that there is insufficient evidence upon which to draw a definitive conclusion on the RNG price that would maximize the revenue recovery from voluntary renewable gas customers. However, the evidence available does demonstrate that the current price for voluntary renewable natural gas has been successful, and that the higher differential between RNG and conventional natural gas used in the past resulted in decreased demand. Therefore, on this basis, FEI considers that the proposal to continue the $7 premium over conventional natural gas should be approved.

FEI considers there to be sufficient evidence on the record to support its view that imposing the full cost of RNG on new gas customers would cause the Renewable Gas Connections service to be not viable. Therefore, FEI maintains that the cost to customers under the Renewable Gas Connections service should be equivalent to the cost of conventional gas service. Please refer to the response to BCUC IR1 13.2 (Exhibit B-17) for a discussion on how alternatives to this proposal result in unjust discrimination against new residential connections customers.

1.2 Please confirm whether the price elasticity of demand for conventional natural gas presented by Brattle is consistent with FEI's understanding of the natural gas market.

Response:

As mentioned in the preamble, FEI considers that Brattle's evidence is largely consistent with its own. Brattle's evidence on price elasticity for conventional natural gas is found on pages 47 and 48 of its evidence (Exhibit A2-4) and is summarized below.

Short-term vs. Long-term Elasticity Estimates for Energy Products

Brattle states that: "energy is considered an inelastic good in the short-run … Over the longer term, however, customers do have options to reduce their energy consumption (energy efficiency improvements, switching to a lower blending percentage in the case of RNG, etc.) or switching to a substitute form of energy (converting from natural gas heat to electric heat)."

FEI agrees with Brattle's evidence that elasticity estimates for energy products are lower in the short-run than in the long-run.[1] Nevertheless, the evidence indicates that in both the short- and long-term, price elasticity of conventional natural gas remains well-below one, meaning that it remains relatively inelastic.[2]

Elasticity Studies for Conventional Natural Gas Referenced by Brattle

Brattle provides three references to third-party elasticity studies in its evidence. These references and FEI commentary are provided in the following table:

Referenced Study	Elasticity Estimate	FEI Commentary
Auffhammer and Rubin (2018)	-0.17 to -0.23	These estimates are close to FEI's reference case short-term elasticity of -0.28 (please refer to the response to RCIA IR1 2.3) although they are slightly lower.

[1] In absolute terms.

[2] As defined in Brattle's evidence, footnote 206 "a good is considered inelastic when the absolute value of its own price elasticity is less than 1."

Referenced Study	Elasticity Estimate	FEI Commentary
Labandeira et al (2017)	**Long-term:** -0.6	While this estimate is within the range of long-run elasticity values studied in FEI's literature review, it is higher than FEI's reference case of -0.38. FEI notes that this is a "meta-analysis" and is not defined to any particular jurisdiction, thus lessening the value of the elasticity estimates. This is because price elasticity of energy demand is influenced by geographical location and, in particular, the need for heating (for example) can impact the elasticity of demand. For this reason, FEI prefers to rely on the State of Washington's Department of Commerce study for its reference case.
EIA (2021)	**Short-term:** -0.08 to -0.15 **Long-term:** -0.23	As explained in FEI's Rebuttal Evidence to MS2S-Brattle, this is an updated version of the 2014 EIA study referenced in the response to RCIA IR1 21.1 and, therefore, is consistent with FEI's evidence.

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2.0 Reference: ISSUES WITH DR. FINN'S LIST OF ELASTICTY STUDIES AND THE AVERAGE OWN-PRICE ELASTICITY ESTIMATE

Exhibit B-66, Section 1.3, A12, p. 10

Price Elasticity of Demand Studies

On page 10 of Exhibit B-66, FEI states:

> Item 3 in Dr. Finn's list is: "Alberini et al (2011): Residential consumption of gas and electricity in the U.S.: The role of prices and income, 2011". The inclusion of this study skews the average value. As the study's authors note, the results of this study should be considered as outliers to much of the literature on residential energy demand for both natural gas and electricity:
>
> These results are in sharp contrast with much of the literature on residential energy consumption in the United States, and with the figures used in current government agency practice. In its Annual Energy Outlook, for example, the EIA historically employed a short-term elasticity of -0.15 for non-electric energy. In their 2010 report, EIA adopts an electric elasticity of -0.30 in anticipation of improved consumer awareness resulting from recent smart grid projects. Our results suggest that price elasticities are likely more pronounced than that. Moreover, they suggest that there might be considerable potential for policies which affect energy price than may have been previously appreciated. We leave it to future research to explore how people respond to changing energy prices- through energy efficiency investments, changing the stock of appliances, or merely changing conservation practices. [*Footnotes omitted*]

2.1 The authors of the Alberini et al. (2011) study states that the price elasticities of residential energy demand for both natural gas and electricity are likely more pronounced than -0.30 as adopted in the Energy Information Administration elasticity estimates (EIA) in 2010. Please explain, in FEI's view, whether the price elasticity of residential energy demand for both natural gas and electricity now would be more or less pronounced than -0.30 considering the increased public attention of clean energy, as well as ongoing climate action- related regulations. Please also explain how this compares to the price elasticity of demand information presented by both Dr. Finn and Brattle.

Response:

As explained in FEI's Rebuttal Evidence to MS2S-Brattle, FEI's reference case for conventional natural gas price elasticity of demand is based on the State of Washington's Department of Commerce study which indicates that its short-term own-price elasticity is around -0.28 while its long-term price elasticity is slightly higher at -0.38. Therefore, as suggested by Alberini et al (2011), in the long run, the price elasticity of conventional natural gas could be slightly higher than -0.30. The price elasticity of electricity is usually higher than that of conventional natural gas.

Therefore, considering the long-term elasticity of -0.38 for conventional natural gas in FEI's reference case, it is reasonable to conclude that the price elasticity of electricity could be higher than -0.30 as well (as stated by Alberini et al (2011)).

Please note that, as discussed in the response to BCUC IR1 1.2 Rebuttal MS2S-Brattle, FEI's reference case elasticity estimates indicate higher natural gas price elasticity than Brattle's referenced studies in two cases and lower in another. With regard to Dr. Finn's proposed estimates, and as discussed in FEI's Rebuttal Evidence to MS2S-Brattle, the average range of price elasticity studies provided in Dr. Finn's evidence (after correcting for the errors and duplicates) is between -0.23 and -0.36, which is very close to the referenced conventional natural gas own-price elasticity of -0.28 and -0.38.