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January 7, 2020

British Columbia Public Interest Advocacy Centre  
Suite 803 470 Granville Street  
Vancouver, B.C.  
V6C 1V5

Attention: Ms. Leigha Worth, Executive Director

Dear Ms. Worth:

**Re: FortisBC Energy Inc. (FEI)**

**Project No. 1599033**

**Revelstoke Propane Portfolio Amalgamation Application (the Application)**

**Response to the British Columbia Public Interest Advocacy Centre representing the British Columbia Old Age Pensioners' Organization, Active Support Against Poverty, Disability Alliance BC, Council of Senior Citizens' Organizations of BC, and the Tenant Resource and Advisory Centre *et al.* (BCOAPO) Information Request (IR) No. 2**

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On July 18, 2019, FEI filed the Application referenced above. In advance of the deadline in the Regulatory Timetable established by the British Columbia Utilities Commission Order G-290-19 for the review of the Application, FEI respectfully submits the attached response to BCOAPO IR No. 2.

If further information is required, please contact the undersigned.

Sincerely,

**FORTISBC ENERGY INC.**

***Original signed:***

Doug Slater

Attachments

cc (email only): Commission Secretary  
Registered Parties

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1    **11.0    Reference:    Exhibit B-2, BCUC IR 1.1.1, Figures 1 - 3**

2            11.1    Please explain why the intervals on the abscissa are marked off in 5-month  
3                    periods.

4  
5    **Response:**

6    The 5-month intervals were labelled as a result of an automatic axis selection in Excel; however,  
7    the underlying data used to create the chart is based on the rates in effect at the beginning of  
8    each month.

9

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1    **12.0    Reference:    Exhibit B-2, BCUC IR 1.1.2, Chart – Natural Gas and Propane prices**

2            12.1    Please provide the data in the referenced chart in tabular form.

3

4    **Response:**

5    Please refer to Attachment 12.1 for the requested data file.

6

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**13.0 Reference: Exhibit B-2, BCUC IR 1.1.4, Commodity Cost Annual Standard Deviations Chart**

13.1 Please provide the data in the referenced chart in tabular form.

**Response:**

Please refer to Attachment 12.1 provided in response to BCOAPO IR 2.12.1 for the requested data file.

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1    **14.0    Reference:    Exhibit B-2, BCUC IR 1.2.7**

2            14.1    To FEI's knowledge, do any Revelstoke energy users use heating oil and  
3                   propane?    If so, please provide the information FortisBC Energy has on that  
4                   subject.

5  
6    **Response:**

7    FEI is not aware of any individual Revelstoke energy users that use both oil and propane.

8

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**15.0 Reference: Exhibit B-3, BCOAPO IR 1.1.1**

The referenced IR response provides the standard deviation and the coefficient of variation page over the period June 2008 – January 2019 for Alberta propane and AECO natural gas based on “Monthly Data.”

15.1 Please provide the underlying data for each month in the period June 2008 – January 2019 that underpins the response to BCOAPO 1.1.1 in tabular form.

**Response:**

Please refer to Attachment 15.1 for the requested data file. In responding to this information request, FEI noted an error in the time frame referenced in its response to BCOAPO IR 1.1.1 and clarifies that the response covers the period of January 2008 to December 2018.

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**16.0 Reference: Exhibit B-3, BCOAPO IR 1.1.3**

The referenced IR and the non-confidential response read as follows:

1.3 Does FEI have any information as to why propane prices have historically been more volatile than natural gas prices?

Response:

A portion of this response is redacted pursuant to Section 18 of the BCUC's Rules of Practice and Procedure regarding confidential documents as set out in Order G-15-19. The redaction has been made as it contains commercially sensitive information that, if disclosed, may prejudice negotiations with parties in future contract negotiations, which, in turn, will harm FEI's ratepayers and would not be in the public interest. FEI continues to operate in a competitive environment with respect to its purchases from the wholesale market. A confidential version of this response is being filed with the BCUC under separate cover. FEI obtained the following commodity market information from Wood Mackenzie which relates to the monthly pricing of propane being more volatile than that of natural gas. Although it focuses on the shorter term historical timeframe, FEI believes it provides relevant market context.

16.1 Would FEI describe the Alberta propane market as competitive in the sense that participants are price takers and that no single actor can significantly impact the market price? If not, please explain how this market is competitive.

**Response:**

In reviewing this information request, FEI realizes that while its request for confidentiality was warranted, the reasoning provided in the response to BCOAPO IR 1.1.3 was incorrectly stated. FEI clarifies that the response to BCOAPO IR 1.1.3 was filed confidentially because the information is proprietary to Wood Mackenzie and under the terms of use in FEI's subscription agreement with Wood Mackenzie, FEI is not authorized to disclose the information. As a result, FEI does not have the authority to make Wood Mackenzie's information available publicly or on a confidential basis. In this proceeding, FEI did obtain consent from Wood Mackenzie which allowed disclosure of the information to the BCUC only, on a confidential basis. Further, Wood Mackenzie has reaffirmed that they require FEI to continue to abide by the terms of use over their proprietary information and they do not grant permission for FEI to disclose their information to parties, other than the BCUC, even on a confidential basis for the purposes of this proceeding.

FEI confirms that the Alberta propane market participants are price takers and that no single actor can significantly impact the market price.

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16.2 Please provide a non-confidential response that accurately and fully characterizes the Alberta propane market in which FEI obtains propane for Revelstoke customers.

**Response:**

The following, from the Canadian Propane Association, provides an overview of the North American integrated Natural Gas Liquids (NGLs) market, which includes the Alberta propane market.

NGLs is a term for liquid hydrocarbon products including ethane, propane, butane, and pentanes plus that are extracted from natural gas.

The Canadian NGL sector is part of an integrated North American market. Since Canadian propane exports represent a small portion of North American and U.S. demand, Canada does not set the price. Mont Belvieu, Texas is the price reference point for North American NGL markets, as it is the largest consuming region. Its strategic location on the Gulf Coast allows access to supplies from Europe, Africa and the Middle East. Mont Belvieu also has significant storage and pipelines to transport liquids to market, and is close to large crude oil refineries. Petrochemical and export demand are the main factors affecting Mont Belvieu NGL prices.

There are three other major North American NGL trading centres located at Edmonton, Alberta; Sarnia, Ontario; and Conway, Kansas. These locations have substantial underground storage and are connected to NGL supply, as well as to pipeline transmission and distribution systems. Edmonton and Conway serve the U.S. mid-west market while Sarnia and Mont Belvieu serve the U.S. northeast market.

In general, NGLs are priced higher than natural gas to cover the cost for extraction. Crude oil prices help set the price ceilings for propane and butane because they compete with oil-based products (in particular, naphtha, heating oil and gasoil) in major markets. Since 2000, there have been several periods when natural gas prices have been equal to or above crude oil prices (on an energy equivalent basis). When this happens, propane and butane prices tend to follow natural gas prices and NGL extraction becomes less economic. Supplies of NGLs in North America are determined by the level of natural gas production, the amount of liquids in the gas and by imports and exports. The two largest

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1 contributors to demand are weather, since propane is used in home heating, and  
2 the petrochemical industry's requirement for ethane. Asia has replaced North  
3 America as the largest NGL market because of strong growth in demand for  
4 propane and butane for home heating, particularly in China. This competition for  
5 global propane supplies has occasionally contributed to higher prices in North  
6 America.<sup>1</sup>

<sup>1</sup> [https://propane.ca/wp-content/uploads/2016/08/CPA\\_Fact-Sheet\\_Propane-Pricing\\_August-2016.pdf](https://propane.ca/wp-content/uploads/2016/08/CPA_Fact-Sheet_Propane-Pricing_August-2016.pdf).

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**17.0 Reference: Exhibit B-3, BCOAPO IR 1.6.1 and 1.6.2**

The response to the first referenced IR includes a chart that shows the propane portfolio consists of fixed price volumes (maximum 37% over the period) and floating price volumes (minimum 63% over the period) and no propane storage.

17.1 Can FEI confirm that the only hedging it uses for its propane portfolio is physical fixed price purchases or does FEI also use financial hedging?

**Response:**

FEI does not utilize financial hedging for its propane portfolio as there is no financial market for Alberta propane hedges. However, FEI has historically utilized both physical fixed price purchases and propane storage in the implementation of its price risk management plans. Since the 2016/17 gas year, FEI has only utilized physical fixed price purchases.

17.2 If FEI uses financial hedging tools (swaps, options, etc.) please provide details and quantify the magnitude of financial hedging costs for each relevant year.

**Response:**

Please refer to the response to BCOAPO IR 2.17.1.

17.3 Please explain how FEI determined the percentages for the fixed price and floating price components, e.g., is the composition based on logistics or operational constraints?

**Response:**

Over the past few years, FEI has maintained the total hedging component at approximately 50 percent of the winter demand of Revelstoke customers, as specified in the Revelstoke Annual Contracting Plan.<sup>2</sup> Propane market demand is highly seasonal (higher demand during winter months than summer months) and variable (colder-than-normal winters or increased demand

<sup>2</sup> 50 percent of winter demand is approximately equal to 37 percent of annual demand, as referenced in the response to BCOAPO IR 1.6.1 and 1.6.2.

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1 for crop drying), which causes higher volatility for winter propane prices. Hedging 50 percent of  
2 the winter demand with fixed price purchases or Alberta-based propane storage during the  
3 summer months allows for a balanced approach to mitigating winter propane price volatility and  
4 provides some stability to Revelstoke customer rates, with the remaining 50 percent of the  
5 winter demand to be purchased at market prices (floating price volumes). The summer volumes  
6 for Revelstoke are purchased at market prices due to lower summer propane price volatility.

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## 18.0 Reference: Exhibit B-3, BCOAPO IR 1.6.4

The referenced response states in part:

Leaving aside the costs of onsite storage capacity, it is challenging to predict future propane prices because winter prices can increase or decrease relative to the summer, as has occurred in the past.

18.1 Is it typical for winter prices to be lower than summer prices or is it considered an aberration?

### Response:

It is abnormal for future market winter prices to trade lower than future market summer prices for both the propane and natural gas markets. This is due to the high demand for these fuels during the winter months for heating requirements. However, the premium for winter prices above summer prices, traded in the forward market, is not always reflected in the actual settled market prices. As the table below shows, both propane and natural gas prices in the summer can sometimes settle higher than the prices in the winter months.

<b>AECO/NIT Summer/Winter Settled Prices (\$Cdn/GJ)</b>								
	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Summer	\$ 3.52	\$ 1.97	\$ 2.95	\$ 4.17	\$ 2.61	\$ 1.75	\$ 2.17	\$ 1.16
Winter	\$ 2.71	\$ 3.02	\$ 4.01	\$ 3.18	\$ 2.17	\$ 2.78	\$ 1.87	\$ 1.91
Difference (+/-)	\$ 0.81	\$ (1.05)	\$ (1.06)	\$ 0.99	\$ 0.44	\$ (1.03)	\$ 0.30	\$ (0.75)

<b>Propane - Mont Belvieu Summer/Winter Settled Prices (\$US/MMBtu)</b>								
	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Summer	\$ 16.55	\$ 10.26	\$ 10.87	\$ 11.34	\$ 4.83	\$ 5.46	\$ 8.01	\$ 10.24
Winter	\$ 14.52	\$ 9.37	\$ 13.95	\$ 6.44	\$ 4.34	\$ 7.29	\$ 9.79	\$ 7.53
Difference (+/-)	\$ 2.03	\$ 0.89	\$ (3.08)	\$ 4.90	\$ 0.50	\$ (1.83)	\$ (1.78)	\$ 2.71

In this respect, the propane market can behave in the same manner as the natural gas market. However, the factors that cause the summer prices to settle higher than the prices in the winter months are different between the two markets. For the natural gas market, storage inventory levels exiting the winter can significantly impact summer prices, whereas for the propane market, increasing exports to overseas markets and supply chain congestion resulting in less propane available for distribution and delivery can have an effect on summer prices. Weather conditions can also play a major role for both the natural gas and propane markets. For example, a warmer-than-expected winter can result in lower winter prices than summer prices.

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1  
2           18.2   Does FEI possess any information not in evidence as to why the propane market  
3                   seems to behave differently in this respect than, for example, the natural gas  
4                   market?

5  
6   **Response:**

7   Please refer to the response to BCOAPO IR 2.18.1.

8

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## 19.0 Reference: Various FEI IR Responses

The responses provided by FEI in the first round of IRs in this process indicate that FEI has information regarding historical commodity prices (propane and natural gas), historical UPC data, rates, and volumes over the period 2008-2019.

19.1 Please provide what the annual impacts on FEI ratepayers would have been had the currently proposed Option 1 been approved and implemented in January 2008 and continued in effect to the present time.

### **Response:**

FEI has provided the requested analysis in the tables below for the period of 2015 to 2019 as follows:

- Table 1 shows the average annual midstream rate impact to FEI's customers,
- Table 2 shows the annual bill impact to FEI's residential and commercial customers, and
- Table 3 shows the annual bill impact to Revelstoke's residential and commercial customers.

FEI notes that the analysis is not shown from 2008 as requested because FEI implemented common rates (delivery and gas cost recovery) in 2015 across FEI's amalgamated service area as approved by BCUC Order G-21-14. Prior to the amalgamation and implementation of common rates, the rates of FEI, FEVI, and FEW were set differently; therefore, for a reasonable and relevant analysis of the impact to FEI's customers due to the proposed Option 1, FEI calculated the impacts starting in 2015.

As demonstrated in Table 2 below, if Option 1 in the Application was implemented in 2015, the cumulative bill impact over the 5-year period from 2015 to 2019 for FEI's residential, small commercial, and large commercial customers remains small at approximately \$5.13, \$18.36, and \$158.34, respectively. For Revelstoke customers, the cumulative annual bill savings for the same rate classes would have been \$1,826.60, \$9,313.80, and \$212,348, respectively (see Table 3).

As demonstrated by the relatively small cumulative bill impacts to FEI's natural gas customers over a 5-year period, Option 1 continues to be an innovative non-capital solution that minimizes the impact to FEI's natural gas customers while alleviating the significant geographic disadvantage faced by FEI's existing Revelstoke customers as reflected by the cumulative annual energy bill differential over the years.

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**Table 1: Average Annual Midstream Rate Impact (\$/GJ) to FEI's Customers**

Line	Option 1 - Equal Cost Recovery		2015	2016	2017	2018	2019
1	Actual FEI Revelstoke Propane Costs		\$ 1,728 <sup>1</sup>	\$ 1,233	\$ 2,410	\$ 2,618	\$ 2,280 <sup>4</sup>
2	Estimated Propane recovery via Commodity Recovery Charge <sup>2</sup>		(817)	(330)	(481)	(361)	(388)
3	Total Propane Costs transfer to FEI MCRA	(\$000s)	\$ 911	\$ 903	\$ 1,930	\$ 2,257	\$ 1,892
4							
5	FEI Natural Gas Total Midstream Costs		\$ 163,266	\$ 131,348	\$ 121,036	\$ 138,748	\$ 194,680
6	FEI MCRA Amortization		(7,411)	(23,095)	(23,733)	(39,839)	(2,972)
7	Total Natural Gas Midstream Costs, incl MCRA Amortization <sup>3</sup>	(\$000s)	\$ 155,855	\$ 108,253	\$ 97,303	\$ 98,909	\$ 191,708
8							
9	Revelstoke Propane Demand Actual		216	192	234	233	251 <sup>4</sup>
10	FEI MCRA Natural Gas Demand Forecast <sup>3</sup>		121,383	121,180	123,733	134,485	135,901
11	Total Demand (Natural Gas & Propane)	(TJ)	121,599	121,372	123,968	134,718	136,152
12							
13	Average Midstream Rate - Natural Gas (Line 7/Line 10)	(\$/GJ)	\$ 1.284	\$ 0.893	\$ 0.786	\$ 0.735	\$ 1.411
14	Average Midstream Rate - Natural Gas & Propane [(Line 3+Line 7)/Line 11]	(\$/GJ)	\$ 1.289	\$ 0.899	\$ 0.800	\$ 0.751	\$ 1.422
15							
16	Average Midstream Rate Impact to FEI's Customer (Line 14 - Line 13)	(\$/GJ)	\$ 0.005	\$ 0.006	\$ 0.014	\$ 0.015	\$ 0.011
17	Average Midstream Rate Impact to FEI's Customer (Line 16/Line 13)	(%)	0.41%	0.67%	1.79%	2.11%	0.80%

Notes:

<sup>1</sup> Actual 2015 FEI Revelstoke Propane Costs included the January 1, 2015 Revelstoke Propane Cost Deferral Account actual opening balance.

<sup>2</sup> Propane recovery based on the actual Revelstoke propane demand with the effective January 1, FEI Commodity Recovery Charge.

<sup>3</sup> Based on the annual FEI Fourth Quarter Gas Cost Report forecast data

<sup>4</sup> Based on the FEI Revelstoke 2019 Fourth Quarter Gas Cost Report forecast data.

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**1 Table 2: Annual Bill Impact to FEI's Natural Gas Customers (Rate Schedule 1 to 3)**

		FEI		FEI		FEI		FEI		FEI	
		January 1, 2015 Rates		January 1, 2016 Rates		January 1, 2017 Rates		January 1, 2018 Rates		January 1, 2019 Rates	
		Actual	Option 1	Actual	Option 1	Actual	Option 1	Actual	Option 1	Actual	Option 1
Rate Schedule 1 (Residential)											
Commodity Related Charges											
Cost of Gas	(\$/GJ)	\$ 3.781	\$ 3.781	\$ 1.719	\$ 1.719	\$ 2.050	\$ 2.050	\$ 1.549	\$ 1.549	\$ 1.549	\$ 1.549
Storage and Transport	(\$/GJ)	1.334	1.341	0.921	0.927	0.811	0.826	0.758	0.775	1.462	1.474
Total Commodity Related Charges	(\$/GJ)	\$ 5.115	\$ 5.122	\$ 2.640	\$ 2.646	\$ 2.861	\$ 2.876	\$ 2.307	\$ 2.324	\$ 3.011	\$ 3.023
Incremental Commodity Related Charges											
Average annual consumption	(GJ)	90	90	90	90	90	90	90	90	90	90
Total Commodity Related Charges	(\$)	460.35	460.98	237.60	238.14	257.49	258.84	207.63	209.16	270.99	272.07
Annual Bill Impact	(\$)	\$ 0.63		\$ 0.54		\$ 1.35		\$ 1.53		\$ 1.08	
Cumulative Bill Impact 2015-2019											
	(\$)	\$ 5.13									
		FEI		FEI		FEI		FEI		FEI	
		January 1, 2015 Rates		January 1, 2016 Rates		January 1, 2017 Rates		January 1, 2018 Rates		January 1, 2019 Rates	
		Actual	Option 1	Actual	Option 1	Actual	Option 1	Actual	Option 1	Actual	Option 1
Rate Schedule 2 (Small Commercial)											
Commodity Related Charges											
Cost of Gas	(\$/GJ)	\$ 3.781	\$ 3.781	\$ 1.719	\$ 1.719	\$ 2.050	\$ 2.050	\$ 1.549	\$ 1.549	\$ 1.549	\$ 1.549
Storage and Transport	(\$/GJ)	1.334	1.339	0.934	0.940	0.820	0.835	0.765	0.781	1.467	1.479
Total Commodity Related Charges	(\$/GJ)	\$ 5.115	\$ 5.120	\$ 2.653	\$ 2.659	\$ 2.870	\$ 2.885	\$ 2.314	\$ 2.330	\$ 3.016	\$ 3.028
Incremental Commodity Related Charges											
Average annual consumption	(GJ)	340	340	340	340	340	340	340	340	340	340
Total Commodity Related Charges	(\$)	\$ 1,739.10	\$ 1,740.80	\$ 902.02	\$ 904.06	\$ 975.80	\$ 980.90	\$ 786.76	\$ 792.20	\$ 1,025.44	\$ 1,029.52
Annual Bill Impact	(\$)	\$ 1.70		\$ 2.04		\$ 5.10		\$ 5.44		\$ 4.08	
Cumulative Bill Impact 2015-2019											
	(\$)	\$ 18.36									
		FEI		FEI		FEI		FEI		FEI	
		January 1, 2015 Rates		January 1, 2016 Rates		January 1, 2017 Rates		January 1, 2018 Rates		January 1, 2019 Rates	
		Actual	Option 1	Actual	Option 1	Actual	Option 1	Actual	Option 1	Actual	Option 1
Rate Schedule 3 (Large Commercial)											
Commodity Related Charges											
Cost of Gas	(\$/GJ)	\$ 3.781	\$ 3.781	\$ 1.719	\$ 1.719	\$ 2.050	\$ 2.050	\$ 1.549	\$ 1.549	\$ 1.549	\$ 1.549
Storage and Transport	(\$/GJ)	1.114	1.117	0.775	0.780	0.684	0.696	0.647	0.660	1.226	1.235
Total Commodity Related Charges	(\$/GJ)	\$ 4.895	\$ 4.898	\$ 2.494	\$ 2.499	\$ 2.734	\$ 2.746	\$ 2.196	\$ 2.209	\$ 2.775	\$ 2.784
Incremental Commodity Related Charges											
Average annual consumption	(GJ)	3,770	3,770	3,770	3,770	3,770	3,770	3,770	3,770	3,770	3,770
Total Commodity Related Charges	(\$)	\$ 18,454.15	\$ 18,465.46	\$ 9,402.38	\$ 9,421.23	\$ 10,307.18	\$ 10,352.42	\$ 8,278.92	\$ 8,327.93	\$ 10,461.75	\$ 10,495.68
Annual Bill Impact	(\$)	\$ 11.31		\$ 18.85		\$ 45.24		\$ 49.01		\$ 33.93	
Cumulative Bill Impact 2015-2019											
	(\$)	\$ 158.34									

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**Table 3: Annual Bill Impact to Revelstoke Customers (Rate Schedule 1 to 3)**

Rate Schedule 1 (Residential)		REVELSTOKE January 1, 2015 Rates		REVELSTOKE January 1, 2016 Rates		REVELSTOKE January 1, 2017 Rates		REVELSTOKE January 1, 2018 Rates		REVELSTOKE January 1, 2019 Rates	
		Actual	Option 1	Actual	Option 1	Actual	Option 1	Actual	Option 1	Actual	Option 1
Commodity Related Charges											
Cost of Gas	(\$/GJ)	\$ 3,781	\$ 3,781	\$ 1,719	\$ 1,719	\$ 2,050	\$ 2,050	\$ 1,549	\$ 1,549	\$ 1,549	\$ 1,549
Storage and Transport	(\$/GJ)	1,398	1,341	1,117	0,927	1,009	0,826	1,064	0,775	1,485	1,474
Revelstoke Rider 1	(\$/GJ)	10,168		3,162		4,819		10,066		7,587	-
Total Commodity Related Charges	(\$/GJ)	\$ 15,347	\$ 5,122	\$ 5,998	\$ 2,646	\$ 7,878	\$ 2,876	\$ 12,679	\$ 2,324	\$ 10,621	\$ 3,023
Incremental Commodity Related Charges Savings	(\$/GJ)	\$ (10,225)		\$ (3,352)		\$ (5,002)		\$ (10,355)		\$ (7,598)	
Average annual consumption	(GJ)	50	50	50	50	50	50	50	50	50	50
Total Commodity Related Charges	(\$)	\$ 767.35	\$ 256.10	\$ 299.90	\$ 132.30	\$ 393.90	\$ 143.80	\$ 633.95	\$ 116.20	\$ 531.05	\$ 151.15
Annual Bill Impact	(\$)	\$ (511.25)		\$ (167.60)		\$ (250.10)		\$ (517.75)		\$ (379.90)	
Cumulative Bill Impact 2015-2019	(\$)									\$ (1,826.60)	
Rate Schedule 2 (Small Commercial)		REVELSTOKE January 1, 2015 Rates		REVELSTOKE January 1, 2016 Rates		REVELSTOKE January 1, 2017 Rates		REVELSTOKE January 1, 2018 Rates		REVELSTOKE January 1, 2019 Rates	
		Actual	Option 1	Actual	Option 1	Actual	Option 1	Actual	Option 1	Actual	Option 1
Commodity Related Charges											
Cost of Gas	(\$/GJ)	\$ 3,781	\$ 3,781	\$ 1,719	\$ 1,719	\$ 2,050	\$ 2,050	\$ 1,549	\$ 1,549	\$ 1,549	\$ 1,549
Storage and Transport	(\$/GJ)	1,397	1,339	1,133	0,940	1,020	0,835	1,073	0,781	1,490	1,479
Revelstoke Rider 1	(\$/GJ)	9,078		2,055		3,717		8,966		6,491	
Total Commodity Related Charges	(\$/GJ)	\$ 14,256	\$ 5,120	\$ 4,907	\$ 2,659	\$ 6,787	\$ 2,885	\$ 11,588	\$ 2,330	\$ 9,530	\$ 3,028
Incremental Commodity Related Charges Savings	(\$/GJ)	\$ (9,136)		\$ (2,248)		\$ (3,902)		\$ (9,258)		\$ (6,502)	
Average annual consumption	(GJ)	300	300	300	300	300	300	300	300	300	300
Total Commodity Related Charges	(\$)	\$ 4,276.80	\$ 1,536.00	\$ 1,472.10	\$ 797.70	\$ 2,036.10	\$ 865.50	\$ 3,476.40	\$ 699.00	\$ 2,859.00	\$ 908.40
Annual Bill Impact	(\$)	\$ (2,740.80)		\$ (674.40)		\$ (1,170.60)		\$ (2,777.40)		\$ (1,950.60)	
Cumulative Bill Impact 2015-2019	(\$)									\$ (9,313.80)	
Rate Schedule 3 (Large Commercial)		REVELSTOKE January 1, 2015 Rates		REVELSTOKE January 1, 2016 Rates		REVELSTOKE January 1, 2017 Rates		REVELSTOKE January 1, 2018 Rates		REVELSTOKE January 1, 2019 Rates	
		Actual	Option 1	Actual	Option 1	Actual	Option 1	Actual	Option 1	Actual	Option 1
Commodity Related Charges											
Cost of Gas	(\$/GJ)	\$ 3,781	\$ 3,781	\$ 1,719	\$ 1,719	\$ 2,050	\$ 2,050	\$ 1,549	\$ 1,549	\$ 1,549	\$ 1,549
Storage and Transport	(\$/GJ)	1,167	1,117	0,940	0,780	0,851	0,696	0,907	0,660	1,245	1,235
Revelstoke Rider 1	(\$/GJ)	9,308		2,248		3,886		9,132		6,736	
Total Commodity Related Charges	(\$/GJ)	\$ 14,256	\$ 4,898	\$ 4,907	\$ 2,499	\$ 6,787	\$ 2,746	\$ 11,588	\$ 2,209	\$ 9,530	\$ 2,784
Incremental Commodity Related Charges Savings	(\$/GJ)	\$ (9,358)		\$ (2,408)		\$ (4,041)		\$ (9,379)		\$ (6,746)	
Average annual consumption	(GJ)	6,650	6,650	6,650	6,650	6,650	6,650	6,650	6,650	6,650	6,650
Total Commodity Related Charges	(\$)	\$ 94,802.40	\$ 32,571.70	\$ 32,631.55	\$ 16,618.35	\$ 45,133.55	\$ 18,260.90	\$ 77,060.20	\$ 14,689.85	\$ 63,374.50	\$ 18,513.60
Annual Bill Impact	(\$)	\$ (62,230.70)		\$ (16,013.20)		\$ (26,872.65)		\$ (62,370.35)		\$ (44,860.90)	
Cumulative Bill Impact 2015-2019	(\$)									\$ (212,348)	

19.1.1 If possible, please provide the annual cost impacts on a typical residential customer and a typical commercial customer along with definitions of what FEI considers "typical" in each of those two rate classes.

### Response:

Please refer to the response to BCOAPO IR 2.19.1.

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19.2 Please provide what the annual impacts would have been on FEI ratepayers had the currently proposed Option 2 been approved and implemented in January 2008 and continued in effect to the present time.

**Response:**

FEI notes that this Application is requesting approval of the amalgamation of commodity costs under the proposed Option 1 only. As noted in the response to BCUC IR 1.12.3, Option 2 was included in the Application to demonstrate the range of alternatives that FEI considered. FEI did not propose Option 2 as it does not address the rate relief objective for FEI's Revelstoke propane customers.

Regarding the bill impacts associated with Option 2, FEI notes that because the commodity cost would be based on a 5-year rolling average of the ratio between propane and natural gas prices, in theory any differences between propane cost recovery and actual costs would be due to timing and are expected to true-up over time (please refer to the response to BCSEA IR 1.8.1).

However, to be responsive FEI has provided the table below which shows the average annual midstream rate impact and annual bill impact to FEI's customers from 2015 to 2019. The calculation is based on the illustrative example provided in BCSEA IR 1.8.1. FEI added 2019 figures to the illustrative example for the purpose of this information request. Consistent with the reasons provided in BCOAPO IR 2.19.1, the analysis was shown from 2015 to 2019 following the 2015 implementation of common rates (commodity and delivery) across FEI's amalgamated service areas.

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Line	Particular	Reference	2015	2016	2017	2018	2019	Cumulative over 5 years
1	Annual Variance captured in MCRA (\$000s) <sup>1</sup>	BCSEA IR 1.8.1, Line 22	(1,085)	(209)	573	1,173	585	
2								
3	Revelstoke Propane Demand Actual	BCOAPO IR 1.19.1, Line 9	216	192	234	233	251	
4	FEI MCRA Natural Gas Demand Forecast (TJ) <sup>2</sup>	BCOAPO IR 1.19.1, Line 10	121,383	121,180	123,733	134,485	135,901	
5								
6	<b>Average Midstream Rate Impact to FEI's Customer</b>	<b>Line 1 / Line 4</b>	<b>(0.009)</b>	<b>(0.002)</b>	<b>0.005</b>	<b>0.009</b>	<b>0.004</b>	
7	<b>Average Cost of Gas Impact to Revelstoke Customers</b>	<b>- Line 1 / Line 3</b>	<b>5.025</b>	<b>1.089</b>	<b>(2.445)</b>	<b>(5.038)</b>	<b>(2.332)</b>	
8								
9	<b>Annual Bill Impact</b>							
10	FEI's Natural Gas Customers							
11	RS 1 Residential (\$)	Line 6 x UPC @ 90 GJ/yr	(0.80)	(0.16)	0.42	0.78	0.39	<b>0.63</b>
12	RS 2 Small Commercial (\$)	Line 6 x UPC @ 340 GJ/yr	(3.04)	(0.59)	1.58	2.96	1.46	<b>2.38</b>
13	RS 3 Large Commercial (\$)	Line 6 x UPC @ 3,770 GJ/yr	(33.71)	(6.50)	17.47	32.87	16.22	<b>26.35</b>
14								
15	Revelstoke Customers							
16	RS 1 Residential (\$)	Line 7 x UPC @ 50 GJ/yr	251.25	54.43	(122.24)	(251.90)	(116.62)	<b>(185.07)</b>
17	RS 2 Small Commercial (\$)	Line 7 x UPC @ 300 GJ/yr	1,507.51	326.55	(733.44)	(1,511.37)	(699.70)	<b>(1,110.45)</b>
18	RS 3 Large Commercial (\$)	Line 7 x UPC @ 6,650 GJ/yr	33,416.45	7,238.61	(16,257.85)	(33,502.06)	(15,510.06)	<b>(24,614.91)</b>

Notes:

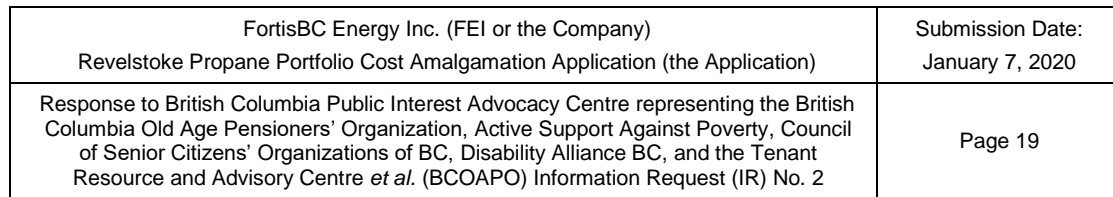
<sup>1</sup> Deficiency / (Surplus) - Recovered from natural gas customers

<sup>2</sup> Based on the annual FEI Fourth Quarter Gas Cost Report forecast data

19.2.1 If possible, please provide the annual impacts on a typical residential customer and a typical commercial customer.

**Response:**

Please refer to the response to BCOAPO IR 2.19.2.



3 20.1 Please provide the data in the referenced chart in tabular form.

6 Please refer to Attachment 20.1 for the requested data file.

7

## **Attachment 12.1**

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### **REFER TO LIVE SPREADSHEET MODEL**

Provided in electronic format only

(accessible by opening the Attachments Tab in Adobe)

## **Attachment 15.1**

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### **REFER TO LIVE SPREADSHEET MODEL**

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## **Attachment 20.1**

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