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September 18, 2018

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)

Project No. 1598966

Annual Review for 2019 Delivery Rates (the Application)

Response to the B.C. Sustainable Energy Association and Sierra Club of British Columbia (BCSEA) Information Request (IR) No. 1

On August 3, 2018, FEI filed the Application referenced above. In accordance with the British Columbia Utilities Commission Order G-143-18 setting out the Regulatory Timetable for the review of the Application, FEI respectfully submits the attached response to BCSEA IR No. 1.

If further information is required, please contact the undersigned.

Sincerely,

FORTISBC ENERGY INC.

Original signed:

Diane Roy

Attachments

cc (email only): Commission Secretary
Registered Parties

1.0 Topic: 2019-2022 Demand Side Management Application (Expenditures Plan)

Reference: Exhibit B-2, section 1.2.2, pdf p. 12

"Approvals sought within the DSM Application include an increase in expenditures, an adjustment of the amount of expenditures allowed as a forecast within FEI's annual rate setting mechanism and a change to the amortization period of DSM expenditures, all of which will impact the 2019 forecasts within this Application. … FEI anticipates that a decision may be received for the DSM Application by the end of 2018 and if so will incorporate the DSM Application decision in its compliance filing to this Application."

1.1 Please confirm that the increased DSM expenditures described above have already been factored into FEI's energy and demand forecasts for this current application. If not confirmed, please explain.

Response:

Not confirmed.

FEI forecasts use rates using a regression if a significant trend exists, or a 3-year average if a trend does not exist. The trend of decreased use rates due to DSM is already embedded in the forecast, and the only advantage of considering it separately would be if FEI expected a significant shift in the impact on use rates that was different than the annual impacts experienced in the past. Given the increase in spending over the 2019-2022 period that has been included in the DSM application there may be some impact that is incremental to the annual decreases we have observed in the past. FEI will review the final approved DSM plan for the potential for a step change impact once a decision is released, and in future years consider whether any adjustments need to be made.

2.0 Topic: Demand forecast

Reference: Exhibit B-2, pdf pp. 33 - 49

2.1 Please explain how the demand forecast methodology takes into account expected DSM savings.

Response:

Please refer to the response to BCSEA IR 1.1.1.

2.2 Please confirm that in FEI's 2019-2022 DSM Expenditure Schedule FEI proposes increased levels of DSM savings in 2019 to 2022. Are these higher levels of DSM savings taken into account in the demand forecasts in Chapter 3?

Response:

Confirmed that FEI's 2019-2022 DSM Expenditure Schedule includes increased levels of DSM spending and savings. Please refer to the response to BCSEA IR 1.1.1 for a discussion of how the DSM savings impact the demand forecasts.

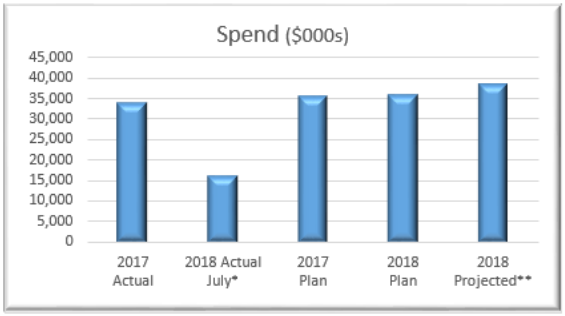
2.3 Please provide in numeric and graphic form the levels of actual spending and savings on DSM programs for 2017 and 2018 to date, compared to the forecasts for 2017 and 2018.

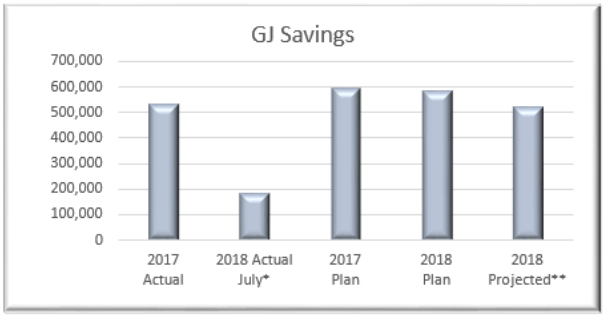
Response:

FEI interprets the use of the term 'forecast' to mean 'plan' or in other words the values for 2017 and 2018 contained in the 2014-2018 DSM Plan. The table and figures below are a summary of actual expenditures and GJ savings on DSM programs for 2017 and to the end of July 2018 compared with the plan values for 2017 and 2018. The 2017 actual values are as presented in FEI's 2017 DSM Annual Report. FEI notes that DSM expenditures typically are highest in the second half of the year and has also presented the 2018 projected year-end values as prepared at the end of July.

Program Area	SPEND ($000s)					Gj Savings				
	2017 Actual	2018 Actual July*	2017 Plan	2018 Plan	2018 Projected **	2017 Actual	2018 Actual July*	2017 Plan	2018 Plan	2018 Projected **
Residential	12,203	6,515	10,700	11,383	13,968	137,161	82,927	136,672	157,890	155,786
Commercial	10,834	4,865	10,416	10,051	11,361	238,688	88,073	237,665	183,258	248,590
Industrial	2,099	368	2,983	2,983	1,624	105,516	1,709	190,300	189,465	64,197
Low Income	2,644	1,097	3,247	3,483	2,878	47,263	13,849	27,768	28,190	56,973
Conservation Education and Outreach	2,590	1,692	2,400	2,400	2,729	--	--	--	--	--
Innovative Technologies	928	491	1,218	1,210	1,280	4,910	0	5,343	29,468	--
Enabling Activities	1,181	529	4,425	4,365	3,238	--	--	--	--	--
Portfolio Level Activities	1,559	789			1,529	--	--	--	--	--
ALL PROGRAMS	**34,039**	**16,346**	**35,388**	**35,874**	**38,607**	**533,538**	**186,558**	**597,748**	**588,271**	**525,546**

*End of July 2018 **Subject to change





2.4 Has the implementation of DSM measures by FEI customers been higher or lower than FEI forecast for 2017 and 2018 to date? Please respond in terms of major customer classes, for total energy used and for UPC.

Response:

There are many factors other than DSM Programs that can influence the total energy use and use per customer for FEI's customers and that are not possible to measure with any certainty. For this reason, total energy used and use per customer by rate class are not tracked as measures of performance for the DSM portfolio. Hence it is not possible to provide a response in terms of total energy used and for UPC.

Energy savings from DSM programs in 2017 were higher than plan for the Residential and Commercial Program Areas, but lower than plan for Industrial. These results can be viewed in FEI's DSM 2017 Annual Report. FEI did not prepare mid-year Plan values for the 2014-2018

1 DSM Plan and so cannot say at this point if 2018 implementation based on Energy Savings is
2 higher or lower than Plan.

3

3.0 Topic: Evaluation of the PBR Plan

Reference: Exhibit B-2, section 1.4, pdf pp. 13-24

3.1 Is it FEI's position that the current proceeding is the appropriate venue in which to review and evaluate the current PBR system? Please explain.

Response:

Consistent with past PBRs, FEI's position is that the appropriate venue to review and evaluate the current PBR Plan is in the regulatory period or periods following the current PBR Plan. As FEI is planning on filing an application for a next generation PBR plan to replace the current PBR Plan expiring at the end of 2019, the proceeding for review and consideration of a next Generation PBR application would be the appropriate venue to consider the experiences and incorporate the successes from the current PBR Plan.

3.2 Is it FEI's position that the O&M savings given in Table 1-2 represent savings relative to spending that would have taken place under a cost-of-service ratemaking formula, had PBR not been used?

Response:

FEI cannot speculate on whether the O&M savings, including both the formula O&M and PIF related savings indicated in Table 1-2, would have taken place under a cost-of-service ratemaking regime had PBR not been in place, as the conditions under a cost service ratemaking regime would have been different, including a shorter test period (i.e. one to two years) versus the six-year test period for the current PBR Plan.

Please also refer to the response to MoveUP IR 1.2.2.

3.2.1 If so, please detail FEI's methodology in making that assessment.

Response:

Please refer to the response to BCSEA IR 1.3.2.

3.2.2 If not, please explain how PBR should be assessed against cost-of-service ratemaking, in terms of savings.

Response:

Please refer to the response to BCSEA IR 1.3.2.

4.0 Topic: Biomethane O&M

Reference: Exhibit B-2, section 6.3.3, pdf pp. 60 – 61 & section 7.2.2, pdf p. 68

"The 2019 forecast O&M [for Biomethane] of $1.369 million is $0.248 million higher than the 2018 Approved O&M primarily due to assignment of additional resources to support supply development to meet the growing demand." [pdf p. 61]

4.1 Please provide an update on the biomethane (RNG) program, addressing whether the price reductions from the BERC Rate Methodology proceeding and Commission Decision and Order G-133-16 have impacted biomethane sales.

Response:

Since implementing the lower BERC rate approved by Commission Order G-133-16, FEI has noticed a strong increase in demand among residential and small commercial customers. Further, over the past year, FEI has also noted an increase in demand among commercial customers.

In the three years prior to the lower BERC rate (August 2013 to August 2016), growth in demand was fairly flat. There were 1,396 customers added for a cumulative total of 6,977 in that three-year period (an average of 465 new customers per year).

In contrast, FEI noticed a strong increase in demand starting in autumn 2016 when the new BERC rate took effect. In the two-year period from August 2016 through to August 2018 the customer count increased by 2,898 to a cumulative total of 9,875 (an average of 1,449 new customers per year).

Over the period leading up to August 2016, FEI was able to add several larger commercial customers (Rate Schedule 11B). After the BERC rate reduction in the fall of 2016, FEI added the University of BC as its first long-term customer.

4.2 Please provide more detail on the "growing demand" for biomethane: is demand growing among both larger volume and smaller volume customers?

Response:

Yes. Please refer to the response to BCSEA IR 1.4.1.

4.3 Please discuss the outlook for further growth of the RNG program, including the outlook for securing further biomethane supply contracts.

Response:

FEI has seen an increase in interest from suppliers to evaluate and develop new opportunities for RNG supply through active engagement and through a Request for Expressions of Interest released by FEI in July 2018. Several of these opportunities are progressing but until agreements have been signed, FEI will not comment on the specific location or size of these opportunities. Based on the existing status of the project evaluations and agreement discussions, FEI anticipates filing at least one new agreement this fall and additional agreements over the next few years. The current amount of RNG represented by these prospective projects is below the maximum allowance under section 2(3.8) of the Greenhouse Gas Reduction (Clean Energy) Regulation.

4.3.1 What effect does FEI expect this to have on the BVA and recoveries from delivery rates?

Response:

Generally, FEI expects some increase in O&M with an increase in supply as there will be a corresponding increase in the effort required to manage a larger number of supply projects. The BVA captures all costs for the RNG program, including the cost of securing new supply and offsetting recoveries from RNG customers (based on the BERC rate). To the extent that a costs are higher than revenues, the difference is recovered from all non-bypass customers through the BVA Rider and delivery rates. FEI expects an increase in total supply cost, an increase in total (BERC) recoveries driven by growth in demand and a corresponding increase in the BVA Rider. Given variability in natural gas commodity prices, carbon tax, new RNG supply cost, growth in company-wide throughput, and customer demand, it is difficult to determine the exact effect.

"The 2018 Projected O&M of $1.928 million is $0.807 million higher than the 2018 Approved O&M of $1.121 million. This is due to under forecasting of resources by approximately $0.367 million, the Kelowna upgrader fire remediation cost of approximately $0.463 million (partially offset by lower operating costs during remediation) and the Surrey interconnection regulatory proceeding costs $0.075 million." [pdf p. 61]

4.4 Please explain this under-forecasting of resources in more detail.

Response:

As discussed, FEI assigned more resources to the RNG program in order to increase supply in response to increased demand. The under-forecasting was a result of the timing of adding resources compared to the timing of filing the previous Annual Review.

The additional resources are being used to support new project development, existing operations and new project execution. Dedicated technical resources were added to support the increase in the number of operational projects and the initial feasibility analysis for new possible projects. Business resources were added to support new project assessment and contract negotiation.

5.0 Topic: Customer Satisfaction Index

Reference: Exhibit B-2, Table 13-12, pdf p.156

"The 2017 [CSI] result was 8.4, lower than the 8.8 score in 2016. Index contributor scores were lower in all areas. Although not conclusive, customer comments and statistical analysis suggest that the lower 2017 result may be associated with lower customer satisfaction with the cost of natural gas following commodity cost increases in October 2016, followed by a colder, wetter winter."

5.1 Please provide the results of the statistical analysis related to whether the Customer Satisfaction Index is associated with commodity costs increases and colder, wetter winters.

Response:

FEI clarifies that the analysis it conducted that suggests that the lower CSI scores were driven by a combination of commodity cost increases and a colder, wetter winter, was not "statistical" in nature. FEI's review was a qualitative analysis of other research: first, to confirm that elements in FEI's sphere of influence were not responsible for the drops; and second, to investigate customer verbatim captured from CSI study participants for indications as to what factor(s) were adversely affecting customer ratings of FEI.

FEI conducts continuous customer service research using a company called SQM to evaluate many customer interactions, including contact centre calls, self-service, and field interactions. This research includes outbound calls to a large sample of customers within 72 hours of their interaction with FEI representatives. The methodology is used, for example, to generate the company's First Contact Resolution scores. The CSI study, by comparison, is conducted during a two-week period in the middle of each quarter using smaller sample sizes.

While all CSI sub-attributes were lower in comparison to 2016 results, our research data from SQM indicated that FEI service remained stable and of high-quality during 2017. The SQM research focuses exclusively on individual service transactions and feedback is gathered shortly after the transaction occurs. In contrast, although the CSI is helpful in providing a holistic impression of the Company's overall service, its results are particularly sensitive to external factors like price or natural gas safety incidents that may have occurred in another jurisdiction. The CSI also asks customers to rate service quality for transactions up to six months in the past, so memories of events may have eroded with time. These types of factors are outside the control of FEI and it is for these reasons that FEI relies upon the CSI metric only as an informational indicator.

Because SQM results were stable in 2017, FEI next evaluated verbatim comments from CSI study participants to understand what factors might be adversely influencing scores. Results from this review follow.

During each CSI interview, participants are asked, "On a 10-point scale where 1 is "Not at all satisfied" and 10 is "Fully satisfied," how satisfied are you with the overall service provided by FortisBC." Respondents scoring FortisBC under 6 are asked why they evaluated the Company's service low. The following word cloud portrays the common words found in the verbatim comments. The more prominent the word in the cloud, the more frequently it was mentioned in responses.

From the review of verbatim comments, FEI concluded that the most prevalent factor repeatedly mentioned by respondents related to underlying concerns about the price paid for natural gas. FEI surmised that consumer concerns about prices were likely exacerbated because of the particularly inclement weather experienced in late 2016 through the spring of 2017.

5.2 What does FEI plan to do to respond to the decline in the customer satisfaction index score?

Response:

FEI continues to assess its practices and processes in order to improve customer satisfaction. While the CSI result in 2017 was lower than the score in 2016, this is attributed to lower scores in the first three quarters of 2017, possibly associated with the cost of natural gas and colder weather, as described in the reference above. CSI results since then have improved. In the fourth quarter of 2017, the CSI result rose to 8.8, and has averaged 8.6 for the first two quarters in 2018.

6.0 Topic: SQI: Transmission Reportable Incidents

Reference: Exhibit B-2, section 13.2.3, pdf p. 157

"The fourth Level 1 incident occurred in September 2017 and was the result of a contractor hitting a transmission pipeline while building an access road to a new residential development. The contractor had not called BC One Call to obtain location records, nor been issued a permit for work by FEI. Significant damage to the pipeline coating occurred. A stop work order was issued and the coating was repaired." [pdf p.158]

6.1 Was there any release of natural gas in the above-noted incident?

Response:

There was no release of natural gas. The damage was limited to the coating.

"The first [2018] Level 1 incident took place in April 2018 when a mud slide struck and exposed a Transmission Pipeline near Castlegar. The pipeline was dented and will require repair."

"The second [2018] Level 1 incident involved pipe along a section of river in the Falkland Valley that was exposed due to erosion. The potential for erosion was reported by patrols in April and May. The Company waited for water levels to recede in June before it could inspect and confirm the erosion." [pdf p.158]

6.2 Does FEI expect there to be more incidents relating to erosion or slides in the future, as a result of climate change induced extreme weather events?

Response:

It is reasonable to expect the potential for more incidents relating to erosion or land slides in the future, whether due to climate change or other factors. FEI has a robust Natural Hazards Reduction Program to monitor and mitigate potential areas of concern that could impact FEI assets.

7.0 Topic: SQI: Annual GHG emissions

Reference: Exhibit B-2, section 13.3, pdf p. 161

BCSEA-SCBC has compiled the following table showing FEI's reported annual GHG emissions from 2009 to 2016:

	Estimated GHG Emission (tCO2e)
2009	171,312
2010	156,467
2011	137,059
2012	134,303
2013	127,940
2014	140,507*
2015	120,997
2016	124,077
2017	137,903
Source: FEU 2014 LTRP Proceeding, Exhibit B-4, BCSEA 1.18.4; FEI 2015 PBR Annual Review Proceeding, Exhibit B-4, BCSEA 7.1; FEI 2017 PBR Annual Review Proceeding, Exhibit B-2, p.145; current proceeding, pdf p. 161.	

7.1 Please confirm that this table is accurate, or provide a corrected version.

Response:

Not confirmed. Please see the corrected table below. The 2009 to 2016 values were provided in FEI's response to BCSEA-SCBC IR 1.3.1 in FEI's Annual Review for 2018 Rates[1] and the 2017 value is reported on page 152 of the Application.

	Estimated GHG Emission (tCO2e)
2009	161,793
2010	153,993
2011	137,059
2012	134,355
2013	127,940

[1] http://www.bcuc.com/Documents/Proceedings/2017/DOC_50038_B-5_FEI_BCSEA-IR1-Resp.pdf

	Estimated GHG Emission (tCO2e)
2014	140,507 *
2015	120,997 *
2016	124,077 *a
2017	137,903 *b

Notes:

* GHG Emissions for 2014-2017 adopted IPCC 4th Assessment Report for global warming potential.

[a] Value reported to BC Ministry of Environment. GHG emission reported to Environment Canada and Climate Change was 126,613 tCO2e. The difference is attributed to differing reporting requirements.

[b] Value reported to BC Ministry of Environment. GHG emission reported to Environment Canada and Climate Change was 142,534 tCO2e. The difference is attributed to differing reporting requirements.

The Environment Canada and Climate Change website provides GHG emission values for the organization based on the revised Global Warming Potential adopted in 2014 (as noted by the asterisk in the table provided above). Reporting using the Environment Canada Global Warming Potential standard provides a more comparable year to year comparison of GHG emissions. The revised GHG Emission values for FEI using the Environment Canada Global Warming Potential standard are as follows:

	Estimated GHG Emission (tCO2e)
2009	177,827
2010	171,059
2011	153,611
2012	150,648
2013	141,947

7.2 What measures did FEI take in 2017 and 2018 year-to-date to control and reduce its GHG emissions? Please provide an estimate of the cost in 2017 and 2018 year-to-date of carrying out these measures.

Response:

FEI's 2017 and 2018 year-to-date programs designed for the direct reduction of GHG emissions or the improvement in GHG reporting estimates included leak detection and repair (LDAR), as well as a jointly sponsored fugitive emission best management plan for distribution facilities, an industry study on residential meter set leak emission factor estimates, and an industry study on

industrial meter set leak emission factor estimates. The cost of the LDAR program is estimated to be approximately $50 to $100 thousand per year while the contribution by FEI to the industry studies was approximately $50 thousand.

In addition, there were both capital and O&M programs carried out that result in the potential reduction in GHG emissions. The programs included a continuation of the residential meter set replacement program, call before you dig (i.e. BC One Call), and leak detection surveys along distribution lines. These programs are driven by reasons other than GHG emissions reduction (i.e., public safety) with the potential reduction in GHGs as a co-benefit that cannot be quantified. As a result, the costs of these programs are not attributable to GHG emissions reduction measures.

7.3 How do these measures and their cost compare with measures taken in 2016?

Response:

FEI's 2017 programs designed for the direct reduction of GHG emissions or the improvement in GHG reporting estimates included leak detection and repair surveys, similar to that completed in 2016. Expenditures for the leak detection and repair surveys increased slightly for FEI LNG operations as third party vendors using thermal imaging were used at the Mt. Hayes LNG plant. This resulted in an increase of approximately $15 thousand to O&M cost. The estimated GHG emissions accounted for through LDAR programs in 2017 were approximately equal to 2016.

Industry studies conducted in 2017 were approximately equal in expenditures for industry studies in 2016. Emission factors developed in these 2017 studies have not been adopted in FEI annual GHG emissions reporting and will be implemented in the subsequent calendar year.

FEI's 2016 capital and O&M programs carried out that resulted in the potential reduction in GHG emissions were similar to 2017 programs and included a residential meter set replacement program, call before you dig (i.e. BC One Call) and leak detection surveys along transmission and distribution lines.

7.4 How do these measures and their cost compare with measures expected in 2019 and into the future?

Response:

For existing programs, it is anticipated the cost of GHG emissions reduction programs will be similar to past years. These include residential meter set replacement program, call before you dig (i.e., BC One Call) and leak detection surveys along transmission and distribution lines.

Forecasting for industry studies is not available as projects for the next calendar year are proposed and selected annually in Q4.

The cost of Leak Detection and Repair Surveys at compressor and liquefied natural gas stations is expected to increase relative to 2017 levels. Use of thermal imaging devices by external third party accounts for this increase, as previous manual surveys were conducted using internal personnel time and resources. Cost is approximately $15 to $25 thousand per station; however, the rate of adoption by different assets may differ.

Lastly, other compliance measures associated with GHG emissions reporting and compliance requirements face uncertainty. Specifically, Environment and Climate Change Canada (ECCC) *Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds* are subject to equivalency agreements between ECCC with BC Ministry of Environment. Should ECCC requirements be adopted, additional O&M and capital compliance costs are expected. The timeframe associated with adopting these changes is not expected until 2020.