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VIA EMAIL

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January 14, 2016

FEI BERC RATE METHODOLOGY
EXHIBIT A-7

Ms. Diane Roy
Director, Regulatory Affairs
FortisBC Energy Inc.
16705 Fraser Highway
Surrey, BC V4N 0E8

Dear Ms. Roy:

Re: FortisBC Energy Inc.
Application for Approval of Biomethane Energy Recovery Charge
Rate Methodology

Further to British Columbia Utilities Commission Order G-147-15, which established the Regulatory Timetable with respect to the above noted Application, enclosed please find the Commission's Information Request No. 2 to FortisBC Energy Inc. Please provide your written responses with the Commission at the Streamlined Review Process on Wednesday, February 3, 2016.

Yours truly,

Erica Hamilton

/yl

Enclosure

cc: Registered interveners

An Application for Approval of
Biomethane Energy Recovery Charge Rate Methodology

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A. BIOMETHANE PROGRAM TO DATE

**45.0 Reference: INTRODUCTION
Exhibit B-5, BCUC IR 1.5.1
Premium calculation update**

In response to BCUC IR 1.5.1, FEI confirmed the following equation:

$$BERC\ rate = CCRA\ rate + Carbon\ Tax + BERC\ premium$$

45.1 As of January 1, 2016 rates, please confirm that the BERC premium is \$11.205/GJ.¹ If not confirmed, please specify.

45.2 Based on the indicative rate calculated as of January 1, 2016, as filed in the Fourth Quarter Report on the Biomethane Variance Account (BVA) and Biomethane Energy Recovery Charge (BERC) dated November 13, 2015 (2015 Fourth Quarter BVA Report), please confirm that the BERC premium is \$12.863/GJ.² If not confirmed, please specify.

45.2.1 Please file a copy of the 2015 Fourth Quarter BVA Report on a non-confidential basis.

B. ALTERNATIVES CONSIDERED

**46.0 Reference: ALTERNATIVES CONSIDERED
Exhibit B-5, BCUC IR 1.19.1, 1.19.2
RNG pricing alternatives**

In the attachment to BCUC IR 1.19.1, FEI provides potential benefits and concerns regarding the status quo, FEI's proposal, and seven alternatives. In response to BCUC IR 1.19.2, FEI states that it is "essentially proposing a change to the price of the RNG [renewable natural gas] commodity, without otherwise affecting the design of the program. FEI believes that this will help increase customer participation in the program without changing the program design and incurring additional costs."

¹ BERC Premium = \$14.414/GJ - \$1.719/GJ - \$1.4898/GJ = \$11.205/GJ

² BERC Premium = \$16.072/GJ - \$1.719/GJ - \$1.4898/GJ = \$12.863/GJ

- 46.1 With respect to the FEI Proposal, please explain why there are no system implementation costs when compared with the status quo.
- 46.1.1 Would it be correct to say that FEI will resume marketing spending of \$300,000 regardless if FEI remains under the status quo, or if FEI's proposals are approved?
- 46.2 If the Commission is to consider Option 1, please clarify if the low volume short term contract would be less than 2000 GJ per year or less than 499 GJ per year. Similarly, please clarify for the high volume short term contract. Please provide rationale for the threshold.
- 46.3 With respect to Option 1, please illustrate an example to show "A R3B customer taking less than a 100% blend would be using less than 2,000 GJ of RNG so would be in the higher Short Term Contract price bracket, while a R3B customer taking 100% would be in the lower price Short Term Contract bracket." Show your calculations.
- 46.4 With respect to Option 1, please provide a breakdown of estimates that make up the \$100,000 estimated system implementation cost.
- 46.5 With respect to Option 2, please illustrate an example to show "R3B customers on a higher blend buying more RNG than a R11B on a lower blend but paying a higher rate per GJ for the RNG." Show your calculations.
- 46.6 With respect to Option 3, please explain why the estimated system implementation cost is half of Option 1.
- 46.7 With respect to Option 3, why does FEI rank this option least favourable? Would FEI agree that Option 3 is an extension of the FEI Proposal and does not face the challenges of Option 1 and 2? (i.e. complexity of different rate class and volumes.) Please explain.
- 46.8 With respect to Options 1-3 and 6, please provide a breakdown of estimates that make up the \$120,000 incremental marketing costs. Describe the scope of additional work.
- 46.9 With respect to Option 5, please clarify FEI's concerns about the potential confusion with respect to the carbon tax credits. Include examples if appropriate.
- 46.10 Does FEI believe that the potential benefits of the alternative options will outweigh the estimated system implementation and additional incremental marketing cost? If this analysis differs depending on the Options considered, please provide a response for each Option.

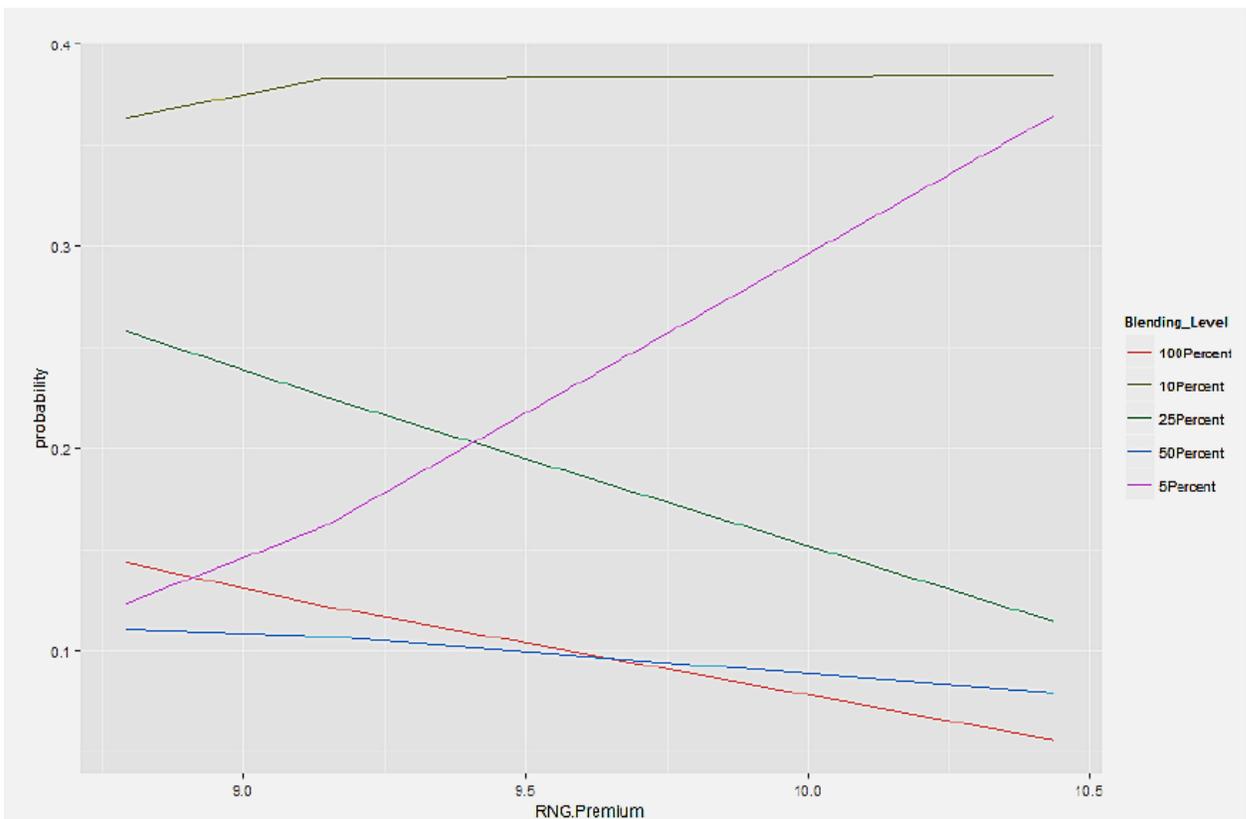
C. PROPOSED MARKET BASED BERC

**47.0 Reference: Proposed Market Based BERC
Exhibit B-5, BCUC IR 1.23.1
Elasticity of demand**

In response to BCUC IR 1.23.1, FEI states:

Using 2014 and 2015 data and multinomial regression, FEI has been able to estimate a demand curve for RNG for residential customers, and has also been able to determine an estimate of the elasticity of demand based on the relative probability of selecting a certain blend level at varying levels of RNG price premiums. Only residential data were analyzed as it was the only class that had adequate data points to meet the minimum degree of freedom to allow a statistical assessment of demand elasticity.

FEI shows the RNG demand curve for residential customers, with the relative probabilities of various RNG blends relative to various RNG Premiums.



Commission staff re-arranged the following table provided in FEI’s response to BCUC IR 1.23.1:

Blending level	Average Elasticity
5 Percent	10.48
10 Percent	0.31
25 Percent	(2.98)
50 Percent	(1.50)
100 Percent	(3.27)

FEI states that the “10 percent blending option is least elastic to changes in the RNG price premium relative to other options. The 5 percent is the option most elastic to changes relative to other options, indicating that in the case of a price increase beyond the \$10.50 per GJ RNG premium, customers are most likely to choose the 5 percent option over other options.” [Emphasis added]

- 47.1 Please briefly explain the objectives and purpose of a multinomial regression, and why the multinomial regression is appropriate for the RNG demand curve and elasticity of demand. Why is a simple linear regression not appropriate in this case (e.g. using dummy variables)?
- 47.2 Please provide the model equation(s) for this multinomial regression.
- 47.3 Please provide the dataset for the multinomial regression. Show and explain that the residential rate class had adequate data. Show that other rate classes have inadequate data.
- 47.4 Please provide the regression summary (e.g. regression statistics, ANOVA table, coefficients, intercepts, etc.).
- 47.5 Please provide the raw data and calculations to support the average elasticity figures.
- 47.6 How should a negative average elasticity be interpreted, if any different compared to a positive average elasticity?
- 47.7 The proposed RNG premium is \$7 for short term contracts and \$6 for long term contracts. Why did FEI appear to choose an interval between \$8.50 and \$10.50 RNG Premium as shown in the graph in the preamble?
- 47.8 Please expand the graph with the “RNG Premium” axis with a minimum value of \$3 to a maximum value of \$12, and expand the “probability” axis from 0 to 1. If not possible, please explain why.
- 47.9 How does FEI interpret the multinomial regression results? Please provide interpretations for each blend level (i.e. 5 percent, 10 percent, 25 percent, 50 percent and 100 percent), for each \$1 increments from \$3 to \$12, with specific probability levels.
 - 47.9.1 In the 5 percent blend case, FEI states that “a price increase beyond the \$10.50 per GJ RNG premium, customers are most likely to choose the 5 percent option over other options.” [Emphasis added]

Please specify the probability associated with “most likely”. Is it a 35 percent chance as indicated in the graph shown in the preamble? If not, please clarify.

47.9.1.1 Does the multinomial model have the ability to indicate which “other option” a customer will move towards (e.g. higher/lower blend) if a certain RNG premium is reached? How does the model account for the 0 percent blend option?

47.9.2 Based on FEI’s interpretation, in the 5 percent blend case, is it true to say that a price decrease below the \$9/GJ RNG premium, customers would have around 10 percent probability chance to stay in the 5 percent option? If not, please clarify.

47.10 A traditional demand curve shows price on the y-axis and quantity on the x-axis. Please provide a demand curve with RNG Premium (price) on the y-axis and blend level (quantity) on the x-axis. If not possible, please explain why.

47.10.1 If possible, please calculate the elasticity of demand and provide interpretation. How do these results compare with the average elasticity calculated in the multinomial regression? Show your calculations.

D. POTENTIAL IMPACT ON NON-RNG CUSTOMERS

48.0 Reference: SUPPLEMENTARY INFORMATION
Exhibit B-3, Supplementary Information, Attachment C, Tab Forecast Impacts;
Exhibit B-1-1, Evidentiary Update, Appendix E, Schedule 3;
Exhibit B-1-2, Errata, Figure 8-3;
Exhibit B-5, BCUC 1.37.1;
Exhibit B-5, BCUC 1.40.2.1
Forecast impacts on non-RNG customers at market-based BERC rate

Schedule 3 in Appendix E of Exhibit B-1-1 shown below provides the calculation of forecast impact of the proposed BERC rates on the non-RNG customers.

FORTISBC ENERGY INC.
 2015 BERC Rate Methodology Application
 Forecast Impacts at Market-Based BERC Rate

Schedule 3

Line No.	Particulars	2016	2017	2018	2019	2020
1						
2	<u>Aged Inventory Transfer to Storage and Transport Rates</u>					
3	GJs > 18 months in age	\$ -	\$ -	\$ 346,070	\$ 1,013,201	\$ 1,450,737
4	Forecasted Natural Gas Commodity rate	\$ 2.83	\$ 2.97	\$ 3.10	\$ 3.27	\$ 3.43
5	Aged inventory transfer - non-tax effected (\$000)	-	-	(1,073)	(3,308)	(4,970)
6	Non-bypass Sales Volume	124,017.9	124,017.9	124,017.9	124,017.9	124,017.9
7	IMPACT TOTAL CUSTOMERS PER GJ	\$ -	\$ -	\$ (0.0087)	\$ (0.0267)	\$ (0.0401)
8	IMPACT % of delivery margin	0.00%	0.00%	0.15%	0.46%	0.69%
9						
10						
11						
12						
13						
14	<u>Transfer to Delivery Rates</u>					
15	Transfer all costs except Supply ending balance	(751)	114	(107)	(2,576)	(9,538)
16	Non-bypass Sales & Transportation Volume	175,315.3	175,315.3	175,315.3	175,315.3	175,315.3
17	IMPACT TOTAL CUSTOMERS PER GJ	\$ (0.0043)	\$ 0.0006	\$ (0.0006)	\$ (0.0147)	\$ (0.0544)
18	IMPACT % of delivery margin	0.10%	-0.02%	0.01%	0.36%	1.32%
19						
20		\$ 720,884	Delivery margin			
21						

In response to BCUC IR 1.40.2.1, FEI states:

... a balance transferred to the UBPDA account from the BVA would be the result of any transfer of RNG supply to the MCRA. The volume of inventory would be transferred to the MCRA at the prevailing CCRA rate and would be recovered through Storage and Transport charges.

- 48.1 Please confirm, or otherwise explain, that the transfer of the aged inventory volume from the BVA to the MCRA results in a transfer of the associated revenue from the MCRA to the BVA (i.e. revenue equal to volume transferred times the prevailing CCRA rate.) For example, as shown in Schedule 3, in 2020 a volume of 1,450,737 gigajoules is transferred from the BVA to the MCRA, and a corresponding dollar amount of \$4.97 million is transferred from the MCRA to the BVA.
- 48.2 Please confirm, or otherwise explain, that the “balance transferred to the UBPDA account from the BVA” that results from the transfer of aged inventory to the MCRA, is a transfer of the net cost of the transferred biomethane (i.e. the cost of the biomethane less the revenue transferred from the MCRA to the BVA.)
- 48.2.1 Please confirm that this amount is included in line 15 on the Schedule 3 in the preamble above.
- 48.2.2 Please confirm that this “balance transferred to the UBPDA account from the BVA” that results from the transfer of RNG supply to the MCRA does not include the amount on line 5 of Schedule 3 (i.e. the \$4.97 million in 2020.)
- 48.3 Please confirm, or otherwise explain, that line 8 on Schedule 3, that is titled “IMPACT % of delivery margin”, is the cost of the aged inventory transfer (i.e deemed cost of the biomethane transferred to the MCRA) divided by the 2016 delivery margin total of \$720,884.
- 48.3.1 Please confirm, or otherwise explain, that the percentages shown on line 8 of Schedule 3, do not represent the impact of the transfer of aged inventory to the MCRA on the delivery margin, and are therefore not meaningful numbers.

BCUC IR 1.37.1 referenced the following information extracted from Schedule 3, in tab Forecast Impacts in the “fully functional spreadsheet” in Attachment C to the Supplementary Information that is Exhibit B-3 (which is the same as shown in Schedule 3 in Appendix E of Exhibit B-1-1), summarizing in percentage terms the impact of FEI’s proposed market-based BERC rates on FEI’s non-RNG customers:

	2015	2016	2017	2018	2019	2020
Aged Inventory Transfer to Storage and Transport Rates IMPACT % of delivery margin	0.00%	0.00%	0.00%	0.15%	0.46%	0.69%
Transfer to Delivery Rates IMPACT % of delivery margin	0.00%	0.10%	-0.02%	0.01%	0.36%	1.32%
Total Impact Non-bypass Sales Volume	0.00%	0.10%	-0.02%	0.16%	0.82%	2.01%

When asked in BCUC IR 1.37.1 whether FEI considers a 2.01 percent impact to be significant, FEI elaborated by stating:

Based on the current annual bill of a residential customer of approximately \$806²⁴, a 1.32% increase to delivery rates represents approximately \$6 per year or approximately \$0.50 per month, and a 0.69% increase to storage and transport rates represents approximately \$0.83 per year.²⁵

In footnote 24 to BCUC IR 1.37.1, FEI notes that this assumes a lower mainland customer consuming 90 GJ per year and in footnote 25, FEI sets out how the \$6 and \$0.83 per year impact respectively, are calculated from the current annual bill amount of \$806.

- 48.4 Please confirm, or otherwise explain, that Schedule 3 shows, for a typical residential customer with an annual consumption of 90 GJ per year, the impact of transfers to delivery rates in 2020 would be \$4.90 (i.e. \$0.0544 times 90 GJ) and the impact of the aged inventory transfer to the MCRA in 2020 would be \$3.60 (i.e. \$0.0401 times 90 GJ).
- 48.5 Does FEI agree that the 2.0% total impact referenced in BCUC 1.37.1 is not an accurate reflection of the impact on the delivery margin for FEI's non-bypass customers? If not, please explain why not.
- 48.6 Does FEI agree that \$4.90 and \$3.60, respectively, are more accurate estimates of the impacts to a residential customer in 2020 than \$6 and \$0.83 as calculated by FEI in response to BCUC 1.37.1? If not, please explain why not.

**49.0 Reference: SUPPLEMENTARY INFORMATION
Exhibit B-1-1, Appendix E, Schedule 3;
Exhibit B-5, BCUC 1.40.2.1
Forecast impacts on non-RNG customers at market-based BERC rate**

In response to BCUC IR 1.40.2.1, FEI states:

... a balance transferred to the UBPDA account from the BVA would be the result of any transfer of RNG supply to the MCRA. The volume of inventory would be transferred to the MCRA at the prevailing CCRA rate and would be recovered through Storage and Transport charges.

- 49.1 Please confirm, or otherwise explain, that the transfer of aged inventory from the BVA to the MCRA at the prevailing CCRA rate, effectively has the same dollar impact on the MCRA balance, expressed in dollars as if this same quantity of conventional natural gas was physically purchased from the market at the prevailing CCRA rate.
- 49.2 Does FEI agree that at the time this aged inventory biomethane was originally delivered onto the FEI system it would have displaced conventional gas purchases? (i.e. FEI would have required a lesser volume of conventional gas supply on that day to balance the system and meet the daily load requirement of its non-RNG customers.) If not, please explain.

**50.0 Reference: EVIDENTIARY UPDATE
Exhibit B-5, BCUC 1.34.0;
FEI Rate Schedule 14A
Applicable Rate Schedules**

In response to BCUC IR 1.34.1, when asked to describe the RNG customer categories used internally by FEI in its demand model, FEI states:

The remaining two categories are used internally by FEI to categorize customers served under Rate Schedule 11B which may include biomethane customers served under an existing transportation agreement with a gas marketer or customers purchasing RNG direct from FEI under Rate Schedule 14A.

- 50.1 Please confirm that FEI sells RNG to the transportation service customers who have selected FEI as their Shipper Agent under Rate Schedule 11B, and not under Rate Schedule 14A.

- 50.1.1 If not confirmed, please provide the reference in Rate Schedule 14A that provides for the sale of RNG to these customers under this Rate Schedule.

51.0 Reference: EVIDENTIARY UPDATE
Exhibit B-1-1, Appendix E;
Exhibit B-1-2, Errata, Figure 8-3
Longer term impact on non-RNG customers

In the evidentiary update in Exhibit B-1-1, Appendix E provides the financial analysis. Figure 8-3 in Exhibit B-1-2 shows the summary of market-based rate + yearly clearing impacts to 1, the BVA, MCRA and Non- RNG Customers.

- 51.1 Please provide an updated version of each of the schedules shown in Appendix E of the Evidentiary Update that is Exhibit B-1-1, with the time period extended by an additional five years out to 2025. Please state all assumptions.
 - 51.1.1 Please provide fully functional copies of the associated spreadsheet models.
- 51.2 On Figure 8-3 as shown in Exhibit B-1-2, please explain whether the “Non-RNG Customer Impact per GJ” as shown in Figure 8-3 continues to increase year over year beyond 2020, or whether it can be expected to level off and/or decrease at some point.
 - 51.2.1 Please describe the conditions under which it would level off and/or decrease.
 - 51.2.2 If supply additions continue to be limited by the price and volume caps set out in the 2013 Biomethane Decision, provide the maximum “Non-RNG Customer Impact per GJ”, and provide a projection of the year that the maximum impact is anticipated to occur.
 - 51.2.3 If no further supply is added beyond the supply contracts with the City of Surrey and the City of Vancouver, describe how this would be anticipated to change the trend and magnitude of the “Non-RNG Customer Impact per GJ.”
- 51.3 On Figure 8-3 as shown in Exhibit B-1-2, please explain whether the cost per gigajoule of the “MCRA Impact per GJ” as shown in Figure 8-3 continues to increase year over year beyond 2020, or whether it can be expected to level off and/or decrease at some point.
 - 51.3.1 Please describe the conditions under which it would level off and/or decrease.

52.0 Reference: POTENTIAL IMPACT ON NON-RNG CUSTOMERS
Exhibit B-8, CEC IR 1.20.1
Impact on non-RNG customers

In response to CEC IR 1.20.1, when asked to explain the decline in the Non-RNG Customer Impact per GJ from 2017 to 2018 FEI states “the forecast recovers from demand and valuation of the ending inventory result in a forecast net benefit transfer to delivery rates in 2017.” FEI goes on to provide a table that shows a figure of \$114,000 for the 2017 transfer of all cost except supply ending balance.

- 52.1 Please confirm, or otherwise explain, that the forecast amount for 2017 is a net benefit of \$114,000.

- 52.2 Please explain whether FEI intends to automatically transfer the resulting amount out of the BVA regardless whether it is a net cost or a net benefit.
- 52.3 If FEI intends to transfer a net benefit amount out of the BVA, please explain how this is aligned with the objectives of the Application.

E. ACCOUNTING TREATMENT AND RATE SETTING

**53.0 Reference: ACCOUNTING TREATMENT AND RATE SETTING
Exhibit B-5, BCUC IR 1.9.1, 1.9.1 Attachment;
FEU 2012-2013 RRA Decision, p. 73
Sponsorship costs**

On page 73 of the FortisBC Energy Utilities (FEU) 2012-2013 Revenue Requirements Application (RRA) Decision, the Commission states:

Accordingly, the Commission Panel directs that all Community Involvement Spending will be allocated 50 percent to the ratepayer and 50 percent to the shareholder.

In BCUC IR 1.9.1 FEI states that “FEI does not specifically break down marketing spend by rate class or type of cost” and noted that sponsorship accounted for 10 percent of past marketing activities for 2012-2015 Projected.

Commission staff have extended the table provided in response to BCUC IR 1.9.1 to reflect FEI’s stated allocation, and the allocation directed in the FEU 2012-2013 RRA Decision.

RNG Program Marketing Cost Breakdown

Category	2011	2012	2013	2014	2015 Projected	Total
RNG Program Marketing - Total	\$384,725	\$300,978	\$321,083	\$166,815	\$175,000	
Sponsorship 10 percent	\$38,473	\$30,098	\$32,108	\$16,682	\$17,500	\$96,388
50 percent of Sponsorship		\$15,049	\$16,054	\$8,341	\$8,750	\$48,194

- 53.1 Does FEI agree that the above table accurately reflects the allocation of the sponsorship portion of the RNG program marketing costs? If not, please explain.
- 53.2 Please confirm, or otherwise explain, that 50 percent of the past marketing activities for the period from 2012 through 2015 were allocated to the shareholder as directed by the Commission in the FEU 2012-2013 RRA Decision.

**54.0 Reference: ACCOUNTING TREATMENT AND RATE SETTING
Exhibit B-5, BCUC IR 1.29.3
Emissions Regulations Deferral Account**

In BCUC IR 1.29.3 FEI states:

The Compliance with Emissions Regulations Deferral Account, approved by Commission Order G-44-12, captures potential compliance costs and revenues collected from the sale of carbon credits. On page 111 of the Decision (dated April 12, 2012) (Emissions Regulations Deferral Account, pages 109 to 111.)

- 54.1 For the Emissions Regulations Deferral Account, please provide the following:
- a. The timeline for recovery;
 - b. The carrying costs; and
 - c. The term that the account is approved for, or when it will be subsequently reviewed.

**55.0 Reference: ACCOUNTING TREATMENT AND RATE SETTING
Exhibit B-5, BCUC IR 1.40.2
Unsold Biomethane Premium Deferral Account (UBPDA)**

With respect to the UBPDA, FEI states the following In BCUC IR 1.40.2:

If the Commission were to direct the use of a separate deferral account and rate rider mechanism, FEI would propose a rate base deferral account with an amortization period of one year. To the extent that the RNG Program remains in place, this would be an ongoing account and thus there would not be an expiration date for this account.

- 55.1 Please provide the carrying costs that would apply to the UBPDA.
- 55.2 Does FEI agree the UBPDA should be periodically reviewed (i.e. every 3 to 5 years) to determine if it is still required and continues to serve its original objective? Please explain why, or why not.