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November 13, 2015

<u>Via Email</u> Original via Mail

British Columbia Utilities Commission Sixth Floor 900 Howe Street Vancouver, B.C. V6Z 2N3

Attention: Ms. Erica M. Hamilton, Commission Secretary

Dear Ms. Hamilton:

Re: FortisBC Energy Inc. (FEI)

2015 System Extension Application (the Application)

Response to the British Columbia Utilities Commission (BCUC or the Commission) Information Request (IR) No. 2

On October 2, 2015, FEI filed its responses to IRs No. 1. In accordance with Commission Order G-170-15 setting out the Amended Regulatory Timetable for the review of the Application, FEI respectfully submits the attached response to BCUC IR No. 2.

If further information is required, please contact Brent Graham at 604-592-7857.

Sincerely,

FORTISBC ENERGY INC.

Original signed by: Ilva Bevacqua

For: Diane Roy

Attachments

cc (email only): Registered Parties



BTI	SPC	FortisBC Energy Inc. (FEI or the Company) 2015 System Extension Application (the Application)	Submission Date: November 13, 2015
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1 A. COMMISSION CONCERNS

2	1.0	Reference:	MAINS EXTENSION TEST
3			Exhibit B-1, Section 2.2.1, p. 17;
4 5			Decision for 2007 System Extension and Customer Connection Policies Review, p. 19;
6 7			Exhibit A2-1, Ontario Energy Board's E.B.O. 188 – Final Report of the Board, Para. 2.1.5, p. 8
8			Purpose of the main extension test
9 10 11 12 13		On page 19 Policies Rev policies is to ensure that customer or	of the decision for the 2007 System Extension and Customer Connection view, the Panel stated: "the primary purpose of extension and connection promote fair and equitable treatment of customers and, more specifically, to existing customers are not adversely affected by the addition of a new customers."
14		On page 17	of the Application, FortisBC Energy Inc. (FEI) states:
15 16 17 18 19 20		If the contr syste the F the 0 portfe	e results of the Test do not meet the approved PI threshold, a financial ibution is required from a customerif an individual PI is 0.8 or greater, a em extension can proceed without the need for a customer contribution. If PI is less than 0.8, a customer contribution is required to bring the PI up to 0.8 threshold in order for the system extension to proceed. In aggregate, the polio of main extensions completed on an annual basis is to have a PI of 1.1.
21 22 23 24 25 26 27		1.1 Pleas Exter Profi is to syste existi	se confirm, or explain otherwise, that the quote from the 2007 System nsion and Customer Connection Policies Review decision coupled with the tability Index (PI) targets indicate that the purpose of the main extension test ensure that on an annual basis, the forecast revenues of all the executed em extensions would exceed the costs and result in no negative impact to ing ratepayer costs.

28 **Response:**

29 The reference to "all" is ambiguous, as to whether it is addressing the extensions in aggregate 30 or each individual main extension separately. It is necessary to distinguish between individual main extensions and the extensions in aggregate. As discussed in the preamble, the purpose 31 32 of the Test is to ensure the interests of new and existing customers are fairly and equitably balanced. Specifically, at a portfolio level, the purpose of the MX Test is to provide a practical 33 tool to ensure that the forecast revenues of all contemplated system extensions are equal to, or 34 exceed the forecast costs on an annual basis. At an individual main extension level, the 35 forecast revenues could be less than the forecast costs since the individual PI threshold is 0.8. 36



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1 The use of the term "executed" in the information request is inaccurate since the MX Test is to 2 be used ex ante to the execution of contemplated system extension. The MX Test was never 3 intended to be used as an expost tool to annually re-assess whether the forecast revenue for 4 executed main extensions actually exceeds the costs, nor assess the actual impact to existing 5 rate payers.

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Please confirm, or otherwise explain, that the implications of actual revenues being lower than forecasted revenues underscore the importance of forecast accuracy in the effective functioning of the mains extension test PI formula.

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14 Response:

1.1.1

15 FEI confirms that inaccurate forecasts have the potential to reduce the anticipated benefits to 16 existing customers, or (other things being equal) to unfavourably impact rates. Note however, 17 actual revenues over a five year period for example, represent only a small part of overall 18 revenues received as a result of the installation of a main extension. As mains last over 60 19 years, a PI calculated after five years does not indicate whether a main has turned out to be 20 cost effective. Revenues will continue throughout the life of the main.

21 Further, the Company has demonstrated that between 2008 and 2014 existing customers have 22 not been adversely affected by the addition of new customers as informed by the Rate Impact 23 analysis. FEI also believes that its forecasting practices continue to be appropriate and have 24 contributed to the effective functioning of the MX Test.

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- 28 29 On page 8 of E.B.O. 188, the Ontario Energy Board stated: "The Board recognizes that 30 subsidization can be measured at both the project and portfolio level. An overall rolling 31 portfolio P.I. of 1.0 means that existing customers will not suffer a rate increase over the 32 long term as a result of distribution system expansion. The Board is therefore of the view 33 that an overall portfolio P.I. of 1.0 or better (emphasis added) is in the public interest."
- 34 1.2 For the annual portfolio of extensions, please explain the implication to existing ratepayers if the ratio of the Net Present Value (NPV) of the actual revenues to 35 36 the NPV of actual costs turns out to be 0.7, after being forecasted to be 1.1.
- 37



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1 **Response:**

2 It is reasonable to assume that if the actual incremental revenues collected from new customers 3 are lower than the costs to serve them (in other words, a scenario where the PI was less than 4 1.0), there would likely be upward pressure on existing customer rates, all else equal. The 5 opposite would hold true if the revenue was determined to be greater than the costs. The 6 theory related to system extension policy reviewed by EES in the Application is built on this 7 basic premise.

- 8 However, in order to properly answer the information request, there must be a common 9 acceptance of the methodology used to assess the "implication to existing ratepayers." As discussed in the Application¹, FEI believes that there is a fundamental misunderstanding in how 10 11 to evaluate the actual performance of system extensions and, consequently, the implications to
- 12 existing customers.

13 The MX Test is a tool that should be used to determine the forecast PI values ex ante in order to 14 determine whether or not the customer needs to provide a contribution. In the example 15 provided in the information request, the MX Test would be appropriate to determine whether the 16 forecast PI equals 1.1. The Company believes that the MX Test has worked well in this regard 17 for many years and will continue to do so with the updates proposed in the Application.

- 18 The MX Test is not an appropriate tool to determine whether the actual PI was indeed 0.7. The 19 MX Test was never intended to be used ex post to determine actual PI. The Commission's 20 methodology to determine an actual PI does not result in an actual PI at all; it merely results in a 21 re-forecast Pl². Further, the methodology used to re-forecast the Pl includes a number of 22 incorrect assumptions that distort the results.
- 23 The OEB recognizes the need for consistency in methodology as seen in the following excerpt 24 taken from the filing referenced in the preamble:
- 25 The Board also expects the utilities to develop proposals on the appropriate method to 26 use to monitor the variation between forecast and actual profitability of their distribution 27 system expansion portfolios.³
- 28

29 In other words, at the time the OEB published the comments, it was inviting proposals to help 30 inform the issue. In absence of an appropriate methodology, the question posed in the 31 information request cannot be properly answered.

32 In the Application, FEI has put forward a proposal to adopt a new method to report on its MX 33 Test and to assess the impact on customers. Specifically, it has proposed to annually report to

¹ Refer to section 5. ² BCUC IR 1.7.2.

³ Section 6.1.4, page 27.



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1 the Commission on the forecast portfolio PI using the accepted MX Test methodology.⁴ The 2 Company has also proposed to conduct the Rate Impact analysis which, as will be discussed in the response to BCUC IR 2.2.1, takes a simple revenue to cost ratio analysis several steps 3 4 further to determine the short term impact to existing and new customers. The Rate Impact 5 methodology benefits from the use of actual data to assess performance versus the current re-6 forecasting methodology. Despite the merits of the Rate Impact analysis and FEI's proposal to 7 adopt the methodology, the only way to truly assess the impact on customers would be examine the actual revenues and costs over the life of the main. 8

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12	1.2.1	Would this introduce subsidization of FEI system extensions by existing
13		customers?
14		

15 Response:

As discussed in the previous information request, if the test is being conducted before the fact, then a PI less than 1.0 would indicate a forecast (not an actual) unfavourable impact on rates in the absence of a CIAC. However, a PI of less than 1.0 based on an after the fact evaluation of an extension based on the Commission's current reporting approach would not suggest subsidization or a lack thereof. The approach is not suited to yielding a conclusion in that regard. Please refer to the response to BCUC IR 2.1.2.

22 The Rate Impact analysis could also be considered a more detailed form of an actual PI 23 calculation, similar to the OEB's approach. Specifically, between 2008 and 2014, the Rate 24 Impact analysis is determining the rate impact of adding \$47.7 million⁵ in revenue and \$38.3 25 million in costs⁶ associated with system extensions. A simpler way of presenting the same data 26 would be to say FEI's "actual PI" has been 1.25 where actual PI is defined as the ratio of actual 27 revenue to actual costs (i.e. \$47.7 million divided by \$38.3 million). The Company's approach 28 takes this simple PI calculation several steps further by showing how an actual PI of 1.25 29 reduces rates for existing customers. The Company has proposed adding the periodic Rate 30 Impact information in response to the Commission's concerns identified in L-34-14 and L-44-14 31 which suggested that existing customers may have been harmed from system extensions.

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Refer to BCUC IR 2.27.14 for detail on the forecast PI methodology.

⁵ Line q, third column (\$11,454, 018) multiplied by line r, first column (\$4.16) of Rate Impact analysis, Appendix A, p. 27

⁶ Line m, third column (\$38,224, 268) of the Rate Impact analysis, Appendix A, p.27.



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11.3Please confirm, or explain otherwise, that a target minimum PI of 0.8 for each2individual main extension means that the NPV of the revenues associated with3that extension should cover at least 80 percent of the NPV of the costs4associated with the same extension.

6 **Response:**

5

The 0.8 target PI represents that, within the confines of the MX Test, revenues are expected to
reach 80% of costs over a five year period based on reasonable inputs and forecasts. It does
not however mean that actual revenues will be 80% as the test is an ex ante test and not
designed to determine ex post the actual revenues or costs.

- 11 12 13 14 1.4 For an individual extension, please explain the implication to existing ratepayers 15 if the ratio of the NPV of the actual revenues to the NPV of actual costs turns out to be 0.5, after being forecasted to be 0.8. In this scenario no CIAC would have 16 17 been paid since the forecast yielded an individual PI of 0.8. Would this introduce 18 subsidization of an FEI system extension by existing customers? 19 20 **Response:** 21 No conclusion can be drawn in this regard. Please refer to the response to BCUC IR 2.1.2. 22 23 24
- 251.4.1Please confirm, or otherwise explain, that in the scenario described in26the previous question, there would be no way to obtain a CIAC from the27developer after discovering that actual revenues would be lower than28forecasted.
- 30 **Response:**

Confirmed, nor does FEI believe that this is an appropriate approach to customer attachments. The developer cannot and should not be responsible for revenues over the life of a main. The developer does not have the ability to directly influence how each customer that attaches to the main in question, actually uses the appliances and at what rates and the resulting revenues the Company would receive from the end use customers.

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1 2.0 FORECASTING ACCURACY Reference: 2 Letter L-34-14, p. 3; Exhibit B-1, Appendix A; Exhibit B-3 BCUC IR 3 1.1.9 4 Main extension forecast accuracy 5 On page 3 of letter L-34-14, the British Columbia Utilities Commission (Commission) lists 6 forecasting accuracy as an area of concern. 7 In BCUC IR 1.1.9, FEI states: 8 An independent review will not be cost-effective and it will add administrative 9 burden... While in theory one might conclude that having a third party conduct the review instead of FEI adds credibility, there is no indication that performing 10 11 an independent review would increase the accuracy of the estimate. The third 12 party would face similar data limitations to FEI. FEI installs more main extensions 13 annually than any other party in the province and therefore has a better understanding of costs than a third party would. 14 15 2.1 Would it be more effective and efficient for the independent party to endorse 16 FEI's annual main extension report instead of having the independent party 17

perform estimates for each system extension? For example, the independent party party can sample FEI's main extension system forecasts, test for reasonableness and endorse the annual report.

21 **Response:**

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FEI believes it would be inefficient and ineffective to use a third party to endorse its annual MX report. The limitations listed in the response to BCUC IR 1.1.9 would also apply to having a third party endorse FEI's annual main extension report. A third party would simply add additional cost and time to complete a report that FEI regards as already disproportionate in terms of cost and effort to prepare and does not permit the Commission to draw meaningful conclusions about the profitability of mains.

Sampling of FEI's main extension system forecasts for reasonableness as suggested in the question can only be a check by the independent party to ensure that the test as run by FEI did indeed meet the PI requirement at the time. This information is already evident in the report, and a review of the report will provide no further value. FEI provides compliance reports to the Commission on a regular basis for a large number of projects and activities (including annual MX reports); there has been no suggestion in other processes that a third party review is required.

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- 2.2 If FEI believes that the utility would have a better understanding of costs than a third party, please discuss any potential limitations of the third party EES Report.
- 4

5 **Response:**

6 There are no limitations of the EES Report related to FEI having a better understanding of costs 7 than a third party. FEI's statement in response to BCUC IR 1.1.9 was in relation to FEI's 8 understanding of its cost structures and its ability to forecast its own costs. Consistent with that 9 comment, FEI retained EES for its industry expertise to develop the framework for the Rate 10 Impact analysis, while the individual inputs into the model, including costs, came from the 11 expertise provided by FEI.

12 Going forward, if the Commission were to approve the use of the Rate Impact analysis to help

13 evaluate the effectiveness of Company's system extension policies, the Company would

14 populate the model independently.



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1 3.0 Reference: FORECASTING ACCURACY

2 3

Exhibit B-3, BCUC 1.1.1, 1.1.3, 1.1.4

Main extension and service line cost estimates

- In response to BCUC IR 1.1.1 FEI provides four tables for MX costs: FEI, FEI Includes
 assumed result, FEVI, and FEVI Includes assumed result.
 - 3.1 Please explain why the total actual cumulative MX spend to date for 2008 is listed as \$467,819 in the FEI table but is listed as \$437,819 in the FEI-Includes assumed result table.
- 8 9

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10 Response:

11 In the response to BCUC IR 1.1.1, the 2008 Actual FEI Cumulative MX spend to date of 12 \$467,819 shown in the table called 'FEI' is incorrect. The correct value is \$437,819 which is the 13 amount that was included in the table called 'FEI - Includes assumed result'.

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- 173.2Please explain why the total actual cumulative MX spend to date for 2009 is18listed as \$937,423 in the FEVI table but is listed as \$951,042 in the FEVI-19Includes assumed result table.
- 20

21 Response:

In the response to BCUC IR 1.1.1, the 2009 Actual FEVI Cumulative MX spend to date of \$937,423 shown in the table called 'FEVI' is incorrect. The correct value is \$952,042 which is the amount that was included in the table called 'FEVI - Includes Assumed Result'.

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28 3.3 Please explain why the estimated remaining MX costs for 2014 in the FEI-Includes assumed result and FEVI-Includes assumed result tables are exactly the difference between the total forecast MX cost estimates used in original MX tests less the total actual cumulative MX spend to date for 2014.



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1 **Response:**

2 In the table accompanying BCUC IR 1.1.1, the 'Estimated Remaining MX Costs' (Column 4) is 3 requesting a re-forecast of a forecast. FEI has previously created forecasts for each 2014 main 4 and had based those forecasts on the best available information.

5 There is no additional useful information on which to base a re-forecast. Therefore, the original 6 forecasts for the 2014 main extensions are appropriate to determine the estimated remaining 7 MX costs. As such, the estimated remaining costs for 2014 in the 'FEI-Includes assumed result' 8 and 'FEVI-Includes assumed result' (\$14,191 and \$323,671 respectively) are the difference 9 between the original forecast cost and the actual cumulative MX spend to date.

10 The 2015 MX Report, which has not yet been produced, would contain updated actual costs for 11 all 2014 main extensions consistent with other MX Reporting years.

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15 3.4 Please reproduce the FEI-Includes assumed result and the FEVI-Includes assumed result tables correcting any errors and including only 2008 to 2013 16 17 results.

18

19 Response:

20 The Company has removed the 2014 results from the tables as requested. The 'FEI-Includes

21 assumed result' and 'FEVI-Includes assumed result' tables already contain the correct cost

22 information. The revised tables (excluding 2014 data) are included below.

Table Includes F	Table includes Forecast to Actual Main Extension Costs included in MX Reporting Years 2008 to 2014											
		2. Total										
	Fo	recast MX		3. Total								
		Cost		Actual	4.	Estimated	5.	Variance	6. Variance		7. Total	
1. MX Year	E	stimates	Cu	umulative	R	emaining	(in	MX Year \$)	(in %)	Exp	pected MX	
		Used in	M	(Spend to	1	MX Costs		2- (3+4)	[2-(3+4)]/2	C	osts (3+4)	
	Or	iginal MX		Date								
		Tests										
2008	\$	352,046	\$	437,819	\$	-	\$	(85,773)	24.4%	\$	437,819	
2009	\$	873,525	\$	944,648	\$	-	\$	(71,123)	8.1%	\$	944,648	
2010	\$	458,129	\$	453,092	\$	-	\$	5,037	-1.1%	\$	453,092	
2011	\$	634,248	\$	728,259	\$	-	\$	(94,011)	14.8%	\$	728,259	
2012	\$	585,584	\$	713,526	\$	-	\$	(127,942)	21.8%	\$	713,526	
2013	\$	498,166	\$	768,151	\$	-	\$	(269,985)	54.2%	\$	768,151	
Sum	\$	3,401,698	\$	4,045,495	\$	-	\$	(643,797)	19%	\$	4,045,495	

FEI - Includes assumed result



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FEVI - Includes assumed result

		2. Total									
	Fo	recast MX		3. Total							
		Cost		Actual	4. 6	Estimated	5.	Variance	6. Variance		7. Total
1. MX Year	E	stimates	Cu	umulative	Re	emaining	(in	MX Year \$)	(in %)	Ex	pected MX
		Used in	M)	(Spend to	Ν	MX Costs		2- (3+4)	[2-(3+4)]/2	Costs (3+4)	
	Or	iginal MX		Date							
		Tests									
2008	\$	264,194	\$	298,877	\$	-	\$	(34,683)	13.1%	\$	298,877
2009	\$	796,757	\$	951,042	\$	-	\$	(154,285)	19.4%	\$	951,042
2010	\$	467,152	\$	482,629	\$	-	\$	(15,477)	3.3%	\$	482,629
2011	\$	513,670	\$	558,939	\$		\$	(45,269)	8.8%	\$	558,939
2012	\$	367,763	\$	366,389	\$	-	\$	1,374	-0.4%	\$	366,389
2013	\$	366,502	\$	352,995	\$	-	\$	13,507	-3.7%	\$	352,995
Sum	\$	2,776,038	\$	3,010,871	\$	-	\$	(234,833)	8%	\$	3,010,871

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3.4.1 Please comment on the new cumulative variance for 2008 to 2013 only for each of FEI and FEVI.

8 <u>Response:</u>

9 The variances in the tables for FEI and FEVI have not substantially changed. The variances are 10 19% for FEI and 8% for FEVI. As stated in the response to BCUC IR 1.1.1, the degree of 11 accuracy is within an acceptable range for a Class 3 estimate, which is +30% to -15%, which 12 FEI considers to be reasonable.

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- 163.5Using the revised data in the FEI-Includes assumed result table please plot the
variances for 2008, 2009, 2010, 2011, 2012 and 2013 on a scatter plot with
variance on the y-axis and the year on the x-axis. Please add a trend line to this
data, and include the trend line formula and the R-squared result on the chart.
- 20
- 21 Response:
- 22 The requested graphs for FEI and FEVI are included below.

FEI cannot conclude whether there is a trend with main extension cost variances, other than to say the degree of accuracy has improved over time and is within an acceptable range for a



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- 1 Class 3 estimate which FEI considers to be reasonable as discussed in the response to BCUC
- 2 IR 2.3.4.1. The r-squared values are as follows:
- The R² value for the FEI scatter plot is low⁷ which indicates the trend line will not do a good job predicting the trend.
- The R² value for the FEVI scatter plot indicates the trend line may be representative⁸.





⁷ The R² for FEI is .34 out of a possible maximum of 1.0 where 1.0 would indicate the trend line is a perfect fit for representation of the trend.

⁸ The R² for FEVI is .72 out of a possible maximum of 1.0 where 1.0 would indicate the trend line is a perfect fit for representation of the trend.

FORTIS BC

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3.5.1 Based on the above information, please discuss FEI's observations and conclusions. Can FEI conclude there is a trend with MX cost variance? If so, what is that trend and how reliable is it? If not, why not?

8 **Response:**

9 Performing a trend line analysis on a relatively small number of main extension or service line 10 variances does not yield any useful or intuitive results as the sample size is too small. There will 11 inherently be a variance between a forecast and an actual result and this variance will be 12 different for any given reporting year based on the number and types of main extensions and 13 service lines installed and the complexities that materialize during construction. That is, the

14 variance in one year is not necessarily indicative of the variance in another year.

FEI believes that the forecast to actual cost variances for all mains and services are currently within an acceptable range based on a consideration the resources and costs required to obtain a more accurate forecast as compared to any incremental increase in forecast accuracy. This is especially true given the large volume of services and mains and the relatively small capital costs for an individual main or service.

FEI's forecasting methodologies for mains and services continue to be appropriate and will continue to be improved while ensuring a suitable balance between additional cost and accuracy of forecasts. Please refer to the response to BCUC IR 1.1.1 for a discussion of the forecast to actual variances for FEI and FEVI.

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27	3.6	Please provide a similar plot, trend line, formula and R-squared result for the
28		revised FEVI-Includes assumed result data also for 2008 to 2013 only. Please,
29		again, discuss FEI's observations and conclusions.
30		
31	Response:	
32	Please refer	to the responses to BCUC IRs 2.3.5 and 2.3.5.1.
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- In response to BCUC IR 1.1.3, FEI provides four tables for service line costs: two tables
 that BCUC requested, and two tables that FEI corrected.
- 3.7 Please explain why in the corrected tables the estimated remaining service line
 costs for 2014 are exactly the total forecast service line cost estimates used in
 original MX tests for 2014.
- 7

8 Response:

9 The 2015 MX Report would normally contain the updated actual service line costs for all 2014 10 main extensions. This practice is consistent with the practices of past MX Reporting years

11 where a new forecast year is included with each new annual MX Report and that same year is

12 then revised with actual data in subsequent annual MX reports.

13 Since FEI has not yet completed the 2015 MX Report, it does not have the actual service line

14 cost data included and matched to the 2014 reporting sample. Therefore the only data available

15 to FEI at this time is the original 2014 forecasted service line costs for both FEI and FEVI.

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- 193.8Please provide the sum line for both the corrected FEI service line cost table and20the corrected FEVI service line cost table including only 2008 to 2013 results.
- 21
- 22 <u>Response:</u>

23 There are no changes to correct for the FEI and FEVI includes assumed result service line costs

tables, as all values provided are accurate. As requested, FEI has removed the data for 2014,

25 included the sum line and provided the revised tables below.



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FEI

1. MX Year	2. Total Forecast MX Cost Estimates Used in Original MX Tests	3. Total Actual Cumulative Service Line Spend to Date	4. Estimated Remaining Service Costs		5. Variance (in MX Year \$) 2- (3+4)		6. Variance (in %) [2-(3+4)]/2	7. Total Expected MX Costs (3+4)	
2008	\$ 539,720	\$ 532,515	\$	154,000	\$	(146,795)	27.2%	\$	686,515
2009	\$ 1,219,661	\$ 1,551,821	\$	167,000	\$	(499,160)	40.9%	\$	1,718,821
2010	\$ 425,478	\$ 569,636	\$	58,000	\$	(202,158)	47.5%	\$	627,636
2011	\$ 841,123	\$ 885,958	\$	147,000	\$	(191,835)	22.8%	\$	1,032,958
2012	\$ 580,867	\$ 969,808	\$	10,000	\$	(398,941)	68.7%	\$	979,808
2013	\$ 633,470	\$ 546,463	\$	149,000	\$	(61,993)	9.8%	\$	695,463
Sum	\$ 4,240,319	\$ 5,056,201	\$	685,000	\$	(1,500,882)	35%	\$	5,741,201

Table Includes Forecast to Actual Service Line Costs included in MX Reporting Years 2008 to 2014

estimated service line cost based on assuming service line cost of \$1,000 times the number of expected attachment. *acutal service line cost based on actual attachments times annual average service line cost

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FEVI

Table Includes Forecast to Actual Service Line Costs included in MX Reporting Years 2008 to 2014

1. MX Year	: For Es Ori	2. Total recast MX Cost stimates Jsed in iginal MX Tests	3 Cu Ser Sj	3. Total Actual mulative vice Line pend to Date	Es Re	4. timated maining Service Costs	5. (in	Variance MX Year \$) 2- (3+4)	6. Variance (in %) [2-(3+4)]/2	Ex C	7. Total (pected MX Costs (3+4)
2008	\$	282,526	\$	341,880	\$	34,000	\$	(93,354)	33.0%	\$	375,880
2009	\$	539,508	\$	663,920	\$	268,000	\$	(392,412)	72.7%	\$	931,920
2010	\$	362,046	\$	338,504	\$	140,000	\$	(116,458)	32.2%	\$	478,504
2011	\$	345,695	\$	314,366	\$	77,000	\$	(45,671)	13.2%	\$	391,366
2012	\$	201,122	\$	192,140	\$	36,000	\$	(27,018)	13.4%	\$	228,140
2013	\$	247,716	\$	217,465	\$	77,000	\$	(46,749)	18.9%	\$	294,465
Sum	\$:	1,978,613	\$2	2,068,275	\$	632,000	\$	(721,662)	36%	\$	2,700,275

estimated service line cost based on assuming service line cost of \$1,000 times the number of expected attachment *acutal service line cost based on actual attachments times annual average service line cost





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2 **Response:**

3 The service line cost variances in the revised tables for FEI and FEVI have not substantially changed. The variance is 35% for FEI and 36% for FEVI. Please refer to the response to BCUC 4

- IR 1.1.1 for further discussion of the variances. 5
- 6
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- 8
- 9 3.9 Using the corrected FEI service line cost variance data please plot the variances 10 for 2008, 2009, 2010, 2011, 2012 and 2013 on a scatter plot with variance on the 11 y-axis and the year on the x-axis. Please add a trend line to this data, and 12 include the trend line formula and the R-squared result on the chart.
- 13

14 Response:

15 The requested graphs for FEI and FEVI are included below.

16 FEI cannot conclude whether there is a trend with service line cost variances, other than the 17 variance in more recent years has decreased. As the earlier years were impacted by the 18 financial crisis, the attachments have taken longer to be realized than was forecast. This has 19 resulted in higher costs due to inflationary pressures as discussed in the response to BCUC IR 20 1.1.3. The r squared values are as follows: 21

- The R² value for the FEI scatter plot⁹ indicates the trend line should not be used to 22 • 23 predict a trend.
- The R² value for the FEVI scatter plot is low¹⁰ which indicates the trend line will not do a 24 25 good job predicting the trend.

⁹ The R² for FEI is .005 out of a possible maximum of 1.0 where 1.0 would indicate the trend line is a perfect fit for representation of the trend. ¹⁰ The R^2 for FEI is .41 out of a possible maximum of 1.0 where 1.0 would indicate the trend line is a

perfect fit for representation of the trend.









3.9.1 Based on the above information, please discuss FEI's observations and conclusions. Can FEI conclude whether or not there is a trend with service line cost variance? If so, what is that trend and how reliable is it? If not, why not?



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1 Response:

- Please refer to the response to BCUC IR 2.3.5.1. 2
- 5 6 Please provide a similar plot, trend line, formula and R-squared result for the 3.10 7 corrected FEVI service line variance data also for 2008 to 2013. Again, please discuss FEI's observations and conclusions.

10 Response:

- 11 Please refer to the responses to BCUC IRs 2.3.9 and 2.3.9.1.
- 12

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1 4.0 Reference: FORECASTING ACCURACY

2

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Exhibit B-3, BCUC 1.2.1; Exhibit B-1, Table 5-3, p. 76

Number and timing of attachments

In response to BCUC IR 1.2.1, FEI does not provide the requested information as FEI
explains that the relevant data prior to 2008 is not accessible and completing the request
for 2008 to 2014 would take approximately 4 to 5 months.

7 8 9 4.1 Please confirm, otherwise explain, that the data in the "Actual Attachments" column in Table 5 3 includes only attachments that have already physically connected to the main and are actually receiving gas. That is, no attachments in the "Actual Attachments" column are forecast attachments.

10 11

12 <u>Response:</u>

Not confirmed. Table 5-3 follows the Commission's required reporting methodologies which involve using a mixture of forecast and actual attachments to re-forecast the "Actual Attachments" for mains where the first five years have not passed. For mains where the first five years have passed, the methodologies use only actual attachments and do not contain forecast attachments.

18 The "Actual Attachment" methodology was originally designed by Commission Staff for use in 19 the 2012 MX Report and has been in place since then. The Company has strictly adhered to 20 this methodology in its annual reporting and the Company has therefore used the same 21 methodology in Table 5-3.

For background, the pre-populated table below was provided to the Company by Commission staff¹¹ with specific instructions to follow an exact Excel based formulaic approach for calculating "Actual Attachments". In the example provided by staff, the cumulative attachment variance is 4% (highlighted in yellow for ease of reference) and uses a combination of actual (white) and reforecast (grey) attachments. Moreover, according to the required methodologies, if an attachment fails to materialize in the expected forecast attachment year it cannot be included in the re-forecast and is assumed to disappear forever.

¹¹ Email from Leon Cheung, BCUC Regulatory Analyst. May 8, 2012.



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_										
Line #	Draft Table 1B: [2009 Coho	ort for 2012 MX	(Report] SAMP	LE MAIN EXT	ENSIONS - ATT	CHMENTS, COI	NSUMPTION,	and USE PER C	USTOMER (see)	note 1)
1	For Each Utility		Attachments			onsumption (GJ)		Use per Customer (see note 4)		
2		Original Forecast As of date: (a)	Actual or Re- forecast As of date: (b)	Variance % (see note 3) (c)	Original Forecast As of date: (d)	Actual or Re- forecast As of date: (e)	Variance % (see note 3) (f)	Original Forecast As of date: (g)	Actual or Re- forecast As of date: (b)	Variance % (see note 3) (i)
3	[ABC Company]	(-/	(-)		(-/	(-/		(6/	()	
4	Year 1 (see note 2)	10	1	-90%	500	40	-92%	50.0	40.0	-20%
5	Year 2 (see note 2)	20	2	-90%	1000	80	-92%	50.0	40.0	-20%
6	Year 3 (see note 2)	30	32	7%	1500	1280	-15%	50.0	40.0	-20%
7	Year 4 (see note 2)	40	42	5%	2000	1780	-11%	50.0	42.4	-15%
8	Year 5 (see note 2)	50	52	4%	2500	2280	-9%	50.0	43.8	-12%
9	Years 1-5 Total (see note 2)	Cumulative	Attachments	-	7500	5460	-27%	50.0	42.3	-15%

3 The Commission included the following instructions regarding the table above:

4 *"The Commission Staff Draft Table 1B is designed to meet the annual MX reporting* 5 *requirements and meet the Commission' expectations of a meaningful and informative* 6 *annual MX Report."*

7

8 Over time, the Company has consistently expressed its concerns to the Commission regarding 9 the "Actual Attachment" methodology. As part of the 2011 Main Extension Report, the 10 Company provided a discussion on the issues it had with the Commission's "Actual Attachment" 11 methodology, stating for instance:

"The risk of focusing on performance of an individual year is that attachments that didn't materialize in a given year may do so at some point in the future of the 20 year DCF time frame."¹²

15

In Letter L-60-12, the letter following the first year of the new reporting methodologies, theCommission provided the following direction regarding the required approach described above:

18 *"Existing cumulative reporting for the original forecast and actual attachments is acceptable."*

20

The Company notes that the information request highlights the shortcomings of the current MX Reporting requirements and the general confusion associated with attempting to assess forecast accuracy and the performance of a main that is only in the first few years of its greater than 60 year lifespan. Nevertheless, the Company has been applying the required "Actual Attachment" methodologies in its MX reporting and in the Application in Table 5-3.

¹² 2011 Main Extension Report Section 2 Page 13.



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4.1.1 If not confirmed, please update the "Actual Attachments" Table 5-3 to only include actual attachments that are actually connected and receiving gas.

7 Response:

8 This information request deviates from the Commission's current reporting methodologies that 9 the Company is required to follow, as discussed in the response to BCUC IR 2.4.1. The request 10 appears to be asking for a new methodology to re-forecast "Actual Attachments" based on a 11 comparison of 5 years of forecast attachments against mains where 5 years have not yet 12 passed and therefore all attachments have not had a chance to materialize (as noted in 13 response to BCUC IR 1.3.1). Reporting in this fashion appears to be designed to negatively 14 distort the results even beyond the negative distortion that is inherent in the existing reporting 15 methodology, and the Company strongly objects to its use to draw conclusions.

For instance, if a main extension is only in its third year as shown in the illustrative example provided by the Commission (refer to the response to BCUC IR 2.4.1), comparing the total forecast attachments for the five year period (50) to only the first three years of actual attachments (32) would be incorrect since years 4 and 5 have not happened yet. This method focuses on individual years and compares them to an aggregate total. This incorrectly skews the attachment variance and would not be a valid comparison.

Nevertheless the Company has provided the data in response to Commission's request below with explanatory notes. The Company has also included a more accurate updated version of Table 5-3 where only actual attachments are included but are compared to a matching timeframe.

- 26 New Methodology Using Assumptions in BCUC IR 2.4.1.1
- For 2010 to 2013, the variance calculations incorrectly compare 5 years of forecast attachments to less than 5 years of attachments for mains where MX Reporting is not complete.
- Attachments that occur outside of 5 year forecast window are not included.
- Format and results are inconsistent with Commission MX reporting requirements.



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	Forecast Attachments	Actual Attachments (Inconsistent with MX Report Formats)	Variance	Variance (%)	Comments
2008 FEI	571	417	-154	-27.0%	MX reporting complete
2008 FEVI	293	259	-34	-11.6%	wix reporting complete
2009 FEI	1228	1061	-167	-13.6%	Year 5 of attachment
2009 FEVI	698	430	-268	-38.4%	reporting
2010 FEI	478	420	-58	-12.1%	Year 4 of attachment
2010 FEVI	402	262	-140	-34.8%	reporting
2011 FEI	715	568	-147	-20.6%	Year 3 of attachment
2011 FEVI	291	214	-77	-26.5%	reporting
2012 FEI	620	610	-10	-1.6%	Year 2 of attachment
2012 FEVI	166	130	-36	-21.7%	reporting
2013 FEI	516	367	-149	-28.9%	Year 1 of attachment
2013 FEVI	232	155	-77	-33.2%	reporting
		A	verage Variance	-22.5%	

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2 <u>New Methodology Using FEI Assumptions</u>

- Forecast Attachments have been updated to ensure a valid comparison. For example if a main is in the second year of attachment reporting, the forecast attachments used are reflective of the Year 1 and Year 2 expectations.
- Attachments that occur outside of 5 year forecast window are not included.
- Format and results are inconsistent with Commission MX Reporting Requirements, however a valid comparison is provided.
- 9

	Forecast Attachments	Actual Attachments (Inconsistent with MX Report Formats)	Variance	Variance (%)	Comments
2008 FEI	571	417	-154	-27.0%	MX reporting complete
2008 FEVI	293	259	-34	-11.6%	wix reporting complete
2009 FEI	1228	1061	-167	-13.6%	Year 5 of attachment
2009 FEVI	698	430	-268	-38.4%	reporting
2010 FEI	456	420	-36	-7.9%	Year 4 of attachment
2010 FEVI	402	262	-140	-34.8%	reporting
2011 FEI	587	568	-19	-3.2%	Year 3 of attachment
2011 FEVI	279	214	-65	-23.3%	reporting
2012 FEI	377	610	233	61.8%	Year 2 of attachment
2012 FEVI	123	130	7	5.7%	reporting
2013 FEI	242	367	125	51.7%	Year 1 of attachment
2013 FEVI	143	155	12	8.4%	reporting
		A	verage Variance	-2.7%	

- 12 In summary, the Company has presented three versions of the "Actual Attachments," each with
- 13 different levels of consistency with Commission requirements and resulting variance as
- 14 summarized in the table below.



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Version of Table 5-3	Consistent with Commission MX Reporting Methodology Requirements	"Actual Attachment" Variance
Original provided in Application	Yes	7.2%
Per BCUC 2.4.1.1 using assumptions in IR	No	22.5%
Per BCUC 2.4.1.1 using FEI assumptions	No	2.7%

As seen above, the Company believes that the variance should be interpreted to be 2.7%. Nevertheless, it has conservatively used the methodology required by the Commission in the Application, resulting in a variance of 7.2%. The methodology suggested in the information request results in a 22.5% variance using an invalid methodology and should not be used to draw conclusions. Further, as previously noted, reporting on any main extension in only the third year of its greater than 60 year existence is meaningless in making a determination on the economic viability of the main.

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- 134.2Please confirm that the "Actual Attachments" data for each main year do not14include connections to mains constructed in a different main year. For example,15the 2013 FEVI results do not include connections made to 2008, 2009, 2010,162011 or 2012 mains.
- 18 **Response:**
- 19 Confirmed.
- 20

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4.2.1 If not confirmed, please update the "Actual Attachments" Table 5-3 to only include actual attachments that are actually connected and receiving gas.

- 25 26
- 27 **Response:**
- 28 The response to BCUC IR 2.4.2 was confirmed.



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1 2		
3 4 5 6 7	4.3 Response:	Please provide FEI's attachment variance with the all the changes described above included and provide comment on this new variance.
8	Please refer t	to the responses to BCUC IRs 2.4.1 and 2.4.1.1.
9 10		
11 12 13 14	4.4	Please confirm, otherwise explain, that all other things being equal, if consumption is forecast to be initiated later, the PI will be reduced.
15	Response:	

Assuming all else being equal in the current MX Test, on an ex ante basis, the forecasted PI 16 17 would be reduced if consumption in the Test was assumed to be initiated at a later time. For example, as shown in the response to BCUC IR 2.4.5, if a customer is expected to connect in 18 19 the first year, the MX Test calculates the revenue based on the consumption credits for the full 20 20 year DCF term of the test. If another customer was expected to connect to the same main in 21 year 2, the MX Test would calculate that customer's revenue based on 19 years of 22 consumption. For a customer in year 3, the calculated revenue would be reflective of 18 years 23 of consumption, and so forth.

The use of the MX Test on an *ex post* basis to assess the performance of a main extension(s) would be inappropriate as that is not the intended purpose of the Test. Further, to compare the consumption credits used in the Test ex ante to actual consumption ex post would also be inappropriate as the credits do not represent a forecast. The Company believes the Rate Impact analysis should be used to inform assessment of system extension performance ex post, and consumption used in the MX Test should not be compared to actual consumption to evaluate forecasting accuracy.

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- 344.5Please provide an example of a PI calculation for 5 customers who are all35forecast to connect in year 1 and based on their "consumption credits" are36forecast to have a PI of 1.0. Next, provide that same example where



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1 consumption initiated for these same 5 customers instead in year two. Please 2 repeat again where all customers' consumption is initiated in year three. 3 4 **Response:** 5 FEI used the following MX Test hypothetical scenario to populate the table below: 6 5 Residential customers with a consumption of 55.1 GJs per year per customer; 7 • A mains cost of \$5,000; and 8 • A service line and meter cost of \$1,100 per customer. 9

The table below summarizes the results of varying the connection year of the 5 customers using the same scenario. The different result depending on the year of connection is due to the fact that the DCF term in the MX Test fixed (currently at 20 years); in fact there is no difference to the length of time that customers in any of the years would be expected to consume gas from the main.

Connection Year of 5 Customers	Calculated Revenue from 2015 Main Extension Test	PI of MX Test	% Change in MX Test Revenue
Year 1	\$ 13,011	1.00	
Year 2	\$ 12,006	0.95	-7.7%
Year 3	\$ 11,081	0.90	-14.8%

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- 4.5.1 Based on the results of the previous question, would FEI conclude that, all other things being equal, later connections/consumption has a significant impact on PI calculations? If so, why? If not, why not?
- 2223 Response:

In relation to the hypothetical scenario presented in the response to BCUC IR 2.4.5, the timing of attachments and consumption forecast in the MX Test can have an impact on the ex-ante forecast PI calculations. For example, the difference in PI between 5 customers attaching in year 1 versus year 3 would be 1.0 versus 0.9. The size and characterization of the impact would depend on the number of connections that are delayed and for how long. As above, all the customers are expected to remain on the main for the same amount of time and contribute



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equally to revenues over the life of the main, but the defined DCF term in the MX Test results in
 the timing of attachments impacting the PI.

As discussed in the response to BCUC IR 2.4.1, the attachment variance could be considered to have been as low as 2.7 percent over the period of 2008 to 2014, so the hypothetical scenario is not applicable in practice. Further, ex ante consumption values used in the Test and corresponding PI calculations should not be confused with ex post main extension assessment as discussed in the response to BCUC IR 2.4.4.

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- 4.6 Please confirm that FEI internally evaluates its attachment performance (i.e.
 forecasts attachments and then reviews forecast attachments against actual attachments). If not confirmed, please explain why not.
- 14

15 **Response:**

16 Confirmed. The Company works closely with its customers to ensure attachments materialize 17 as forecast. Further, as a part of the annual MX report, the Company has annually evaluated 18 the forecast to actual attachments for a sample of main extensions. BCUC IR 2.4.3 indicates 19 that FEI's attachment variance has been as low as 3 percent between 2008 and 2014 showing 20 that FEI has an effective process in place.

As discussed in the response to BCUC IR 2.4.8, the process of evaluating forecast to actual data for the 785 main extensions¹³ completed annually is highly labour intensive and burdensome to match data line by line. Therefore, the Company does not evaluate the success of customer attachments in this manner nor is it able to produce the data in a short time frame for information requests. FEI believes that the Rate Impact analysis provides a more efficient, effective means to inform its evaluation of the impact on customers from customer attachments.

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- 304.7Please provide the estimated resources (in time and money) required to obtain31the information the Commission requested in BCUC IR 1.2.1, broken down by32each task (bullet point) that FEI identified under "Request Exceeding Current MX33Reporting Requirements."
- 34

¹³ On average.



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1 **Response:**

2 FEI has estimated the requested breakdown below.

BCUC IR 1.2.1 Task	Estimated Hours	Es	timated Cost
Extract all historic MX tests completed since 2008	48	\$	7,800
Match the completed MX Tests to actual installed main extensions using GIS based mapping software	144	\$	23,400
Group the completed MX tests by year and by main extension and extract forecast attachment profile for each MX test	72	\$	11,700
Cross reference all the installed main extensions against approximately 75,000 new services that have connected since 2008	160	\$	26,000
Extract the number of meters connected to those services and segment the resulting customer group by rate class and installation year.	136	\$	22,100
Align customers to specific main extensions and compare to forecast profile to actual in order to formulate a re-forecast.	224	\$	36,400
Aggregate the forecasts and re-forecast attachment profile and compile the information in the Commission's table.	16	\$	2,600
Total	800	\$	130,000

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4 Note: the table above has not included costs for regulatory and/or legal review which would be 5 incremental to the total of \$130 thousand.

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- 4.8
 - Of the information the Commission requested in BCUC IR 1.2.1, what is the most burdensome for FEI to obtain and why?
- 11
- 12 Response:

13 At this time, FEI has actual costs and attachments available for all mains, services and meters 14 installed since 2008. This data is provided in the Rate Impact analysis included in the 15 Application. This type of actual cost and attachment information requires the least amount of 16 effort to provide

- 17 With some effort, FEI is also able to provide the forecasted MX Test results, such as the PI, 18 from its CAFÉ system. However, additional resources would be needed to extract, compile and
- 19 aggregate each individual set of MX test inputs and associated forecasts.



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In general, the primary function of CAFÉ is to facilitate the design and installation of natural gas 1 2 distribution infrastructure. It provides an efficient and cost effective way of allowing the 3 Company to install approximately 785 mains per year and 11 thousand services per year. The 4 MX test currently resides in CAFÉ and was included as a single step in a one way process to 5 install a main or service in a safe and efficient manner. From a technological standpoint, the MX 6 test was designed as a connection tool as part of this one way process, where it can determine 7 how much a customer should pay to connect to the system, after which the main or service 8 would proceed to a detailed construction design and eventually installation. The Company's IT 9 infrastructure follows this one way process from CAFÉ to SAP to GIS to Billing but there is no IT 10 mechanism in place to automatically go backwards through this system, such as tracing a new customer account in billing back to the original forecasted attachment in the main extension test. 11

12 Acquiring data of this type remains a costly and manually intensive process.

13 Therefore, the most burdensome information relates to the line by line matching of forecasted 14 costs, attachments and consumption to the actual costs, attachments and consumption for over 15 75,000 services and 5,000 mains installed since 2008. That is, matching a specific forecasted 16 MX test input to an installed main or service requires a large amount of time and resources. 17 This is reflected in the time it takes to produce the MX report as described in the response to 18 BCUC IR 1.32.2. As previously stated in response to BCUC IR 1.2.1, this process is manually 19 intensive and requires merging and categorizing data from four different systems within the 20 Company's IT infrastructure.

- The process and related burden described above would be similar for the scenarios described in the responses to BCUC IRs 2.4.9, 2.4.10, and 2.4.11.
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- 4.9 Would providing the requested information in aggregate, as opposed to once for FEI and once for FEVI lessen the burden on FEI? If so, why and by how much?
- 27 28
- 29 Response:
- 30 Please refer to the response to BCUC IR 2.4.8.

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- 4.10 Would providing the requested information for only residential and commercial
 customers, as opposed to residential, commercial and industrial customers,
 lessen the burden for FEI? If so, why and by how much?
- 37



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1 Response:

- 2 Please refer to the response to BCUC IR 2.4.8.
 - 4.11 Would providing the requested information for only residential customers, as opposed to residential, commercial and industrial customers, lessen the burden for FEI? If so why and by how much?

10 **Response:**

- 11 Please refer to the response to BCUC IR 2.4.8.
- 12

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- 4.12 Would providing the requested information for only the sample main extensions,
 as opposed to all main extensions, lessen the burden for FEI? If so, why and by
 how much?
- 18

19 Response:

FEI is able to populate part of the Commission's table found in BCUC IR 1.2.1 using information already gathered for the samples included in the 2014 MX Report. This data is based on attachments that have connected to the mains in the MX Report on or before December 31, 2014. Therefore, the variance calculations found in the Commission's tables do not include all actual attachments to date. Please refer to the tables in response to BCUC IR 2.4.1 for the correct attachment variance calculation.

The Company is not able to interpret the purpose or intended result of the Commission's tables and has identified some of the issues in the notes below. The Company does not see value in providing the data in the format requested nor are there meaningful conclusions that can be drawn.

- Notwithstanding the limitations of the information requested, the Company has provided the data to the best of its ability and provides the following notes regarding the tables:
- The first year of actual attachment reporting for the 2014 main extensions would normally occur in the 2015 Main Extension Report. The 2015 Main Extension Report has not yet been produced. Therefore the 2014 actual attachment data is not available at this time.



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- 2. The Commission MX reporting requirements do not allow for:
 - Attachments that occur outside of their respective forecast windows and;
 - Attachments that occur outside of the 5 year reporting window
- 3 4 5

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For instance, if an attachment does not connect in the same year it is projected to connect, then that attachment is assumed to disappear forever, even if the project is simply delayed.

8 Furthermore, any attachments that occur outside of the first five years of a main 9 extension will not be taken into consideration for reporting due to the 5 year reporting 10 window. As such the Company does not have any 2009 attachment data prepared for 11 Column 6 "Total actual attachments in years outside the original 5 year addition term." 12 The Company only had data for 2008 as part of an illustrative example highlighting the 13 fact that attachments do occur outside of the 5 year MX Test forecast window which was 14 included as a separate section in the 2014 MX Report.

- As discussed in the response to BCUC IR 2.4.1, the Commission is comparing the total attachments expected to occur over 5 years to actual attachments on mains that are less than five years old. This results in an inappropriate comparison and skews the results of the variance calculation. Therefore the Company is not able to ascertain an appropriate representation of the variance calculation from the Commission's table on which to comment.
- 4. As required by Commission staff, the MX reporting requirements were updated in 2012
 to include a breakdown of attachments by rate class for 2012 and onwards. Therefore, a
 breakdown by rate class is not available for main extensions before 2012.
- 5. The Commission has taken steps to pre-populate some columns in its tables. For instance, for the 2008 and 2009 mains, Column 7 "estimate of remaining attachments" has been pre-populated with "n/a". The Company recognizes that the 5 year MX Reporting window for these mains has passed. However, attachments continue to occur on a main regardless of the forecast window used in the test. Therefore the value of "n/a" is not correct.



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FEI - Main Extension Data taken from 2014 MX Report - Attachments current to December 31, 2014

	1. MX Year	2. Total forecast attachments used in the original MX test			3. Total actual attachments in original 5 year addition term (or less if term is not up yet)			4. Variance (2 - 3)			5. Variance in % (2 -3) ³ (6. Total actual a original 5 year	attachments in addition term	years outside	7. Estimate of Expected in th addition term	Remaining Atta e original 5 yea 5	chments r customer	8. Va	ariance to date	(6 - 7)	9. Variance to date (6-7)					
		Residential ⁴	Commercial ⁴	Industrial ⁴	Residential	Commercial	Industrial	Residential	Commercial	Industrial	Residential	Commercial	Industrial	Residential	Commercial	Industrial	Residential	Commercial	Industrial	Residential	Commercial	Industrial	Residential	Commercial	Industrial			
	2008		571			417			154			27%			50		n/a			50			9%					
	2009		1228			1061			167			167			14%		Not a	vailable at this t	time ²		n/a		Nota	vailable at this	time 2	Nota	vailable at this	time ²
	2010		478			420			58			12%		n/a	n/a	n/a		58		n/a	n/a	n/a	n/a	n/a	n/a			
	2011		715			568			147			21%		n/a	n/a	n/a		147		n/a	n/a	n/a	n/a	n/a	n/a			
Reporting Not Yet	2012	496	122	2	509	99	2	-13	23	0	-3%	19%	0%	n/a	n/a	n/a	0	23	0	n/a	n/a	n/a	n/a	n/a	n/a			
Completed	2013	463	53	0	317	45	5	146	8	-5	32%	15%	100%	n/a	n/a	n/a	146	8	0	n/a	n/a	n/a	n/a	n/a	n/a			
	2014	507	48	3				Nota	vailable at this	time ¹				n/a n/a n/a			507 48 3			n/a	n/a	n/a	n/a	n/a	n/a			

FEVI - Main Extension Data taken from 2014 MX Report - Attachments current to December 31, 2014

	1. MX Year	2. Total fore	ecast attachmen original MX tes	ts used in the t	3. Total actual addition term	l attachments in o o (or less if term i	original 5 year s not up yet)	4. Variance (2-3)			5. \	5. Variance in % (2 -3) ³			attachments in addition term	years outside	7. Estimate of Expected in th addition term	Remaining Attac e original 5 year	chments customer	8. Variance to date (6 -7)			9. Variance to date (6 -7)			
		Residential ⁴	Commercial ⁴	Industrial ⁴	Residential	Commercial	Industrial	Residential	Commercial	Industrial	Residential	Commercial	Industrial	Residential	Commercial	Industrial	Residential	Commercial	Industrial	Residential	Commercial	Industrial	Residential	Commercial	Industrial	
	2008		293		259 34						12%			14		n/a			14			5%				
	2009		698			430			268			38%			Not available at this time ²			n/a			Not available at this time ²			Not available at this time ²		
	2010		402			262			140			35%		n/a	n/a	n/a		140		n/a	n/a	n/a	n/a	n/a	n/a	
	2011		291			214			77			26%		n/a	n/a	n/a		77		n/a	n/a	n/a	n/a	n/a	n/a	
Reporting Not Yet	2012	155	6	5	118	8	4	37	-2	1	24%	-33%	20%	n/a	n/a	n/a	0	0	1	n/a	n/a	n/a	n/a	n/a	n/a	
Completed	2013	220	10	2	152	1	2	68	9	0	31%	90%	0%	n/a	n/a	n/a	68	9	0	n/a	n/a	n/a	n/a	n/a	n/a	
	2014	233	8	2				Not	available at this	time ¹				n/a n/a n/a			233	8	2	n/a	n/a	n/a	n/a	n/a	n/a	

FEI and FEVI Combined - Main Extension Data taken from 2014 MX Report - Attachments current to December 31, 2014

	1. MX Year	2. Total fore	cast attachments original MX test	used in the	3. Total actual addition term	Total actual attachments in original 5 year Idition term (or less if term is not up yet)			4. Variance (2-3)			5. Variance in % (2 -3) ³			6. Total actual attachments in years outside original 5 year addition term			Remaining Atta e original 5 yea 5	chments r customer	8. V	ariance to date	(6 - 7)	9. Variance to date (6-7)		
		Residential ⁴	Commercial ⁴	Industrial ⁴	Residential	Commercial	Industrial	Residential	Commercial	Industrial	Residential	Commercial	Industrial	Residential	Commercial	Industrial	Residential	Commercial	Industrial	Residential	Commercial	Industrial	Residential	Commercial	Industrial
	2008	008 864 676						188			22%			64			n/a			64			7%		
	2009		1926			1491			435		23%			Not available at this time ²			n/a			Not available at this time ²			Not available at this time ²		ime ²
	2010		880			682			198			23%		n/a	n/a	n/a		198		n/a	n/a	n/a	n/a	n/a	n/a
	2011		1006			782			224			22%		n/a	n/a	n/a		224		n/a	n/a	n/a	n/a	n/a	n/a
Reporting Not Yet	2012	651	128	7	627	107	6	24	21	1	4%	16%	14%	n/a	n/a	n/a	24	21	1	n/a	n/a	n/a	n/a	n/a	n/a
Completed	2013	683	63	2	469	46	7	214	17	-5	31%	27%	100%	n/a	n/a	n/a	214	17	0	n/a	n/a	n/a	n/a	n/a	n/a
	2014	740	56	5				Nota	vailable at this	time ¹					n/a n/a n/a			740 56 5			n/a n/a n/a			n/a n/a n/a	



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4.13 Based on the response provided above, please provide a reasonable subset of the information requested in BCUC IR 1.2.1.

<u>Response</u>:

7 Please refer to the response to BCUC IR 2.4.12.



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1	5.0	Refer	nce: HISTORICAL DATA	
2 3			Exhibit B-3, BCUC IR 1.3.1; 2012-2013 FEU Revenue Requirements and Rates Application (2012-2013 FEU RRA), pp. 326-327	5
4			Number of attachments	
5 6	In BCUC IR 1.3.1, FEI states: "That is, these new service lines/customers attached to mains that were between 53 to 62 years old."		l to	
7 8 9 10	On page 327 of the 2012-2013 FEU RRA, FEI states: "Customer driven service retirements or removals are initiated by homeowners and developers as older homes are demolished, existing property lots are subdivided and new properties and potential homes are created."		rice are itial	
11 12			New service lines attached to mains that were between 53 to 62 years old m be the result of older homes being demolished and replaced by new homes.	nay
13 14 15 16		5.1	Please confirm that when a service is retired due to the demolition of an old home and a new home constructed on the same site, the replacement service treated as a "new service."	der e is
17	Resp	onse:		
18 19 20 21	Confir servic with d "new s	med. e or se lensifica service"	here will often be a time lag between when the service is retired and the n vices are installed. Multiple replacement service lines are increasingly comm ion of new developments, and in this situation each service line is counted a	ew ion s a
22 23				
24 25 26 27		5.2	In the same format as the response to BCUC IR 1.3.1, please provide the serv line retirements in 2013 by Main Installation Year.	'ice
28	Resp	onse:		
29	The g	raph be	ow provides the total 2013 service line abandonments categorized by the m	ain

installation year that the abandoned service was connected to. Note that this graph cannot be directly compared to the graph in response to BCUC IR 1.3.1. The graph in BCUC 1.3.1 only contains the attachments of detached single family residences. For example, it does not include all the multi-family (condo, vertical subdivision), duplex/triplex attachments and commercial attachments. In other words, the graph in response to BCUC IR 1.3.1 is only a subset of all attachments whereas the graph below contains all abandonments which include all rate classes and all building types.



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- 1 Many of the abandonments in this graph can materialize as new service attachments in the
- 2 future, such as those shown in BCUC IR 1.3.1. For example, when a customer demolishes an
- 3 existing home or building and re-builds a new home or building on the same lot a new
- 4 attachment can occur in the same year or a subsequent year of the abandonment.
- 5 Ninety four percent (94%) of service line abandonments that occurred in 2013 took place on
- 6 services that were connected to mains installed before 2000.¹⁴ Note that in total there were 267
- 7 out of 3,670 abandonments for 2013 where the main installation year was not referenced on the
- 8 abandonment record and these abandonments are not included in the graph.



17 The requested data is provided below. The Company has averaged approximately 7,000 net 18 new service lines per year from 2008 to 2014. Note that the service line data below is not

¹⁴ 3,210/3,403 = 94% (excludes the 267 abandonments in 2013 where the main installation year could not be found)



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- 1 indicative of the gross or net customer additions. Although new service lines are correlated with
- 2 new customer additions, they are not a one to one relationship. A simple example is in the case
- 3 of a duplex where one service line addition would be associated with two customer additions
- 4 given that one service line would be providing gas to two distinct units.

5 The Company has populated the table using service line abandonments (rather than 6 "retirements" as requested in the IR). The Company's practice for all abandonment work is to 7 disconnect at the service tee, leaving the abandoned service in the ground. Service retirements 8 occur only when the abandoned service line must be removed from the ground due to safety 9 reasons and this practice represents only a small sub-set of service abandonments.

	Service Lines Additions*	Removals (Abandonments)	Net Additions (Additions-Abandonments)
2008	13,539	3,939	9,600
2009	9,278	3,528	5,750
2010	11,782	3,987	7,795
2011	10,213	4,012	6,201
2012	10,545	4,039	6,506
2013	9,495	3,670	5,825
2014	10,728	3,912	6,816

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1 6.0 Reference: FORECASTING ACCURACY

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Exhibit B-3, BCUC 1.4.2, 1.4.3

Use per customer – consumption credits

In response to BCUC IR 1.4.2 FEI explains that the "...return rate from customers
responding to the mail out surveys is approximately 17%. ...Less than five percent (5%)
of the housing stock changes every two years on average. Even if renovation activity is
taken into account, it is not likely that the bulk of the housing stock would change
materially enough to affect REUS results."

9 In response to BCUC IR 1.4.3 FEI explains that "...the Company adds approximately 10 10,000 to 15,000 new customers per year..." and the "...REUS does not have the 11 capability to determine the new customer average consumption per appliance..."

- 12 6.1 Please provide the number of new customers FEI added in the last five years.
- 13

14 Response:

FEI interprets this to be a request for gross customer additions rather than net customer additions (which is the net change in the total number of customers). Gross customer additions are not the same as service line additions, which will be a subset of gross customer additions. The data below represents all new customer additions associated with mains, services and meters installed from 2010 and 2014 and included as part of the Rate Impact analysis.

Year	Customer Count
2010	14,607
2011	13,616
2012	13,429
2013	12,213
2014	14,044

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- 23 24

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6.2 Please provide the number of new customers that were added in the last five years that FEI would expect to respond to the REUS on average.

27 **Response:**

BCUC IRs 2.6.2 through 2.6.6.1 are all based on the premise that using the consumption of new customers in the MX Test would be fair and reasonable, which FEI believes is an erroneous

30 premise. FEI confirms that the REUS could be modified to provide results that could help FEI



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- estimate new customer average consumption; however, the Company does not believe it would be appropriate or fair to use the consumption of new customers in the MX Test without offsetting changes to either the revenue margin or the PI thresholds. Further, there would be incremental costs to gathering the new customer consumption data and limitations in the forecasting accuracy. Please refer to the responses to BCUC IRs 1.35.3 and 2.18.3 for FEI's
- 6 views on the use of consumption in the MX Test.
- 7 Notwithstanding the premise of the requests, FEI has provided responses to this series of8 questions.
- 9 Sampling for the REUS is designed to provide for a large enough sample to allow for analysis at 10 a regional level plus additional analysis at the appliance level. The sample is randomly drawn 11 from the Customer Information Systems. To qualify to be a part of the survey, a customer must 12 have 24 months of consecutive billing for the premise with the same account owner. This 13 proviso allows for a Conditional Demand Analysis (CDA) which provides a statistically based 14 breakdown of overall household consumption of natural gas by appliance type. This means that 15 homes attached in the previous two years are not included in the sample. The table below 16 illustrates the 2012 REUS sample plan, target response rate and estimated accuracy 17 confidence interval by FEI region.

Company	FEI Region	Population (N)	Questionnaire Mail-Out	Expected Response Rate	Tanget Response (n)	Estimate of Accuracy 95% Conf. Interval
FEI	Lower Mainland / FraserValley	530,000	7,800	16%	1,250	2.8%
FEI	Vancouver Island / Sunshine Coast	90,000	3,700	27%	1,000	3.1%
FEI	Interior/Columbia	230,000	3,125	24%	750	3.6%
FEI	Whistler	2,300	2,300	13%	300	5.7%
FEI	Fort Netson	1,900	1,900	15%	300	5.8%
FBC	Direct - Electric Only	99,000	2,900 '	24%	700	3.7%
FBC	Indirect - Electric Only	44,000	2,900 '	24%	700	3.7%
	Total	997,200	24,625	20%	5,000	1.4%6

Table 1: F	Proposed Sample	Plan -	2012 REUS
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 $^{\rm I}$ Based on the assumption that 50% of the target population is not a FEI customer.

18

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20 Consistent with the Rate Impact Analysis, for this response the Company regards a new 21 customer to be one that connected between 2008 – 2014. Assuming that the 2015 survey will 22 be similar to the 2012 survey with a similar sample plan as that provided above and a similar 23 response rate, the Company would expect 210¹⁵ responses from 'new' customers connected

¹⁵ Based on a 2014 residential customer YE count of 875,000 including 53,971 residential customers added during the period 2008 – 2014 which meet the billing criteria of 24 months continuous billing. This represents 6.168% of total customers. Assuming the same number of responses as the 2012 survey and an even distribution of responses we would expect approximately 210 responses from new customers.



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Please confirm that FEI would expect the number of new customers that were

added in the last five years and responded to the REUS to be a statistically

1 from 2008-2014, which is not a statistically significant sample. As the table indicates, the 2 current method provides for a confidence interval of 1.4%. In order for the Company to achieve 3 this same confidence interval for new customers, there would need to be 4,600 responses, 4 chosen from the total population of new residential customers connecting from 2008 - 2014 of 5 76,560 as indicated in response to BCUC IR 2.30.5. 6

significant sample size. If not confirmed, please explain why not.

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- 13 Response:

6.3

- 14 Please refer to the response to BCUC IR 2.6.2.
- 15
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- 17
- 6.4 18 Please confirm, otherwise explain, that the REUS could be modified to provide 19 results that could help FEI estimate new customer average consumption. 20

21 Response:

22 As discussed in the response to BCUC IR 2.6.2, FEI confirms that the REUS could be modified to provide results that could help FEI estimate new customer average consumption; however, 23 24 the Company does not believe it would be appropriate or fair to use the consumption of new 25 customers in the MX Test without off-setting changes to either the revenue margin (increase) or 26 the PI thresholds (decrease). Please refer to the responses to BCUC IRs 1.35.3 and 2.18.3 for 27 further discussion on the use of consumption in the MX Test.

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- 31 6.5 Please confirm, otherwise explain, that the REUS could be modified to provide 32 results that could help FEI estimate new customer average consumption per 33 appliance.
- 34



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1 Response:

2 The response to BCUC IR 1.4.3 describes how the new customer average consumption per 3 appliance could be acquired, including a discussion on how the REUS could be modified, the 4 addition of customer site-visits and the implementation of appliance sub-metering, and 5 discusses the merits and practical challenges associated with each method. Although the 6 REUS could be modified to provide results that could help FEI estimate new customer average 7 consumption per appliance, as discussed in BCUC IR 2.6.2 the Company does not believe it 8 would be appropriate or fair to use new customer consumption per appliance in the MX Test 9 without off-setting changes to either the revenue margin (increase) margin or the PI thresholds 10 (decrease). Please refer to the response to BCUC IR 2.18.3 for explanation of why the PI would 11 have to be adjusted. 12 13 14 15 6.5.1 If confirmed, please explain how FEI could modify the REUS to obtain 16 this information. For instance, could FEI design the REUS questionnaire 17 to include questions such as: Does the customer reside in a home that was built in the last 5 years? What gas appliances do they have? How 18 19 do they use those appliances? 20 21 **Response:** 22 Please refer to the response to BCUC IR 2.6.5. 23 24 25 26 What benefits and costs could result from acquiring this 6.5.1.1 27 additional information? For instance, could knowing the new 28 customer consumption support optimizing main and service 29 line design? Please explain. 30 31 **Response:** 32 Please refer to the response to BCUC IR 2.6.5. 33 34 35



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In response to BCUC IR 1.4.5 FEI provides a table of forecast PIs for the top 5 main
 extensions for FEI and FEVI using 2008 and 2012 REUS data.

6.6 Please add three columns to this table: one based 2002 REUS data, one for the
difference between 2002 and 2008 and one for the difference between 2002 and
2012. Please provide comment.

7 **Response:**

6

8 The updated table is provided below. The Company acquired FEVI (Centra Gas) in 2002 so it

9 was not included in the REUS at that time; therefore PIs could not be re-calculated for the FEVI

10 main extensions based on the 2002 REUS.

	1. Main Extension	2. Forecast PI Using 2002 REUS	3. Forecast PI Using 2008 REUS	4. Forecast PI Using 2012 REUS	Difference (3-4)	Difference (2-3)	Difference (2-4)
	Maclure Road - 5550003872 - LML	1.89	1.98	1.78	0.20	-0.09	0.11
	244 Avenue - 5550006721 - LML	1.00	1.00	0.95	0.05	0.00	0.05
FEI	Predator Ridge Drive - 5550007707 - COL	0.80	0.80	0.67	0.13	0.00	0.13
	Highland Drive - 5550008051 - LML	1.04	1.07	0.88	0.19	-0.03	0.16
	Plateau Drive - 5550008847 - LML	0.88	0.84	0.87	-0.03	0.04	0.01
	Stamp Way - 5550007879 - VI		0.80	0.70	0.10		
	Westwood Road - 5550008861 - VI		0.91	0.77	0.14		
FEVI	East Saanich Road - 5550008872 - VI		0.88	0.72	0.16		
	Road A - 5550009123 - VI		0.87	0.61	0.26		
	Howard Avenue - 5550009619 - VI		1.59	1.55	0.04		

11

12 The Company has added the data above and notes that the change from the 2002 REUS 13 appliance consumption credits to the 2012 REUS appliance consumption credits resulted in a 14 9% average decrease in PIs, while the average variance was less than 1% when comparing the 15 2002 REUS to the 2008 REUS. These results show how in the recent past (2008 to 2012), the REUS is reflecting the overall decline in the use per customer of FEI's existing customers. The 16 17 Company expects subsequent REUS studies to reflect the changing consumption patterns of its 18 new customers and their impacts on the overall system average consumption. Although the 19 Company expects the consumption of new residential customers to continue to decrease over 20 time, the magnitude of the decrease would be bound by the efficiency level of the appliances 21 and homes on the market. For example, the majority of gas appliances are already above 95% 22 efficiency. Therefore, the change in a 95% efficient furnace to a 98% would have a relatively 23 small impact on the appliance consumption in future REUS studies. The Company also expects 24 future REUS studies to reflect the changing demographics of its customer base. For instance, 25 the usage from a gas hot water tank has increased from 21 GJs to 30 GJ when comparing the 26 2002 and 2012 REUS studies due to changing household demographics.

Thus, while the consumption of new customers is going to differ from the average consumption credited in the test, the average is incorporating trends in declining consumption over time. It remains a reasonable input, both in light of the purpose of the input (consumption credit) and due to the challenges associated with fine tuning the information.



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6.6.1 What difference would FEI expect between 2012 and 2016 (i.e. the next REUS results)?

7 <u>Response:</u>

8 Please refer to the response to BCUC IR 2.6.6.



7.0 Reference: SECURITY AND EXISTING RATEPAYER PROTECTION 1

2

3

Exhibit B-3, BCUC 1.9.1, 1.9.2, 1.9.3

Security policies

4 In response to BCUC IR 1.9.1 FEI explains it has no specific threshold for requiring 5 security. In response to BCUC IR 1.9.2 and 1.9.3 FEI provides the amounts and number of times security was required.¹⁶ 6

7 8 7.1 If FEI had to select a threshold where security is required, what would FEI propose that threshold to be and why?

9 10 Response:

11 As discussed in the response to BCUC IR 1.9.1, the Company has an effective process to 12 determine the financial viability of all main extensions and there is no indication that changes to 13 FEI's current security practices are required. Therefore, FEI does not believe that a specific threshold for security for main extensions is warranted. It could be counterproductive if it deters 14 15 profitable mains.

16 Given that the average extension is \$11,600 and 97% are less than \$50,000, any threshold 17 imposed that would routinely require security for extensions would be inefficient and 18 unnecessary as FEI's current practices already consider security requirements for larger mains 19 on an case by case basis.

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- 23 7.2 Please explain how FEI accounts for security.
- 24
- 25 Response:

26 In the event that FEI determines that security is warranted, the funds are held in a separate 27 account until they are returned to the customer as required.

¹⁶ Exhibit B-3, BCUC IR 1.9.1-1.9.3.



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8

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1 B. CONSISTENCY WITH BCUC GUIDELINES

2 8.0 Reference: CONSISTENCY WITH OTHER BC UTILITIES

- 3 Exhibit B-3, BCUC 1.13.4.2
 - Expected average service life of meters
- 5 In response to BCUC IR 1.13.4.2 FEI provides the expected average service life of 6 FortisBC Inc.'s (FBC) distribution services, line transformers, poles, towers and fixtures.
 - 8.1 Please also provide the expected average service life of FBC's smart meters.

9 Response:

10 The approved service life of FBC's smart meters is 20 years.

As stated in the response to BCUC IR 1.13.4.2, "...FEI's main and service assets are not comparable to similar assets of FBC and BC Hydro, since they are electric utilities." Although FEI's meters generally have a similar life to electric meters, the life of smart meters for electric utilities should not be a consideration in assessing the benefits that accrue to FEI customers over the life of its main extensions.

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- 198.2Please confirm, otherwise explain, that BC Hydro and FBC use nearly identical20smart meters.
- 21

22 Response:

23 Confirmed.



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1	9.0	Referenc	e: REPORTING
2 3			BCUC Utility System Extension Guidelines, section 4.1, p. 12; Exhibit B-5, BCSEA IR 1.12.1
4			EES Rate Impact Analysis
5		Page 12 o	of the BCUC Utility System Extension Guidelines states:
6 7 8 9		Th sy re ba	nerefore, the Commission recommends that the Utilities develop a DCF based stem extension test and submit it to the Commission. The Commission also commends that, insofar as is practical, the analysis of system extensions be ased on full incremental costs and benefits.
10		In BCSEA	A IR 1.12.1, FEI states:
11 12 13 14		FE ex ap the	El agrees that an ex post facto analysis aimed at determining whether system atensions are balancing the interests of existing and new customers is appropriate. Thus, the Company has proposed a periodic ex post facto analysis, e Rate Impact analysis, to achieve this. [Emphasis added]
15 16 17 18 19 20		9.1 Th an Gi ba or	he FEI proposal to use the EES Rate Impact analysis periodic ex post facto halysis appears to be inconsistent with the BCUC Utility System Extension uidelines recommendation that the analysis of system extensions be a DCF ased system based on full incremental costs and benefits. Please explain why why this is or is not inconsistent.
21	Respo	onse:	
22	FEI re	spectfully o	disagrees with the suggestion that there is an inconsistency. The excerpt from

- the System Extension Guidelines quoted above discusses two items.
- The first is the use of an ex ante DCF based system extension test. FEI has an ex ante 25 DCF based system extension test.
- The second is an analysis that is based on full incremental costs and benefits. It is unclear whether this statement refers to the test itself or the analysis of main extensions at an overall level. Regardless, both FEI's MX Test and the Rate Impact Analysis are based on full incremental costs and benefits.

When considering the "analysis" aspect of the quoted guideline, the Rate Impact analysis should be preferred over the current annual reporting required by the Commission. The Rate Impact analysis examines the actual incremental costs and benefits over a period of time long enough to take into account expected variations from forecast. As discussed in the response to BCUC IR 2.1.2.1, the Rate Impact analysis could also be viewed as an actual PI since it considers the actual incremental revenue and costs of system extensions. This approach is



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1 consistent with the remaining section of the quote provided above, which is from page 12 of the

2 System Extension Guidelines:

"Moreover, in reviewing system extension filings, the Commission will consider the time
period of the analyses and the extent to which the costs of a system extension are
allocated to those customers who cause them"

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7 The Rate Impact analysis also provides an indication of whether or not the actual costs of 8 system extensions are allocated to the customers who cause them. In contrast, one of the limitations of the Commission's recent annual reviews of system extension filings is that the time 9 10 period has been too short to garner any meaningful insights to evaluate system extension 11 policy. Additionally, current review practices do not take into account the actual incremental 12 costs and benefits, rather, the Company is required to re-run MX Tests using re-forecasts of the 13 costs and revenue. Ultimately, the re-running of the MX Tests does not yield an "actual PI" at 14 all¹⁷ and cannot be used to assess cost allocation practices. Finally, the DCF based MX Test is 15 not appropriate to perform an ex post analysis of cost allocation.

Regarding annual (compliance) reporting, the relevant guideline is found on page 16, where
Utilities are permitted to choose the level of aggregation deemed appropriate for annual
reporting:

"For the purposes of annual statement filing, the Utilities initially may choose the level of
aggregation they deem appropriate. The extent of aggregation will depend on the
projects planned by each utility in a given year."

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Furthermore, one of the key recommendations of the Core Review was the need to ensure the necessity and usefulness of compliance reports:

25 "The BCUC should make additional efforts to ensure all compliance reports are
26 necessary and useful, and eliminate the reporting requirement for those that are not.
27 The BCUC should place more responsibility on regulated entities to report, on an
28 exception basis, deviations from forecasts that could affect costs and rates, instead of
29 routine reporting."¹⁸

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Consistent with the spirit of the Core Review, FEI's proposed annual MX reporting will maintain an appropriate level of oversight and provide more meaningful information, while reducing the cost and the administrative burden associated with the current reporting regime.

¹⁷ BCUC IR 1.7.2.

¹⁸ Application, p. 42.



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1 C. SYSTEM EXTENSION FUND

2	10.0	Reference:	SYSTEM EXTENSION POLICY REVIEW
3			Exhibit B-3, BCUC IR 1.3.4, 1.10.2.1, 1.11.1

Contribution in aid of construction (CIAC) and System Extension Fund (SEF)

6 In BCUC IR 1.3.4, FEI provides the number of main extensions completed from 2008 to 7 2014 by FEI and FEVI respectively.

	Total Main Extensions for FEI	Total Main Extensions For FEVI
2008	837	435
2009	505	248
2010	462	245
2011	545	221
2012	486	173
2013	433	203
2014	459	240
Total	3,727	1,765

8

9 The average number of annual main extensions is 785 for FEI and FEVI combined. If the 10 maximum SEF contribution per customer is \$10,000, then there will be at least 100 11 mains eligible based on the proposed \$1,000,000 SEF per year.

- In BCUC IR 1.10.2.1, FEI indicates that the average contribution for refundable mains
 over the past few years has been approximately \$5,000. FEI does not know how many
 customers would apply to the SEF, so it cannot speculate on whether or all customers
 who apply would receive some level of funding.
- 16 In BCUC IR 1.11.1, FEI states that "The vast majority of CIAC was collected from 17 builders and developers."

- 10.1 Based on historical data, please provide the CIAC distribution breakdown between builders/developers vs. homeowners.
- 20 21



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1 Response:

- 2 The CIAC received by builders/developers and homeowners for main extensions installed
- 3 between 2008 and 2014 is provided below. \$2.5 million out of \$3.9 million was received from
- 4 builders/developers.

Customer Type	Sum	of Total CIAC
Builder/Developer	\$	2,462,876.3
Homeowner	\$	1,432,487.7





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10.2 Assuming that at least 100 main extensions are SEF eligible and that FEI builds an average of 785 main extensions per year, is it correct to say that approximately 1 in 8 mains would be expected to receive some level of SEF 13 funding?

14

15 **Response:**

In the Application, the Company has not provided a forecast of the number of eligible customers nor the likely uptake of the SEF due to the difficulty of providing an accurate estimate. Instead, FEI has compared the SEF to BC Hydro's Uneconomic Fund to illustrate how this type of fund may be utilized when eligible customers are making an energy decision. FEI has also mitigated the risk to existing customers related to any potential under-utilization.

It could be assumed that 1 in 8, or a maximum of 1 in 2, mains will be SEF eligible as suggested
 in this question or in BCUC IR 2.10.3. In fact, the actual eligibility will vary from any



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- 1 mathematically-derived number due to other criteria such as the program being designed for
- less densely populated communities and access being limited to homeowners. Ultimately, the
 accuracy of any SEF eligibility estimate is limited since FEI is not able to predict how many
- 4 projects that did not proceed in the past due to a prohibitive CIAC would have gone forward with
- 5 access to the SEF.

6 Similarly, the Company is not able to accurately forecast how many projects are expected to 7 receive SEF funding nor the level of SEF funding uptake. The SEF will be a new offering for 8 natural gas customers in British Columbia and its adoption will be affected by a number of 9 variables. The \$1 million SEF is designed to be proportionally equivalent to BC Hydro's \$1.5 10 Uneconomic fund. Upwards of 99% of the \$1.5 million available in BC Hydro's fund has been 11 accessed by electricity customers suggesting that there is potential for 99% of the \$1 million 12 SEF to be utilized. Regardless of the expected level of SEF utilization, FEI has proposed that 13 any used portion of the \$1 million would not be carried over to subsequent years so any risk to 14 existing customers of under-utilization is mitigated.

- 15 16 17 18 10.2.1 Please also estimate the level of SEF participation in consideration of 19 the distribution between homeowners vs. developers/builders. 20 21 Response: 22 Please refer to the response to BCUC IR 2.10.2. 23 24 25 26 10.3 Is it likely that 1 in 2 mains, or 50 percent of mains, will be SEF eligible if the average contribution for refundable mains over the past few years cost around 27 28 \$5,000? (I.e. \$1,000,000 divided by \$2,500 assistance equals 400 SEF grants, 29 then divided by approximately 800 mains per year). In other words, based on the 30 past few years' average, would 400 SEF grants be a reasonable estimate? 31 Please also estimate the level of SEF participation in consideration of the 32 distribution between homeowners vs. developers/builders. 33 34 **Response:**
- 35 Please refer to the response to BCUC IR 2.10.2.



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1 11.0 Reference: SYSTEM EXTENSION POLICY REVIEW 2 Exhibit B-3, BCUC IR 1.10.2, 1.10.2.1, 1.13.1

2

System economic fund amount – contribution in aid of construction

In BCUC IR 1.10.2, FEI provides the total CIAC amounts for all main extensions installed
 between 2008 and 2014 by FEI and FEVI respectively.

MX Year	Tota	al Contributions Received	FE	El Contributions Received	FE\	/I Contributions Received
2008	\$	539,951	\$	436,727	\$	103,224
2009	\$	479,393	\$	368,955	\$	110,437
2010	\$	394,528	\$	292,231	\$	102,297
2011	\$	629,518	\$	523,062	\$	106,456
2012	\$	639,581	\$	446,312	\$	193,270
2013	\$	525,679	\$	432,673	\$	93,006
2014	\$	686,714	\$	623,689	\$	63,025
Total	\$	3,895,364	\$	3,123,649	\$	771,715

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In BCUC IR 1.10.2.1, FEI explains that it does not have data on those customers who,
after being made aware of a required CIAC, decided to not attach to the system. Thus,
the actual CIAC amounts collected by the Companies since 2008 as provided in the
response to BCUC IR 1.10.2 are reflective of those customers that were able to afford
the up-front contribution and proceeded with the main extension. FEI does not know how
many customers would apply to the SEF.

- 13In BCUC IR 1.13.1, FEI states that "The proposals, except the discontinuance of the14energy efficiency credits, would have the effect of lowering the CIAC."
- 1511.1The proposed SEF pays 50 percent of the CIAC for the project. If the16Commission decides to align the SEF to reflect 50 percent of the average annual17CIAC contribution to approximately \$278,240 (or \$300,000), would this be a18reasonable amount based on historical CIAC? Please estimate the rate impact to19customers if \$300,000 is approved.

21 Response:

20

FEI believes it is more fair and reasonable to align the SEF with the size of BC Hydro's Uneconomic Fund. Designing the SEF to reflect historical CIAC values is not appropriate as this methodology would not take into account the customers that have historically opted against the use of natural gas due to a prohibitive CIAC (i.e. the customers likely to access the SEF would not be accounted for). Further, a value such as \$300 thousand based on historical behavior could result in under-funding of the SEF; therefore, the Company continues to believe that a System Extension Fund of \$1 million is appropriate.



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1 Nevertheless, to perform the rate impact as requested, the Company has assumed a cost to the 2 customers of \$300 thousand in the form of a System Extension Fund. This value was then 3 added to the existing Rate Impact model included in the Application as an additional cost and 4 resulted in a maximum rate impact of \$0.0002/GJ.

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- 11.2 How does the \$1 million SEF take into account FEI's proposed MX Test changes as stated in BCUC IR 1.13.1? Please specify for each component in accordance with FEI's proposals.
- 12 **Response:**

The information request appears to incorrectly reference BCUC IR 1.13.1; that response doesnot address FEI's proposed MX Test changes.

There is no direct, quantifiable link between the amount of the SEF being proposed and the other proposals. The \$1 million SEF level was designed to be proportionally similar to BC Hydro's \$1.5 million Uneconomic fund. The SEF is being introduced in conjunction with the proposed changes to the MX Test to promote energy choice for British Columbians, consistent with the Guiding Principles developed with stakeholders. FEI considers the SEF amount to be reasonable irrespective of the other proposals.

21 22 23 24 11.2.1 If the effect of lowering the CIAC is not taken into account, how much 25 SEF reduction is warranted? Please specify for each component in 26 accordance with FEI's proposals. 27 28 Response: 29 Please refer to the response to BCUC IR 2.11.2. 30



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1 12.0 **Reference:** SYSTEM EXTENSION POLICY REVIEW 2 Exhibit B-1, Appendix A, EES Report, p. 19; Exhibit B-3, BCUC IR 1.10.2.1, 1.16.1, 1.32.7; Exhibit B-6, CEC IR 1.45.4 3 4 System economic fund amount – comparison with BC Hydro 5 In BCUC IR 1.16.1, FEI states: 6 ... BC Hydro's mid-year distribution rate base for 2015 is approximately \$4.37 7 billion. The size of BC Hydro's Uneconomic Extension Fund (UEA) is \$1.5 8 million, which equals approximately 0.03% of its distribution rate base. 9 FEI's comparable distribution rate base is approximately \$1.98 billion for 2015. If using the exact portion (i.e. 0.03% of the distribution rate base), the size of the 10 11 fund for FEI would be approximately \$0.7 million. The Company's proposal for an 12 SEF of \$1.0 million is to ensure that the size of the fund is sufficient to meet the 13 potential demands from customers, particularly from customers remotely located. 14 Exhibit B-1, on page 19 of the EES Report, it states that BC Hydro's Uneconomic Fund is "aimed at individual customer connections, typically in more rural areas, and does not 15 apply to new housing developments." 16

Based on Exhibit B-3, BCUC IR 1.10.2.1, IR 1.32.7.1 and Exhibit B-6, CEC IR 1.45.4,
Commission staff compiled the following comparison table:

	FortisBC Energy Inc. (1)	BC Hydro (2)	Percentage proportion FEI vs. BC Hydro (1) / (2)
(A) Average extension costs	\$11,600	\$23,345	49.69%
(B) Average annual CIAC	\$5,000	\$14,105	35.45%
CIAC percentage of extension costs (B) / (A)	43.10%	60.42%	
Source: Exhibit B-3 B	CUC IR 1 10 2 1 IR 1 3	271 Exhibit B-6 CEC	IR 1 45 4

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- 12.1 Please confirm, otherwise explain, that the comparable distribution rate base that FEI refers to does not include transmission pressure pipelines, stations and other assets.
- 24 **Response:**
- 25 Confirmed.



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1 2					
3 4 5 6 7 8	<u>Response:</u>	12.1.1	If not confirmed, please provide FEI's distribution rate base without transmission pressure pipelines, stations and other assets, and provide the amount of a commensurately reduced SEF.		
9	The response	to BCUC	IR 2.12.1 is confirmed.		
10 11					
12 13 14 15 16	12.2 <u>Response:</u>	Please r places.	estate the \$0.7 million SEF figure in BCUC IR 1.16.1 using four decimal		
17 18	The \$0.7 million SEF figure provided in response to BCUC IR 1.16.1, restated using four decimal places equals \$0.6796 million.				
19 20					
21 22 23 24 25	12.3 <u>Response:</u>	What is using a i	the customer rate impact if the Commission approves a \$0.7 million SEF rate base comparison approach?		
26 27	Using the Rawould result in	ate Impac n a rate in	t Analysis, a fully subscribed \$700 thousand System Extension Fund npact of \$0.0005 / GJ.		
28 29					
30 31 32 33 34	12.4	Since Be (EES Re million is	C Hydro's \$1.5 million UEA is aimed at customers in more rural areas eport, p. 19), would it be considered double counting if an additional \$0.3 allocated to FEI to account for remotely located customer demands?		



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To make the SEF more comparable with the BC Hydro UEA, should the

SEF be limited to FEI's rural homeowners/customers only? Why or why

1 **Response:**

2 For clarification, in determining the \$1 million SEF proposal, the Company did not size the SEF 3 relative to the exact proportion of BC Hydro's UEA to distribution rate base ratio and then 4 specially allocate an additional \$0.3 million to the fund to account for remotely located customer 5 demands. The \$1 million SEF is sized equivalent to two thirds the size of BC Hydro's \$1.5 6 million level, to reflect that the Company has a smaller service territory, a smaller number of 7 new customers added annually and a smaller distribution rate base.

8 Similar to the UEA, the SEF is aimed at customers in more rural/less densely populated areas. 9 All of the funds available through the SEF are intended to alleviate the barrier of CIAC for all 10 eligible customers and to provide greater consistency with the common rate approach for FEI's 11 service area, as indicated in Section 4.3.2 of the application. For this reason, the Company 12 does not believe any issue of double counting exists.

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12.4.1

not?

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- 20 **Response:**

21 The SEF was designed based on BC Hydro's UEA and should not be limited to FEI's rural 22 homeowners/customers. Like the BC Hydro UEA, the SEF is intended to provide financial 23 assistances toward the cost of connecting homes to the Company's distribution system where 24 infrastructure does not currently exist, which would typically occur in less densely populated 25 areas. Eligibility to access the UEA outlined in Section 8.8 of BC Hydro's Electric Tariff are 26 based on criteria that are similar to that proposed by FEI and does not limit access to the UEA 27 based on area of residence. Restricting eligibility of the SEF to FEI's rural homeowners / 28 customers would therefore have the effect of making the SEF less comparable with the UEA.

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- 31 32

- 12.5 Please confirm the Commission staff comparison table is accurate. If not, please correct.
- 34
- 35 **Response:**
- 36 Confirmed.

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IS BC [∞]	FortisBC Energy Inc. (FEI or the Company) 2015 System Extension Application (the Application)	Submission Date: November 13, 2015
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12.5.1 FEI's average extension cost is approximately one-half of BC Hydro's cost. Is it fair to say that the SEF could reasonably be one-half of BC Hydro's UEA which is \$750,000? Please correct this calculation to reflect any adjustments to the Commission staff table above.

Response:

10 This response also addresses BCUC IR 2.12.5.2.

The proposed size of the SEF of \$1 million is unrelated to the actual CIAC collected or the average extension cost incurred for completed main extensions in a given year, and the Company believes that the size of the fund should not be based on the relation of these elements to that of BC Hydro. As explained in response to BCUC IR 2.15.5.3, the average extension costs incurred and average CIACs received as shown are the result of existing policies at each utility for system extensions that proceeded, which do not accurately depict the circumstances faced by the customers that the SEF is intended to assist. These amounts also do not reflect the relative size of the utilities or indicate what an appropriate size of a fund should be.

As indicated in Section 4.3.2 of the Application, the \$1 million SEF is sized equivalent to two thirds the size of BC Hydro's \$1.5 million level, to reflect that the Company has a smaller service territory, a smaller number of new customers added annually and a smaller distribution rate base. Given the minimal impact on rates, forecast to be \$0.0007 per GJ (rounded to \$0.001 per GJ in the Application and assuming that the fund will be fully subscribed), the Company believes that a \$1 million SEF is a reasonable and appropriate amount that will ensure that the size of the fund is sufficient to meet the potential demands from customers, particularly from customers that are remotely located.

12.5.2 FEI's average annual CIAC is approximately one-third of BC Hydro's average annual CIAC. Thus, is it fair to say that the SEF could reasonably be one-third of BC Hydro's UEA which is \$500,000? Please correct this calculation to reflect any adjustments to the Commission staff table above.



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1 Response:

2 Please refer to the response to BCUC IR 1.12.5.1.

3 4		
4		
5		
6	12.5.3	Considering BC Hydro on average requires CIACs that are 60% of the
7		average extension cost, and FEI on average requires 43%, why does
8		FEI consider it appropriate for the Commission to approve a SEF that
9		may further reduce the customer's anticipated CIAC?
10		

11 Response:

12 The Company believes it is appropriate for the Commission to approve the SEF to help alleviate

13 the barrier of CIAC for some customers and provide greater consistency with the common rate

14 approach for FEI's service area.

No conclusion on the size of a SEF can be drawn by comparing the ratio of CIAC to extension costs. Electricity is a not optional for customers and as such when presented with a CIAC it is more likely that a customer will accept the CIAC and connect. Gas is optional and as a result, when presented with a CIAC, the customer may opt to not connect. The comparison in the question does not take into account those customers who did not attach when required to pay a CIAC and as such it is not possible to compare the CIAC/extension cost ratio of the two utilities.
Put another way, the analysis provided in the table of the preamble does not accurately depict.

the circumstances faced by the customers that the SEF is intended to assist. The analysis is based on the average extension costs incurred and CIAC received by the Company and BC Hydro for system extensions that proceeded. That is, system extensions where the required

25 CIAC did not serve as a barrier to connect.



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1 13.0 Reference: SYSTEM EXTENSION POLICY REVIEW

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Exhibit B-6, CEC IR 1.30.1

BC Hydro uneconomic fund

In CEC IR 1.30.1, FEI states: "FEI does not know the rationale used by BC Hydro in determining the appropriate amount for its Uneconomic Fund at the time it was developed."

- 7 13.1 To the best of FEI's knowledge, please describe the origin of the BC Hydro uneconomic fund, including the following: (i) rationale to establish BC Hydro's UEA, for example, was there a government directive that established BC Hydro's UEA? (ii) specific section of the *Utilities Commission Act* used to approve BC Hydro's UEA; and (iii) is BC Hydro's UEA an evergreen fund or is there a termination date?
- 13

14 **Response:**

Despite an extensive review of past regulatory proceedings, the Company was unable to pinpoint the origins of BC Hydro's UEA and therefore cannot comment on the rationale for the UEA or the specific section of the UCA used to approve it. To the best of the Company's knowledge, the UEA is an evergreen fund with no set expiration date.



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1	14.0	Reference:	SYST	EM EXTE	NSION POLICY REVIEW
2 3			Exhib 1.20.1	oit B-3, BC	CUC IR 1.15.1, BCUC IR 1.16.2; Exhibit B-6, CEC IR
4			Comr	nission ju	irisdiction
5		In BCUC IR 1	I.15.1, F	El states	
6 7 9 10 11 12 13 14		The C sectio These appro UCA believ to app rule, corpo	Compan ins 28-3 e sectio priate t is appli res that prove th practice ration re	y is apply 30 and 59 ns should o refer to cable. FE the Comm the SEF. "F e, measure elating to a	ing for the updates to its system extension policies under 61 of the UCA, including the establishment of the SEF. d be read together and therefore FEI believes that it is all these sections when considering what section of the I does not believe further precision is necessary, as FEI nission has the authority under sections 59-61 of the UCA Rate" is broadly defined under the UCA, which includes "a rement, classification or contract of a public utility or a rate." This definition is broad enough to capture the SEF.
15		In BCUC IR 1	I.16.2, F	El states	:
16 17 18 19 20 21		The te alway sense The c Exten custor	est in th s involv becau question sion Fu mer	e UCA is ve some o se the co i is wheth ind is an	whether there is "undue discrimination". Rates will almost degree of cross-subsidy or discrimination in the technical st to serve individual customers will almost always differ. er the subsidy is "undue." FEI believes that the System appropriate rate mechanism. It is not unfair to existing
22		In CEC IR 1.2	20.1, FE	El cites se	ction 30 of the UCA:
23		Comn	nission	may order	extension of existing service
24			30	If the co	mmission, after a hearing, determines that
25 26 27 28				a.	an extension of the existing services of a public utility, in a general area that the public utility may properly be considered responsible for developing, is feasible and required in the public interest, and
29 30 31 32				b.	the construction and maintenance of the extension will not necessitate a substantial increase in rates chargeable, or a decrease in services provided, by the utility elsewhere,
33 34 35				the com terms th part of th	mission may order the utility to make the extension on e commission directs, which may include payment of all or ne cost by the persons affected.



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14.1	Does FEI agree that the test under sections 28 through30 is a p whereas the test under sections 58 through 61 is "not unjust or u	ublic interest test, unreasonable"?
<u>Response:</u>		
Agreed.		
14.2	Is it FEI's position that the Commission can consider approval both a public interest test <u>and</u> a "not unjust or unreasonable same time? Why or why not?	of the SEF using " rate test at the
<u>Response:</u>		
FEI's positio BCUC IR 1. commission of service t Commission and its imple construct un	n with respect to the approval of the SEF is set forth in Exhibit 15.1, which is cited in the preamble. To elaborate, the "terms directs" referenced in sections 29 and 30 may or may not be term hat meet the definition of a rate. If those terms qualify as should only be implementing terms that are also just and reaso ementation affect how much a customer will pay for service, an der the definition of the UCA.	B-3, response to a upon which the ns and conditions a rate, then the onable. The SEF d is thus a "rate"
14.3	FEI believes that the Commission has the authority under section of the UCA to approve the SEF. In FEI's view, is section 30 appropriate to consider the SEF? Why or why not?	ons 59 through 61 of the UCA more
Response:		
All of these s	sections should be considered. Please refer to the response to BC	UC IR 2.14.2.
14.4	If the Commission approves the SEF as a rate under sections the UCA, is a tariff or rate schedule required?	59 through 61 of



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1 Response:

2 FEI believes that if the Commission were to approve the SEF as a rate under sections 59 3 through 61 of the UCA, then a tariff or rate schedule is required. In Appendix E of the 4 Application, FEI filed proposed amendments to the FEI General Terms and Conditions, which 5 includes (along with other proposed amendments), a new definition for the System Extension Fund and a new section 12.11, entitled System Extension Fund, which provides the proposed 6 7 terms and conditions for the SEF. FEI believes that the proposed amendments to the FEI 8 General Terms and Conditions as outlined in Appendix E of the Application meets the 9 requirements of the UCA.

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- 1314.5FEI submits that rates will almost always involve some degree of cross-subsidy14or discrimination in the technical sense because the cost to serve customers will15differ. However, is it fair to say that the SEF is an optional policy decision to16subsidize between existing utility customers and new customers?
- 17

18 **Response:**

FEI will approach this response by dealing first with the reference to "optional policy", and thendealing with the "subsidize" point.

FEI interprets the "optional policy" to mean that the SEF is a policy that the Company does not have to implement. FEI agrees that the Company is only putting forward the SEF because it believes it is the right thing to do from a policy perspective, and not because it is legally obligated to do so. Utility services are often "optional", but they are offered or implemented because they are in the public interest or are otherwise the right thing to do from the perspective of the utility and its customers. Biomethane service is an example of a service offered by FEI that is not "essential" for the public to obtain energy from FEI, but is a good idea nonetheless.

This is consistent with the whole concept of utility rates being *regulated* (as opposed to legislated or otherwise prescribed). Bonbright emphasizes that the role of proposing rates is in the hands of the utility, within the bounds of the statutory test:

It is a general doctrine of American law, almost universal in its application to public utility companies operating under special franchises or "certificates of public convenience and necessity" that these companies are under a duty to offer adequate service under "reasonable" (or "just and reasonable") rates. In addition the governing state and Federal statutes require that in its rates of charge as well as in its supply of services, a company must avoid "unjust" or "undue" discriminations or preferences among consumers. But the rule against undue discrimination is a mere extension of the



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1 mandate of reasonable pricing to reasonable price relationships and it need not be 2 distinguished for present purposes.

A full treatment of the import of the legal rule of "reasonableness" as applied to utility rates would go far beyond the scope of this study. But certain elements of this principle are fairly elementary. In the first place, the law of public utility rates is, for the most part, a law of rate *regulation*. Instead of prescribing a complete set of measures of rates, it leaves primary responsibility for rate making policies for management of the enterprise, private or public, so long as management keeps within public-interest or consumerinterest considerations. (Bonbright, 1st Ed., p.33-34; emphasis in original)

10

The question of whether or not a provision is necessary has no bearing on whether it is unduly discriminatory. Undue discrimination is defined by whether or not distinctions among similarly situated customers are determined by the Commission to be "undue".

14 With respect to the subsidy point, the SEF involves customers generally offsetting a portion of 15 In economic terms, this is subsidization (albeit lawful the CIAC otherwise payable. subsidization) to the extent that the resulting revenues do not offset the benefit conferred by 16 17 existing ratepayers. However, the italicized caveat is important because even the notion that an economic subsidy exists in the case of the SEF is not a given. Mains supported by the System 18 19 Extension Fund could well provide a net benefit to existing customers over the life of the main, 20 as discussed in the response to BCUC IR 1.16.2. In such circumstances, the SEF amounts to a 21 form of financing, rather than a subsidy, which is consistent with MX Guideline 9a (p. 33):

"9. Alternative methods for collecting customer contributions are discussed in section
6.5. In the Commission's view, viable mechanisms would satisfy the following criteria: ...
Introduce additional options for financing system extensions, thereby reducing the
financing pressures on local government (i.e. the use of local taxation mechanisms);"

26

Even if the revenues do not offset the cost to existing ratepayers and it becomes a subsidy in
economic terms, this type of subsidization is routine as a matter of ratemaking and flows from
the fact that there are a variety of accepted ratemaking principles routinely considered by
regulators. The test is the absence of "undue" discrimination, not an absence of discrimination.
Bonbright (1st ed) states:

Readers of the treatises and case law of railroads and public utility rates will often come
across bald statements to the effect that, in these regulated industries, the practice of
rate discrimination is unlawful. In fact, however, such statements are grossly inaccurate.
What the law forbids is "undue" or "unjust" discrimination. (p.370)



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- 1 The System Extension Fund also reflects accepted ratemaking principles. The intent and effect
- 2 of the System Extension Fund is akin to postage stamping of rates in that it makes service more
- 3 cost effective in areas with a higher than average cost of service. Regulators routinely approve
- 4 the use of uniform rates throughout the utility service area despite geographic differences in
- 5 cost of service so as to achieve other rate design objectives.
- 6



1	15.0	Refere	ence:	SYSTEM EXTENSION POLICY REVIEW
2 3				Exhibit B-3, BCUC IR 1.10.2.1, BCUC IR 1.15.1, 1.15.3., 1.18.2.1, 1.18.4
4 5				Evaluation criteria, guidelines, reporting, and administrative procedures
6		In BCL	JC IR 1	.10.2.1, FEI states:
7 8 9 10 11 12			FEI do require to ass able to many custon	bes not have data on those customers who, after being made aware of a ed CIAC, decided to not attach to the system The SEF fund is intended ist eligible customers who potentially have a larger CIAC and may not be o afford the required contribution The Company does not know how customers would apply to the SEF, so it cannot speculate on whether all ners who apply would receive some level of funding.
13		In BCL	JC IR 1	.15.1, FEI states:
14 15 16 17			The su will ap Compa the Fu	access of the SEF is measured by how many potential eligible customers oply for and receive funding and proceed with the main extension the any proposes to include the total number of approved requests to access and and the total dollar value of the approved requests in its MX reporting.
18		In BCL	JC IR 1	.18.2.1 and IR 1.18.4, FEI states:
19 20 21 22			The absent Comm develo	e specific administrative elements of the SEF have not been developed t knowing that the SEF proposal will be approved. Pending the ission's approval of the establishment of the SEF, the Company will up the procedures and elements required to administer the SEF.
23 24 25			The Co of elig	ompany will be responsible for managing the Fund, including determination ibility, ranking and final approval of customer applications for the SEF, reasonable judgement and acting in good faith.
26 27 28 29			If the Compa option to file a	SEF funding application for a particular customer were denied by the any, the SEF applicant would be advised of the reasons, and have the to request a review with the Company Customers also have the ability a complaint with the Commission.
30 31 32 33 34 35		15.1	A CIA meet t would require availat custon	C is required and collected from those customers whose main does not he 0.8 PI threshold and decide to continue with the main. Presumably, FEI have to first calculate the PI to advise a potential customer if a CIAC is ed. Thus, one would expect that FEI would have such customer records ble. As such, please clarify why FEI does not have data for those ners requiring CIAC but do not go through.



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2 Response:

3 While the presumption in the preamble is correct regarding the calculation and review of PIs 4 with potential customers, the assumption that records are catalogued and retained in 5 circumstances when a customer declines to proceed with a main extension is not. If the 6 potential customer decides not to proceed, the data is not retained. For this reason, FEI does 7 not have data for those applicants requiring CIAC but who decided to not go through with the 8 extension.

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- 15.1.1 Does FEI have the ability to collect such data? If so, please estimate the incremental costs, if any, to collect such data. If not, please explain.
- 14

15 Response:

16 Yes, FEI does have the ability to collect data on potential SEF applicants that may have been 17 denied funding. Since the SEF applicant would be advised of the reasons if denied funding, and 18 have the option to request a review with the Company, the Company would maintain this data in 19 order to properly review the decision with the customer. The cost is expected to be minimal.

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24

15.2 It appears that one criterion FEI considers in the SEF is affordability. Please specify how FEI would evaluate affordability of a SEF applicant.

25 26 Response:

27 Affordability is an issue that the SEF will address but is not a criterion for eligibility for the Fund.

28 As indicated in the response to BCOAPO IR 1.2.2, the SEF is intended to apply to all eligible 29 customers, and any applicant regardless of income level that meets the eligibility requirement could potentially receive funding. However, given that new customers residing in lower density 30 31 areas will likely have a higher CIAC than those in urban areas, the SEF will have an effect of 32 creating greater equity between new customers in lower density areas of FEI's service area with 33 those new customers in more urban areas. Based on anecdotal feedback from stakeholders in 34 the Company's consultation process, FEI expects the SEF to benefit applicants who live in 35 lower density areas as well as low income applicants who are faced with high costs of heating 36 with competing energy forms.

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- 15.3 FEI does not have specific SEF guidelines at this time. Hypothetically, if the Commission finds that the SEF proposal is in the public interest, is FEI amenable to conditional approval of the SEF subject to FEI providing clear and well-defined selection and funding rules for review?
- 7 8

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- 9 Response:
- 10 This response also addresses BCUC IR 2.15.3.1

FEI believes that clear rules have been specified already. The specific terms and conditions for the proposed SEF, which defines the eligibility requirements, application deadlines and funding rules, are included as part of the proposed tariff changes filed as Appendix E-2 of the Application, and summarized in Section 4.3.2 of the Application. Similar to BC Hydro's UEA and as indicated in response to BCUC IR 1.10.2.1, customers applying to the fund would likely receive funding provided that they meet the eligibility requirements as set out in the tariff and provided there is still a sufficient amount in the SEF remaining.

- In the event that the Commission were to determine that greater specificity was required but
 supported the concept in principle, then conditional approval pending further changes to the
 proposed terms would be appropriate.
- 21
- 22
- 23
- 24 25

- 15.3.1 How long will it take for FEI to develop clear and well-defined selection and funding rules and file them with the Commission?
- 26
- 27 **Response:**
- 28 Please refer to the response to BCUC IR 2.15.3.
- 29
- 30

31

3215.4FEI in BCUC IR 1.15.1 states that the success of the SEF is measured by how33many potential eligible customers will apply for and receive funding and proceed34with the main extension. However, FEI in BCUC IR 1.10.2.1 states that it does35not know how many customers would apply to the SEF. Please explain how FEI



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would measure success without knowing how many customers would apply to
 the SEF.

3

4 <u>Response:</u>

5 The Company believes that measuring the success of a Fund that is intended to assist eligible 6 customers who are faced with cost prohibitive CIACs is not contingent upon knowing how many 7 customers would (on a prospective basis) apply to the Fund. As referenced in the question's 8 preamble from the response to BCUC IR 1.15.1, success of the SEF would be measured by 9 how many customers apply for and receive funding *and* then proceed with the main extension. 10 Therefore, success would be measured "after the fact".

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 15.4.1 To achieve meaningful assessment of the SEF, does FEI agree that reporting should, at the minimum, provide information regarding (i) forecast number of applications, (ii) actual number of applications, (iii) actual number of applications and (iv) actual number of approved customers receiving funding and proceeding with a main
- extension? Please also indicate if FEI has the ability to report such information.
- 20

22 Response:

As indicated in Section 4.4.3 of the Application, the Company is proposing to report on the total number of approved customers that proceeded with a main extension and the total amount of funding made available as part of the annual reporting. The Company believes these factors represent the key performance indicators of success for the fund as they quantify the derived benefit to customers directly attributed to the availability of the Fund. However, the Company is amenable to also providing the actual number of applications received [item (ii)] and the actual number of applications approved [item (iii)] as part of the annual reporting for the SEF.

With respect to forecast number of applications to the SEF [item (i)], the Company does not believe this metric will provide any meaningful assessment of the SEF as FEI will not forecast the number of SEF applications for the reasons described in response to BCUC IR 2.10.2. Please also refer to the response to BCUC IR 2.15.4.

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To measure success in a meaningful manner, does FEI agree that

specific thresholds to renew, modify or review the SEF should be

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- 5
- 6 Response:

15.4.2

7 The Company believes that the reporting proposal for the SEF as set out in Section 4.4.3 of the 8 Application provides for a meaningful assessment and measure of the Fund's success and 9 believes that specific thresholds to renew, modify or review the SEF are unnecessary given the 10 limited potential rate impact to existing customers, forecast to be a maximum of approximately 11 \$0.001/GJ. Further, the SEF is designed to be comparable to the UEA which has operated 12 effectively for many years without specific thresholds or ex post evaluation. As indicated in 13 response to BCUC IR 1.15.3, if there are circumstances where the fund is not functioning as 14 intended or is being underutilized, either FEI or the Commission can initiate a process to bring 15 forward modifications or termination of the SEF.

established before implementation?

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- 18
- 1915.5Please elaborate what is the Commission's role in a complaint process involving20SEF disputes. How would the Commission resolve a complaint if FEI has no21specific rules to approve or deny SEF applications?
- 22

23 **Response:**

Similar to BC Hydro's UEA, applicants to the SEF will likely receive funding provided they meet the eligibility requirements outlined in the proposed tariff amendments related to the SEF included in Appendix E-2 of the Application and provided there are sufficient funds to be allocated for that year. Refer to the response to BCUC IR 2.15.6 for a description of the scenarios in which a potential applicant may be denied funding.

In the event a customer files a complaint with the Commission, the Commission may request a
 review of the claimant's application and reason for denial from the Company to ensure the
 Company acted in accordance with its General Terms and Conditions.

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- 34
 35 15.6 How many times can a customer re-apply for the SEF in the event that FEI
 36 denies funding? For example, can the customer apply an unlimited number of
 37 times until he/she receives funding?



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2 Response:

3 In the event that FEI denies funding to a particular applicant, the SEF applicant would be 4 advised of the reasons for the denial and would have an opportunity to review the assessment 5 with the Company. Depending on the reason for the denial, the customer may have an 6 opportunity to re-apply for funding.

7 Section 4.4.3 of the Application sets out the proposed terms for the SEF. There are four main 8 reasons why a customer's application for SEF funding may be denied:

- 9 1. The applicant is not the owner of a single-family residential home or townhome that is a 10 principal resident within an existing FEI service area at the time the application is taken. 11 In this instance, the applicant is ineligible for funding under the SEF and any re-12 applications will not be considered by the Company.
- 13 2. The eligible applicant's requested main extension does not meet the minimum 0.2 PI 14 threshold requirement as determined by the MX test. In this instance, the applicant 15 would not be eligible for funding under the SEF and would be discouraged from reapplying until there is a material change in circumstance that would improve the 16 17 economics of the project to meet the minimum 0.2 PI threshold.
- 18 3. The eligible applicant is ranked lower than another eligible applicant in the event the 19 Company must decide between eligible customers' requests in order to not exceed the 20 \$1 million funding cap. In this instance, the eligible applicant that was denied would be 21 free to re-apply the following year when additional SEF funds become available. 22 Alternatively, the applicant would have the option to have their application automatically 23 rolled over to the next application deadline if their project is not funded.
- 24 4. The SEF is fully subscribed for the year. In this instance, the eligible applicant would be 25 free to re-apply the following year when additional SEF funds become available. 26 Alternatively, the applicant would have the option to have their application automatically 27 rolled over to the next application deadline if their project is not funded.
- 28
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Would FEI consider a SEF application fee to cover the administration costs of the 15.7 program?

34 Response:

35 Charging an application fee for a program designed to reduce the burden on particular customers would be counterproductive. The Company does not believe a SEF application fee 36



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- 1 to cover the administration costs of the program is necessary. The review of SEF applications
- 2 and the selection of projects to be funded will form a part of the existing duties of the Company's
- 3 Energy Solutions business unit.



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1 16.0 **Reference:** SYSTEM EXTENSION POLICY REVIEW 2 Exhibit B-3, BCUC IR 1.10.4, Attachment 10.4.1 3 Non-contributory main 4 In BCUC IR 1.10.4, FEI explains that a contributory main is where the required CIAC 5 collected from customers is subject to refund. Refund is applicable only if the contribution to a main was made by residential homeowners. 6 7 In the proposed mechanism under the FEI General Terms and Conditions, FEI states 8 that no refunds will be due to customers who receive funding under the SEF. 9 16.1 Please confirm, otherwise explain, that the 50 percent cost sharing and the non-10 refundable nature of a SEF main extension serve as a risk-sharing mechanisms 11 to protect existing ratepayers in the event that the new customer does not 12 consume as much natural gas as FEI has estimated. 13 14 Response: 15 Not confirmed. Although the 50 percent cost sharing and the non-refundable nature of a SEF 16 main extension serve as risk-sharing mechanisms to protect existing ratepayers, they are not 17 designed to mitigate the situation of new customers not consuming as much natural gas as FEI 18 had estimated, as suggested in the question. FEI has proposed that the customer(s) should

19 equally share the contribution in order to ensure the customer has some financial "skin in the

20 game" prior to the project proceeding.



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1	17.0	Refere	ence: SYSTEM EXTENSION POLICY REVIEW
2			Exhibit B-3, BCUC IR 1.18.6; Exhibit B-6, CEC IR 1.47.4, 1.47.6, 1.48.1
3			Other eligibility
4		In BCL	JC IR 1.18.6, FEI states:
5 6 7 8 9			The Company anticipates that all regions of the province will benefit from the SEF. Specifically, conversion customers (i.e. those switching from one fuel to another in a pre-existing home) are most likely to access the SEF, if eligibility is met. The greatest conversion potential is on Vancouver Island although opportunities exist throughout the rest of the province as well.
10 11		In CEC availat	C IR 1.47.4, FEI states that "the Company is not opposed to making the SEF fund ole to commercial customers."
12		In CEC	CIR 1.47.6, FEI states:
13 14 15 16 17			the Company's proposed SEF is intended to be applicable to end-users of natural gas, not to builders or developers since the costs for the project will likely be included in the selling price of the units and the Company would have no way of knowing or requiring that the unit selling price would take into account the amount of SEF awarded to the benefit of natural gas end-users.
18 19 20		In CE option so."	C IR 1.48.1, FEI states "The Company would not be opposed to exploring the of providing a contributory refund, since there would be no rate impact in doing
21 22 23 24	_	17.1	Please discuss the benefits of having the SEF only accessible to prospective fuel switching customers who are fuel switching from higher carbon intensity forms of energy use. Would FEI be amenable to such a restriction on access to the SEF?
25	Resp	onse:	
00	The C		a halfarran tha OFF should not be nothing to ank mean a thir first sufficient

The Company believes the SEF should not be restricted to only prospective fuel switching customers form higher carbon intensity forms, since the intention of the fund is to help alleviate the barrier of CIAC by providing financial assistance toward the cost of connecting homes to the Company's distribution system where infrastructure does not currently exist. Further, stakeholders indicated that they wanted access to gas in part because it was a lower cost fuel compared to alternatives. Restricting the SEF to only those switching from higher carbon fuels would be inconsistent with the stakeholder desires.

FEI believes that the Company's DSM programs are the most appropriate and effective way to
 incent energy efficient behavior. Further, the carbon tax already accounts for the carbon
 intensity of natural gas.



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- If commercial customers or other classes of customers are included in the SEF, 17.2 is it fair to say that it will have a similar effect of lowering the PI? **Response:** For clarification, the financing awarded does not have the effect of lowering the PI of a main extension as the question suggests. As indicated in the terms for the proposed SEF outlined in Section 4.3.2 of the Application, SEF Financing provided to successful applicants will have the effect of lowering their required CIAC by 50%, to a maximum of \$10,000 per customer. If commercial customers or other classes of customers were eligible for SEF funding, then the financing provided would also lower their required CIACs. 17.3 Does FEI agree that including commercial customers or other classes of customers is a departure from the BC Hydro UEA? Please elaborate. **Response:** FEI agrees that including commercial customers or other classes of customers would be a departure from the BC Hydro UEA, which is not available to commercial enterprises. Currently, only principal residences on a parcel of land, principal residences on a farm and single or three-phase extensions to serve a farm irrigation load are eligible to access funds from the UEA. Please confirm that it is FEI's position to not expand the SEF eligibility to 17.4 developers/builders. Response: Confirmed.
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| 1
2
3
4 | | 17.4.1 | Please confirm that a developer/builder and a homeovexclusive. If not confirmed, please explain how a personate. | vner are mutually
son/entity can be |
| 5 | Response: | | | |
| 6 | Confirmed. | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | 17.5 | Please o | confirm that FEI is only seeking approval of the SEF pr | ogram applicable |
| 11 | | to non-re | efundable mains at this time. If not confirmed, please up | date the approval |
| 12 | | sought. | | |
| 13 | | | | |
| 14 | <u>Response:</u> | | | |
| 15 | Confirmed th | at any mai | ins to which the SEF is applied will be non-refundable. | |



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1 D. DISCOUNTED CASH FLOW TERM

2	18.0	Refer	ence:	RECOMMENDATIONS
3				Exhibit B-3, BCUC 1.23.1
4				DCF term – appliance life and discount rate
5 6		In resp be cor	ponse to nsidereo	D BCUC 1.23.1 FEI explains that the expected life of appliances should not d when determining the DCF term.
7 8 9 10 11 12	Respo	18.1	Please or ele applia either	e confirm, otherwise explain, for an appliance that could be served by gas ctricity, for example a furnace or hot water heater, at the end of that nce's life a customer would typically consider replacing that appliance with a gas or electric appliance.
13	Confir	med.		
14 15				
16 17 18 19 20	Respo	18.2 onse:	Please study.	e provide the expected lives of all the gas appliances identified in the REUS
21 22 23	The R expect the M	EUS de ted live < Test a	oes not s of gas as discu	provide the expected lives of the gas appliances identified. Further, the s appliances is not germane to the DCF term nor the consumption used in ssed in the response to BCUC IR 2.18.3.
24 25				
26 27 28 29 30 31		18.3	Please consu foreca year o	e confirm, otherwise explain, that it is more difficult to forecast a customer's mption 40 years out than it is to forecast it 20 years out, than it is to st 10 years out, than it is to forecast 5 years out, than it is to forecast 1 ut, etc.
32	<u>Respo</u>	onse:		
33	The C	ompan	y confiri	ms that in general it is more difficult to predict consumption further into the

34 future.



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However, the question incorrectly suggests a relationship between the recommendation to extend the DCF term to 40 years and the calculation of the consumption inputs used in the MX Test. The recommendation to extend the DCF term is based on <u>the benefits accruing to</u> <u>customers</u> over the useful life of mains. The consumption input in the MX Test it is not a forecast of future use, and thus the concern being raised does not actually arise.

6 The consumption input in the MX Test is intended to be a credit commensurate with the usage 7 of existing customers, not a forecast of how much customers on the new extension are 8 expected to use. As EES explained:

9 "These average use numbers are not intended to reflect the use of customers in the 10 future but rather reflect the average usage of all customers on the system. That allows 11 new customers to be treated equitably compared to existing customers. FEI is 12 consistent in this practice as it uses the results of the REUS survey of usage per 13 appliance which is based on all customers on the system."

14

In order to maintain consistency from a rate design perspective, customer rates and customer consumption should be treated similarly in the MX Test. Since customer rates are derived from a forecast use per customer (UPC) of existing customers, it follows that the consumption per customer should also be derived from the UPC of existing customers. Further, the customer rates used in the MX Test are not adjusted to forecast any potential changes over the course of the DCF term; therefore the consumption per customer should be treated in a similar fashion.

If, hypothetically, consumption per customer were to be based on new customers, or adjusted downwards over the course of the DCF term to forecast potential appliance switching, the customer rates in the MX Test would have to be adjusted proportionally higher. Otherwise, the revenue credited to new customers in the MX Test would be understated and new customers would be unfairly discriminated against compared to existing customers.

Additional reasons to continue using the REUS values in the MX Test are discussed in the response to BCUC IR 1.35.1.

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- 3118.4Please confirm, otherwise explain, that FEI believes that the Commission32approved a 20 year forecast period as a trade-off for the uncertainty of customer33consumption in the future.
- 34



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1 Response:

Not confirmed. The Company does not know the rationale behind using a DCF term that matched the time horizon of the Integrated Resource Plan (IRP). The IRP term has no bearing on the impact of the projected revenue to be realized by the main extension. Regardless of the Commission's rationale originally, the principled starting point for assessing an appropriate DCF term should be to consider the time period over which the main is expected to generate revenues, which is typically considerably longer than what is being proposed by FEI.

8 9	
10 11 12 13 14 15	 18.5 Considering FEI proposes to extend the DCF period from 20 to 40 years, does FEI believe it would be appropriate to subsequently change the discount rate? Why, or why not? Response:
16 17 18	FEI does not believe it is appropriate or necessary to change the discount rate used in the DCF period. The discount rate used already reflects a long term discount rate and FEI would consider both a 20-year and 40-year period to be a long-term period.
19 20	
21 22 23	18.5.1 If so, what discount rate would FEI propose and why?
24	Response:
25	Please refer to the response to BCUC IR 2.18.5.
26	



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1	19.0	Reference:	RECOMMENDATIONS
2			Exhibit B-3, BCUC IR 1.23.1; Exhibit B-1, Section 4.1.1.1, p. 51
3			DCF term
4		In BCUC IR	1.23.1, FEI states:
5 6 7 8 9 10		Duri and not equi appl <u>and</u>	ng the life of a main extension a customer will add or remove gas equipment improve gas equipment but that equipment is not owned by FEI and does impact FEI's costs. Attempting to forecast how a customer uses the pment, when they will retire equipment or when the customer may add an iance (for example a range, water heater etc.) would be <u>extremely difficult</u> <u>entirely unreliable</u> . [Emphasis added]
11		On page 51	of the Application, FEI states:
12 13 14 15		By e will perc thos	extending the term to 40 years, the incremental revenue of new customers be more accurately captured in the Test. This will result in a smaller entage of customers paying a CIAC, and a reduced amount of a CIAC for e that do pay while still protecting the interests of existing customers.
16 17 18 19 20		19.1 Give and why new	In that forecasting how customers use gas equipment is "extremely difficult entirely unreliable" and customer use determines revenue, please explain extending the DCF term to 40 years to capture the incremental revenue of customers is appropriate.
21	Resp.	onse:	
22	ine (question inco	prrectly asserts that FEI is forecasting consumption. It is not. The

23 consumption input in the MX Test is based on consumption of existing customers, and is not a 24 forecast of consumption for a main extension. The consumption input is used for the purpose of 25 crediting the new customers with the same consumption by appliance as existing customers 26 with an objective of treating existing and new customers fairly. As discussed in the response to 27 BCUC IR 2.18.3, the question also incorrectly suggests a relationship between the 28 recommendation to extend the DCF term to 40 years and the consumption inputs used in the 29 MX Test. There is no relationship between the two as one is a credit for consumption and not a 30 forecast, the other is to align the DCF period with the life of the main.

On page 31 of the Guidelines, the Commission specifies that system extension evaluations be based on a DCF evaluation method that includes "...all incremental costs and benefits associated with a particular system extension over a time period long enough to consider the full impact of the extension."

The current 20 year DCF term is based on the IRP 20 year time horizon which bears no relation to the full impact of the extension. The Company believes a DCF term incorporating the useful



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- 1 life of the main would take into consideration the full impact of the extension. FEI has
- 2 conservatively proposed 40 years as a DCF term as it is more in line with industry standards.



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E. **CUSTOMER ADDITION TERM** 1

20.0 CUSTOMER FORECAST PERIOD Reference:

Exhibit B-3, BCUC 1.24.5, 1.24.6, 1.25.3

Customer forecast period and main and service design

5 In response to BCUC IR 1.24.5 FEI explains "There is no proposed threshold or criteria 6 that will be used for each type of data utilized in assessing whether or not a 10 year 7 forecast period is appropriate."

8 Please confirm, otherwise explain, that a purpose of a utility having an MX test is 20.1 9 to avoid the regulatory burden of having to apply for CPCNs for routine low cost extensions (e.g. for FEI to avoid the need of having to apply for CPCNs for 10 11 extensions below the CPCN threshold).

13 Response:

14 FEI disagrees with the statement.

15 The purpose of having a CPCN threshold is to avoid the need to have to apply for CPCNs for 16 ongoing capital investments. FEI agrees that no CPCN should be required for most main 17 extensions as they usually don't meet the threshold set for a CPCN application. But there are 18 many types of capital investments that are below the CPCN threshold that are not main 19 extensions. The regulatory efficiency rationale for not requiring a CPCN applies equally to all of 20 these expenditures, including those mains that are subject to the MX Test.

21 The purpose of an MX Test is to determine the reasonable level of investment for the Company 22 to incur to construct the requested main extension without contribution by the customer, and it 23 provides an efficient way to attach customers using a Commission-approved methodology.

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- 27 20.2 If it were necessary for FEI to have a threshold(s) and criteria, what would FEI 28 propose those thresholds and criteria to be? Please elaborate.
- 29
- 30 Response:

31 FEI has interpreted the reference to "threshold" as being a threshold in relation to the 32 application of a 10 year horizon.

33 The Company believes that it would not be appropriate to introduce a threshold(s) and criteria.

34 The Company has proposed using a 10 year horizon on a case by case basis where there is



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1 evidence that customers may attach beyond the five year window. The Company has also

- 2 offered to provide compliance reporting specific to the use of a 10 year forecast to allow the
- 3 Commission greater oversight of this change in policy.

The Company notes that utilities in Ontario, for example, have successfully been using a 10 year forecast for <u>all</u> main extensions for many years without any threshold, criteria nor compliance reporting related to the forecast term.

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- 11 In response to BCUC IR 1.24.6 FEI explains that the majority of customer attachments 12 are infill customers over the life of the main.
- 13 In response to BCUC IR 1.25.3 FEI explains:
- 14 The size of a main will take into consideration the expected loads extending from 15 the main over the life of the main. Thus, a new main is not sized just to serve the currently expected load, but also the potential loads served over the life of the 16 17 main based on a reasonable forecast. Given the expected life of a main, a main 18 with a 5-year or 10-year horizon for customer attachments may make little 19 difference in terms of the size of the main. Further, in situations where a larger 20 pipe size is required for future capacity requirements, this incremental cost is 21 generally minimal as a percentage of the total project.
- 22 20.3 Please confirm, otherwise explain, that FEI sizes its mains to allow for customer 23 attachments that are infill customers.
- 24

25 **Response:**

FEI confirms that, from a capacity perspective, mains are sized based on an analysis of current and forecast loads that includes estimates of infill customer attachments¹⁹. However, FEI currently does not typically install additional length of main to serve areas and customers beyond the time frame considered in the MX Test's 5 year horizon.

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¹⁹ In this context, current customers are assumed to be those forecast in the 5 year MX Test and infill customers are assumed to be those that may attach beyond the 5 year forecast.



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20.4 Please confirm, otherwise explain, that all other things being equal, FEI would expect to have unused capacity in a main for a longer period of time for a main designed for customers connecting over a ten period versus a main designed for the same customers connecting over a five period.

6 Response:

Not confirmed. All other things being equal, FEI expects available capacity would be the same
in a main designed for customers connecting over a ten year period versus a main designed for
the same customers connecting over a five year period.

In cases where a 10 year horizon would be used, additional lengths of main could be installed to allow for the service of future customers attaching after the first 5 years (years 6-10). The available capacity, however, would be the same or similar as FEI currently has capacity design processes in place to consider capacity requirements beyond 5 years in growing communities and installs mains with capacity to accommodate additional growth (i.e. larger pipe) where necessary. Please refer to the response to BCUC IR 2.20.14 for additional explanation.

There are potential cost efficiencies in installing contiguous mains all at once rather than in discrete sections. Additional benefits that need to be considered include the addition of new customers that would have otherwise decided against installing natural gas due to the MX Test not taking into account customers likely to attach to the system over a 10 year period.

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20.5 Please explain how FEI accounts for unused capacity in a main.

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25 **Response:**

FEI's system is designed such that the pipelines (including mains) are designed to peak capacity as well as future growth; and do not incorporate the concept of "unused capacity". The cost of distribution mains is included in account 475 per the BCUC Uniform System of Accounts, and included in rate base once in service.

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JULI 12 RC.	Response to British Columbia Utilities Commission (BCUC or the Commission) Information Request (IR) No. 2	Page 81
20.6	Please confirm, otherwise explain, that a 10-year customer fore be used in situations where a main extension's customers that c five years are further away than the customers that connect ir years.	cast period could connect in the first in the second five
<u>Response:</u>		
Confirmed.		
20.7	Please confirm, otherwise explain, that a 10-year customer fore be used in situations where a main extension's customers that c five years are spread out along the entire length of the main an that connect in the second five years are also spread out along of that same main.	cast period could connect in the first nd the customers the entire length
Response:		
Confirmed.		
20.8	Please confirm, otherwise explain, that in both examples procustomers in the second five years, whether they are the closer customers spread out along the length of the main, are all cur infill customers and are not included in the current MX test.	ovided above the customers or the rently considered
<u>Response:</u>		
Confirmed, _I forecast peri	provided that infill customers are defined as those that attach bey od.	ond the five year
20.9	Are there any other scenarios where a 10-year customer forecas applied? If so, please elaborate and provide those scenarios.	st period could be



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1 **Response:**

2 A third scenario is described in response to CEC IR 1.25.1.3. In this scenario, the customers 3 that connect in the first five years are closer than those that connect in the second five years.

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20.10 Please explain how peak hourly demand of a proposed main is estimated.

9 **Response:**

10 FEI uses an estimate of the peak hourly demand expected for that main for determining the capacity of a main (i.e. it is not an input in the MX Test). 11

12 Peak hour demand for a proposed main is determined by summing the peak hour demand of i)

13 initial customers included in the MX Test, attaching immediately or forecasted to attach in the

14 first 5 years; and ii) forecasted customer growth anticipated to be supported by the main over a

15 longer period of time. The peak hour demand for the initial customer attachments is determined

16 from the MX Test results which consider the appliances being attached. Peak hour demand 17

beyond the MX Test period is determined by first identifying the number of additional customer 18

attachments forecast in each rate schedule, and then multiplying those figures by the average 19 peak hourly use per customer (UPC) for the respective rate schedules for the region in which

20 the main is being installed.

21 FEI reassesses regional peak hour UPC annually through a load gathering assessment. In the 22 load gathering process, billing information for the preceding two year period is extracted for all 23 customers. Regional peak hour UPC values for each rate schedule are determined by 24 averaging the calculated peak UPCs for all customers in the rate schedule in the region and 25 these UPC values therefore reflect the current peak hour behaviour (demand) of customers in 26 the neighbourhood of the proposed main extension.

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- 30 20.11 Please confirm, otherwise explain, that FEI designs the capacity of a main based 31 on FEI's actual estimate of the peak hourly demand expected for that main. If not 32 confirmed, please provide FEI's basis for main design.

33 34 Response:

35 FEI confirms that design for the capacity of a main is based on FEI's estimate of the peak hourly 36 demand expected for that main.



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20.12 Please confirm, otherwise explain, that FEI's main capacity design is not derived from the REUS results (i.e. consumption credits).

7 **Response:**

8 Not confirmed. As discussed in the response to BCUC IR 2.20.10, the peak hour demand 9 includes the initial demand considered in the MX Test (immediate attachments plus attachments 10 forecasted within 5 years) plus any additional forecast customer peak hour demand. The peak 11 hour demand associated with initial customer attachments is derived from the results of the MX

- 12 Test which uses the REUS as inputs to determine consumption.
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16 20.13 Please confirm, otherwise explain, the standard forecast period FEI uses to 17 determine the peak hourly demand for a main is based on the peak hourly 18 demand forecast of connections forecast in the first five years of service. If not 19 confirmed, please provide the number of years FEI uses and justify why that is 20 the appropriate forecast period for a main.

22 Response:

23 Not confirmed. Please refer to the response to BCUC IR 2.20.12 where FEI explains the 24 methodology for determining the peak hourly demand for a main.

25 In the peak demand forecasting process, there is consideration of those areas where sustained 26 growth is occurring, which incorporates information gathered through assessment of Official 27 Community Plans (OCP's), long range account forecasts and other long range planning 28 information as available. It is in these types of instances where the Company is proposing to 29 use a 10 year forecast in its MX Test.

30 Currently, the difference in cost for mains increased in size to support future growth anticipated 31 in these long range plans is included as a system improvement credit in the current MX Test.

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20.14 Please confirm, otherwise explain, that FEI designs its mains with an allowance for additional capacity to allow for potential variations in peak hourly demand



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and/or infill customers. If confirmed, please provide each allowance in percent of FEI's actual estimate of the peak hourly demand expected for the main.

4 <u>Response:</u>

5 FEI confirms it designs its mains to accommodate some additional peak hour demand whether 6 that be from some variation in demand of initial attached customers or from forecasted infill of 7 customers on the system. FEI cannot provide an allowance in terms of the percent of the 8 estimated peak hour demand through a main extension as the peak hour demand or flow 9 through the pipe is not the ultimate determinant of whether adequate capacity is available. FEI 10 uses minimum system pressure at peak demand (under Design Degree Day temperatures) as a 11 measure to ensure adequate capacity. As mains can be attached at many different points in the 12 system, mains of the same size and length and same peak demand requirements can have 13 widely ranging additional capacity, or ability to remain above the minimum system pressure with 14 increasing load. The additional capacity is highly dependent on the pressure (under peak 15 demand) at the point in the system that the new main is attached.

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20.15 Please explain how peak hourly demand of a service is estimated.

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21 Response:

Peak hourly demand for a service is estimated based on an analysis of the appliances to be connected and the REUS results. The appliances to be connected are those reported by the customer at the time gas service is applied for. The REUS results provide the consumption values per appliance, and after applying those values to the appliances to be connected, the peak hourly demand may then be estimated. FEI also confirms it designs the capacity of a service based on the peak hourly demand for that service.

Note that FEI has made changes to its service line installation process to standardize the size of
 service lines to ensure that there is sufficient capacity on the service line to serve the residence
 regardless of the appliances added.

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20.16 Please confirm, otherwise explain, that FEI designs the capacity of a service
based on FEI's actual estimate of the peak hourly demand expected for that
service. If not confirmed, please provide FEI's basis for service design.



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1 2	<u>Response:</u>	
3	Please refer to	the response to BCUC IR 2.20.15.
4 5		
6 7 8 9	20.17	Please confirm, otherwise explain, that FEI's service capacity design is not derived from the REUS results (i.e. consumption credits).
10	<u>Response:</u>	
11	Please refer to	the response to BCUC IR 2.20.15.
12 13		
14 15 16 17 18 19 20 21	20.18	Please confirm, otherwise explain, the standard forecast period FEI uses to determine the peak hourly demand for a service is based on the peak hourly demand forecast of the service in the first five years of supply. If not confirmed, please provide the number of years FEI uses and justify why that is the appropriate forecast period for a service.
21	<u>Response:</u>	
22	Please refer to	the response to BCUC IR 2.20.15.



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1	21.0 F	Refere	nce: RECOMMENDATIONS
2			Exhibit B-3, BCUC IR 1.25.1
3			Main costs for customers connecting in years 6 to 10
4 5	F	Regard n BCU	ing the treatment main extension costs for customers connecting in years 6 to 10, C IR 1.25.1, FEI states:
6 7 9 10 11 12			Overall, there is little difference to the delivery rates as to where these amounts are recorded – the only impact would be whether they are recorded in a depreciable asset account such as 475 or in a temporary account with no depreciation such as 102 or 115. Overall, FEI does not expect the amounts related to "years 6 to 10" to be material enough to warrant the system changes that would be required to track and record the ins and outs to a separate account for this component
13 14 15	2	21.1	Please explain why account 115 – Gas Plant Under Construction is appropriate for main extension costs for customers connecting in years 6 to 10.
16	Respon	ise:	
17 18 19 20	FEI did connect had note where th	not st ing in y ed that ne mair	ate that account 115 was appropriate for main extension costs for customers rears 6 to 10. FEI stated that account 475 should be used for all main costs. FEI other accounts may be appropriate (such as account 115 which is the account n cost is held while it is being constructed).
21 22			
23 24 25 26 27	2 <u>Respon</u>	21.2 I se:	Please provide the cost of the "system changes that would be required to track and record the ins and outs to a separate account for this component."
28 29 30 31 32 33	FEI doe the cost the resp believe There is as soon	es not h s would bonse t there i s no ba as it is	ave an estimate of the cost of the system changes; a request for an estimate of d require a detailed scoping document and system design analysis. As stated in o BCUC IR 1.25.1, FEI is not proposing to make such a change and does not s value in segregating parts of an installed main between different accounts. sis to segregate a part of a main; the entire main forms part of FEI's gas system placed in service.

FEI provides the following example, with the assumption of a main extension with a cost \$10,000. Over a 10 year period there are expected to be five customers attaching in year 1, and 1 customer in each of years 6 through 10.



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1 The current process is that when the main is complete and in service, the \$10,000 is transferred

2 from account 115 to account 475, and depreciation commences.

3 FEI understands the proposal put forth in the question in BCUC IR 1.25.1 is that FEI would 4 segregate some portion of the original cost of the main in a "holding account" for later transfer to account 475. The IR suggests that the amount that is determined to be segregated would 5 6 initially be transferred to account 102 from account 115. The segregated amount could be 7 based on number of customers, metres of main, or some other characteristic. For simplicity in 8 this example, FEI has assumed the allocation would be based on customers, such that one-half 9 of the main would be transferred from account 115 to account 475 when the main goes into service and the other half would be transferred to account 102. This is the first place where 10 11 system changes would be required, since the process to transfer a completed main from 12 account 115 to account 475 currently occurs automatically when the main work order is TCo'd 13 (technically complete) in the system.

Subsequent to the completion of the main, and for each year thereafter, an FEI employee would need to manually review all of the mains to check how many attachments came on in the year, compare to the forecast, and manually calculate a proportion that would be transferred to account 475. At the end of the 10 year period any remaining balance would need to be transferred to account 475. In the example above, if customers attached as forecast, \$1,000 would be manually transferred each year from years 6 to 10 from account 102 to account 475. It is unlikely that this process could be automated at all.

Further, FEI foresees complications that would arise when mains are later retired as the cost of the main would be staggered through various years but the data on the main (from the original work order that was raised to complete it) would show a vintage of year one. This change would also require system changes, or may not be possible to implement at all.

FEI does not believe that the proposed accounting changes are an efficient use of resources, and any process that involves significant manual intervention will be more prone to errors. Further, FEI does not see that the proposed process would provide any benefit as compared to FEI's proposal to maintain its existing accounting practices. Under either method, at the end of the 10 year period, all costs are in account 475. The only difference would be a slight delay in when depreciation commences for each segment of pipe.

As there is no improvement in process, no change in the end result of the accounting, and costs
to implement system changes and risks and costs to implement a manual process, the proposal
as stated in the IR should not be pursued.

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- 1 2
- 21.3 Please explain how FEI would keep the Commission informed of the main extension costs for customers connecting in years 6 to 10 in the absence of "system changes."
- 3 4

5 **Response:**

FEI believes there is a misunderstanding regarding its proposal to consider a 10 year term for additions to the main. Regardless of the number of years considered in the MX Test to forecast additions, all of the main costs would be incurred when the main is installed (in year 1). Thus, there is only one addition to capital for the main and there are no "main extension costs for customers connecting in years 6 to 10" that can be tracked and reported on, since all costs are incurred in year 1. Once the main is placed into service the entire length of main forms part of FEI's gas system and resides in rate base.



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1 22.0 Reference: CUSTOMER FORECAST PERIOD

2 3

Exhibit B-1, Section 3.3.1.3, p. 38; Exhibit B-5, CEC IR 1.25.1.3, pp. 56–57

4

Customer forecast period

5 In the response to CEC IR 1.25.1.3, FEI provides an example of a scenario "where the 6 five year planning horizon was used, but a 10 year forecast would have been more 7 appropriate." FEI elaborated that "[t]he CIAC was calculated assuming 30 lots being 8 developed by the customer in the first 5 years. An additional 37 lots were owned by the 9 customer, zoned for residential development by the municipality and expected to be built 10 in 6 to 10 years."

Please explain if the scenario in the response to CEC IR 1.25.1.3 could be
 described as two separate mains extension projects to serve two developments
 or two different phases of the same development.

15 **Response:**

16 The scenario in the response to CEC IR 1.25.1.3 is currently treated in FEI's system extension 17 policies as two separate main extension projects to serve two developments. Moving to a 10 18 year forecast period would effectively treat this scenario as two different phases of the same 19 development.

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- 22.1.1 Please confirm, or explain otherwise, that even if the area had been zoned for residential development by the municipality, poor economic conditions during the first five years, could adversely affect the timing of the development of the additional 37 lots.
- 26 27

28 **Response:**

Poor economic conditions, such as those experienced following the global financial crisis of 2008, could temporarily delay any attachments regardless of the customer forecast period. Nevertheless, attachments do materialize over time as shown by the variance in Table 5-3 of the Application that shows that the forecast to actual variance was only 7 percent between 2008 and 2014. In fact, as shown in the response to BCUC IR 2.4.1, the MX report attachment variance methodology required by the Commission overstates the variance, and the actual variance is only 3 percent. FORTIS BC^{**}

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On page 38 of the Application, FEI states "The EES [EES Consulting Ltd.] survey found that utilities in Saskatchewan and Ontario currently use a 10 year customer forecast window for all projects."

8 22.2 Please explain if the system extension projects for utilities in Saskatchewan and
 9 Ontario generally contain a plan to build a single development over a 10 year
 10 timeframe, or several development plans which in total span 10 years.

12 **Response:**

- 13 The Company does not have access to the level of detail requested.
- 14 In their respective system extension tests, the utilities in Ontario and Saskatchewan forecast
- 15 customer revenue over 10 years. Whether or not the utilities treat system extension projects
- 16 singularly or separately is not relevant to the forecast revenue.



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1 23.0 Reference: CUSTOMER FORECAST PERIOD 2 Exhibit B-3, BCUC IR 1.24.7, pp. 107-108 3 Customer forecast period 4 In response to BCUC IR 1.24.7, FEI states: 5 In general, a longer customer addition forecast period would allow the Company 6 to service multi-staged subdivision projects more cost effectively in instances 7 where there is sufficient indication of a build out that will exceed 5 years. If 8 sufficient indication exists, the Company would install one longer main extension 9 in the early stages of a new subdivision development instead of multiple, shorter 10 main extensions over a 10 year period; thus, future road cuts and repairs may be 11 avoided, which could result in a reduction of total capital costs for servicing that 12 subdivision, all else being equal. 13 23.1 Please confirm, or explain otherwise, that the mains extension test using a 5 year 14 forecast could be applied to each of the shorter main extensions to service each 15 stage of a multi-stage subdivision project. 16 17 **Response:**

18 Confirmed, these developments could be serviced. However, the Company has proposed the 19 use of a 10 year forecast because it is beneficial to both existing and new customers.

New customers currently potentially face a disproportionate CIAC that does not factor in the full impact of the costs and benefits of the system extension. Existing customers can lose the benefit of new customers that opt against the use of natural gas due to a prohibitive CIAC. Under the existing five year horizon, the only way to mitigate these immediate negative outcomes for new and existing customers would be for the utility to size the distance of the mains as close as possible to meet only the forecast within that five year period and not further growth beyond.

FEI does still account for growth in capacity requirements beyond the five years to accord with good system planning, but the interaction of the MX Test short attachments horizon with good system planning that suggests the length of main should be confined to the five year horizon is creating unintended negative consequences. A better solution that is in the long term interests of both new and existing customers is to modify the test parameters in the manner FEI is proposing.

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23.2 Please explain the short-term impact to existing ratepayers, of installing one longer main in the early stages for servicing a multi-staged subdivision, coupled with the expected change in CIAC from the developer using a forecast period of 10 years instead of 5 years.

<u>Response</u>:

7 The short and long term impacts to existing ratepayers are expected to be favorable and that is 8 why FEI has proposed the approach as described in the question. For example, over a 10 year 9 horizon, the benefits of projects that otherwise may not have proceeded due to a prohibitive 10 CIAC will be realized, and there may be projects that result in more cost effective system 11 extensions. These favorable impacts are expected to improve over the life of the main.

23.2.1 Please explain the timeframe in which existing ratepayers would be expected to experience the benefits of installing a longer main extension as described above.

19 Response:

- 20 Please refer to the response to BCUC IR 2.23.2.



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1 24.0 Reference: CUSTOMER FORECAST PERIOD

2 3

Exhibit B-3, BCUC IR 1.24.3, p. 105

Forecast Accuracy for a 10 year forecast period

In response to BCUC IR 1.24.3, FEI states that it "will rely on the same type of
information in forecasting customer additions to apply to a MX Test, whether the forecast
period be 5 years or 10 years."

Please explain if and how FEI expects its forecast accuracy of (i) customer
attachments and timing; and (ii) use per customer to change when the same
source of information is used to forecast 10 years out instead of 5 years.

10 11 <u>Response:</u>

FEI expects the following outcomes related to forecasting accuracy in the instances where a 10 year forecast will be utilized:

- The customer attachment accuracy will improve as the incremental customers in years 6 to 10 will be accounted for.
- Use per customer accuracy is not an issue, as the consumption used in the MX Test has always been a credit commensurate with the average usage of existing customers and is not intended to represent a forecast of future use. The fact that the MX Reporting is currently equating the original input with a forecast, and then using a variance from it (an "apples to oranges" variance) to assess FEI's performance is of significant concern to FEI and informs the Company's proposals relating to reporting.²⁰
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The proposal to use a 10 year forecast is consistent with the Guidelines which suggest that Utilities are expected to use a time period long enough to consider the full impact of the system extension.

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- 2924.2Please explain if and how FEI would produce a best estimate forecast, at30reasonable cost, for use per customer for customers forecasted to attach 6-1031years into the future.
- 32

²⁰ Refer to BCUC IR 2.18.3 for further discussion.



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1 Response:

The consumption in the MX Test is not a forecast of what customers on the extension will consume. It reflects average use per customer, per appliance, on the system as a credit to ensure fairness with existing customers rather than a forecast of consumption on the extension. FEI has proposed to continue to use the data from the REUS for all MX Tests, including those where a 10 year forecast is warranted. Please refer to the responses to BCUC IRs 1.35.1 and 2.18.3 for further discussion on the reasons why the data from the REUS continues to be appropriate.



1 F. SLIDING SCALE OVERHEAD RATE

2	25.0	Refere	ence: RECOMMENDATIONS
3			Exhibit B-3, BCUC IR 1.26.2, 1.27.2
4			Sliding scale overhead rate
5 6 7 8		25.1	Please provide the best fit curve and standard error of the estimate for the 2010 through 2014 data by year, and for the combined 2010 through 2014 data. Also include fully functional electronic spreadsheets showing the calculations.
9	Respo	onse:	

10 FEI believes the best fit curve described in section 4.1.3 of the Application remains the best fit 11 for each of the individual years 2010 through 2014 and for the combined years 2010 to 2014. 12 The sliding scale curve is not meant to be a precise fit to the actual data, but rather an 13 approximation of the overhead a main extension will incur. Refer to the fully functioning 14 electronic spreadsheet, provided in Attachment 25.1, which shows that in each of the individual years and in the combined years (2010 to 2014) the sliding scale continues to fairly represent 15 16 the actual data yet remains conservative by calculating an overhead rate that, in most cases, 17 tends to be higher than the actual data shows.

Given that the sliding scale curve is a best fit for all individual years and for the combined years analyzed, FEI believes that recalculating the sliding scale overhead formula each year would not yield a more accurate curve for the sliding scale overhead formula. FEI considers it appropriate to review the curve periodically (when the main extension test is reviewed as a whole) to ensure the curve remains a fair representation of actual overheads incurred.

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In BCUC IR 1.27.2, FEI states: "FEI does not plan on updating the sliding scale formula on an annual basis. FEI will apply the formula as set out in section 4.1.3 of the Application."

- 3025.2Given that the MX test parameters are updated annually, please explain why the
sliding scale formula is not being updated on an annual basis.
- 33 **Response:**

34 Please refer to the response to BCUC IR 2.25.1.

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1 G. SERVICE LINE COST ALLOWANCE

2 26.0 Reference: RECOMMENDATIONS

Exhibit B-1, Application, Section 4.2.2, p. 62; FEI 2014–2019 Multi-Year Performance Based Ratemaking Plan (PBR), p. 231

SLCA analysis

6 On page 62 of the Application, FEI states: "68.3 GJ is a scenario representing the 7 normalized average annual consumption of residential customers that connected to 8 FEI's system between 2008 and 2014."

9 On page 231 of the PBR, FEI states:

10Using three years of unit costs produces a larger and more representative11sample size for unit costing versus relying solely on main jobs from the12most recent year (2012). The three year average includes a broader13selection of geographical areas, different lengths of main, variations in14workforce and the other variables that impact variability in mains unit15costs.

- 1626.1Please provide the normalized average annual consumption of residential17customers that connected to FEI's and FEVI's systems from 2012-2014 by18company and year.
- 19

20 Response:

21 The requested data is provided below.

Normalized Average Residential Annual Consumption based On Customer Connection Year (GJ's)		
	FEI	FEVI
2012	81.1	36.2
2013	71.2	33.8
2014	70.7	29.4

22

The Company does not believe that the SLCA value should be derived from only the most recent few years of consumption data available (e.g. 2012-2014) because the data set is incomplete. The Company expects all values in the table above to change over time as additional years of consumption data are added. For instance, 2014 reflects only one year's worth of data and therefore does not represent an average as suggested in the information request.



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Instead, the average consumption value should be determined using a long enough time frame to include a sufficient mix of consumption data over different dwelling types, regions and individual customer usage patterns. The Company believes the 2008 to 2014 period provides a reasonable representation to be used in the derivation of the SLCA.

- 5 6 7 8 26.1.1 Please update the SLCA Analysis in Appendix D of the Application to 9 reflect the three year average main cost per customer for 2012 to 2014 and the normalized average annual consumption of residential 10 11 customers that connected to FEI's and FEVI's systems from 2012 to 12 2014. Also provide the average main cost per customer for 2012 13 to2014. 14
- 15 **Response:**

16 The Company has updated the SLCA analysis based on the 2012 to 2014 average main cost

17 and the 2012 to 2014 average consumption of new customers using the same methodology

18 discussed in Section 4.2 of the Application. The re-calculated SLCA amount is \$1,983 for a

19 single family dwelling and \$3,966 for a duplex.

	FEI 2015
2012-2014 average annual consumption (GJ)	65.6 GJ
2012-2014 average main cost	\$728
Target service line cost	\$1,462
Average service line cost	\$2,125
Maximum Allowance	\$1,983
% of Customers > Maximum	36%

20

21 The average main cost for 2012 to 2014 is provided below.

Year	Average Main Cost
2014	\$745
2013	\$725
2012	\$711



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1 As discussed in the response to BCUC IR 2.26.1, the Company does not believe data from only

2 2012 to 2014 should be used to determine the SLCA; therefore \$1,983 would be an inappropriate value to adopt.

The Company believes that the 2008 to 2014 normalized average consumption of 68.3 GJs included in the Application should be used as it provides a reasonable representation of a new customer's consumption and captures a sufficient mix of dwelling types and regional consumption variations. In future years when the SLCA is updated, the Company is proposing to use 7 years of consumption data. For example, for the 2017 SLCA analysis, the Company would use consumption from 2009 to 2015.



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1 H. REPORTING METHODOLOGY – ANNUAL REPORTING

2 27.0 Reference: APPROVAL	S SOUGHT
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3 4

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Exhibit B-3, BCUC 1.27.3, 1.32.1, 1.32.2, 1.32.3, 1.32.4, 1.32.7.1, 1.32.14, 1.32.17

Reporting

6 In response to BCUC IR 1.32.1 where the BCUC asked to provide a sample report, FEI 7 provides a spreadsheet and states the following: "Reporting on the forecast aggregate PI 8 will allow the Commission to review whether the MX Test was applied as approved and 9 to determine if the aggregate PI thresholds need to be adjusted on a go forward basis in 10 order to achieve the aggregate PI of 1.1."

- Please confirm, otherwise explain, that FEI plans to not only provide a spreadsheet but also provide a discussion based on the results. If confirmed, please describe what FEI proposes to include in that discussion and why.
- 14

15 **Response:**

16 Confirmed. FEI is proposing to provide discussion related to the purpose of annual reporting

17 which is to confirm that the Company has complied with the application of the MX Test.

18 Consistent with the spirit of the Core Review, FEI is proposing to provide the following brief

19 discussion:

20 Forecast PI

- Confirmation that the forecast individual and aggregate PI thresholds of 0.8 and 1.1 respectively were met in the given year
- 23 Main Extension Test Parameter Update
- Confirmation that the methodology to develop the parameters used in the MX Test are those approved by the Commission
- 26 <u>Main Extension Installation Activity</u>
- Qualitative discussion on the use of the 10 year forecast including:
- 28 o The prevalence of the number of instances, the actual costs and CIAC where a
 29 10 year forecast was warranted
- 30 The types of main extension projects where a 10 year forecast was warranted



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- 1 <u>System Extension Fund</u>
 - Qualitative discussion on the use of the SEF
 - The prevalence of the number of instances and the actual value of SEF funds accessed by customers
- 5 Service Line and Meter Installation Activity
- Confirmation that the Company used the SLCA as approved by the Commission
- 7
 8
 9
 10 27.2 Please explain under what conditions FEI would propose to adjust the aggregate PI threshold and under what conditions FEI would accept the Commission adjusting FEI's aggregate PI threshold.
 13
 14 **Response:**

FEI is not proposing specific conditions for when a PI should be changed, nor any annual reporting regarding adjustment of the PI. In FEI's view, it is not appropriate to simply look at changing the PI as a solution. Rather, the PI is one component of the suite of System Extension parameters that are reviewed as part of a System Extension Application. Further, from a rate design perspective, FEI believes that stability is an important consideration of system extension policy. Since the PI thresholds are the cornerstones of the Test, it follows that they should be stable for customers over a time frame longer than one year.

As discussed in the response to BCUC IR 1.38.1, at the next point in time that FEI submits a System Extension Application, one of the factors that it will take into consideration is the Rate Impact Analysis. If the Rate Impact Analysis indicates that changes should be made to system extension policy to rebalance the interests of new and existing customers, one solution could be a change to the PI. However there may be many other solutions such as those proposed in this application relating to overheads, attachment timeline (5-10 years) and test DCF timeframe (40 years).

For example, in the current Application, the Rate Impact analysis indicated that customer rates have gone down as a result of capital growth between 2008 and 2014. The Company has therefore proposed a number of changes designed to rebalance the interests of new and existing customers. In the future, if the Rate Impact analysis continued to show that incremental revenue was greater than the costs, one of the options to rebalance the interests of customers would be to lower the PI thresholds. However there may be other changes that could result in better outcomes than a change to the PI.



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27.3 Please explain under what conditions FEI would propose to change the individual
 PI threshold and under what conditions FEI would accept the Commission
 adjusting FEI's individual PI threshold.

6 **Response:**

- 7 Please refer to the response to BCUC IR 2.27.2.
- Please discuss if there should be an automatic adjustment mechanism for the
 individual PI threshold and/or the aggregate PI threshold. If so, how should it
 work? If not, why not?
- 14

8 9

15 **Response:**

No, there should not be an automatic adjustment mechanism to the PI. The appropriateness of using a PI in general and a specific PI threshold are considerations that should be reviewed at the time of a System Extension Application. Once the terms of the System Extension Application are approved, FEI should implement the test and mechanisms until such time as it makes an application for a new set of System Extension parameters. As FEI notes in response to BCUC IR 2.27.2, it is not appropriate to look at the PI in isolation as it is but one component of the interrelated System Extension parameters.

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26 27.5 Please explain and justify why FEI does not propose to include any estimates in 27 its annual reporting, whether or not they in aggregate or more granular.

29 **Response:**

FEI is unsure what estimates the Commission is referring to in the question. FEI notes that the existing reporting mechanism has faced challenges in that estimates (forecast attachments and consumption) are treated by the Commission as reflective of "actual" long term impact of customer additions, when future consumption and attachments are unknown. As such, FEI believes it more appropriate to report on its customer addition activity as noted in the response to BCUC IR 1.32.1. Refer also to the response to BCUC IR 1.32.7.1 for a discussion of the reasons why reporting on any additional forecast data would not be appropriate.



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- 2 In response to BCUC IR 1.32.2 where the Commission asked for the number of hours spent and the cost of preparing each MX Report from 2008 through 2015, FEI explains: 3
- 4 The current annual MX reporting consists of 175 individual data tables and takes 5 one highly specialized employee approximately 3 months to complete, assuming a 5 day work week and 100% of the workload is dedicated to the annual MX 6 7 Report. In addition, the Company must draw upon internal resources across the 8 organization to produce the current MX Report, including assistance from the 9 Forecasting, GIS-Mapping, Information Systems, Operations, Sales, Marketing 10 and Regulatory departments.
- 11 In total, the Company estimates the preparation of the current format of the MX 12 Report, excluding extraneous activities as requested, requires approximately 500 13 labor hours, costing approximately \$100,000 annually to produce.
- 14 In response to BCUC IR 1.27.3, for 2014 FEI lists \$20.599 million in actual main 15 additions, \$26.924 million in actual service additions, and \$10.339 million in actual meter additions. 16
- 17 Please provide the actual number of hours spent and the actual costs of 27.6 18 preparing each of the 2008, 2009, 2010, 2011, 2012, 2013 and 2014 MX 19 Reports.
- 20

21 Response:

22 An approximation of the number of hours and costs is provided below for each of the annual MX 23 Reports from 2008 to 2014. The Commission's reporting requirements have increased 24 substantially since the 2008 MX Report resulting in an increase in time and resource 25 requirements. Refer to Appendix D of the 2014 MX Report for detailed correspondence relating 26 to the Commission's reporting requirements.

Report	Estimated Hours	Estimated Costs	Number of Pages	Reporting Structure/Requirements Changed by BCUC
2008 MX Report	50	\$10,000	17	-
2009 MX Report	150	\$30,000	31	Yes
2010 MX Report	150	\$30,000	35	Yes
2011 MX Report	450	\$90,000	87	Yes
2012 MX Report*	500	\$100,000	110	Yes
2013 MX Report	500	\$100,000	126	No
2014 MX Report	500	\$100,000	127	No

*Does not include EES Review of System Extension Policies.

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27.7 Please confirm, otherwise explain, \$100,000 and 500 hours equates to \$200/hr. If confirmed, please explain and justify using a cost estimate of \$200/hr.

7 <u>Response:</u>

8 \$200 is an estimated loaded and blended hourly cost for all employees involved in producing 9 the annual main extension report and includes an estimated cost for unpaid overtime hours. It 10 also includes costs for external IT resources that have a relatively high hourly rate that are 11 necessary to extract and compile data from across multiple systems within the Company.

12 Refer to the response to BCUC IR 1.32.2 for a breakdown of the cost and hours involved in 13 producing the annual main extension report.

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17 27.8 Please confirm, otherwise explain, that cost of the 2014 annual report would be 18 approximately 0.0017% of annual main, service and meter additions in 2014, if 19 assumes report costs \$100.000 to prepare one the (i.e. 20 100,000/(20,599,000+26,924,000+10,339,000)).

22 Response:

23 Not confirmed.

The 2014 annual MX Report would be approximately 0.17% of annual main, service and meter additions. The 0.0017% provided in the question was not converted to a percentage. In reality 0.17% represents the minimum percentage since the MX Report provides data for a sample of all mains extensions and their related services installed in each year and therefore the denominator could be smaller and the percentage larger if the calculation was revised to include only the sample of main extension costs included in the MX Report.

As a comparison, in the Company's response to BCUC IR 1.23.1 of the Annual Review for 2015 Rates, the Company states that the actual 2012-2013 FEU RRA cost was approximately $1,561,000^{21}$ relating to a Net Plant in Service, Mid-Year amount of $3,467,576,000^{22}$. This equates to 0.05% for an application that set customers' rates for <u>two</u> years and included as a component an oral public hearing. Therefore the current annual main extension report is

²¹ FEI Response to BCUC IR 1.23.1 - Application for approval of 2015 Delivery Rates, page 87.

²² Section 11, Page 83 - Schedule 17 Utility Rate Base for the Year Ending December 31, 2015, Line 17 2014 APPROVED (2).



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1 approximately 3.8²³ times more costly to produce per capital dollar than the RRA application, or

2 7.6 times more costly if considered on an annual basis.

The Company believes that the appropriate way to assess reporting/compliance costs is in relation to the overall necessity and usefulness of the report and whether it serves its intended purpose rather than by quantifying it in terms of a specific value, as introduced above. The Company believes that the costs to produce the report are dis-proportionate to the intended purpose of compliance reporting.

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9 10

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- 11 In response to BCUC IR 1.32.3 FEI provides the costs of this Application.
- 12 27.9 If not already included in the Application costs, please provide and breakdown
 13 the project development costs. Please describe what is included in each category
 14 of the breakdown.

16 **Response:**

17 There is no reference to "project development costs" in the response to BCUC IR 1.32.3.
18 However, FEI can confirm that it does not track the time spent by its employees in the regulatory
19 or other departments in developing regulatory applications and as such, does not have an
20 amount for the costs of developing its proposals in this Application.

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24 27.10 Please breakdown the Application costs into consulting fees, legal fees,
25 intervener funding, participant funding, workshop costs, Commission costs,
26 miscellaneous facilities, stationary and supplies. Please describe what is
27 included in each category of the breakdown.

28

29 Response:

30 The requested breakdown of the \$325 thousand forecast application costs is provided below.

 $^{^{23}}$ \$100,000 / \$57,862,000 = \$0.0017 and \$1,561,000/\$3,467,576,000 = \$0.00045. Therefore, \$0.0017/\$0.00045 = 3.7.



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			Category
Consulting Costs		144,50	20
Legal Fees		57,00	20
Intervener and Participant Funding Costs		50,00	20
Commission Costs		60,00	20
Miscellaneous Costs		13,50	20

325,000

\$

1 2 TOTAL

This information was provided in response to BCUC IR 1.22.1 in FEI's Annual Review for 2016 Rates, where approval of these costs has been requested. These are the same categories of costs that FEI incurs in the majority of its regulatory applications. The Consulting Costs are for EES Consulting; the legal fees are for external legal review of the application and information request responses, and preparation of submissions; Intervener and Participant Funding Costs include PACA costs and Commission costs that have been estimated based on processes of a similar scope; Miscellaneous Costs includes publications costs and courier expenses.

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- 11
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- 14 In response to BCUC IR 1.32.4 FEI estimates the Rate Impact analysis would cost 15 approximately \$15,000 and take about 75 hours to prepare.
- 27.11 Please confirm, otherwise explain, that \$15,000 and 75 hours equates to
 approximately \$200/hr. If confirmed, please explain and justify using a cost
 estimate of approximately \$200/hr.
- 19

20 Response:

Confirmed. Please refer to the response to BCUC IR 2.27.7 for an explanation as to why that is the correct value to use.

- 23
- 24
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- 26 27.12 Please provide the cost FEI paid EES to provide the Rate Impact analysis report
 27 for this Application. If this is different than the \$15,000 FEI estimates for future
 28 Rate Impact analyses, please explain why.
- 29



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1 Response:

Please refer to the response to BCUC IR 2.27.10 for EES costs. EES' work on the Rate Impact Analysis was just one component of the work they did on this matter. FEI has used EES to provide expertise in preparing for and attending its workshops with stakeholders, as well as providing input for the Application. EES also prepared a report that outlined the results of a jurisdictional survey and explained their analysis.

With respect to the Rate Impact Analysis, it took time to develop the appropriate approach and model as well as additional time reviewing data sources to ensure the proper sources were being used in the analysis. In addition, different iterations of the analysis were prepared for the workshops and for the Application using different time periods and updated assumptions. EES also had to explain the analysis in its report. Therefore the amount spent on this analysis to date is much more than would be required to update the analysis in future years.

The estimate of \$15,000 is based on having an established model and methodology for gathering the required data. The largest amount of time required for the analysis would include FEI's time to work with the raw data on costs for projects by year and the raw data used in developing the average use on a weighted basis for all of the various rate schedules. It is expected that very little, if any, time would be required from EES now that the model has been constructed, unless the results suggested some changes to the MX Test should be considered in which case FEI might consult with EES on what if anything should be changed.

20

- 21 22
- 23 In response to BCUC IR 1.32.7.1, FEI stated:
- 24 [...] the Core Review's specific recommendation with respect to the requirements 25 for compliance reporting is cited below:
- 26 "... The BCUC should place more responsibility on regulated entities to
 27 report, on an exception basis, deviations from forecasts that could affect
 28 costs and rates, instead of routine reporting."
- The above recommendation made the following two points clear: First, unnecessary or low value information should not be part of the compliance reporting requirements. Second, deviations from forecasts are not part of the routine reporting; rather, they are done "on an exception basis."
- 27.13 Please explain what FEI considers "an exception" for (i) mains extension capital
 cost variance; (ii) use per customer variance; and (iii) number of customer
 attachment variance. Please include figures and calculations in your explanation.



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1 Response:

The annual reporting would normally (i.e. other than years when the Rate Impact analysis was undertaken) report by providing a statement as to whether FEI had complied with the MX Test and its PI parameters. Further reporting would only be required in the event that there was an instance of non-compliance. FEI considers this to be exception based reporting.

With specific regard to the items listed in the question, FEI considers that the information should
be considered in aggregate – looking at exceptions based on the sum total of the data, not
looking for exceptions on a main-by-main basis. The most appropriate way to do this is through
the Rate Impact Analysis which would be updated periodically. Specifically, the analysis
considers the following aggregated actual data:

- 11 1. Capital costs for main extensions, service lines and meters;
- 12 2. Customer attachments; and
- 13 3. Customer usage by rate class.
- 14

FEI is proposing that further inquiries would only be undertaken regarding the parameters of the MX Test if the Rate Impact analysis suggested there is some reason to consider them. FEI thus considers the Rate Impact analysis to be exception based reporting conducted in an efficient manner, consistent with the Core Review recommendations.

- 19
- 20
- 21
- In response to BCUC IR 1.32.14 FEI explains that it uses the random sample to calculate the aggregate PI.
- 24 27.14 Please provide the formula used to determine the random sample based 25 aggregate Pl.
- 26

27 **Response:**

Currently, the Company does not determine the random sample based aggregate PI using a formula. As described in the response to BCUC IR 1.32.14, the Company combines the inputs from each individual MX test in the sample year and then applies those inputs into a single MX test that recalculates the PI for the entire sample in aggregate. This yields a more accurate result since the aggregate PI is actually being calculated using the MX test rather than estimated using an average or weighted average of the individual PIs. The Company has been following this methodology since the 2008 MX Report.


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- 1 The Company has provided a simple diagram to illustrate this process assuming there were
- 2 only two individual main extensions from the 2011 sample year. The attachments and costs are
- 3 added together and the consumption by rate group is averaged for each year. These inputs are
- 4 then entered into a single MX test with the same annual parameters as the original MX tests for
- 5 that sample year and an aggregate PI is calculated.
- 6 In practice, this same process is followed with a much larger number of mains in the sample.





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2 Response:

Confirmed. FEI is proposing to include the entire population of main extensions for each year
and calculate the aggregate forecasted PI based on the methodology described in the response
to BCUC IR 2.27.14. FEI believes this will provides the most accurate PI value.

10 In response to BCUC IR 1.32.17 FEI provides the cost of the five most costly main 11 extensions in 2008 to 2014 taken from the Rate Impact Study.

27.16 Please reproduce this table adding actual and forecast service and meter costs to the main costs.

Response:

16 The data is provided below as requested.

Year	Main Cost	Act and	tual Service d Meter Cost	F a	orecast Service nd Meter Cost
2008	\$ 1,862,680	\$	67,608	\$	196,515
2008	\$ 342,460	\$	182,818	\$	197,280
2008	\$ 294,388	\$	20,531	\$	18,887
2008	\$ 266,841	\$	15,265	\$	82,662
2008	\$ 210,421	\$	72,802	\$	36,329
2009	\$ 232,703	\$	6,938	\$	42,764
2009	\$ 104,818	\$	30,776	\$	103,235
2009	\$ 103,212	\$	65,735	\$	103,235
2009	\$ 101,429	\$	6,733	\$	94,710
2009	\$ 96,276	\$	69,279	\$	60,768
2010	\$ 110,083	\$	50,096	\$	83,785
2010	\$ 92,511	\$	2,967	\$	3,974
2010	\$ 85,907	\$	62,354	\$	89,010
2010	\$ 82,883	\$	13,660	\$	26,202
2010	\$ 72,910	\$	3,551	\$	47,745



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Year	Main Cost	Ac and	tual Service d Meter Cost	F	orecast Service and Meter Cost
2011	\$ 250,121	\$	5,772	\$	11,684
2011	\$ 163,391	\$	161	\$	26,862
2011	\$ 157,638	\$	38,440	\$	36,329
2011	\$ 124,139	\$	30,271	\$	28,609
2011	\$ 77,867	\$	18,697	\$	5,026
2012	\$ 289,737	\$	14,784	\$	16,353
2012	\$ 132,915	\$	7,855	\$	14,581
2012	\$ 91,846	\$	21,564	\$	43,008
2012	\$ 78,309	\$	19,277	\$	70,544
2012	\$ 68,206	\$	-	\$	192,870
2013	\$ 274,142	\$	29,829	\$	105,096
2013	\$ 177,812	\$	20,496	\$	47,557
2013	\$ 149,733	\$	8,115	\$	123,066
2013	\$ 134,003	\$	61,059	\$	92,532
2013	\$ 132,797	\$	-	\$	32,093
2014	\$ 564,483	\$	-	\$	36,436
2014	\$ 164,241	\$	4,137	\$	69,772
2014	\$ 108,314	\$	21,936	\$	44,616
2014	\$ 98,934	\$	63,806	\$	150,793
2014	\$ 82,774	\$	31,217	\$	61,856

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27.17 Please confirm, otherwise explain, that FEI would consider the five most costly main extensions, including the service and meter costs, to be material extensions as compared to other extensions. If confirmed, why? If not confirmed, why not?

9 Response:

10 The five most costly main extensions would certainly be larger than the typical extension, 11 considering that the average extension is only \$11,600 and 97% of extensions are below 12 \$50,000. However, even the largest main extensions are not very large even relative to the 13 smallest CPCN applications. For example, the average cost of the top 5 mains between 2008



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- 1 and 2014 was only \$211,000. FEI routinely undertakes capital expenditures of greater amounts
- 2 not associated with main extensions with little or no expost reporting at all. For example, FEI's
- PBR Application identified a number of transmission and distribution projects that each exceed 3
- 4 \$1 million in value²⁴. FEVI's 2014 RRA²⁵ similarly lists a number of projects that are in excess of
- 5 \$400 thousand.

6 FEI does not consider the five most costly main extensions to be material extensions compared 7 to its rate base nor its annual revenue requirements.

- 8
- 9
- 10
- 11
- 12
- 27.18 Please fill in the following table in as-spent dollars for residential and commercial customers:

	2008	2009	2010	2011	2012	2013	2014
1. Actual total main costs							
2. Actual total service line costs (including meter and regulator for new non-infill customers)							
3. Actual number of new mains							
4. Actual number of new service lines (new non- infill customers)							
5. Actual new consumption of non-infill customers							

13

14 **Response:**

15 The Company is assuming that by "non-infill" customers, the Commission is referring to those

16 customers who have connected to a main and that were part of the forecast attachments for that

17 main in the MX Test. Following the same logic, an "infill" customer would be a customer who

- 18 connected to a main and who was not part of the original attachment forecast for that main in
- 19 the MX Test.

 ²⁴ Pages 221 through 226.
 ²⁵ Pages 67 to 69.



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1 The Company is not able to provide a breakdown of total service line costs, customers and 2 consumption by in-fill and non-infill customers as there is currently no internal mechanism to

3 identify the approximately 75,000 new service lines that have connected since 2008 as either

4 infill or non-infill.

5 In general, there is no need for such a mechanism. For example, a residential customer 6 connecting to a new main extension in year 4 who was part of the original attachment forecast is 7 identical to a residential customer connecting in year 4 to the same main extension who was not 8 part of the original forecast in that they both would have similar costs to connect, pay the same 9 rates, contribute to the revenues over the life of the main extension and would both be 10 considered in any final analysis of the economic performance of the main extension.

- 11
- 12
- 13
- 14 15

16

27.19 Please fill in the following in forecast year dollars for residential and commercial customers:

	2015	2016	2017	2018	2019	2020
Forecast new main costs						
Forecast new service line costs (for new non-infill customers, including meter, regulator etc.)						
Forecast number of new mains						
Forecast number of new service lines (new non- infill customers)						
Total expected new consumption (new non-infill customers)						

17

18

19 Response:

- 20 Please refer to the response to BCUC IR 2.27.18.
- 21
- 22
- 22



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1	
2	27.20 Using the data provided in the first table please perform linear regression on row
3	1 (actual total main costs for 2008 to 2014) and extrapolate for years 2015, 2016,
4	2017, 2018, 2019 and 2020. Please repeat for rows 2, 3, 4 and 5.
5	
6	Response:
7	Please refer to the response to BCUC IR 2.27.18.
8	
9	
10	
11	27.21 Could FEI devise a reporting methodology using the information provided in the
12	tables and/or the information filed in response to the previous question? If so,
13	what would it be? If not, why not?
14	
15	Response:
16 17	No; this reporting is not reasonable. The cost and effort to produce the information given the relative value is not efficient from a regulatory perspective. EEI's proposed reporting which

relative value is not reasonable. The cost and enort to produce the mormation given the relative value is not efficient from a regulatory perspective. FEI's proposed reporting which focuses on an annual report showing compliance with the MX Test, should be preferred. The tables provided in BCUC IRs 2.27.18 and 2.27.19 appear to be a comparison of actual to forecast main extensions by year, segregated by infill vs. non infill customers, which is not a meaningful comparison. In addition to annual compliance reporting, FEI has proposed its Rate Impact analysis as a means to consider the impact to existing customers of adding new customers over time.



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1	28.0	Refere	ence:	CUSTOMER FORECAST PERIOD
2				Exhibit B-1, Section 4.1.2, pp. 54–55;
3				Exhibit B-3, BCUC IR 1.24.2, p. 104; Exhibit B-5, CEC IR 1.40.5, p. 96
4				Reporting Methodology for a 10 year forecast period
5 6 7		On pa additio custon	ge 55 c onal sun ner addi	of the Application, FEI recommends including, in its annual MX reporting, nmary information regarding the main extensions that rely on a 10 year tion forecast.
8 9 10 11		In resp 785 m In resp would	oonse to ain exte oonse to fall in th	BCUC IR 1.24.2, FEI "estimates that a small percentage of the average of ensions installed each year would warrant the use of the 10 year forecast." to CEC IR 1.40.5, FEI "estimates less than 1 percent of main extensions are 10 year category."
12 13 14		28.1	For the discuse extens	e less than 1 percent of an average of 785 yearly main extensions, please s the feasibility of FEI reporting the following information for <u>each</u> main ion that used a 10-year customer addition forecast period:
15 16			•	The forecast total capital cost using the 10 year forecast period along with the forecasted dollar value of the associated CIAC;
17 18 19			•	The forecast total capital cost to serve the same customers if a single 10- year forecast period was not used, along with the dollar value of the associated CIAC;
20			•	The forecast reduction in total capital cost if the 10-year period was used;
21			•	The actual total capital cost for the installed mains;
22			•	The actual CIAC for the installed mains; and
23 24 25 26			•	Explanations of how the five types of data, listed on page 55 of the Application, was used to determine that a 10-year customer addition forecast period was more appropriate than a 5-year customer addition forecast period.
27 28	<u>Respo</u>	onse:		

Although FEI could feasibly provide the information requested, the Company does not believe that this is necessary. The Company believes that its reporting proposal already meets or exceeds what is required for routine compliance reporting. For example, utilities in Ontario have been using a 10 year forecast for all their main extensions without providing compliance reporting specific to the forecast term.

34



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1		
2	28.2	If the number of main extensions that use a 10-year customer attachment
3		forecast period makes individual reporting infeasible, please discuss the
4		possibility of reporting (i) a summary of the information requested in the previous
5		question; as well as (ii) individual information for all main extensions with capital
6		costs above a certain dollar amount.
7		
8	Response:	
9	Please refer t	to the response to BCUC IR 2.28.1.
10		
11		
12		
13		28.2.1 What should that dollar amount be?
14		
15	<u>Response:</u>	
16	Please refer t	to the response to BCUC IR 2.28.1.
17		



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1 I. REPORTING METHODOLOGY – RATE IMPACT ANALYSIS

2	29.0	Refere	nce: SYSTEM EXTENSION POLICY REVIEW				
3			Exhibit B-1, Section 5.4.3, p. 79;				
4 5			Exhibit A2-4, BCUC Generic Cost of Capital Proceeding, Exhibit B- 20, BCUC IR 1.108.0, pp. 255–258;				
6 7 8			Exhibit A2-5, FEI and FBC Multi-Year Performance Based Ratemaking Plan for 2014 through 2018 Applications, Exhibit B-26, BCUC IR 2a 17.0, pp. 4–8				
9 10			Use per customer – rate impact and Rate Stabilization Adjustment Mechanism (RSAM)				
11 12	On page 79 of the Application, FEI states "[it] has seen an overall reduction in use per customer for new customers compared to existing customers."						
13 14 15 16		Exhibit that lov among simply	A2-4, page 256 states: "Second, as the information described below indicates wer use per customer is 'the new norm,' there is an issue of equitable treatment customers with any policy designed to deter customer attachments as oppose to making a reasonable CIAC."				
17 18 19 20 21	Resp	29.1 onse:	Please update Figures 1 and 2 in Exhibit A2-4 to include 2011 through 2014 data. Also include a fully functional electronic spreadsheet with updated data and the graphs.				
22	The u	updated	graphs are provided below and a working spreadsheet has been included as				

23 Attachment 29.1.



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FEVI Consumption per Customer ■ FEVI Residential Customer Base as of 2011 EFEVI Residential Customers 2011-2014 12% 10% 8% 6% 4% 2% 0% 165 More GJ/Year



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In Exhibit A2-5 FEI states:

- 2 FEI confirms that the RSAM would capture delivery charge revenue differences 3 between the delivery charge revenues from the average UPC used to set rates 4 and the delivery charge revenues of low UPC customers.
- 5 ... Subject to the observation that the calculations presented in the table in the 6 question are approximations FEI agrees that amounts of \$4.3 million and \$9.6 7 million are directionally reasonable for the first and fifth years respectively.
- 8 29.2 Declining annual use rates from residential customers impact the RSAM and 9 increase rates for RSAM customers. Please complete the table below for 2008 10 through 2014 to estimate impact of new residential customers having lower use 11 per customer (UPC) rates than existing customers.
- 12
- 13

Rate 1 RSAM Rate Impact

Year	Customer Additions	Approved RSAM UPC (GJ)	Actual UPC (GJ)	Delivery Rate (\$/GJ)	RSAM Rate Impact (\$)	
	A	В	С	D	A x (B-C) x D =E	
2008						

14

15 Response:

16 The requested table is provided below for FEI only, since FEVI did not have an RSAM account

17 for any of the years shown. For clarity, FEI has provided net residential customer additions in

18 Column "A" and provided Actual UPC in Column "C", as well as adding two additional columns

19 to provide the RSAM Rate Impact using Normalized Actual UPC as shown in Column "F".

20 The table shows that, over the period 2008 to 2014, the RSAM Rate Impact from using actual 21 residential UPC, which is the amount used in calculating the RSAM deferral account additions 22 each year, has resulted in higher than forecasted use rates overall during the sample period as 23 shown in Column E, which is primarily due to weather variations. Consequently, the additional

24 UPC has contributed to marginally lower rates for RSAM customers.

25 When adjusting for the effects of weather (Column G), there is a cumulative \$68.6 thousand that 26 is not due to weather; there may be some contribution to this amount from lower use rates of 27 new customers, but FEI cannot state whether this is the case. Regardless, the amount is not 28 large enough to have a rate impact on residential customers. As FEI stated in response to 29 BCUC IR 1.5.1, the forecast use rate each year already incorporates the expectation of new 30 customers consuming less.



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	Customer	Approved	Actual	De	livery Rate	1	RSAM Rate	Normalized Actual UPC	R	SAM Rate
Year	Additions	RSAM UPC (GJ)	UPC (GJ)		(\$/GJ)		Impact (\$)	(GJ)	I	mpact (\$)
	А	В	С		D	A	(B-C) x D = E	F	Аx	(B-F) x D = G
2008	7,959	96.1	106.1	\$	2.783	\$	(221,499)	93.0	\$	68,665
2009	4,822	91.1	100.2	\$	3.101	\$	(136,073)	93.0	\$	(28,411)
2010	6,824	91.7	86.8	\$	3.179	\$	106,298	93.0	\$	(28,202)
2011	4,994	90.3	96.2	\$	3.275	\$	(96,497)	90.0	\$	4,907
2012	4,475	90.8	91.7	\$	3.488	\$	(14,048)	92.0	\$	(18,731)
2013	6,956	89.9	90.3	\$	3.663	\$	(10,192)	89.0	\$	22,932
2014	7,415	90.7	87.3	\$	3.761	\$	94,819	89.0	\$	47,409
Total						\$	(277,191)		\$	68,570

2 Note: Columns B, C and D are from FEI's RSAM Annual Status Reports. Columns A and F are from

3 Appendix A2 of FEI's Annual Review for 2016 Rates.

4



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1	30.0 R	eference:	SYSTEM EXTENSION POLICY REVIEW
2			Exhibit B-3, BCUC IR 1.37.1, BCUC IR 1.37.1 Attachment;
3 4			FEI Multi-Year PBR 2014–2018 Decision (FEI 2014–2018 PBR Decision), p. 122;
5 6 7			Exhibit A2-6, FEI Application for Approval for 2015 Delivery Rates pursuant to the Multi-Year PBR Plan approved for 2014 through 2019, Exhibit B-1-1, p. 84
8			EES Rate Impact analysis-growth
9 10 11 12 13	30	0.1 Please (\$3,65 (174,6 BCUC	e provide the sources of the 2015 With Growth items: rate base 66,399,000), O&M expenses (\$238,093,000), customers (970,399), total GJ 523,400 GJ) and return, depreciation and taxes (\$522,883,000) in the FIR 1.37.1 Attachment.
14	<u>Respons</u>	e:	
15	The figur	es used are	e from FEI's 2014 to 2019 Performance Based Ratemaking Plan - Annual

16 Review for 2015 Delivery Rates, Exhibit B-1-1, Section 11 submitted January 29, 2015.

Figure	Reference
\$3,656,399,000	(Schedule 17, Row 27, column 6) multiplied by 1000
\$238,093,000	(Schedule 11, Row 6, column 3) multiplied by 1000
970,399 customers	Schedule 7, Row 28, column 9 + 10 (for the approximate number of Rate 46 customers)
174,623,400 GJ	(Schedule 7, Row 28, column 2) multiplied by 1000
\$522,883,000	((Schedule 3, Row 34, column 5) + (Schedule 13, Row 5, column 3) + (Schedule 3, Row 32, column 5) + (Schedule 3, Row 25, column 5)) multiplied by 1000

30.2 Please complete the table below showing the 2008 to 2014 Growth and Sustainment/Other capital change; include references for the 2008 and 2014 data. Also include a fully functional electronic spreadsheet showing the calculations.

2008-2014 Actual Growth and Sustainment/Other Capital Change

	2014 Actual (\$)	2008 Actual (\$)	Change (2014- 2008)	Reference
Meters/Regulators			\$16,163,726	



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Services (Company Paid)	\$115,724,533
Mains (Company Paid)	\$61,656,694
SJ and Internal Costs	\$7,228,180
Total Growth	\$200,773,133
Sustainment/Other Capital	
Total Capital	

2 Response:

3 FEI is unable to complete the table as requested. The column "Change (2014-2008)" is the total 4 additions to each of the categories shown for new customers, as provided in the EES Rate 5 Impact report. It is not the change in the amount of total growth and sustainment capital 6 between 2014 and 2018. The change in the amount of total growth and sustainment capital 7 between those two years is made up of additions, retirements, capitalized overheads, transfers 8 and other asset transactions. Thus, completing the table by adding the "2014 Actual (\$)" and 9 the "2008 Actual (\$)" columns with the total growth and sustainment capital for those two time 10 periods will not result in the numbers shown in the "Change (2014-2018)" column.

Instead, FEI provides below a summary by year of the new customer capital amounts that agree
to the \$200,773,133 shown in the Commission-provided table, with the functional electronic
spreadsheet provided in Attachment 30.2. The total agrees to the EES Rate Impact report.

14 There are no sustainment/other capital amounts in that report, so FEI was unable to complete

15 that part of the request.

\$	2008	2009	2010	2011	2012	2013	2014	Total
Meters/Regulators	2,770,790	2,184,905	1,945,538	2,245,354	2,492,027	2,138,851	2,386,262	16,163,726
Services	16,037,431	13,507,618	16,147,545	15,850,142	18,504,416	16,872,996	18,804,385	115,724,533
Mains	18,315,025	8,173,206	6,552,862	7,364,986	7,416,149	6,407,139	7,427,327	61,656,694
SJ	(514,285)	440,216	1,108,671	421,684	2,181,045	1,843,543	1,747,305	7,228,180
Total Growth	36,608,961	24,305,945	25,754,617	25,882,165	30,593,637	27,262,530	30,365,279	200,773,133

17

16

18

- Page 122 of the FEI 2014–2018 PBR Decision states: "Accordingly, the Commission
 Panel approves Growth Terms of 0.5 * (SLAt-1/SLAt-2) for FEI's growth capital and 0.5 *
 (ACt-1/ACt-2) for all other cases."
- 2430.3The approved capital growth term of "0.5 * (SLAt-1/SLAt-2)" is based on the25change in the number of service line additions, while the growth term in the EES



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1Rate Impact Model is based on the change in the number of customers. Please2update the EES Rate Impact Model to use the change in the number of service3line additions for 2008–2014 for growth.

4

5 **Response:**

6 The EES analysis growth in customers is based on a change in total customers over the 2008 – 7 2014 period and is used to determine both the GJs associated with growth and the increase 8 (@50%) in O&M that FEI would experience from that growth. The average use per customer 9 developed for the Rate Impact analysis is calculated on the basis of the number of customers 10 rather than the service line additions. If the analysis was changed to reflect the number of 11 service line additions, the average use would have to be adjusted to reflect GJ per service line 12 rather than GJ per customer and the total GJ associated with growth would remain the same. 13 Therefore, changing from number of customers to service line additions would have no impact 14 on the results of the model.

The Service Line Addition (SLA) growth formula is used to calculate the growth capital required to connect new customers in a year in relation to the number of connections performed in the previous year. The SLA formula has no relationship to the growth in O&M over time so it cannot be used in the EES analysis for purposes of estimating growth in O&M. Further, the Rate Impact analysis provides the actual growth capital over the 2008-2014 and therefore the number of service line additions is not necessary to calculate the growth capital over that time period.

21

22

23

2430.4The capital growth formula in the FEI 2014–2018 PBR Decision includes the25impact of customer growth on Sustainment/Other capital. Please explain why the26EES Rate Impact Model does not include the impact of customer growth on27Sustainment/Other capital.

28

29 Response:

30 The purpose of the EES Rate Impact analysis is to quantify the impacts of near term customer 31 growth on rates. Sustainment/Other capital is not linearly related to customer growth but is 32 required over time. For example, if a new customer is added through a main extension and 33 service line addition then that main and service line would not require sustainment/other capital 34 until such time that either the assets were fully depreciated and needed to be replaced or perhaps a standards change required work on the assets. To be clear, sustainment/other capital 35 36 is not directly related to near term (immediate) customer growth capital and is not an 37 incremental cost linearly related to the addition of customers.



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		·
19		Growth in GJs by Rate Class
18		·
17		functional electronic spreadsheet showing the calculations.
16		growth GJs by rate class; include references for the data. Also include a full
15	30.5	Please complete the table below showing the 2008-2014 breakdown of the
14		
13		
12		
11	No. Please re	er to the response to BCUC IR 2.30.4.
10	<u>Response:</u>	
9		
8		Please explain why or why not?
7		EES Rate Impact Model understate the cost of customer growth
6		million) of 2015 formula capital expenditures (Exhibit A2-6) does the
4 5		and Sustainment/Other capital was 80 percent (\$117.2 million/\$145.7
3		20.4.1 Civen that Crowth conital was 20 percent (\$28.5 million/\$145.7 million
2		
2		
1		

	2008–2014 Customer Additions	2008–2014 Average Use per Customer (GJ)	2008-2014 Growth (GJ)	Reference
Rate 1				
Rate 2				
Tota	I 85,348	134	11,454,018	

2122 <u>Response:</u>

The requeseted infromation has been provided below. The Company has not filed actual weather normalized annual average consumption information for the 2008 to 2014 new customers in any previous proceeding, therefore there are no pre-exisitng references to provide.



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	2008-2014 Customer Additions	2008-2014 Average Use Per Customer (GJ)	2008-2014 Growth (GJ)
Rate 1	75,560	68.3	5,159,204
Rate 2	9,210	356.5	3,283,321
Rate 3	514	3,836.6	1,972,226
Rate 4	3	36.0	108
Rate 5	7	10,979.8	74,311
Rate 6	5	3,696.4	18,482
Rate 7	1	69,753.2	69,753
Rate 22	1	350,000.0	350,000
Rate 23	34	7,227.6	245,738
Rate 25	11	14,721.1	161,932
Rate 27	2	59,471.3	118,943
Total	85,348	134.2	11,454,018

2 Please refer to Attachment 30.5 for the requested fully functional electronic spreadsheet.



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1 31.0 Reference: SYSTEM EXTENSION POLICY REVIEW

2 3

Exhibit B-3, BCUC IR 1.37.1, BCUC IR 1.37.1 Attachment, PBR, p.

229; Exhibit B-1, Application, Section 2.2.1.1, p. 20

4

EES Rate Impact analysis

5 On page 229 of the PBR, FEI states: "...FEI has determined that a more simple and 6 accurate method is to forecast mains activity levels based on the most recent three-year 7 historical average for this type of activity."

- 8 31.1 Please recalculate the EES Rate Impact Analysis, BCUC IR 1.37.1 attachment, 9 for 2014 with and without growth using the 2011–2013 period to determine the 10 growth amount. Also show the calculation of the 2014 multiplier for return, 11 depreciation and taxes.
- 12

13 Response:

The results are shown in the table below. Note that the savings per customer are reduced to 40% of the original savings. This does not imply that the savings are less because a different selection of years is used. What it does reflect is the fact that for every year of growth there are additional savings to existing customers. Thus when 7 years of growth are used there are proportionately greater savings than when 3 years of growth are used. Use of this different time period demonstrates that even over a short time period rates decrease for existing customers as a result of adding customers on the system under the current extension policies.



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Actual data

Forumula driven results based on actual data and general assumptions

	2014 With Growth	2014 Without Growth	2011-2013 Growth Amount
a 2011-13 Meters/Regulators			\$6,838,156
b 2011-13 Services (Company Paid)			\$53,582,972
c 2011-13 Mains (Company Paid)			\$18,870,931
d 2011-2013 SJ and Internal Costs			\$4,446,272
e Rate Base	\$3,632,228,000	\$3,548,489,668	\$83,738,332
f Return, Depreciation, Taxes	\$511,602,000	\$499,966,574	\$11,635,426
<i>g</i> Multiplier for Return, Depreciation, Taxes	13.9%	13.9%	13.9%
h O&M Expenses	\$233,508,000	\$228,713,714	\$4,794,286
<i>i</i> 50% of Customer Growth Rate			2.1%
j Other Revenues/Expenses	-\$3,605,000	-\$3,605,000	\$0
k Offsetting Bypass Revenues	\$28,226,000	\$28,226,000	\$0
I Total Revenue Requirement (exc. Cost of Gas)	\$741,505,000	\$725,075,287	\$16,429,713
<i>m</i> Net Revenue Requirement (exc. Cost of Gas)	\$769,731,000	\$753,301,287	\$16,429,713
<i>n</i> Customers	952,119	913,022	39,097
• Percent Growth in Customers			4.1%
<i>p</i> Average GJ/Cust	192	195	123
q Total GJ	182,857,400	178,029,442	4,827,958
r Cost per GJ (exc. Cost of Gas)	\$4.21	\$4.23	-\$0.02
s Percent Difference			-0.5%
 \$ Difference per Original Customer <i>t</i> (Rate Impact per Customer per Year) 			-\$4.20
u Cumulative Rate Impact			-\$3,998,971
Equivalent Capital Spending with 13.9% V Multiplier			\$28,779,962



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1 32.0 Reference: SYSTEM EXTENSION POLICY REVIEW

2

3

Exhibit B-3, BCUC IR 1.37.2

EES Rate Impact analysis

4 The methodology used in EES Rate Impact analysis model has not been approved and 5 used in other jurisdictions.

6 In BCUC IR 1.37.2, FEI states: "EES Consulting has not specifically done a search for 7 such a model; however, FEI received a copy of a table measuring the rate impact 8 associated with adding new customers from Gaz Metro."

- 9 32.1 Please provide the table from Gaz Metro and discuss the findings.
- 10

11 Response:

12 Please refer to the tables provided below. While FEI has not attempted to interpret the findings

13 relative to total rates for the utility, FEI did observe the factors included in the comparison made

14 by Gaz Metro. The table compares forecast to actual number of customers, gas volumes and

15 costs for the year 2012 for the residential class and for the business class. Lines 36 and 37 on

16 all three pages below provide the annual rate impact of growth over a one year period and a five

17 year period.



FortisBC Energy Inc. (FEI or the Company)	Submission Date:
2015 System Extension Application (the Application)	November 13, 2015
Response to British Columbia Utilities Commission (BCUC or the Commission) Information Request (IR) No. 2	Page 128

COMPARAISON DU PLAN DE DÉVELOPPEMENT - VENTES TOTALES CAUSE 2012 VERSUS RÉEL A PRIORI POUR L'EXERCICE TERMINÉ LE 30 SEPTEMBRE 2012

Société en commandite Gaz Métro Rapport annuel au 30 septembre 2012, R-3831-2012

Description RESERVING: road DEFARCE - Total DEFARCE - Total DEFARCE - Total DEFARCE - Total Description Case 3212 Rel 312 Value 3212 Rel 312 <th< th=""><th></th><th></th><th colspan="3">PETIT ET MOYEN DÉBIT (PMD)</th><th colspan="3">GRAND DÉBIT</th><th colspan="2">TOTAL</th><th></th></th<>			PETIT ET MOYEN DÉBIT (PMD)			GRAND DÉBIT			TOTAL								
Control Cases 312 New 2012	Llane	Description	RÉS	SIDENTIEL - T	otal	A	FEAIRES - Tot	al	TOTAL PMD								
	- 0		Cause 2012	Réel 2012	Variation	Cause 2012	Réel 2012	Variation	Cause 2012	Réel 2012	Variation	Cause 2012	Réel 2012	Variation	Cause 2012	Réel 2012	Variation
Hondra de clients an 1 500 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) <th(1)< th=""> (1) <th(1)< th=""></th(1)<></th(1)<>					(C2-C1)			(C5-C4)			(C8-C7)			(C11-C10)			(C14-C13)
1 Number de clenist an 1 3 002 3 541 4 49 2 200 5 6 5 442 6 449 507 10 10 6 6 952 6 495 513 2 bronche de dents an 2 (unutability) 5 568 6 011 6 025 2 205 444 7 407 7 564 4 50 10 11 2 7 417 7 576 4 50 4 bronche de dents an 6 (unutabil) 5 568 6 011 6 05 2 700 2 446 460 8 415 9 000 664 10 111 1 8 455 9 007 6 601 6 Volumes (10 ^m) an 4 (unutabil) 5 200 11 202 2 707 7 200 7 200 7 200 2 201 10 808 9 11 201 10 4217 10 4217 10 4217 10 4217 10 4217 10 4217 10 4217 10 4217 10 4217 10 4217 10 4217 10 4217 10 4217 10 4217 10 4217 10 4217 10 4217 10 4217 10 4217 10 417 10 417 10 417			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
i Number de clents ¹ an 1 3002 3 44 440 2400 56 5 440 6707 10 16 6 5622 6465 513 3 Norme de clents an 2 (cuncular) 5 618 6 070 6 08 2 3708 2 626 4 40 5 207 5 816 7708 10 11 1 8 207 700 10 11 1 8 207 700 100 11 1 8 207 700 100 11 1 8 207 700 100 11 1 8 207 700 100 11 1 8 207 700 100 11 1 8 207 700 100 11 1 8 207 700 100 100 100 100 8 407 700 7137 770 8 416 8 000 10231 5002 8 801 11707 2 507 750 7420 8 507 11075 2 5021 2 5021 3 5021 3 502 8 801 1038 2 20																	
2 Norther destrist and (cumulant) 4 627 508 411 2.722 2.203 44 7.804 455 10 11 1 2.27 7.876 477 4 Norther destrist and (cumulant) 5.68 6.078 6.078 2.258 440 5.078 7.050 7.05 7.76 477 6.64 5 Norther destrist and (cumulant) 5.678 6.078 6.078 7.768 7.768 7.768 7.768 7.770 7.728 8.267 10.033 8.437 10.217 10.9827 2.6621 7 Volumes (10m) and (10m) 0.811 10.982 3.306 0.477 7.238 7.858 7.758 7.750 7.438 8.530 10.071 2.6211 3.562 2.6621 3.5621 1.648 1.228 2.774 1.238 2.6211 3.5621 3.662 2.6621 3.5621 1.655 2.7762 7.438 8.5521 1.155 3.5621 1.155 3.561 1.1555 3.561 1.1555	1	Nombre de clients ¹ an 1	3 092	3 541	449	2 850	2 908	58	5 942	6 449	507	10	16	6	5 952	6 465	513
3 Norther declars and (unumatr) 5408 6076 6068 21700 2484 40 5307 6015 100 11 1 8217 8228 700 5 Northe declars and (unumatr) 5616 6211 6505 21700 2484 40 5305 6005 644 10 11 1 8425 9077 6655 6 Volumes (Umr) and (unumatr) 5616 6211 1020 3444 6063 7750 7838 82677 10203 84371 9070 10201 34008 20171 10208 84371 9070 10201 111 1 1 6217 9020 10201 10108 20171 10201 20181 10101 10201 20181 101018 20181 101018 20181 101018 20181 101018 20181 101018 20181 101018 20181 101018 20181 101018 20181 101018 20181 101018 20181 101018<	2	Nombre de clients an 2 (cumulatif)	4 627	5 038	411	2 782	2 826	44	7 409	7 864	455	10	12	2	7 419	7 876	457
4 Norther de elerits an 4 (cumulatify homes (16m) and (cumulatify elerits an 4 (cumulatify elerits and (cumulatify) 5 508 5 10 0 511 5 11 0 511 5 1200 0 511 5 200 0 527 5 240 0 585 5 100 0 585 5 100 0 500 5 1200	3	Nombre de clients an 3 (cumulatif)	5 408	6 076	668	2 799	2 839	40	8 207	8 915	708	10	11	1	8 217	8 926	709
5 Normal de clients an 6 (cumulati) 5010 6111 1 6 620 0011 646 000 645 100 111 1 6 620 0011 646 Volumes (10m) an 1 7706 11200 3448 6930 77.860 7856 77.860 7856 77.860 28.889 11203 24021 140.201 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217 164.217	4	Nombre de clients an 4 (cumulatif)	5 596	6 211	615	2 799	2 848	49	8 395	9 059	664	10	11	1	8 405	9 070	665
• Volumes (10m) a 1 (mixel) (10m) a 1 (mixel	5	Nombre de clients an 5 (cumulatif)	5 616	6 211	595	2 799	2 849	50	8 415	9 060	645	10	11	1	8 425	9 071	646
6 Volumes (10°m) and (consulatify) 5216 1100 3444 66830 7789 7858 88869 11233 28621 1100 84120 174410 2277 777 77588 88869 11233 28621 1100 84120 174410 2277 777 77588 88869 11233 28621 34602 46400 1777 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587 77587																	
7 Volumes (10mm) and (cumulatify) 8 216 11 082 2 808 64 420 77 777 77 77 72 83 62 207 10 0243 28 021 44 002 17 441 69 21 10 0243 28 021 36 020 8 041 10 0243 28 021 36 020 8 041 10 0243 28 021 36 022 8 041 10 0243 28 021 36 022 8 041 11 083 12 0202 20 045 10 Numaxiliaximis (00 8) an 0 10 018 11 471 653 17 085 28 000 11 075 28 001 11 075 28 001 11 075 29 002 15 024 10 041 12 02 041 11 045 11 045 11 045 11 045 11 045 11 045 11 045 12 040 12 041 12 041 12 041 12 041 12 041 12 041 12 041 11 045 12 041 11 045 12 041 11 045 12 041 12 041 14 041 12 041 12 041 12 041 12 041 12 041 12 041 12 041 12 041 12 041 12 041 12 041 12 041 12 041 12 041 12 041 12 041 12 04	6	Volumes (10°m³) an 1	7 766	11 200	3 4 3 4	69 830	77 689	7 858	77 596	88 889	11 293	26 621	110 938	84 317	104 217	199 827	95 610
6 Outcomes (10 ^{mm}) and (cumulatify) 9.81 12.860 3.89 64.778 77.249 77.578 72.858 77.87 72.859 77.87 72.859 77.87 72.859 77.87 72.859 77.87 72.859 77.87 72.859 77.87 72.857 77.87 72.857 77.87 72.857 77.87 72.857 77.87 72.857 77.87 72.857 77.87 72.857 77.859 77.87 72.862 33.002 11.177 23.022 33.002 8.981 101.38 12.2292 23.082 11.469 10 biomodelisations (000 \$) an 1 20.83 14.23 17.95 23.050 11.055 33.002 1.574 (11.83) 40.774 77.856 33.002 1.574 (11.83) 40.775 77.856 33.002 1.574 (11.80) 1.430 11.440 11.440 11.440 11.440 11.440 11.440 11.440 11.440 11.440 11.440 11.440 11.440 11.440 11.440 11.440	7	Volumes (10 ^a m ^a) an 2 (cumulatif)	8 216	11 082	2 866	64 420	71 797	7 377	72 636	82 879	10 243	26 621	44 102	17 481	99 257	126 981	27 724
9 Volumes (10mm) and (cumulater) 0.000 13.871 3.802 64.778 7.2589 7.789 7.722 80.400 11.075 20.621 35.002 8.881 101.308 122.022 20.2674 11 Immobilisations (000 \$) an 0 10.018 11.471 563 17.085 28.001 11.005 28.001 11.075 20.621 35.002 8.981 101.388 22.033 40.779 11.466 12 Immobilisations (000 \$) an 1 2.000 11.071 12.25 666 13.73 12.74 (11.23) - - - 3.002 18.74 (11.23) - - - 3.002 18.74 (11.23) - - - 3.002 18.74 (11.23) - - - - 11.000 2.000 - - - - 3.002 18.74 (11.29) 1.466 (11.29) 1.466 (11.29) 1.468 3.007 - - - 1.005 2.000 -	8	Volumes (10 ^a m ^a) an 3 (cumulatif)	9 581	12 980	3 399	64 778	72 349	7 570	74 359	85 329	10 970	26 621	35 602	8 981	100 980	120 931	19 951
10 Universe (10mm) and commutation) UP44 14 ubox 7 / 20 / 1 7 / 80 / 20 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 1 10 / 80 / 10 / 80 / 1 10 / 80 / 10 / 1 10 / 80 / 10 / 1 10 / 80 / 10 / 1 10 / 80 / 10 / 1 10 / 80 / 1 10 / 80 / 1 10 / 80 / 1 10 / 80 / 1 10 / 80 / 1 10 / 80 / 1 10 / 80 / 1 10 / 80 / 1 10 / 80 / 1 10 / 80 / 1 10 / 80 / 1 10 / 80 / 1 10 / 80 / 1 10 / 80 / 1 10 / 80 / 1 10 / 80 / 1 10 / 80 / 1 10 / 80 / 1 10 / 80 / 1 <t< th=""><th>9</th><td>Volumes (10^am^a) an 4 (cumulatif)</td><td>9 909</td><td>13 871</td><td>3 962</td><td>64 778</td><td>72 589</td><td>7 811</td><td>74 688</td><td>86 460</td><td>11 773</td><td>26 621</td><td>35 602</td><td>8 981</td><td>101 308</td><td>122 062</td><td>20 754</td></t<>	9	Volumes (10 ^a m ^a) an 4 (cumulatif)	9 909	13 871	3 962	64 778	72 589	7 811	74 688	86 460	11 773	26 621	35 602	8 981	101 308	122 062	20 754
11 Immobilizations (000 \$) an 0 10 0 18 11 471 653 17 085 28 000 11 005 28 003 30 601 11 555 181 12 18 1038 29 313 40 779 11 486 11 Immobilizations (000 \$) an 1 2000 16 208 (1113) 11 055 16 74 (1123) - - - - 13 18 100 18 16 74 (1123) - - - 13 18 100 18 20 313 1079 11469 (1127) - - - 13 18 100 18 20 313 1079 11469 (1127) - - - 13 18 100 18 300 10 18 300 10 18 300 10 18 300 10 18 300 10 18 300 11 07 12 18 1019 1018 3067 - - - 11067 15 64 3677 2147 22 69 212 - - 11067 15 64 3677 2147 22 67 26 - - 14 643 11077 12 18 1000 1000 1000 1000 <th>10</th> <th>Volumes (10°m²) an 5 (cumulatif)</th> <th>9 944</th> <th>14 060</th> <th>4 116</th> <th>64 778</th> <th>/2 63/</th> <th>7 859</th> <th>/4 /22</th> <th>86.697</th> <th>11975</th> <th>26 621</th> <th>35 602</th> <th>8 981</th> <th>101 343</th> <th>122 299</th> <th>20.956</th>	10	Volumes (10°m²) an 5 (cumulatif)	9 944	14 060	4 116	64 778	/2 63/	7 859	/4 /22	86.697	11975	26 621	35 602	8 981	101 343	122 299	20.956
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La Introdistations (uo.s) a)	11	immobilisations (000 \$) an 0	10.918	114/1	503	1/ 085	28 090	11 005	28 003	39 561	11 558	181	1 218	1 038	29 313	40774	11 400
13 Immobilizations (1003) a) 1/2 13/2 13/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 10/2 <t< th=""><th>12</th><td>Immobilisations (000 \$) an 1</td><td>2 809</td><td>1 628</td><td>(1 181)</td><td>194</td><td>247</td><td>03</td><td>3 002</td><td>18/4</td><td>(1128)</td><td>-</td><td>-</td><td>-</td><td>3 002</td><td>18/4</td><td>(1128)</td></t<>	12	Immobilisations (000 \$) an 1	2 809	1 628	(1 181)	194	247	03	3 002	18/4	(1128)	-	-	-	3 002	18/4	(1128)
Implementations (1003) an 4 35 10 (11) (11) 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 33 20 1 1 10 10 33 20 1 1 1 1 1 10 10 33 20 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	13	Immobilisations (UUU \$) an 2	1 387	900	(428)	125	90	(30)	1 512	1 055	(457)	-	-	-	1 512	1055	(457)
10 Imministrations (000 3) an 4 33 10 (10) - 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 <th100< th=""> <th100< th=""> 100<th>14</th><td>Immobilisations (000 \$) an 3</td><td>334</td><td>110</td><td>(218)</td><td>40</td><td>10</td><td>10</td><td>3/8</td><td>1/0</td><td>(203)</td><td>-</td><td>-</td><td>-</td><td>3/8</td><td>1/0</td><td>(203)</td></th100<></th100<>	14	Immobilisations (000 \$) an 3	334	110	(218)	40	10	10	3/8	1/0	(203)	-	-	-	3/8	1/0	(203)
Immunications (action PRC (000 \$) an 1 3 821 6 209 2 448 8 146 9 355 1 208 11 967 1 5 624 3 657 - - - 1 1967 1 5 624 3 657 - - - 1 1967 1 5 624 3 657 - - - 1 1967 1 5 624 3 657 - - - 1 1967 1 5 624 3 657 - - - 1 1967 1 5 624 3 657 - - - 1 1967 1 5 624 3 657 2 147 2 359 2 12 - - - 1 1080 1 686 638 3 subvention PRC (000 \$) an 5 20 - 22 22 2 4 245 3 999 1 64 - - - 2 45 3 999 1 64 2 subvention PRC (000 \$) an 1 (341) (200) 141 (1 118) (467) (66) (1 222) (312) (400) (4187) 2 27 - - - (1 163) (1 403) (1 65)	10	Immobilisations (000 \$) an 5	30	10	(20)	-	10	10	30	20	(10)	-	-	-	30	20	(10)
Important for the function of the product of the form o	17	(incluant les frais généraux)	v		(0)	-	-	-	v	-	(0)	-	-	-	, v	-	(0)
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19 Subvertion PRC (000 \$) an 2 Subvertion PRC (000 \$) an 3 Subvertion PRC (000 \$) an 3 Subvertion PRC (000 \$) an 4 Subvertion PRC (000 \$) an 4 Subvertion PRC (000 \$) an 4 Subvertion PRC (000 \$) an 5 Subvertion PRC (000 \$) an 6 2 202 (28) 2 22 22 22 2 45 22 2 38 22 2 12 22 - - - - 2 147 2 358 235 2 12 23 23 Subvertion PRC (000 \$) an 5 20 - - 2 22 2 22 2 22 2 245 3 39 114 - - - - - 2 147 2 359 2 12 23 Subvertion PRC (000 \$) an 0 (341) (200) 141 (1118) (1458) (1187) 272 - - - (1468) (1433) (1550) - - (1468) (1433) (1453) (1403) (150) - - (1468) (1433) (1433) (1433) (1433) (1433) (1433) (1433) (1433) (1433) (1433) (1433) (1433) (1433) (1433) (1433) (1433) (1433) (1433) (1433) (1433) (1433) (133) (1433) (1133) (123) (140)	18	Subvention PRC (000 \$) an 1	3 821	6 269	2 448	8 146	9 355	1 208	11 967	15 624	3 657	-	-	-	11 967	15 624	3 657
Do Subvertion PRC (DOD \$) an 3 1 019 1 818 509 1 1 48 37 1 030 1 888 6 338 - - - 1 030 1 888 6 338 21 Subvertion PRC (DOD \$) an 5 26 377 132 - 22 245 399 154 - - 28 399 154 - - 28 399 154 - - 28 18 - 28 28 399 154 - - 28 399 154 - - 28 399 164 - - 28 399 164 - - 28 399 154 - - 28 399 164 - 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 168 <th>19</th> <th>Subvention PRC (000 \$) an 2</th> <th>2 062</th> <th>2 229</th> <th>166</th> <th>85</th> <th>130</th> <th>45</th> <th>2 147</th> <th>2 359</th> <th>212</th> <th>-</th> <th>-</th> <th>-</th> <th>2 147</th> <th>2 359</th> <th>212</th>	19	Subvention PRC (000 \$) an 2	2 062	2 229	166	85	130	45	2 147	2 359	212	-	-	-	2 147	2 359	212
11 Subvertion PRC (000 \$) an 4 245 377 132 - 22 22 245 399 154 - - 245 399 154 22 Subvertion PRC (000 \$) an 5 28 . (26) . (26) . . . 245 399 154 <th>20</th> <th>Subvention PRC (000 \$) an 3</th> <th>1 0 1 9</th> <th>1 618</th> <th>599</th> <th>11</th> <th>48</th> <th>37</th> <th>1 0 3 0</th> <th>1 666</th> <th>636</th> <th>-</th> <th>-</th> <th>-</th> <th>1 030</th> <th>1 666</th> <th>636</th>	20	Subvention PRC (000 \$) an 3	1 0 1 9	1 618	599	11	48	37	1 0 3 0	1 666	636	-	-	-	1 030	1 666	636
22 Subvention PRC (000 \$) an 5 28 - (28) - (28) - (28) - (28) 23 contributions clients ² (000 \$) an 0 (341) (200) 141 (1188) (1458) (1187) 272 - - - (1468) (1187) 272 24 contributions clients (000 \$) an 1 (682) (686) (64) (401) (467) (686) (1187) 272 - - - (1468) (1140) (1100) 25 contributions clients (000 \$) an 1 (682) (29) (141) (110) (467) (86) (40) 13 - - - (122) (312) (90) - - - (63) (40) 13 - - - (63) (40) 13 - - - (63) (40) 13 - - - (63) (40) 15 00 0 5 - - 131 1413 1413 1413 1413 1413 1413 1413 1414 1316<	21	Subvention PRC (000 \$) an 4	245	377	132	-	22	22	245	399	154	-	-	-	245	399	154
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37 Pour les cinq premières années (000 \$) 570 (815) (1185) (21109) (22474) (1385) (2053) (2308) (22550) (3075) (4347) (11272) (23118) (2738) (4317) 38 Taux de rendement interne 10,10% 11,85% 28,35% 21,73% -6,62% 20,03% 18,15% -1,88% >100% >100% 0.0% 20,78% 18,99% -1,79% 39 Point mort tarifaire (années) 7,81 3,47 (4,34) 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 - 1,00 1,0	36	Pour la première année (000 \$)	478	114	(363)	(5.042)	(5.148)	(106)	(4.564)	(5.034)	(470)	(737)	(2 441)	(1704)	(5.168)	(7.475)	(2 307)
38 Taux de rendement interne 10,10% 11,95% 1,85% 28,35% 21,73% -6,62% 20,03% 18,15% -1,88% > 100% 0,0% 20,78% 18,99% -1,79% 39 Point mort tarifaire (années) 7,81 3,47 (4,34) 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 - 1,00 - 1,00 - 1,00 - 1,00 - 1,00 - 1,00 - 1,00 - 1,00 - 1,00 - 1,00 - 1,00 - 1,00 - 1,00 - 1,00 - 1,00 - 1,0	37	Pour les cing premières années (000 \$)	570	(615)	(1 185)	(21 109)	(22 474)	(1.365)	(20,539)	(23 089)	(2.550)	(3.075)	(4.347)	(1272)	(23 119)	(27 438)	(4 317)
38 Taux de rendement interne 10,10% 11,95% 1,85% 29,35% 21,73% -6,62% 20,03% 18,15% -1,88% > 100% > 100% 20,78% 18,99% -1,79% 39 Point mort tarifaire (années) 7,81 3,47 (4,34) 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - </th <th></th> <th></th> <th></th> <th>(0.0)</th> <th>(</th> <th>(21.135)</th> <th></th> <th>()</th> <th>(22 222)</th> <th>,,</th> <th>(2000)</th> <th>(00.0)</th> <th>()</th> <th>()</th> <th></th> <th>,</th> <th>(,</th>				(0.0)	((21.135)		()	(22 222)	,,	(2000)	(00.0)	()	()		,	(,
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39 Point mort tarifaire (années) 7,81 3,47 (4.34) 1,00 1,00 - 1,00 1,00 - 1,00 1,00 - 1,00 1,00																	
	39	Point mort tarifaire (années)	7,81	3,47	(4,34)	1,00	1,00	-	1,00	1,00	-	1,00	1,00	-	1,00	1,00	-

¹ Le nombre de cilents correspond aux nombre de cilents pour lesquels II y a eu des ventes. Ceci comprend les nouveaux cilents, mais aussi les cilents existants pour lesquels un ajout de consommation a été signé. ² Les contributions cilents regroupent les frais de raccordement de 300 \$ ainsi que toutes les autres contributions faites par les cilents.



FortisBC Energy Inc. (FEI or the Company)	Submission Date:
2015 System Extension Application (the Application)	November 13, 2015
Response to British Columbia Utilities Commission (BCUC or the Commission) Information Request (IR) No. 2	Page 129

Société en commandite Gaz Métro Rapport annuel au 30 septembre 2012, R-3831-2012

COMPARAISON DU PLAN DE DÉVELOPPEMENT - NOUVEAUX CLIENTS SEULEMENT CAUSE 2012 VERSUS RÉEL A PRIORI POUR L'EXERCICE TERMINÉ LE 30 SEPTEMBRE 2012

PETIT ET MOYEN DÉBIT (PMD) GRAND DEBIT TOTAL Description **RÉSIDENTIEL - Nouveaux clients** AFFAIRES - Nouveaux clients TOTAL PMD - Nouveaux clients Nouveaux clients Nouveaux clients lan Cause 2012 Réel 2012 Variation Cause 2012 Reel 2012 Variation (C2-C1) (C5-C4) (C8-C7) (C11-C10) (C14-C13) (1) (2)(3) (4)(5) (6) (7)(8) (9) (10)(11) (12) (13)(14)(15) Nombre de clients¹ an 1 2 899 3 308 409 2 077 4 976 5 589 4 978 5 593 615 1 2 281 204 613 2 4 2 Nombre de clients an 2 (cumulatif) 4 4 3 4 4 805 371 2 009 2 199 190 6443 7 004 561 2 3 1 6 445 7 007 562 2 3 Nombre de clients an 3 (cumulatif) 5215 5 843 628 2 0 2 6 2 212 186 7 241 8 055 814 2 2 7 243 8 057 814 -Nombre de clients an 4 (cumulatif) 5 403 5 978 575 2 0 2 6 2 221 195 7 429 8 199 770 2 2 7 431 8 201 770 -4 5 Nombre de clients an 5 (cumulatif 5423 5 978 555 2 0 2 6 2 222 196 7 4 4 9 8 200 751 2 2 -7 451 8 202 751 6 Volumes (10°m²) an 1 7 518 10 999 3 4 8 0 47 615 57 540 9 925 55 133 68 538 13 406 12 400 49 424 37 024 67 533 117 962 50 430 Volumes (10^am^a) an 2 (cumulatif) 7 968 10 880 2912 42 205 51 648 9444 50 173 62 529 12 356 12 400 23 500 11 100 62 573 86 029 23 456 7 Volumes (10^am^a) an 3 (cumulatif) 9 333 12778 3 445 42 562 52 200 9 638 51 895 64 978 13 083 12 400 15 000 2 600 64 295 79 978 15 683 8 Volumes (10³m³) an 4 (cumulatif) 9 662 13,669 4 008 42 562 52 440 9878 52 224 66 110 13,888 12 400 15 000 2 600 64 624 81 110 16 488 Volumes (10³m³) an 5 (cumulatif) 10 9 696 13 858 4 162 42 562 52 489 9 926 52 259 66 347 14 088 12 400 15 000 2 600 64 659 81 347 16 688 11 Immobilisations (000 \$) an 0 10 893 11 457 564 15 792 25 681 9 889 26 685 37 138 10 453 169 1 218 1 049 26 855 38 357 11 502 (1 181) (1 128) Immobilisations (000 \$) an 1 2,809 1.628 194 53 3 002 1.874 3 002 1.874 (1 128) 247 12 -13 Immobilisations (000 \$) an 2 1 387 960 (428)125 95 (30)1 512 1 0 5 5 (457)---1 512 1 0 5 5 (457) Immobilisations (000 \$) an 3 334 116 (218)45 16 379 176 379 (203) 14 61 (203)---176 Immobilisations (000 \$) an 4 35 16 10 10 35 26 (10) 35 26 (10) 15 (20)----Immobilisations (000 \$) an 5 0 0 0 16 (0) -(0) --(0) -. --(incluant les frais généraux) 17 18 Subvention PRC (000 \$) an 1 3 679 6 130 2 4 5 1 6 485 7 557 1 072 10 164 13 687 3 523 10 164 13 687 3 523 -19 Subvention PRC (000 \$) an 2 2 0 6 2 2 2 2 9 166 85 130 45 2 147 2 359 212 --2 147 2 359 212 -Subvention PRC (000 \$) an 3 1019 37 1 0 3 0 1 0 3 0 1 618 599 11 48 1 666 636 1 666 636 -20 --Subvention PRC (000 \$) an 4 245 377 22 154 154 21 132 -22 245 399 ---245 399 Subvention PRC (000 \$) an 5 22 26 (26)-26 (26)---26 (26)contributions clients² (000 \$) an 0 23 (341)(192)149 $(1\ 118)$ (984)134 (1458) $(1\ 176)$ 283 -(1458)(1.176)283 contributions clients (000 \$) an 1 (852) (936) (84) (401) (467) (66) (1 253) (1 403) (150) (1 253) (1 403) (150) 24 ---25 contributions clients (000 \$) an 2 (444) (449) (51) 42 (495) (457) 38 (495) (457) 38 (4) (9) (2) ---(91) (2) contributions clients (000 \$) an 3 (219) (311) (222) (312) (90) -(222) (312) (90) 26 1 -contributions clients (000 \$) an 4 27 (53) (39) 14 (1) (1) (53)(40) 13 ---(53) (40) 13 -28 contributions clients (000 \$) an 5 (6) 6 (0) (0) (6) (0) 5 . (6) (0) 5 -29 Total des investissements (000 \$) an 0 10 552 11 265 713 14 674 24 698 10 023 25 227 35 963 10736 169 1 218 1 049 25 396 37 181 11 785 Total des investissements (000 \$) an 1 1 059 14 158 5 635 1 186 6 278 2 2 4 5 2 2 4 5 30 6 821 7 337 11 913 . 11 913 14 158 2 957 31 Total des investissements (000 \$) an 2 3 005 2740 (266)159 217 58 3 164 2 957 (208)---3 164 (208)Total des investissements (000 \$) an 3 1 1 3 3 1 423 289 54 107 54 1 187 1 530 343 -1 187 1 530 343 32 --Total des investissements (000 \$) an 4 228 353 126 31 228 385 157 385 157 33 -31 ---228 20 34 Total des investissements (000 \$) an 5 (20)(0) (0) 20 (0) (21)--20 (0) (21)--35 Impact sur les tarifs Pour la première année (000 \$) 514 139 (3 576) (3 062) (3 4 37) (3 344) (4 4 1 3) (1 069) 36 (375) (3577)(0)(375)(282)(975)(694) 37 Pour les cinq premières années (000 \$) 724 (509) (1233) (14 455) (15 396) (941) (13 731) (15 905) (2 174) (1 181) (1 603) (422) (14 912) (17 508) (2 596) 38 Taux de rendement interne 9,92% 11,83% 1,91% 24 00% 18 77% -5,23% 17.17% 16 04% -1.13% > 100% 21.28% > 100% 17 17% 16 07% -1,10% Point mort tarifaire (années) 8.70 3,70 (5,00)1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 -39 --.



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PETIT ET MOYEN DÉBIT (PMD) GRAND DÉBIT TOTAL **RÉSIDENTIEL - Ajouts de charge** TOTAL PMD - Ajouts de charge Description AFFAIRES - Ajouts de charge Ajouts de charge Ajouts de charge Ligne Cause 2012 Réel 2012 Variation (C11-C10) (C14-C11) (C2-C1) (C5-C4) (C8-C7) (1) (2) (5) (10) (11) (12) (13) (14) (4) (7) (8) (3) (6) (9) Nombre de clients¹ an 1 193 233 40 773 627 (146) 966 860 (106) 8 12 4 974 872 Nombre de clients an 2 (cumulatif) 193 233 40 773 627 (146) 966 860 (106)8 9 974 869 Nombre de clients an 3 (cumulatif) 193 233 40 773 627 (146) 966 860 (106) 8 9 1 974 869 Nombre de clients an 4 (cumulatif) 193 233 40 773 627 (146) 966 860 (106) 9 974 869 8 1 Nombre de clients an 5 (cumulatif) 193 233 40 773 627 (146)988 860 (106)8 9 1 974 880 6 Volumes (10°m²) an 1 248 202 (46) 22 216 20 149 (2.067)22 464 20 351 (2113)14 221 61 514 47 293 36 684 81 864 45 180 Volumes (10^am^a) an 2 (cumulatif) 248 202 (46) 22 216 20 149 (2 067) 22 464 20.351 (2 113) 14 221 20 602 6 381 36 684 40.952 Volumes (10^am^a) an 3 (cumulatif) 248 202 (46) 22 216 20 149 $(2\ 067)$ 22 464 20 351 (2 113) 14 221 20 602 6 381 36 684 40 952 Volumes (10^am^a) an 4 (cumulatif) 248 202 (46) 22 216 20 149 22 464 20 351 (2 113) 14 221 20 602 6 381 36 684 40 952 (2.067)Volumes (10^am^a) an 5 (cumulatif) 248 202 (46) (2 067) 22 464 14 221 20 602 6 381 36 684 40 952 22 216 20 149 20 351 (2 113) 10 11 Immobilisations (000 \$) an 0 25 14 (11) 1 293 2 408 1 1 15 1 318 2 423 1 105 11 (11) 1 329 2 423 Immobilisations (000 \$) an 1 12 . . -. -13 mmobilisations (000 \$) an 2 ---. --------. mmobilisations (000 \$) an 3 14 -----------15 Immobilisations (000 \$) an 4 . -------------16 Immobilisations (000 \$) an 5 . --. . . -. -. ----(incluant les frais généraux) 17 Subvention PRC (000 \$) an 1 142 139 1 661 137 1 803 1 937 1 803 1 937 18 (3) 1 798 134 ---19 Subvention PRC (000 \$) an 2 --Subvention PRC (000 \$) an 3 20 ----. ---------Subvention PRC (000 \$) an 4 21 --------. -----Subvention PRC (000 \$) an 5 22 -23 contributions clients² (000 \$) an 0 (8) (8) (3) (3) (11) (11) (11) . -. -contributions clients (000 \$) an 1 24 -----contributions clients (000 \$) an 2 25 -----26 contributions clients (000 \$) an 3 . ------------contributions clients (000 \$) an 4 27 ------------contributions clients (000 \$) an 5 28 29 Total des investissements (000 \$) an 0 25 6 (19) 1 293 2 405 1 1 1 2 1 318 2412 1 094 11 -(11) 1 329 2412 Total des investissements (000 \$) an 1 139 30 142 (3) 1.661 1 798 137 1.803 1 937 134 -1 803 1 937 -31 Total des investissements (000 \$) an 2 ---Total des investissements (000 \$) an 3 32 . --Total des investissements (000 \$) an 4 33 . -------------34 Total des investissements (000 \$) an 5 --. -. . -. --. . -35 mpact sur les tarifs (1011) (1957) 36 Pour la première année (000 \$) (36) (25)11 (1.465) (1571)(106)(1502)(1.596)(95) (455)(1.465) (3 062) Pour les cinq premières années (000 \$) (154) 37 (106)48 (6 654) $(7\ 078)$ (424)(6 808) (7 184) (376)(1894)(2744)(850) (8 702) (9 928) -15,49% 38 38.33% 35.04% -3,29% 47 11% -18 89% 48 84% -17.96% > 100% > 100% 81,07% 65 58% Taux de rendement interne 66.00% 64 80% .

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COMPARAISON DU PLAN DE DÉVELOPPEMENT - AJOUTS DE CHARGE CAUSE 2012 VERSUS RÉEL A PRIORI POUR L'EXERCICE TERMINÉ LE 30 SEPTEMBRE 2012

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Point mort tarifaire (années)

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1 33.0 Reference: SYSTEM EXTENSION POLICY REVIEW

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Exhibit B-3, BCUC 1.39.2

EES Rate Impact analysis

In response to BCUC IR 1.39.2 FEI explains "...that unless the capital cost to connect
the customer is very low, a customer using less than 5 GJ/year is likely to have a very
low P.I. under the MX Test, given the low revenues associated with consuming 5
GJ/year."

- 8 33.1 Would FEI agree that cost of providing service to new customers using less than
 9 10 GJ/year is likely to be more than the incremental revenue generated by these
 10 customers? Please explain why, or why not.
- 11

12 Response:

FEI notes that a consumption of less than 10 GJ/year is likely to result only in those caseswhere there is no space heating or hot water load.

15 In the case of a customer that uses 10 GJ/year where only a service line is required, the 16 incremental revenue generated by the customers will exceed the annual cost of providing 17 service in the first year.

18 In the case of a customer that requires a main extension, this lower consumption would be 19 reflected in a lower number of appliances forecast in the MX Test and a correspondingly lower 20 consumption credit. Due to the design of the MX Test, FEI would agree that adding a customer 21 using less than 10 GJ per year would be likely to yield a P.I. less than 1 and that customer 22 would be required to pay a contribution in order to obtain service. This is dependent upon the 23 cost of the interconnection but in most cases would be true.

The contribution received from these customers reduces the cost to serve the customer and it cannot be confirmed that this lower cost of service would be greater than the incremental revenue generated.

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- 3033.2What would FEI expect as a threshold of consumption in GJ/year before it would31be likely that the cost of providing service would be less than the incremental32revenue generated? Please explain.
- 33



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1 Response:

2 FEI does not believe a threshold consumption is required, nor would it be feasible to provide a 3 related estimate. The MX Test is required in each particular case to look at both the 4 consumption of all of the customers expected to attach, the mix of residential and non-5 residential customers expected to attach, as well as the specific cost of the project. Because 6 the costs of mains vary so much from one project to another, as does the number and type of 7 customers expected to attach, it is impossible to identify a threshold that would apply in all 8 cases. The existing test, and the proposals requested in this Application, take into account the 9 costs and revenues (which are based upon consumption). Should an MX Test not pass the 10 minimum PI requirement, the customer can pay a CIAC or apply for SEF funding to receive gas 11 service. FEI therefore does not see any added value a "threshold of consumption" would bring 12 to the MX Test.

13 Please refer to the response to BCUC IR 2.33.1.



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1	34.0	Reference:	REPORTING METHODOLOGY
2			Exhibit B-1, Section 3.4.3, p. 47
3 4			Exhibit B-3, BCUC IR 1.32.4, p. 132; BCUC IR 1.33.1, pp. 142–143; BCUC IR 1.38.1, p. 155
5			Rate Impact analysis
6 7		On page 47 time of any fi	of the Application, FEI proposes to conduct a Rate Impact analysis at the uture reviews of the system extension policies to help guide the review.
8 9 10 11		In response Ontario Ener Historic Yea customer rela	to BCUC IR 1.33.1, FEI discusses the annual reporting methodology of the gy Board. FEI states: "The utility must also provide the rate impact of the ar IP [Investment Portfolio] reflecting actual capital expenditures and ated data."
12 13 14 15 16		In response point in time considers the considers att such it can d	to BCUC IR 1.38.1, FEI explains that "The Rate Impact analysis provides a e assessment of the system extension policies and MX Test because it e rate impact of system extensions on both new and existing customers. It cachments over a number of years and uses actual revenues and costs. As etermine at that point in time the impact of adding a set group of mains."
17 18		34.1 Pleas	e discuss the benefits and drawbacks of performing a historic rate impact

analysis on an annual basis versus a historic rate impact analysis performed for
 a periodic system extension policy review.

21 Response:

20

22 FEI sees little benefit in performing a historic rate impact analysis on an annual basis. The Rate 23 Impact Analysis is a test that is performed to determine how the MX Test and policy is working. 24 The Rate Impact Analysis is not intended to determine if a specific main is profitable or as a 25 review of actual revenues or expenditures. The Rate Impact Analysis, if performed every 5-7 26 years would provide an indication as to the effectiveness of the Commission approved test and 27 based upon the results may lead to further analysis and an application. Performing the Rate 28 Impact Analysis annually undermines the premise of the MX Test; the MX Test is designed to 29 be an efficient method of attaching customers to the system. The costs to attach customers to 30 the system are generally small, well below a CPCN threshold, and as such some mechanism to 31 attach customers efficiently is warranted. Performing the Rate Impact Analysis annually is 32 counter intuitive to this construct.

33 It is important that the rate impact analysis considers a time period covering multiple years so 34 that the impact of customers added in the years following a main extension are included, so that 35 the addition of a very large customer does not overly influence the results, and to smooth out 36 the natural variance in the size and costs for main extensions from year to year. When a multi-37 year period is used, such as the seven-year period provided in FEI's analysis, an annual update



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1 will not result in significant changes on an annual basis. Further, it would be inappropriate to

change main extension policies every year, including PI thresholds, as this would not allow for
 customer stability from a rate design perspective.

The other drawback is the cost, which in this case would be approximately \$100,000-150,000 higher than what FEI was envisioning (\$15,000 over 7 to 10 additional years, based on past time between reviews). FEI believes that the additional benefit does not exist so as to make that additional investment worthwhile.

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11 34.1.1 Please provide a general estimate of how often FEI expects to have a

review of its system extension policy.

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- 14 **Response:**

15 In the recent past, the Commission has performed a review of FEI's system extension policies in 16 1996, 2007 and 2015, equating to 11 years and 8 years in between reviews. FEI considers that 17 11 years is too long, but that a review every 5-7 years would provide a balance between stability 18 of policies and ensuring they properly consider impact to new and existing customers. If the 19 review that is undertaken and filed with the Commission indicates that changes to system 20 extension policies or parameters are required, FEI would make an application to the 21 Commission to update its policies at that time.

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In the response to BCUC IR 1.32.4, FEI estimated that it would cost "\$15,000 to periodically produce this analysis [Rate Impact Analysis]."

- 2734.2Please confirm that it would cost \$15,000 to produce a historical rate impact28analysis on an annual basis. If not confirmed, please provide an explanation and29update the table provided in the response to BCUC IR 1.32.4 on page 132 to30support your explanation.
- 3132 **Response:**
- 33 Confirmed.
- 34
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1 2 3		34.2.1	Please confirm that an annual rate impact analysis could highlight the short-term rate impacts of mains extensions.
4	Response:		
5 6 7 8	If a historic significantly d	rate impa lifferent in	act analysis was completed on an annual basis it would not provide formation from year to year as discussed in response to BCUC IR 2.34.1.
9 10 11 12 13 14	<u>Response:</u>	34.2.2	If not confirmed, please explain if and how the rate impact analysis could be used to analyze short term rate impacts of mains extensions on existing

15 The Rate Impact analysis was developed as a tool to determine whether the current policies for 16 main extensions are generally benefitting or harming existing customers and there would be 17 little difference in the results from year to year. Please refer to the response to BCUC IR 2.34.1.

Under the current PBR methodology, the actual costs for main extensions are not used in setting the revenue requirements for the utility. Instead, a formulaic approach is used to determine the allowed capital for growth. Therefore, the Rate Impact analysis would not provide a real-time assessment of the change in rates associated with growth on a short-term basis. Neither does FEI consider it appropriate to change its system extension policies based on impacts within only a short time frame.



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1 J. OTHER

2	35.0	Refere	nce:	RECOMMENDATIONS
3				Exhibit B-1, Exhibit B-1, Appendix A, pp. 7–8, Appendix E, p. 12-1;
4				Exhibit B-3, BCUC IR 1.32.9
5				Tariff changes
6		In the <i>i</i>	Applicat	ion, Appendix E, page 12-1, section 12.3 of the FEI General Terms and
7		Conditi	ons (GT	&C) states "The economic test will be a discounted cash flow analysis of
8		the pro	jected re	evenue and costs associated with the Main Extension." [Emphasis added]
9		In BCU	C IR 1.	32.9, FEI states "The Company does not consider the consumption used
10		in the N	/IX Test	to be a forecast, instead it is a credit."
11		Consur	nption is	s a primary determinant of projected customer revenue.
12		35.1	Please	confirm, otherwise explain, that using a "consumption credit" in the
13			econom	nic test does not translate into projected revenues.
14				
15	Resp	onse:		

The Company believes the section of the GT&C quoted in the preamble is sufficiently clear and 16 17 does not need amending. The "consumption credit" in the MX Test refers to the consumption 18 value assigned to the type of appliance to be installed by the customer. It is used, along with 19 other inputs, to determine the revenue from a main extension used in the DCF analysis. FEI 20 confirms that the consumption credit in the MX Test is not intended to be a forecast of 21 consumption for those specific customers. It is an input that is intended to be reflective of what 22 customers on the system generally consume as a means of crediting the new customers with 23 that level of consumption.

It is also intended to be consistent with the rate design assumptions used to derive the revenue margin used in the Test (see Section 12.4 d of GT&C). As discussed in the response to BCUC IR 2.18.3, since the revenue margins used in the Test are based on the use per customer of existing customers of the respective rate classes, it follows that the consumption should be as well, in order to ensure consistency from a rate design perspective. To treat the consumption differently than the revenue margin would risk new customers being unfairly discriminated against in the Test.

- BCUC IR 2.35.1.1 asks whether the tariff provision should be amended. For ease of reference,
 Section 12.4 Revenue states:
- 33 "The projected revenue to be used in the economic test will be determined by FortisBC
 34 Energy by:



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1	(a) estimating the number of Customers to be served by the Main Extension;
2	(b) establishing consumption estimates for each Customer;
3	(c) projecting when the Customer will be connected to the Main Extension; and
4	(d) applying the appropriate revenue margins for each Customer's consumption.
5 6 7	The revenue projection will take into consideration the estimated number and type of Gas appliances used and the effect variations in weather conditions throughout the applicable Service Area have on consumption"
8 9 10 11 12 13 14	FEI agrees that, taken in isolation, the words "projected revenues" or "revenue projection" in the tariff could be understood to involve a forecast of the expected consumption by customers on the particular extension. However, the section does refer to the concept of consumption credits by specifying how the "consumption estimate" for each customer is done (i.e., the type of appliances used), and also singles out the forecast number of appliances as the variable within the customer's control that affects the revenue in the economic analysis.
15 16 17 18 19	Adding in that the consumption is based on the average consumption of existing users to reflect the current practice would be analogous to describing how the Company derives its revenue margin from existing customers. It would be providing greater detail than has been traditionally included in the GT&Cs.
20 21 22 23 24 25	35.1.1 If confirmed, should section 12.3 of the FEI GT&C be revised? Please explain why, or why not.
26	Please refer to the response to BCUC IR 2.35.1.
27 28	
29 30 31 32 33	On page 7 of Appendix A, FEI states "The usage estimated for each new customer will also be <u>based on common usage rates rather than regional levels</u> . The usage will still be based on the expected appliances to be installed." [Emphasis added]



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1 In the Application, Appendix E, page 12-1, section 12.4 of the FEI General Terms and 2 Conditions (GT&C) states: "The revenue projection will take into consideration the 3 estimated number and type of Gas appliances used and the <u>effect variations in weather</u> 4 <u>conditions throughout the applicable Service Area have on consumption</u>." [Emphasis 5 added]

- Given that the usage estimated for each new customer will be based on common
 usage rates rather than regional levels, does section 12.4 of the FEI GT&C need
 to be revised? Please explain why, or why not.
- 9

10 Response:

Yes, FEI confirms that section 12.4 of the FEI GT&C does need to be revised. Through the course of the IR process and as stated on page 7 of Appendix A of the Application noted in the preamble above, FEI confirms that weather conditions unique to certain service areas are no longer taken into consideration when determining consumption.

Please refer to Attachment 35.2 which provides revised proposed amendments to section 12.4
of the FEI GT&C by removing the reference *"and the effect variations in weather conditions throughout the applicable Service Area have on consumption."*

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In the Application, Appendix E, page 12-3, section 12.7 of the FEI GT&C regarding the
 refund of customer contributions states: "At the end of the fifth Year, all Customers will
 have paid an equal contribution, after reconciliation and refunds."

- 2435.3Does section 12.7 of the FEI GT&C need to be revised to reflect that some main25extensions will have a planning horizon of 10 years? Please explain why, or why26not.
- 27

28 **Response:**

Please refer to the response to BCUC IR 1.10.4.1, Attachment 10.4.1, which providesamendments to section 12.7 to reflect the planning horizon of 10 years.

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 33
 34 In the Application, Appendix E, page 12-4, section 12.11 of the FEI GT&C regarding the
- 34In the Application, Appendix E, page 12-4, section 12.11 of the FEI GT&C regarding the35refund of customer contributions states: "The number of Customers eligible to receive36the System Extension Fund will be limited and the determination of eligibility will be37made by FortisBC Energy in its sole discretion, acting reasonably." [Emphasis added]



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35.4 Could the absence of specific criteria for allocating System Extension Funds (i.e. allocation by lowest cost per customer) and FEI's "sole discretion" to award funds contravene section 59 of the *Utilities Commission Act*, regarding discriminatory service? Please explain why, or why not.

6 **Response:**

FEI has proposed criteria for SEF eligibility, including the applicant being the owner of a singlefamily residential home or townhome that is a principal residence within an existing FEI service area at the time the application is taken, and having a minimum P.I. ratio of 0.2 resulting from the MX Test, and has sought Commission approval of these criteria. The discretion exists only within the bounds of those established criteria, and is further constrained by the term "acting reasonably". This is a common approach in utility tariffs, recognizing that the utility's reasonable and non-arbitrary application of the tariff is subject to review by the Commission.

FEI has the responsibility to administer the fund after the Commission's approval, among other things, of the funding amount and eligibility. Because of the limited funding and depending on the numbers of potential applicants, not all eligible customers may be able to receive funding. FEI thus has to exercise some discretion and judgment when distributing the fund. Such practice is not discriminatory per se. Indeed, FEI will be extending the funding "regularly and uniformly extended to all persons under substantially similar circumstances" who are eligible and when the funding is available.

Attachment 25.1

REFER TO LIVE SPREADSHEET MODEL

Provided in electronic format only

Attachment 29.1

REFER TO LIVE SPREADSHEET MODEL

Provided in electronic format only

Attachment 30.2

REFER TO LIVE SPREADSHEET MODEL

Provided in electronic format only

Attachment 30.5

REFER TO LIVE SPREADSHEET MODEL

Provided in electronic format only
Attachment 35.2

FORTISBC ENERGY INC. GENERAL TERMS AND CONDITIONS SECTION 12

12. Main Extensions

12.1 System Expansion

FortisBC Energy will make extensions of its Gas distribution system in accordance with system development requirements.

12.2 Ownership

All extensions of the Gas distribution system will remain the property of FortisBC Energy.

12.3 Economic Test

All applications to extend the Gas distribution system to one or more new Customers will be subject to an economic test approved by the British Columbia Utilities Commission. The economic test will be a discounted cash flow analysis of the projected revenue and costs associated with the Main Extension. The Main Extension will be deemed to be economic and will be constructed if the results of the economic test indicate a Profitability Index of 0.8 or greater for an individual main extension.

12.4 Revenue

The projected revenue to be used in the economic test will be determined by FortisBC Energy by:

- (a) estimating the number of Customers to be served by the Main Extension;
- (b) establishing consumption estimates for each Customer;
- (c) projecting when the Customer will be connected to the Main Extension; and
- (d) applying the appropriate revenue margins for each Customer's consumption.

The revenue projection will take into consideration the estimated number and type of Gas appliances used. In addition, the projected revenue from the applicable Application Fees will be included. Only those Customers expected to connect to the Main Extension within 5 Years of its completion, or within 10 Years of its completion for the Main Extension with a planning horizon longer than 5 years as determined by FortisBC Energy will be considered.

Deleted: and the effect variations in weather conditions throughout the applicable Service Area have on consumption

Deleted: Customers who intend to install both high efficiency gas fired space (namely an Energy Star rated furmace or boiler) and water heating appliances (tankless water heaters, or water heaters with efficiency rating of 78 percent or greater), will receive a credit of 10 percent of the volume otherwise used for both appliances. Customers who intend to install both high efficiency gas fired space and water heating appliances and attain a minimum of LEEDTM (Leadership in Energy and Environmental Design) General Certification will receive a credit of 15 percent of the volume otherwise used for both.

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Issued By: Diane Roy, Director, Regulatory Services

Effective Date: January 1, 2016

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BCUC Secretary:

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