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December 6, 2013

Via Email
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) and FortisBC Inc. (FBC) (collectively the Companies)

Applications for Approval of a Multi-Year Performance Based Ratemaking Plan for 2014 through 2018 (the Applications)

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

Filed as Response to FEI-FBC BCUC IR No. 3

On June 10 and July 5, 2013, FEI and FBC, respectively, filed the Applications as referenced above.

In an effort to differentiate the IR responses relating to the PBR Methodology which are the subject of the oral portion of the hearing jointly for the Companies from those IR responses which relate to other matters for the written portion of the hearing individually for each of FEI and FBC, the Companies will mark these IR responses as FEI-FBC BCUC IR No. 3.

The Companies respectfully submit the attached response to FEI-FBC BCUC IR No. 3 responses related to the PBR Methodology.

If further information is required, please contact the undersigned.

Sincerely,

FORTISBC ENERGY INC. and
FORTISBC INC.

Original signed:

Diane Roy and Dennis Swanson

Attachments

cc (email only): Registered Parties

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A. PRODUCTIVITY IMPROVEMENT FACTOR

1.0 Reference: FBC Exhibit B-1, pp. 44-47, Exhibit B-1-1, Appendix D2
FEI Exhibit B-1, pp. 48-53, Exhibit B-1-1, Appendix D2
Productivity Improvement Factor (X-Factor)

FortisBC Inc. and FortisBC Energy Inc. (FBC/FEI) provided Black & Veatch (B&V)'s survey of Total Factor Productivity (TFP) studies which were used in the determination of North American electric and natural gas distributor's X-Factor values. The B&V report suggests a downward trend for TFP values in recent years.

B&V concludes that the downward trend of TFP growth is mainly caused by capital intensive infrastructure replacement programs in both natural gas and electric utilities, which drive up input costs without increasing output." (FBC, Exhibit B-1, p. 47)

During FBC's last revenue requirement proceeding, Mr. Walker stated:

> "From 2005 until now, our focus has been on significant investment in system upgrades and load-serving capacity…With the completion of this core infrastructure, combined with the upgrades to our generating plants, FortisBC has substantially completed its system renewal. Most utilities in Canada are only beginning this process and will likely be challenged with material and labour costs, and the resultant rate pressures to customers." [1]

1.1 Please discuss the general conditions of FBC and FEI's current infrastructure in terms of its capital life cycle.

Response:

FEI Response:

Less than 2% of FEI's infrastructure was installed prior to 1957 when natural gas began to be made available for home use in British Columbia. From a financial perspective, the current average capital life expectancy as per the current depreciation rate is 67 years. A capital life expectancy of 67 years means that on average pipe installed since 1946 has not yet reached its capital life expectancy; this means that less than 0.2% of the current pipe is beyond the 67 year capital life expectancy. Note that services are not included in this calculation due to limited information specific to the length of the service pipe; however, as services are installed after the main is installed, omitting that data is not likely to significantly impact the results.

[1] In the Matter of An Application by FBC for Approval of its 2012-2013 RRA & ISP, Transcript Vo. 2, pp. 105-106

At the end of the requested PBR period (i.e. 2018) 0.4% of the distribution pipelines will be beyond the current financial capital life expectancy. No transmission pipelines or pressure regulating stations were installed prior to 1957 and, as such, they have not reached their capital life expectancy.

The capital life expectancy is an average expectation and actual pipe life will vary. Included in the pipe that was installed prior to 1957 is pipe installed as early as 1912 and pipe has been replaced that has not reached its capital life expectancy. Installation techniques, material specifications, maintenance procedures and a variety of other factors all influence the actual life expectancy of the infrastructure and FortisBC has invested significant efforts into understanding those factors. With the improved understanding and analysis capability included in asset management development and the Long term Sustainment Program it is expected that resources can effectively be invested to sustain the assets and to mitigate probable asset failures before they occur with resulting risk to public safety and reliable service.

FBC Response:

Beginning in the early 2000s FBC embarked on a period of significant capital investments to replace aging infrastructure and to address capacity shortages associated with a period of high customer load growth. With respect to the transmission and distribution system alone, in the last ten years FBC has:

- Constructed 14 entirely new substations;
- Substantially altered 14 substations through major rebuilds;
- Retired (salvaged) 12 substations;
- Constructed 11 entirely new transmission lines;
- Altered 3 transmission lines to operate at different voltages;
- Installed two major remedial action schemes (RAS) to provide system protection;
- Replaced old communications systems with satellite, cellular and three new fibre-optic networks; and
- Upgraded 28 distribution substations with automation and remote communications.

While these projects have mostly addressed system capacity shortages and have created a more robust network, for the most part these projects only addressed aging or inadequate substation infrastructure. FBC still has tens of thousands of aging poles and thousands of kilometers of aging transmission and distribution circuits. Much of this poles and wires infrastructure is 30 to 50 years old or more and will continue to require significant ongoing levels of capital investment to ensure that these assets are replaced before failures result in unacceptable safety or customer reliability concerns.

Please refer to the response to FEI-FBC BCUC PBR IR 3.1.2 for an explanation regarding the significance of this information for the productivity factor.

1.2 Given that FBC's infrastructure upgrade program has been largely completed, "while most other utilities in Canada are only beginning this process," please discuss why its productivity factor should not be higher than the average of other utilities?

Response:

The average industry productivity factor is calculated by TFP studies, and as the B&V electric TFP study and other similar studies indicate, the average productivity values for North American electric distributors is well into negative zone and much lower than FBC's proposed +0.5 percent X-Factor.

If by average productivity factor the question is referring to the X-Factor values, then once again FBC's proposed X-Factor is higher than the average of other Canadian electric utilities. As discussed in FBC's response to FBC BCUC IR 1.7.2 (Exhibit B-7), the most recent TFP study conducted by the OEB's consultant (PEG) and approved by the Board in its September 6, 2013 draft report indicates that the total factor of productivity for Ontario's electric distributors is about -0.33 percent. Based on this study and expert opinion, the Board accepted its consultant's proposal for an X-Factor value of zero with an average stretch factor of 0.37% which is lower than FBC's proposed 0.5% X-Factor value.

In addition, as stated in FBC's response to FBC BCUC IR 1.15.1 (Exhibit B-7), X-Factor values depend on a number of factors such as the utility's business profile, the level of productivity gains prior to the start if the PBR plan and other elements of the plan and individual factors are not sufficient for drawing definitive conclusions about why the X-Factor value for one utility is different from others.

1.2.1 Please explain why FBC's productivity factor should not be directionally higher than FEI's?

Response:

As a practical matter, the TFP for electric utilities is more negative than for gas utilities. On that basis alone there is no justification for the conclusion that FBC should have a directionally higher productivity factor.

2.0 Reference: FEI Exhibit B-1, p. 51; FBC Exhibit B-1, p. 47

Exhibit A2-18 Productivity: BC's Position and Why We Should Care, http://www.bcbc.com/content/974/PPv20n3.pdf, p. 5;

Total Factor Productivity (TFP)

"In addition to the survey analysis, B&V prepared its own TFP growth calculation. The analysis is based on three different output measures and the TFP results range between -3.1 to -4.9 percent. The following is a summary of the main elements of B&V's analysis: …" (FEI, Exhibit B-1, p. 51)

Exhibit A2-18 contains a paper from the Business Council of British Columbia, dated August 2013, which discusses productivity in BC. Page 5 of the paper includes a table that shows the productivity growth rate for various different industries in BC. The table is copied below for discussion:

Table 1: BC Industry Productivity Levels and Growth

Industry	2012 Productivity $ per hour	Productivity Growth 2007-12, %
All Industry Average - Business Sector	43.60	2.8
Agriculture, forestry, fishing, hunting	31.70	0.6
Mining and oil and gas extraction	152.10	-48.6
Utilities	176.20	1.8
Construction	37.40	4.2
Manufacturing	43.70	2.1
Non-durable manufacturing ind.	39.80	-8.1
Durable manufacturing ind.	46.90	10.4
Wholesale trade	40.50	0.2
Retail trade	26.10	2.8
Transportation and warehousing	46.10	2.7
Information and cultural industries	87.90	2.3
Finance & insurance, & holding co.	75.60	4.3
Real estate, rental and leasing	128.00	2.4
Professional, scientific & technical serv.	37.30	-0.8
Administrative and support, waste management & remediation services	27.10	11.1
Arts, entertainment and recreation	27.40	24.0
Accommodation and food services	20.40	6.8
Other private services	31.10	5.1

Source: Statistics Canada, CANSIM Table 383-0029.

(Exhibit A2-18, p. 5)

2.1 The Business Council of British Columbia (BCBC) has estimated productivity growth of 1.8 percent for the utilities industry in BC for the period 2007 to 2012. Given that it is BC-specific, is the BCBC estimate of utility productivity growth a better estimate of productivity than the TFP growth calculations prepared by B&V? Please explain why, or why not.

Response:

B&V provides the following response.

The BC Business Council estimate is comparable with the B&V Report's conclusion as it relates to labour productivity (partial factor productivity). At page three of the Gas TFP Report, B&V states the following:

> *Labor productivity has historically increased and will continue to increase in the future, although that increase is in part moderated by the increasing wages paid to labor.*

The results are not comparable to the overall conclusions of the B&V study because the BC Business Council estimate is not a TFP analysis. Using the result of the BC Business Council study as the estimate of TFP is theoretically incorrect because this productivity is not TFP and is not a comprehensive measure of inputs since it excludes capital and materials, rents and supplies. The B&V study is a TFP study and that is a theoretically sound basis for the X- Factor in the PBR mechanism. Further, it is not immediately evident whether the BC Business Council study employed the proper measure of outputs for utilities (demand and customers, not throughput); the validity of the results for use in a PBR plan would depend on their methodology. Finally, the utilities sector is broader than the gas and electric utilities industries that are of interest in this case.

3.0 Reference: FEI Exhibit B-1, p. 51; FBC Exhibit B-1, p. 47

Exhibit A2-19, ESTIMATING LONGER-TERM GROWTH PROSPECTS IN CANADA'S PROVINCIAL ECONOMIES, p. 4

Total Factor Productivity (TFP)

Exhibit A2-19 contains a paper from TD Economics, dated February 9, 2012, which discusses the projected provincial economic growth for the 2016 to 2021. Page 4 of the paper includes a table that shows the productivity growth rate for various provinces. The table is copied below for discussion:

NATIONAL AND PROVINCIAL LONG-TERM ECONOMIC GROWTH
(Annual Per Cent Change)

	1990-2007			2016-2021		
	Growth in Labour Supply	Gains in Labour Productivity	Long-Term Economic Growth	Growth in Labour Supply	Gains in Labour Productivity	Long-Term Economic Growth
Canada	1.3	1.3	2.6	0.7	1.3	2.0
British Columbia	1.7	1.0	2.7	1.1	1.0	2.1
Alberta	2.3	1.2	3.5	1.3	1.2	2.5
Saskatchewan	0.4	1.6	2.0	0.7	1.6	2.3
Manitoba	0.7	1.2	1.9	0.5	1.2	1.7
Ontario	1.3	1.3	2.6	0.8	1.3	2.1
Québec	0.9	1.1	2.1	0.3	1.1	1.4
Newfoundland and Labrador	0.0	1.2	1.2	-0.1	1.2	1.1
Prince Edward Island	1.0	1.5	2.4	-0.1	1.5	1.4
New Brunswick	0.7	1.5	2.2	-0.4	1.5	1.1
Nova Scotia	0.7	1.2	1.8	0.0	1.2	1.2

Source: Statistics Canada, Haver Analytics. Projections by TD Economics.

February 9, 2012 4

3.1 TD Economics has estimated productivity growth of 2.1 percent in BC for the period 2016 to 2021. Given that this is a BC-specific, forward looking estimate of productivity, is the TD Economics productivity estimate a better estimate than the TFP growth estimates prepared by B&V? Please explain why, or why not.

Response:

The TD Economics estimate is comparable with the B&V Report's conclusion as it relates to labour productivity (partial factor productivity). At page three of the Gas TFP Report, B&V states the following:

> *Labor productivity has historically increased and will continue to increase in the future, although that increase is in part moderated by the increasing wages paid to labor.*

The results are not comparable to the overall conclusions of the B&V study because the TD Economics estimate is not a TFP analysis. Using the result of this study as the estimate of TFP is incorrect because this productivity is not TFP and is not a comprehensive measure of inputs since it excludes capital and materials, rents and supplies. The 2.1 percent forecast value mentioned in the question is not productivity but is rather long term economic growth (essentially a forecast of provincial GDP growth). The B&V study is a TFP study and that is a

theoretically sound basis for the X- Factor in the PBR mechanism. Further, it is not immediately evident whether the TD Economics study employed the proper measure of outputs for utilities (demand and customers, not throughput); the validity of the results for use in a PBR plan would depend on their methodology.

Importantly, the TD Economics study is based on the labor productivity for the entire province and bears no relationship to the productivity in even the utilities sector.

B. INFLATION FACTOR

4.0 Reference: FEI Exhibit B-11, BCUC 1.52.5

FEI Exhibit B-11-1, BCUC 1.81.2

Inflation Factors

In response to BCUC 1.52.5, FEI provides data from 2007 to 2018 for the BC-AWE, BC-CPI, Average Customers, and Net OM&A.

Commission staff provides the following tables from Statistics Canada:

Table 281-0027 Average weekly earnings annual (current dollars)

Geography = British Columbia **Type of employees** = All employees **Overtime** = Including overtime
North American Industry Classification System = Industrial aggregate excl. unclassified businesses

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
685.19	696.95	722.38	743.57	768.89	788.55	795.15[A]	819.11[A]	841.74[A]	866.31[A]

(Source: Statistics Canada Table 281-0027)

Table 326-0021 Consumer Price Index (CPI), 2009 basket annual (2002=100)

Geography = British Columbia

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All-items CPI	102.2	104.2	106.3	108.1	110.0	112.3	112.3	113.8	116.5	117.8

(Statistics Canada Table 326-0021)

4.1 Please provide the source of the BC-AWE and BC-CPI data in the table provided in response to BCUC 1.52.5 for the years 2007 through 2009. Please explain the BC-CPI of 2 percent in 2009, compared to the Statistics Canada BC-CPI of zero percent in 2009.

Response:

The BC-CPI and BC-AWE data for 2008 through 2012 provided in response to FEI BCUC IR 1.52.5 (Exhibit B-11) and in Appendix E1 of the FEI and FBC PBR Application (Exhibit B-1-1) contained incorrect data. This historical information has been corrected to agree to the tables shown in the preamble to this question in this response. FEI has provided an amended table for FEI BCUC IR 1.52.5 (Exhibit B-11) and also Attachment 4.1 (Exhibit B-11-1) which is a revised "Summary of General Assumptions: 2008-2018" from Appendix E1 of the FEI PBR Application (Exhibit B-1-1). Note that the amended table also includes re-stated average customers from

2007 through 2012 to restate for the impact of the 2012 customer count adjustment of 14,892 discussed in Appendix E4 of the FEI 2014-2018 PBR Application (Exhibit B-1-1).

FEI Net O&M (Formula Based)	2007	2008	2009	2010	2011	2012
BC-AWE	3.4%	2.6%	0.8%	3.0%	2.8%	2.9%
BC-CPI	1.8%	2.1%	0.0%	1.3%	2.4%	1.1%
Customers (Average)	801,535	810,804	817,859	824,125	830,390	834,888
Gross O&M Expense	178,973					
Less Cost of Service Based:						
Pension/OPEB	10,188					
Insurance	5,067					
O&M Applicable to PBR Formula	**163,718**	**168,670**	**170,071**	**174,387**	**179,380**	**183,251**

FEI Net O&M (Formula Based) cont.	2013	2014	2015	2016	2017	2018
BC-AWE	2.3%	2.7%	2.7%	2.6%	2.6%	2.5%
BC-CPI	0.9%	1.8%	2.1%	2.0%	2.1%	2.1%
Customers (Average)	840,721	845,495	850,620	856,001	861,402	866,681
Gross O&M Expense						
Less Cost of Service Based:						
Pension/OPEB						
Insurance						
O&M Applicable to PBR Formula	**186,718**	**191,177**	**196,019**	**200,899**	**205,926**	**210,913**

4.2 Please revise the data table provided in BCUC 1.52.5 to extend the BC-AWE, BC-CPI, Customers back, by year, to 2004. Please indicate the source used for the 2004-2009 BC-AWE and BC-CPI. Please include in the revised data table, the O&M Applicable to PBR Formula for 2007 to 2018 as provided in BCUC 1.81.2 of FEI Exhibit B-11-1. Please calculate the O&M Applicable to the PBR Formula for 2004 to 2006 on the same basis as provided in the response to BCUC 1.81.2 in Exhibit B-11-1 and include in the revised table. Please provide the revised data table for 2004 through 2018 in both printed and Excel format.

Response:

The revised data table from FEI BCUC IR 1.52.5 (Exhibit B-11), provided in the response to FEI-FBC BCUC PBR IR 3.4.1 and including the customer count adjustment extended back to 2004, has been provided in the Table below and in Attachment 4.2. The Table also includes additional information to help provide clarity in the calculations. The source for the 2004-2012 BC-AWE and BC-CPI amounts are the Statistics Canada amounts shown in the pre-amble to this question. Attachment 4.2 also includes a version of Attachment 81.2 (Exhibit B-11-1), provided in response to FEI BCUC IR 1.81.2, extended to include the summarized historical 2004-2006 amounts as requested, for purposes of completing the requested table, and the information used to complete the response to FEI-FBC PBR BCUC IR 3.5.1.

Line No.	Parameters	2002	2003	2004 Base	2005 Formula	2006 Formula	2007 Formula	2008 Formula	2009 Formula	2010 Formula	2011 Formula	2012 Formula	2013 Formula	2014 Formula	2015 Formula	2016 Formula	2017 Formula	2018 Formula
1	**Cost Drivers for Formulaic O&M**																	
2	CPI Data [1]	100.0	102.2	104.2	106.3	108.1	110.0	112.3	112.3	113.8	116.5	117.8						
3	CPI % [1]		2.20%	1.96%	2.02%	1.69%	1.76%	2.09%	0.00%	1.34%	2.37%	1.12%	0.93%	1.83%	2.07%	2.03%	2.07%	2.05%
4																		
5	AWE Data [2]		685.19	696.95	722.38	743.57	768.89	788.55	795.15	819.11	841.74	866.31						
6	AWE % [2]			1.72%	3.65%	2.93%	3.41%	2.56%	0.84%	3.01%	2.76%	2.92%	2.30%	2.70%	2.70%	2.60%	2.60%	2.50%
7																		
8	**Labour Split**																	
9	Non Labour			45.00%	45.00%	45.00%	45.00%	45.00%	45.00%	45.00%	45.00%	45.00%	45.00%	45.00%	45.00%	45.00%	45.00%	45.00%
10	Labour			55.00%	55.00%	55.00%	55.00%	55.00%	55.00%	55.00%	55.00%	55.00%	55.00%	55.00%	55.00%	55.00%	55.00%	55.00%
11	Composite I Factor (CPI% x Non Lab%) + (AWE% x Lab%)			1.82%	2.91%	2.38%	2.66%	2.35%	0.46%	2.26%	2.59%	2.11%	1.69%	2.31%	2.42%	2.34%	2.36%	2.30%
12	Productivity Factor (PF or X-Factor)			-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%
13																		
14	Average Customers			764,569	776,701	787,851	801,535	810,804	817,859	824,125	830,390	834,888	840,721	845,495	850,620	856,001	861,402	866,681
15	Customer Growth				1.59%	1.44%	1.74%	1.16%	0.87%	0.77%	0.76%	0.54%	0.70%	0.57%	0.61%	0.63%	0.63%	0.61%
16	Net Inflation Factor				**104.04%**	**103.34%**	**103.94%**	**103.02%**	**100.83%**	**102.54%**	**102.86%**	**102.16%**	**101.89%**	**102.39%**	**102.53%**	**102.49%**	**102.50%**	**102.42%**
17	(1 + Composite I Factor + PF) x (1 + Customer Growth)																	
18																		
19	**2004 Actual Gross O&M (Considered "Base O&M" for the IR)**			**171,835**														
20																		
21	**Remove O&M tracked outside of Formula**																	
22	Pension/OPEB (O&M portion)			(9,780)														
23	Insurance			(5,900)														
24																		
25	**O&M Subject to Formula**			**156,155**	**162,462**	**167,884**	**174,496**	**179,775**	**181,267**	**185,868**	**191,189**	**195,315**	**199,010**	**203,763**	**208,924**	**214,125**	**219,483**	**224,798**
26																		
27	**O&M tracked outside of Formula**																	
28	Pension/OPEB (O&M portion)			9,780	10,187	12,203	10,188	7,456	6,069	9,033	9,907	17,132	15,638	24,113	22,426	21,340	20,520	20,973
29	Insurance			5,900	5,000	5,085	5,067	4,650	4,725	4,410	4,631	4,397	4,617	4,990	5,290	5,610	5,945	6,300
30	Rate 16 O&M													376	1,089	1,089	1,089	1,089
31	**Total O&M Calculated per IR**			**171,835**	**177,649**	**185,172**	**189,751**	**191,881**	**192,061**	**199,311**	**205,727**	**216,844**	**219,265**	**232,866**	**236,639**	**241,074**	**245,948**	**252,070**

Notes

[1] - 2004-2012 CPI as provided in FEI-FBC BCUC PBR IR 2.4.1 (Statistics Canada Table 326-0021). 2013-2018 CPI provided in amended Appendix E1 in FEI-FBC BCUC PBR IR 2.4.1.

[2] - 2004-2012 AWE as provided in FEI-FBC BCUC PBR IR 2.4.1 (Statistics Canada Table 281-0027). 2013-2018 AWE provided in amended Appendix E1 in FEI-FBC BCUC PBR IR 2.4.1.

1

4.3 Please repeat the same data from the previous question for FBC, if different.

Response:

The high level Table for FBC has been provided below as well as in Attachment 4.3, utilizing the AWE & CPI data provided by the Commission for the historical years (2004 through 2012).

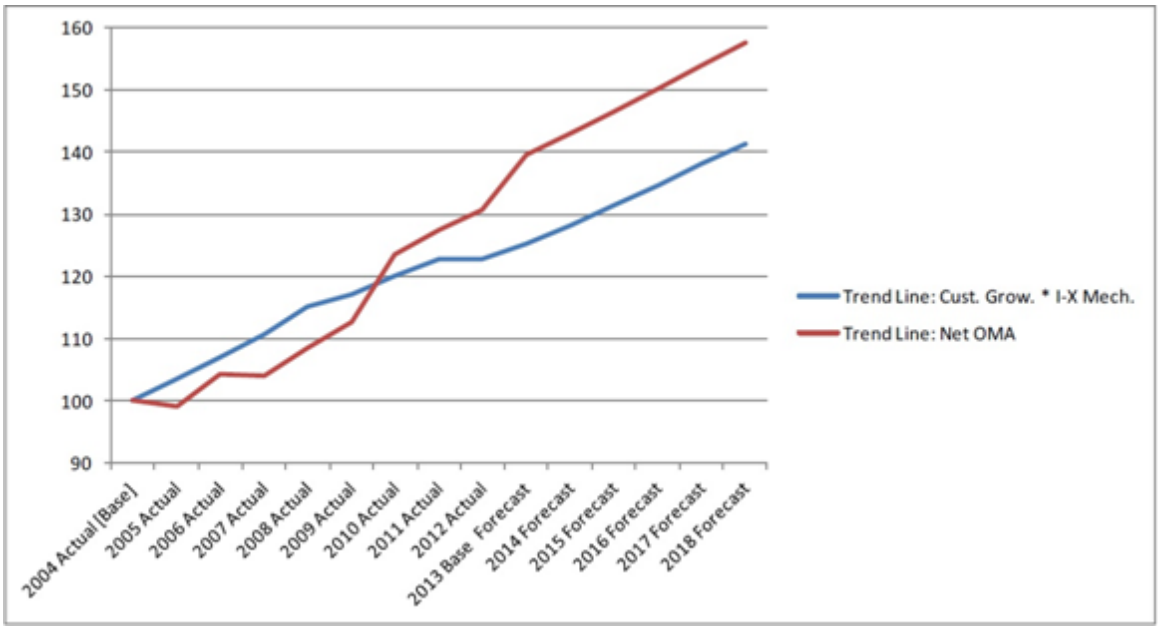
Line No.		2002	2003	2004 Base	2005 Formula	2006 Formula	2007 Formula	2008 Formula	2009 Formula	2010 Formula	2011 Formula	2012 Formula	2013 Formula	2014 Formula	2015 Formula	2016 Formula	2017 Formula	2018 Formula
1	**Cost Drivers for Formulaic O&M**																	
2	**CPI Data (2004-2012 from BCUC)**	100.0	102.2	104.2	106.3	108.1	110	112.3	112.3	113.8	116.5	117.8						
3	CPI %		2.20%	1.96%	2.02%	1.69%	1.76%	2.09%	0.00%	1.34%	2.37%	1.12%	0.93%					
4																		
5	**AWE Data (2004-2012 from BCUC)**		685.19	696.95	722.38	743.57	768.89	788.55	795.15	819.11	841.74	866.31						
6	AWE %			1.72%	3.65%	2.93%	3.41%	2.56%	0.84%	3.01%	2.76%	2.92%	2.30%					
7																		
8	**Labour Split**																	
9	Non Labour			45.00%	45.00%	45.00%	45.00%	45.00%	45.00%	45.00%	45.00%	45.00%	45.00%					
10	Labour			55.00%	55.00%	55.00%	55.00%	55.00%	55.00%	55.00%	55.00%	55.00%	55.00%					
11	Composite I Factor: (CPI% x Non Lab%) + (AWE% x Lab%)			1.82%	2.91%	2.38%	2.66%	2.35%	0.46%	2.26%	2.59%	2.11%	1.68%	2.31%	2.42%	2.34%	2.36%	2.30%
12	Productivity Factor (PIF: X Factor)			-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%
13																		
14	Customer Growth			2.36%	3.63%	3.78%	4.03%	3.48%	1.44%	1.15%	1.08%	0.74%	13.39%	0.76%	0.89%	0.93%	0.94%	0.98%
15	Net Inflation Factor `			**103.72%**	**106.13%**	**105.73%**	**106.28%**	**105.39%**	**101.40%**	**102.93%**	**103.19%**	**102.36%**	**114.73%**	**102.58%**	**102.82%**	**102.79%**	**102.82%**	**102.79%**
16	(1+ Composit I Factor- PIF)*(1+ Customer Growth)																	
17																		
18	**2004 Actual Gross O&M (Conidered "Base O&M" for the IR)**			**36,042**														
19																		
20	**Remove O&M tracked outside of Formula**																	
21	Pension/OPEB (O&M portion)			(2,087)														
22	Insurance			(1,831)														
23	Trail Lease			(600)														
24																		
25	**O&M Subject to Formula**			**31,524**	**33,457**	**35,374**	**37,596**	**39,622**	**40,177**	**41,353**	**42,673**	**43,680**	**50,112**	**51,405**	**52,857**	**54,332**	**55,863**	**57,423**
26																		
27	**O&M tracked outside of Formula**																	
28	Pension/OPEB (O&M portion)			2,087	2,289	2,636	2,924	2,539	3,318	3,749	4,670	3,957	6,222	5,904	5,494	5,084	4,738	4,455
29	Insurance			1,831	1,582	783	944	1,527	1,581	1,539	1,399	1,499	1,588	1,734	1,801	1,868	2,000	2,012
30	Trail Lease			600	600	600	600	753	1,212	1,212	1,212	1,212	909	-	-	-	-	-
31	CEP Decision G-195-10 (Transfer from Capital to O&M)			-	-	-	-	-	-	-	2,933	3,171	3,000	3,000	3,000	3,000	3,000	3,000
32	Princeton Light & Power O&M			-	-	-	1,089	-	-	-	-	-	-	-	-	-	-	-
33	Princeton Light & Power Onetime Transition Cost			-	-	-	251	-	-	-	-	-	-	-	-	-	-	-
34	Advanced Metering Infrastructure			-	-	-	-	-	-	-	-	-	-	368	(439)	(2,411)	(2,369)	(2,794)
35	**Total O&M Calculated per IR**			**36,042**	**37,928**	**39,393**	**43,404**	**44,442**	**46,287**	**47,853**	**52,887**	**53,519**	**61,832**	**62,412**	**62,714**	**61,873**	**63,232**	**64,096**
36																		

1
2

5.0 Reference: FEI Exhibit B-11, BCUC 1.52.6

FEI Exhibit B-11-1, BCUC 1.81.2

Inflation Factors



(Sample graph by Commission staff using FEI RRA Statistics and Statistics Canada BC-CPI and BC-AWE data)

5.1 Please provide a graph of the trend lines for the "Customer Growth times I-X Mechanism" and for the "Net O&M Applicable to the PBR Formula" from 2004 to 2018, starting at "100" in 2004 using the corrected data as referenced in the previous question.

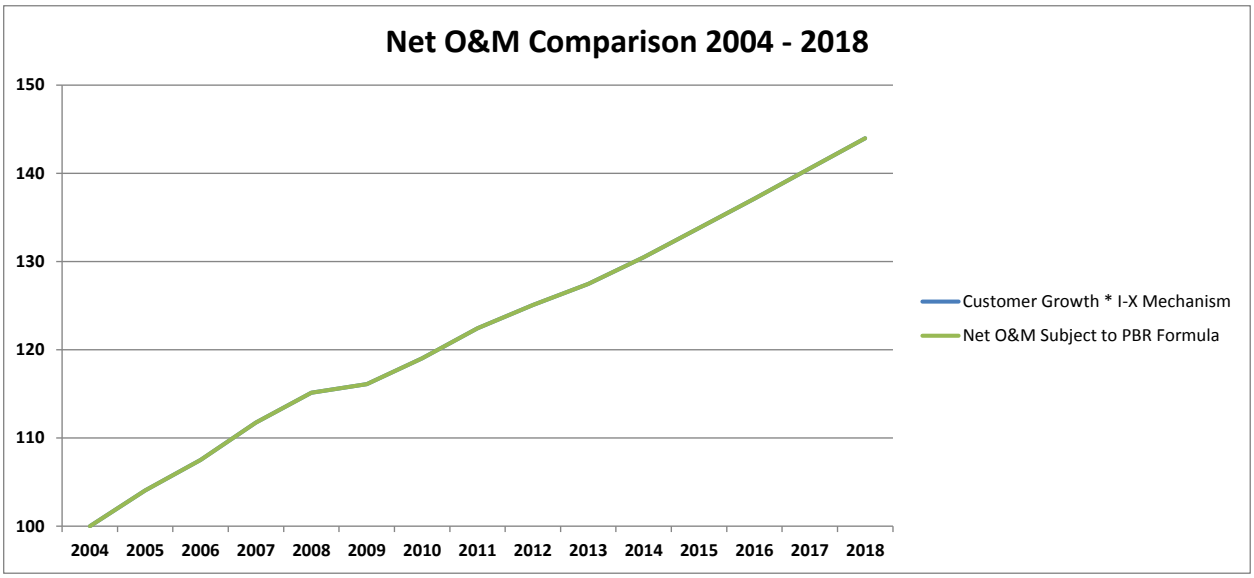
Response:

Similar to the response to FEI BCUC IR 1.52.6 (Exhibit B-11), in plotting these two lines in the requested graph, they overlap each other given that the 2004 "Base O&M" amount provided in the Table in FEI-FBC BCUC PBR IR 3.4.2 is inflated by the Customer Growth times I-X Mechanism annually to get the "O&M applicable to PBR Formula" in that Table. The annual O&M amounts would increase at the same rate as the Customer Growth times I-X Mechanism.

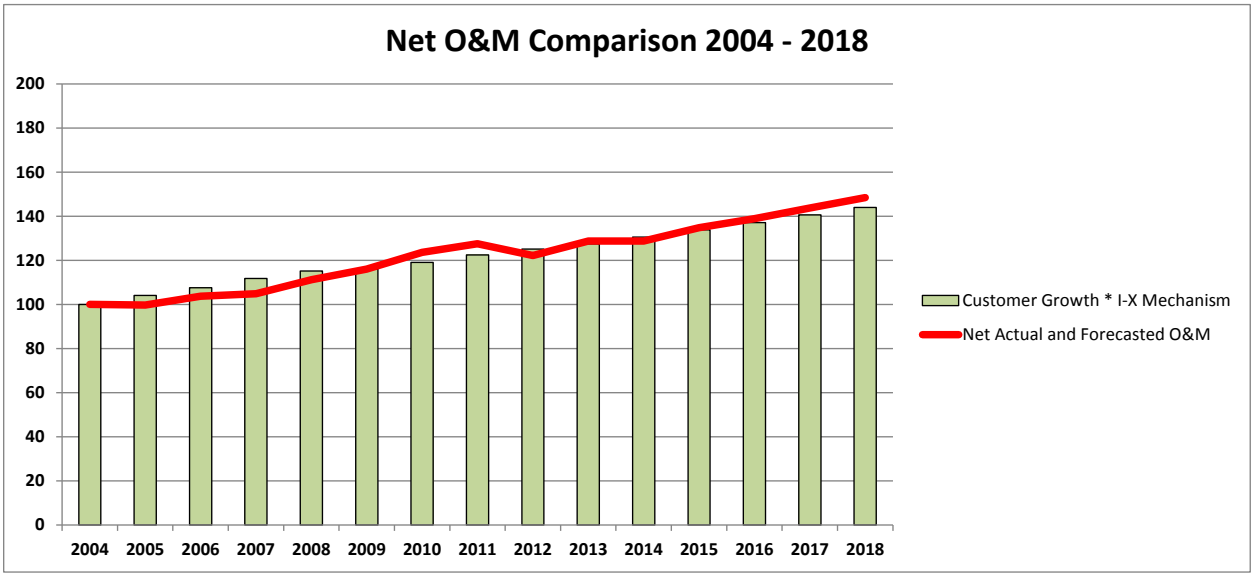
FEI has provided a second graph which compares the Customer Growth times I-X Mechanism to the 2004-2018 Actual and Forecasted O&M as provided in Attachment 4.2 in response to FEI-FBC BCUC PBR IR 3.4.2. FEI is not clear on what the Commission anticipates this graph will portray, since the formula line was not used to set rates during the historical periods and could not be expected to drive productivity investments in those periods. However, FEI does conclude that at a high level it supports FEI's assertion that FEI invested in productivity during

1 the last PBR period and expects that the formula will drive productivity when compared to
2 forecasts in this PBR period.

3 These graphs are also included in Attachment 4.2 provided in response to FEI-FBC BCUC PBR
4 IR 3.4.2.



5



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5.2 Please comment on what the graph in the previous indicates about the three time periods: 2004 to 2009, 2010 to 2013, and 2014 to 2018. For example, in the sample graph provided above, the Net OMA during the previous BPR period was consistently under the CPI-AWE trend line, the Net OMA has increased considerably since the end of the prior PBR period, and the "2012-13 Analysis" savings do not appear to have reset the Net OMA lower for 2014-18.

Response:

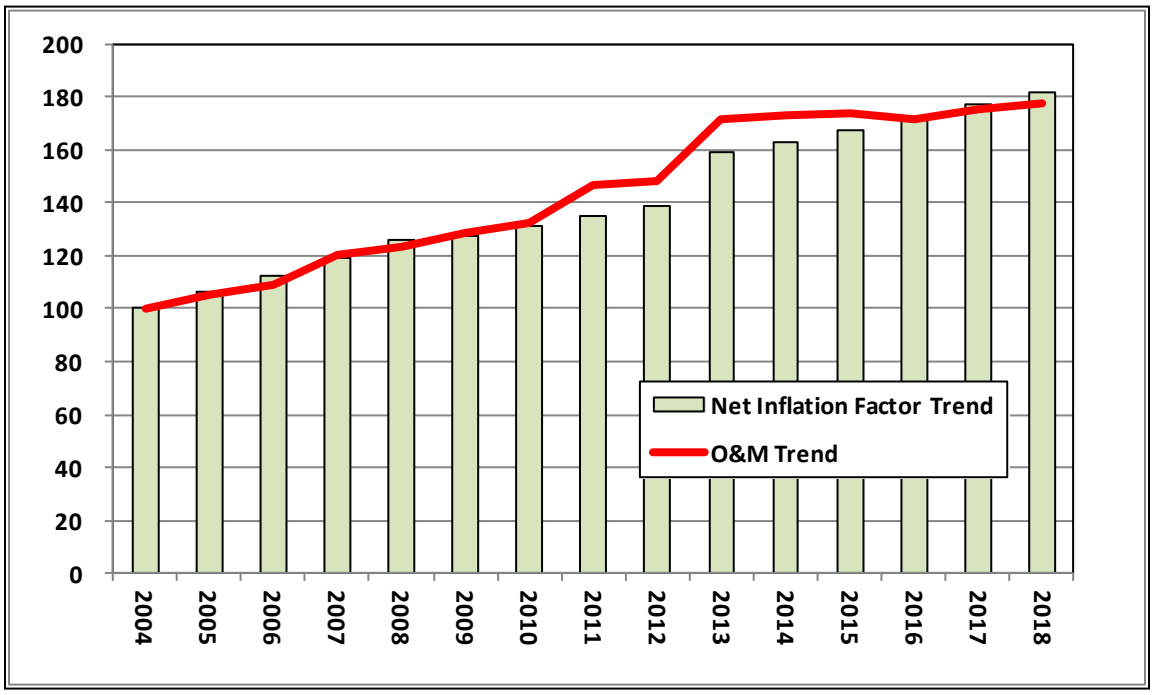
The first graph provided in the response to FEI-FBC BCUC PBR IR 3.5.1 shows a steady increase in all years, with the exception of 2009, due to a fairly stable increase in the BC-AWE, BC-CPI and Average Customer Growth used in determining the Customer Growth times I-X Mechanism. The 2009 amount was relatively flat due to a reduction in both the BC-AWE rate (0.8%) and BC-CPI rate (0.0%) in that year.

The second graph provided in the response to FEI-FBC BCUC PBR IR 3.5.1 is not indicative of any trends or analysis of FEI results and no specific analysis should be based on this graph. For example, while the 2014 through 2018 forecasted O&M is still greater than the formula amounts (as is the case with the amounts provided in the FEI Application), this table does not factor in the 2013 Base O&M applicable to the PBR Formula of $201.0 million in net O&M ($231.0 million gross O&M) as the starting point for the 2014-2018 formula amounts. Instead, it derives a formula amount for 2014 beginning with a 2004 Base O&M amount and inflates that amount by the requested formula in the FEI 2014-2018 PBR Application. This produces a "2013 Base O&M Applicable to PBR Formula" amount of $199.0 million as shown in FEI-FBC BCUC PBR IR 3.4.2. This fictional 2013 Base O&M Applicable to PBR Formula amount of $199.0 million is not indicative of FEI's business requirements which have changed in many ways over successive applications from 2004 through 2013.

5.3 Please repeat the same data and comment from the previous two questions for FBC.

Response:

The FBC information has been provided in the figure below:



Please note that the 2013 increase is primarily due to the City of Kelowna acquisition.

Please refer to the response to FEI-FBC BCUC PBR IR 3.4.3 for a discussion of why no specific analysis should be based on this graph.

6.0 Reference: FEI Exhibit B-1-1, Appendix E1

FEI Exhibit B-11, BCUC 1.4.2, 1.55.1

Inflations and Adjustments

"The impact of not including an adjustment for the actual I-Factor in the PBR plan will depend on whether the composite actual inflation rate is above or below the forecast level. If the forecast I-Factor is lower than the actual, then customers will pay a slightly lower unit rate. Conversely, if the forecast inflation rate is higher than the actual rate, customers will pay a slightly higher unit rate. The forecasts are sourced from independent third parties, and FEI does not believe there will be any material impact of not adjusting the forecast composite I-Factor to the actual level. The revenue requirement impact of any small differences, one way or the other, between the forecast and actual I-Factor results will be caught up in the 50/50 earnings sharing mechanism, further diminishing any effect." (FEI Exhibit B-11, BCUC 1.4.2)

"In this sense, the re-forecasting features of the 2014 PBR are the same as those included in the 2004 PBR Plan. This involves adjusting the base for the O&M formula for actual customer growth when known, but there will be no adjustment for actual composite inflation. … The re-forecasted average number of customers will be incorporated into the O&M base for formula O&M calculation of the next year (including the actuals when known). **The adjustment for the actual customer count may go in either direction.**" (FEI Exhibit B-11, BCUC 1.55.1) [Emphasis added]

6.1 Please provide the BC Ministry of Finance inflation forecasts issued in 2007 through 2011, and the actual Statistics Canada BC CPI inflation for 2008 through 2012. Please provide the annual percentage variance for the forecast to actual inflation for 2008 through 2012. Conceptually, in 2007 a CPI forecast was made for 2008; the actual CPI in 2008 is compared to the forecast for 2008 prepared in 2007. If FEI prefers, please use the composite CPI forecast using data produced in 2007 through 2011 from the entities referenced in Appendix E1 of Exhibit B-1-1.

Response:

FEI provides the requested information below, using the CPI forecasts provided in Appendix E1.

	2008	2009	2010	2011	2012
FEI BC-CPI - FORECASTS	2.10%	1.90%	1.90%	2.00%	2.00%
Source: Average of CPI FORECASTED by RBC, TD, CIBC, BMO, CBOC & BCMF					
Statistics Canada BC-CPI Actuals (2008 to 2012) *Source: Statistics Canada Canism Table 326-0021*	2.10%	0.00%	1.30%	2.40%	1.10%
Variance Forecast to Actuals (BCMF to Stats Can)	0.00%	1.90%	0.60%	-0.40%	0.90%

	2008	2009	2010	2011	2012
BC Ministry of Finance 2007 BC-CPI Forecast	1.80%	2.10%	2.10%	2.10%	2.10%
Source: BC Minsitry of Finance 2008/09-2010/11 Bueget and Fiscal Plan, Table 4.9.2, p.142					
Statistics Canada BC-CPI Actuals (2008 to 2012)	2.10%	0.00%	1.30%	2.40%	1.10%
Source: Statistics Canada Canism Table 326-0021					
Variance Forecast to Actuals	-0.30%	2.10%	0.80%	-0.30%	1.00%

6.2 Please confirm, or otherwise explain, that the magnitude of the annual percentage change in the BC-CPI component of the composite I-factor is larger than the magnitude of the annual percentage change in the Customer Growth.

Response:

Confirmed based on the Companies' current estimates of BC-CPI and customer growth.

6.3 Please explain why there is to be an adjustment for the customer count because it can go in either direction but not an equivalent retroactive adjustment to the BC-CPI component of the composite I-factor, which can also go in either direction.

Response:

There is no retroactive adjustment made to the prior year revenue requirement to "true up" for actual customer count or actual inflation in that past year.

At the end of year 1 the Companies make a forecast of customers for year 2, and adjust revenues for year 2 to reflect that forecast before applying the inflation adjustment. For year 3, if the actual number of customers at the end of year 2 differs from the forecast for year 2, then the base revenue requirements for year 3 would be adjusted to correct for customers actually added in year 2. In other words if, for example, there is growth of 100 customers forecasted for 2014, but at the end of 2014 it turns out only to be 90 new customers, then the forecast for 2015 would start from the 90 customers not 100 customers. And then the adjusted amount is multiplied by the inflation adjustment.

At the end of each year, the CPI and AWE factors are set on a forecast basis using independent third party forecasts for the coming year. The results from the prior year do not affect the base revenue requirement for the coming year. This treatment is the same as the previous FEI PBR.

The main justification for the different treatment is that the utility's costs are more affected by forecasts of inflation than actual inflation and they tend not to change (or change much) if actual inflation is higher or lower than forecast. This is a function of issues like multi-year labour agreements that include yearly increases that are similar to the outlook for inflation. Since these are contractual commitments, these labour rate increases do not change with fluctuations in actual inflation.

A true retroactive adjustment in the sense of truing up the past year's results would not be appropriate. The adjustment for customer count is based on actual costs beyond the reasonable control of the Company. Making a retroactive adjustment for the actual value of the I-Factor has a negative effect. The adjustment would increase the financial risk under the Plan because all of the decisions made during the Plan period when the I-Factor is set will be based on the level of revenue and the potential to earn that revenue. If the I-Factor is adjusted retroactively any reduction would come from the actual earnings for the period. Any increase in the I-Factor would not produce actual revenues because there is no retroactive ratemaking but would increase paper earnings above the actual resulting in a sharing of phantom earnings thus effectively reducing earnings available for shareholders.

C. CAPITAL EXPENDITURES

7.0 Reference: FEI Exhibit B-1, pp. 59, 221-222

Capital Expenditures and CPCNs

FEI states "Regular capital expenditures will be determined by formula and CPCN expenditures will be excluded from the formula and will continue to be subject to the minimum $5 million cost threshold. CPCN expenditures will only be included in rate base after receiving CPCN approval from the Commission and being placed into service." (FEI Exhibit B-1, p. 59)

7.1 Does "minimum $5 million cost threshold" mean that FEI will not apply for a Certificate of Public Convenience and Necessity (CPCN) for a project with an estimated cost less than $5 million, or that FEI must apply for a CPCN for a project with an estimated cost greater than $5 million? Please include quotes from the 2014 PBR Plan that supports the response.

Response:

Under the UCA, extensions to the system are deemed to have a CPCN unless otherwise determined by the Commission. The threshold, in effect, represents a determination by the Commission that projects above the threshold require a CPCN.

The $5 million CPCN cost threshold was established in the 2004 PBR Plan by Commission Order G-51-03 Appendix A on page 8 which stated as follows:

> *CPCN expenditures are excluded from the capital formula. Except in very unusual circumstances, CPCNs will not be filed for projects below $5 million.*

The CPCN threshold was reviewed again in FEI's 2010 to 2011 RRA proceeding where again parties agreed to keep the threshold at $5 million.

FEI considers that any projects greater than $5 million require a separate review from the Commission consistent with longstanding process. Further FEI believes that some projects less than $5 million may also require a separate Commission review under extraordinary circumstances in order to satisfy the public interest.

7.2 Please identify any project costs, such as contingency, overheads, or AFUDC, that are excluded from the estimate of total project costs for comparison to the $5 million threshold, and explain why they are excluded.

Response:

FEI considers that all project capital costs including contingency are to be included when assessing whether to apply the $5 million threshold to a project and file a CPCN separately. Capitalized overheads are not allocated to CPCN projects. These projects are discrete, managed separately from regular capital, and already have overhead directly allocated to the capital costs. AFUDC is not included as this amount will vary depending on the length of time the project is in progress and the Company's allowed AFUDC rate at the time.

The items that are included and excluded are consistent with historical practice under either cost of service of PBR.

7.3 Are estimated project costs expressed in as-spent dollars? If not, please explain why not.

Response:

FEI's practice has been to express project costs in both as-spent and constant dollars.

7.4 What was the basis for the $5 million cost threshold?

Response:

Please refer to the response to FEI-FBC BCUC PBR IR 3.7.1.

7.5 When was the $5 million cost threshold first identified?

Response:

Please refer to the response to FEI-FBC BCUC PBR IR 3.7.1.

7.6 Starting from the year identified in the response to the previous question, please use factors appropriate to project costs to inflate the $5 million cost threshold to the equivalent amount in 2018 dollars.

Response:

In the 2010-2011 RRA, FEI requested the approval to increase the CPCN filing threshold from $5 million. However as per Order No. G-141-09, through the Negotiated Settlement Agreement, the parties agreed that the CPCN threshold will be $5 million except in extraordinary circumstances.

Therefore based on the last review in the 2010-2011 RRA, FEI calculated the $5 million cost threshold to the equivalent amount in 2018 dollars using a start year of 2010. Based on this assumption escalating at 2 percent annually the threshold in future 2018 dollars would be $5.9 million.

FEI does not agree with a CPCN threshold that changes annually with inflation. CPCN projects often span many years, and this approach would not provide the required clarity around which projects require a CPCN filing.

7.7 Will any controllable capital expenditures that are not CPCN expenditures be excluded from PBR formula capital expenditures? If yes, please provide examples and justify each.

Response:

All controllable capital expenditures for FEI that are not CPCN expenditures are included in PBR formulas. There may be non-controllable capital expenditures associated with exogenous factor applications that are below the CPCN threshold of $5 million.

Note that as capital expenditures for biomethane upgraders and NGT fuelling stations are not recovered through FEI's delivery rates, these amounts are not subject to the PBR formula.

7.8 Please provide a comprehensive definition for any such controllable capital expenditures that are not CPCN expenditures that would be excluded from PBR capital formula expenditures under the proposed 2014/18 PBR.

Response:

Please refer to the response to FEI-FBC BCUC PBR IR 3.7.7.

As part of forecast Transmission System Sustainment Capital that would be included in PBR formula capital expenditures, FEI identifies seven projects that involve replacement of sections of pipeline for compliance with CSA Standard Z662. (FEI Exhibit B-1, pp. 221-2)

7.9 One project involves the 1957 vintage 273mm OD Savona Nelson Mainline with a cost of approximately $4.1 million. Depending on when the project is brought forward and cost increases up until that time, is it possible that the estimated cost of this project would exceed the $5 million threshold? If the estimated cost exceeded the threshold, could FEI choose to carry out the project within PBR formula capital rather than filing a CPCN application for the project?

Response:

The project referred to actually includes individual sections of pipe, often several kilometers apart, that were grouped in FEI's Application to illustrate a more complete picture of total costs. Each section of pipe will be treated as a separate project during execution and it is unlikely that any of the individual projects will exceed the $5 million CPCN threshold. Correspondingly, these projects will be covered by the PBR formula capital. If more up-to-date estimates or changing conditions result in any single project exceeding the threshold, FEI will file the appropriate CPCN; however, at this time, there is no reason to believe that a CPCN will be required.

7.10 In the circumstances identified in the previous question, if FEI could proceed with the project as PBR capital rather than as a CPCN project, would it choose to file a CPCN application?

Response:

As explained in response to FEI-FBC BCUC PBR IR 3.9.2, the arbitrary inclusion or exclusion of projects by the Commission or Utilities is inconsistent with the intent of the PBR plan (It may lead to regulatory opportunism) and the parameters of what is included within the formula and what is excluded should be determined in advance as part of the Commission's determination in this Application. Therefore any project that meets the approved CPCN criteria should be treated outside the PBR formula and through a separate regulatory proceeding.

7.11 A second project involves the 1957 vintage 323 OD Savona Nelson Mainline with a cost of approximately $1.2 million. Why does FEI show the Savona Nelson Mainline work as two separate projects, rather that as one project with a cost of approximately $5.3 million that is in excess of the CPCN cost threshold?

Response:

The two projects indicated for the Savona Nelson mainline are a consolidation of 16 smaller pipeline upgrades and have been combined into two projects for convenience in budgeting, project management and work administration. It should also be noted that the two projects referred to are scheduled in different years, one in 2014 and one in 2015. The work is widely dispersed with six segments in 2014 being east of Oliver in the south Okanagan and ten segments west of Kamloops and west of Vernon in the north Okanagan scheduled for 2015. The work required is completed by a small group of specialized employees, requires specialized equipment and must be scheduled in recognition of their availability. Due to the importance of the work and potential negative impacts of errors the work is consistently completed by FEI personnel. With more than 150 kilometres between Oliver and Vernon and in view of FEI's capacity to complete the work, it is appropriate the two projects be planned, managed and executed separately.

7.12 Could FEI decide at a future time to combine the two projects and apply for a CPCN for the combined capital expenditure? Please confirm that, under the

proposed terms of the PBR for 2014-18, the expenditure would then be excluded from PBR capital expenditures. If it would not be excluded, please explain why not.

Response:

As indicated in response to FEI-FBC BCUC PBR IR 3.7.11, due to operational and technical reasons, FEI believes that these two projects should be planned, managed and executed separately and therefore the projects will be accounted for as expenditures under the PBR formula as long as each does not meet the approved CPCN materiality threshold on its own.

Future projects, including the ones cited in FEI-FBC BCUC PBR IR 3.7.9, may be divided into smaller segments or consolidated into bigger ones based on sound technical and operational reasons (such as availability of specialized workforce and equipment, facilitation of project management and work administration, geographic location of the projects, etc.). If such combined projects were filed as a CPCN application, the Commission will be able to review the reasons for doing so in the CPCN review process and make its decision accordingly. FEI confirms that if two small projects were to be combined for a valid reason such that the combined value exceeds the CPCN threshold, and the Commission agreed with that approach, then they would be excluded from PBR capital expenditures as a CPCN project.

FEI does not intend to consolidate unrelated projects or smaller similar projects that would normally be carried out separately in order to create a combined project that exceeds the CPCN threshold. Doing this would compound the regulatory burden and potentially hinder the ability to move forward with projects on a timely basis. This would also be contrary to important objectives of PBR such as providing the utility with more flexibility to manage its business in order to pursue efficiencies and reducing regulatory burden.

The concern being articulated in the question is not unique to PBR.

8.0 Reference: FBC Exhibit B-1, pp. 58, 179, 226-31

Capital Expenditures and CPCNs

"In order to set the base level of capital expenditures for application of the PBR formula, FBC uses 2013 Approved capital expenditures as a starting point, less those expenditures which are not representative of on-going requirements." FBC eliminated "major or non-recurring types of capital" when preparing Table C5-2. (FBC Exhibit B-1, p. 179)

FBC states that one criterion for filing a CPCN application for a project is "The total project cost is $20 million or greater." (FBC Exhibit B-1, p. 226)

FBC anticipates filing CPCN applications for the following projects, even though it identifies cost estimates that are less than $20 million:

- Kelowna Bulk Transformer Capacity Addition;
- Grand Forks Transformer Addition;
- Ruckles Substation Upgrade; and
- Grand Forks to Warfield Fibre Installations.

8.1 Please explain why FBC believes that a CPCN application is required for each of these projects.

Response:

Please refer to the response to FBC BCUC IR 2.45.3 (Exhibit B-24).

8.2 Please explain the basis for the $20 million criterion.

Response:

As part of its 2005 Capital Plan, FBC proposed a number of criteria to be used to determine if a project should be subject to a CPCN application, including whether the total project cost is $20 million or greater. Similar to BC Hydro's (then BCTC) proposed threshold of $50 million, which equated to an increase in BCTC's revenue requirement of approximately 1 percent, FBC's proposed $20 million threshold was based on the approximate rate impact (less than 1 percent) associated with projects of this magnitude.

In its decision (G-52-05) regarding the 2005 Revenue Requirements and Capital Plan, the Commission indicated it was in general agreement with FBC's assessment of the appropriate criteria for determining which projects should be subject to a CPCN.

8.3 Please identify any project costs, such as contingency, overheads, or Allowance for Funds Used during Construction (AFUDC), that are excluded from the estimate of total project costs for comparison to the $20 million criterion, and explain why they are excluded.

Response:

Given that project costs such as contingency, overheads, and AFUDC all form a portion of the rate impact associated with a given project, these costs are included in the total project estimate for comparison with the $20 million threshold.

8.4 Are the estimated project costs expressed in as-spent dollars? If not, please explain why not.

Response:

Yes, the estimated project costs are expressed in as-spent dollars.

8.5 Please confirm that, under the proposed rules for the 2014/18 PBR, FBC will apply for a CPCN if the estimated project cost is $20 million or greater, and may apply for a CPCN if the estimated cost is less that that. If this not correct, please explain the meaning of the $20 million threshold.

Response:

Confirmed. The current Commission approved criteria for filing of a CPCN includes the $20 million threshold, but also additional criteria as described in FBC's Application (Exhibit B-1), Section C 5.7.

8.6 Does FBC propose that "major or non-recurring types of capital" would be excluded from capital expenditures to which the PBR capital formula for 2014/18 would apply? Would all CPCN expenditures be excluded? If not, please explain.

Response:

Confirmed. As noted in FBC's Application (Exhibit B-1), Section B6.3.2, FBC proposes that the use of formula-based calculations be limited to the regular capital expenditures, with larger (major) capital projects (generally CPCN projects) excluded from the PBR formula.

It is frequently the case that PBR formulas are not able to appropriately accommodate all the lumpy and capital-intensive projects that are common in the utility industry. As a solution to this problem many regulators allow projects that meet specified criteria to be treated outside the PBR plans. The specified criteria for treatment of projects outside of the PBR plan will vary from one PBR plan to the next based on the particular circumstances of the utility and the PBR model adopted, as well as any rules or guidelines that have been established by the regulator. For specific information regarding FBC's proposed CPCN criteria please refer to FBC's Application (Exhibit B-1), Section C 5.7.

8.7 Other than CPCN projects, the Advanced Metering Infrastructure (AMI) Project and PCB compliance, will any other controllable capital expenditures be excluded from PBR capital formula expenditures? If yes, please give examples and explain why they would be excluded.

Response:

FBC intends to manage all controllable capital expenditures under the proposed PBR formula, and has not identified any capital expenditures (other than those projects discussed in FBC's Application (Exhibit B-1), Section C5.7 which it would seek to have excluded from the PBR formula.

8.8 Please provide a comprehensive definition of "major or non-recurring types of capital" that should be excluded from PBR capital formula expenditures for the 2014/18 PBR.

Response:

As noted in the response to FBC BCUC IR 1.34.1 (Exhibit B-7), the definitions of Major Capital and non-recurring capital are not exclusive as both Regular Capital and Major Capital projects may be non-recurring in nature. As such, it is the distinction between Regular Capital and Major Capital that is important. Major Capital can be defined as expenditures outside of normal steady-state operations, which would not be considered representative of the types of on-going requirements that the proposed PBR mechanism is intended to apply to.

The types of Major Projects described in FBC's Application (Exhibit B-1), Section C5.7 include substation upgrades, construction of a new substation, construction of new fibre optic cable, as well as civil infrastructure rehabilitation for the Corra Linn generating plant. These projects, and the lumpiness of the expenditures associated with them, are well outside normal steady-state operations. Indeed, there is no provision for expenditures of these types in the determination of the 2013 Base Capital; hence classification of these projects as Major Capital is appropriate.

9.0 Reference: FBC Exhibit B-1, p. 226

FEI Exhibit B-1, p. 59

Capital Expenditures and CPCNs

FBC states that one criterion for filing a CPCN application for a project is "The total project cost is $20 million or greater." (FBC Exhibit B-1, p. 226)

FEI states "Regular capital expenditures will be determined by formula and CPCN expenditures will be excluded from the formula and will continue to be subject to the minimum $5 million cost threshold." (FEI Exhibit B-1, p. 59)

9.1 Please confirm that the *Utilities Commission Act* (UCA) and regulatory practice provides FBC or FEI with a great deal of discretion about project scope and timing when it files a CPCN application for a capital expenditure. If not, please explain and provide specific references to the legislation.

Response:

Section 45 of the UCA, in tandem with any Commission determined CPCN thresholds, establishes certain requirements for when FBC and FEI may have to obtain a CPCN before constructing and operating extensions to the utility system. Project scope and timing are, however, not dictated by the UCA.

The scope and timing of a capital project are driven by multiple factors, including the need for the project, available and cost-effective alternatives to meet the need, available information with respect to each alternative, and rate and socio-economic impacts. Additionally, the timing of the project may also be impacted by other similar constructions in Canada and across North America, as competition for both resources and materials is likely. The Companies design the project based on the best information available at the time of filing of the CPCN.

9.2 Does the Commission have the ability to refuse to issue a CPCN for an otherwise well-justified expenditure if the Commission concludes that the expenditure is of a nature that should be included in the capital expenditures covered by the PBR capital formula (and which the approval of a CPCN would exclude under the proposed PBR mechanism)?

Response:

The parameters of what is included within the capital formula and what is excluded should be determined in advance as part of the Commission's determination in this Application. FBC and FEI are proposing that the treatment be determined by whether, (i) under the Commission's existing approved criteria for FEI and FBC, a CPCN is required, or (ii) whether the expenditure is associated with an exogenous factor. If a project requires a CPCN under the Commission's guidelines, then it should be addressed outside the capital formula. If the expenditure is driven by an exogenous factor, then it should be addressed outside the formula.

In the case of FEI, the CPCN threshold is a financial criterion - $5 million. FBC's criteria include a financial limit of $20 million and other elements. Given FBC's higher financial threshold (and particularly relative to FBC's size compared to FEI), there is a greater potential for projects under that limit to go well beyond what would be considered as normal "steady state" capital expenditure so as to potentially be excluded from the formula due to unforeseen or exogenous factors.

B&V adds that the question seems to imply that the Commission could arbitrarily reject a project that would provide a safer and more reliable system in order to avoid the costs of that project passing through to the customers who benefit from the project solely for the reason that the Commission did not agree with the particular rate treatment approved under the PBR Plan. This type of regulatory opportunism would be inconsistent with the PBR Plan concept that permits the Plan to operate without regulatory intervention except in the instance that an off-ramp or re-opening provision is triggered to protect the integrity of the Plan.

Please refer to the response to FEI-FBC BCUC PBR IR 3.9.3.

9.3 In the circumstances set out in the previous question, could the Commission issue a CPCN for the project with a condition that the expenditure would be included in the capital expenditures covered by the PBR capital formula?

Response:

If, based on the predetermined parameters of the capital formula, a project should be outside of that formula, then imposing such a condition will defeat the purposes of having certain capital expenditures excluded from the PBR formula as further explained below.

First, the purpose of excluding capital projects that require a separate regulatory approval process is to recognize some capital expenditures will require special treatment under the PBR

for reasons such as costs being not completely within the control of the company, the costs to build capital being significantly higher than historic norms, the need to build specific large projects, and the potential rate impact on ratepayers and financial impact on the utility. These types of expenditures cannot be reasonably expected, and would be difficult to recover through a PBR formula.

Second, excluding CPCN projects from the PBR capital formula as proposed by FEI and FBC also recognizes the variability of capital investments that are required to meet the customers' needs.

Please refer to the response to FEI-FBC BCUC PBR IR 3.9.2. B&V's view is that, essentially, this type of regulatory opportunism would break the implied bargain of the plan and would render the PBR concept unacceptable for the Companies. The PBR terms and provisions must be protected from modifications that have an adverse impact on the financial risk of the Companies and would create uncertainty about the risk/reward for investments in higher productivity (the goal of PBR).

9.4 Under the proposed terms of the 2014/18 PBR, what is there to prevent FBC or FEI from combining several generally similar capital expenditures into one project with an estimated cost that exceeds the applicable CPCN threshold?

Response:

The Commission has oversight over projects applied for CPCNs. Whether a project is subject to a CPCN application is guided by section 45 of the UCA, the Commission's 2010 Certificates of Public Convenience and Necessity Application Guidelines, and the Commission's established CPCN thresholds and criteria. The Companies are not proposing any change to the CPCN requirements, and the Commission can continue to apply the criteria in the normal course.

FEI has a $5 million threshold.

FBC's CPCN criteria are outlined in Order G-52-05 and the accompanying decision. There, the Commission discussed the criteria proposed by FBC to be used to determine if a project should be subject to a CPCN application, which included:

1. the total project cost is $20 million or greater; or
2. the project is likely to generate significant public concerns; or
3. FortisBC believes for any reason that a CPCN application should proceed; or

4. after presentation of a Capital Plan to FortisBC stakeholders, a credible majority of those stakeholders express a desire for a CPCN application.

The Commission further stated:

> *With regard to the CPCN Criteria, the Commission Panel is in general agreement with FortisBC's assessment of the appropriate criteria to guide the Company and the Commission when applying for CPCN's. However FortisBC has missed an important distinction with respect to the BCTC application. BCTC has acknowledged that the Commission has the authority to designate any projects it deems necessary for a CPCN application, regardless of the criteria. In exercising this prerogative the Commission will be guided by the suggested criteria. However, in practice the Commission intends to review each year's capital filings and will determine with reasons which projects will require CPCNs.*

The criteria will continue to guide the Companies' determination whether to apply for a CPCN during the PBR period. Based on these criteria, in both Applications, the Companies have identified a number of capital projects that the Companies anticipate to file for CPCN approval during the PBR period. (See Section C5.7 of FBC's Application and section C4.7 of FEI's Application). Additionally, each company has explained the categories of capital expenditures that will fall under the proposed capital formula during the PBR period.

Please also refer to the response to FEI-FBC BCUC PBR IR 3.7.12.

9.5 Unless the Commission is able to separate the approval of a CPCN for a project from the treatment of that expenditure under the PBR, how could the Commission prevent an outcome that would be inconsistent with the intent of the PBR?

Response:

B&V provides the following response.

As proposed, there is no basis to conclude that the approval of a CPCN and the pass through of those costs outside the PBR formula is inconsistent with the intent of the PBR. The PBR Plan and the I–X formulas are predicated on an exclusion of the CPCN costs from the PBR mechanism. Arbitrarily including some CPCN costs under the plan would make it impossible for the Company to evaluate the economic incentives under the plan because they would never

know what the return-related risk of efficiency investments would be when the Commission had the right to force CPCN related costs on to the shareholder under the Plan. In doing so, the Commission increases the risk that the Company might not earn a just and reasonable return on its rate base investments. Further, it would be impossible to develop a reasonable X-Factor for the PBR Plan Period without using a forecast of future revenue requirements associated with CPCN projects included, which is basically just a form of cost of service ratemaking.

9.6 Should the 2014/18 PBR include a provision that a CPCN expenditure can only be excluded from the PBR capital formula expenditures if the Commission makes an explicit determination that it should be excluded? If not, please explain why not.

Response:

No, it should not. CPCN expenditures should be treated as being outside of the formula. Please refer to the responses to FEI-FBC BCUC PBR IRs 3.9.2 and 3.9.3 above.

B&V adds the following.

If the Commission determines to include or exclude CPCN costs from the PBR Plan, the Company has no way to determine the value of the X-Factor in the formula for adjusting revenue requirements in a way that is just and reasonable. The only logical option under this provision relative to CPCN would be to set the X-Factor at the value based on the studies provided to reflect the total impact of capital and to attempt to manage capital projects, including timing, magnitude and duration, within the context of the formula driven revenue requirements. By adopting this type of provision, the Commission significantly increases the risk associated with efficiency programs. Higher risks means higher cost and hence lower investment in efficiency, thus working against the purpose of the PBR Plan.

9.7 Please set out the criteria, such as major or non-recurring, that FBC and FEI propose the Commission apply to determine whether a capital expenditure should be excluded from PBR formula capital.

Response:

FEI's and FBC's views of what capital should be excluded from the PBR capital formulas are stated in the quotes in the question preamble (as well as FBC's additional criteria as detailed in Exhibit B-1 p. 226). These are projects that meet the CPCN cost thresholds or criteria. Please also refer to the response to FEI-FBC BCUC PBR IR 3.9.2.

9.8 Should the Commission consider this question during its review of the CPCN application, as part of the PBR Annual Review process or at some other time?

Response:

The PBR Plan should be adopted as filed. In that event, there would be no consideration of the question during the pendency of the Plan because it would be a specific treatment already approved.

10.0 Reference: FBC Exhibit B-1, pp. 63, 73-74

FEI Exhibit B-1, pp. 70, 79-81

Other Capital Projects in Annual Review

FBC states "Larger projects which will be the subject of CPCN applications in addition to any other large projects that the Company may ask for approval as part of the Annual Review will be added into rate base after they are approved and complete." (FBC Exhibit B-1, p. 63)

FEI states the Annual Review will address "Any proposals for funding of incremental resources in support of customer service and load growth initiatives." (FEI Exhibit B-1, p. 79)

10.1 Please provide examples of the "other large projects" that FBC is referring to, and explain why each is neither a CPCN project nor included in PBR capital formula expenditures.

Response:

The quotation was not intended to distinguish between types of projects but rather between the type of regulatory process that would be used to address projects that qualify as CPCNs. The proposal to possibly seek approval for such projects at the Annual Review (as opposed to a stand-alone CPCN application) was considered in the interests of regulatory efficiency, however it is important to note that the Commission would still retain the ability to direct the Company to apply for its CPCN as part of a separate process should it disagree with providing such approval as part of the Annual Review. FBC currently anticipates filing CPCN applications for all major projects as described in Section C5 of the Application.

10.2 Would the "proposals for funding" that FEI refers to involve any capital expenditures? If yes, please, provide examples of the project expenditures that FEI is referring to, and explain why each is neither a CPCN project nor included in PBR capital formula expenditures.

Response:

The "proposals for funding" would pertain to the costs associated with specific revenue generating or load growth opportunities. This provision sets out a means to bring incremental revenue generating opportunities forward at the Annual Review process, in a PBR Plan that is

otherwise mainly focussed on finding O&M and capital efficiencies (and revenues are not part of the PBR formulas). The proposals brought forward at the Annual Review would identify the benefits (i.e. incremental expected revenues) and incremental costs of the specific initiative. The costs may be O&M or capital. FEI will bring proposals of this nature forward only if it believes there is a genuine opportunity to generate net benefits for customers; however if there is not a general consensus that FEI should engage in the opportunity it will not be taken forward for Commission approval. FEI does not have any specific examples of load growth or revenue generating opportunities to provide at this time. However the basis for including O&M or capital funding that is outside the formula for these proposals is that the revenues generated will be identifiably incremental to the Utility's other sources of revenue.

10.3 The PBR proposals by FBC and FEI contain several provisions to deal with unexpected situations, including the Exogenous Factors provision. Are there any of the expenditures identified in the previous two questions that would not be addressed and covered by one of these explicit provisions in the PBR proposals? If yes, please provide examples and justify each.

Response:

The expenditures for the revenue generating proposals discussed in this IR series would not be covered by the Exogenous Factors provision. Exogenous factor applications deal with the net cost impacts of unexpected situations that occur and are beyond the Utilities' control. The revenue generating proposals will be optional in the sense that they will be brought forward for consideration at Annual Reviews but will not be pursued if there is not general agreement that they are worthwhile. FEI and FBC do not have any specific examples currently but if and when any of these are brought forward at an Annual Review appropriate justification will be provided.

10.4 Do FBC and FEI believe there is a need for some sort of general provision for capital expenditures that are outside of PBR Capital formula expenditures and are not covered by other proposed explicit provisions of the PBRs? If yes, please explain and provide a complete definition of the expenditures that would qualify.

Response:

Other than CPCN capital the only capital expenditures that might be outside the capital formulas are (i) expenditures that are necessary due to exogenous factor applications and (ii) those that might be associated with incremental revenue generating opportunities. Both of these types of applications will be brought forward through the Annual Review process together with appropriate justifications and will require Commission approval. FEI and FBC are not able to define these expenditures with any greater specificity because they will be dependent on the specific applications that are brought forward.

11.0 Reference: FBC Exhibit B-1, pp. 226-31

FEI Exhibit B-1, pp. 250-3

Impact of CPCN Projects on Regular Capital Expenditures

FBC describes a number of anticipated CPCN projects. (FBC Exhibit B-1, pp. 226-31)

FEI describes a number of anticipated CPCN projects including the stabilization of Right of Way in Burns Bog, and states, "As a result of operational issues that have been experienced, work has been undertaken over the past several years to stabilize most of the Right of Way in the Burns Bog area through which two transmission pipelines run. There are still sections that remain to be stabilized to mitigate the risk of ground movement and associated pipe damage. FEI anticipates filing a CPCN for this project and completing this project during the PBR period." (FEI Exhibit B-1, p. 251)

11.1 Has any of the Right of Way stabilization in Burns Bog been carried out under CPCNs? If yes, please provide a year by year list of the stabilization expenditures to date, identifying the amounts that were Operations and Maintenance (O&M) expense, CPCN capital expenditure and normal capital expenditure.

Response:

Please refer to the response to FEI BCUC IR 2.298.1 (Exhibit B-24).

11.2 Please explain why FEI believes it is necessary and appropriate to apply for a CPCN for the remaining Burns Bog stabilization expenditure.

Response:

Estimates based on previous similar right of way remediation in the area indicate costs in excess of the current $5 million threshold for filing a CPCN. At the time of filing the Application and as noted in Exhibit B-1, p. 251, FEI predicted a CPCN to be required to move the pipeline to temporary bypass, preload and consolidate the soils in the right of way and to reinstate the pipeline to their original alignment.

Since the original installation of the two pipelines through Burns Bog, development and third party activities have moved closer to the pipeline Right of Way. These activities are outside the control of FEI and have the potential to impact the unstable soil resulting in risk to the pipelines.

FEI is currently reviewing data received from inline inspection tools collected in August 2013 to determine current stresses on the pipelines and whether or not a CPCN is required or if further monitoring is recommended.

FEI considers it critical to protect the integrity of the pipelines through Burns Bog and the customers dependent on those pipelines for their supply of natural gas.

Please also refer to the responses to FEI BCUC IRs 2.298.1 and 2.298.2 (Exhibit B-24).

11.3 Do FEI and FBC agree that, other than examples such as a major system expansion, a CPCN expenditure will frequently reduce both future sustaining capital expenditures and future O&M expenses? If not, please explain.

Response:

A CPCN project does not ultimately reduce future sustaining capital but rather delays the timing of that future investment which in all likelihood will be greater in absolute dollars as the result of the delay. It is reasonable to conclude that the delay may produce a net present value reduction in revenue requirements for customers if the rate of inflation is reduced by the technological changes below the expected discount rate in the NPV analysis. Given the nature of the PBR Plan and the relatively short term of five years, the reduction in future sustaining capital would not impact the Plan period but may impact subsequent PBR Plans over time.

As for future O&M expenses, CPCN projects may reduce some O&M costs. Those O&M reductions may or may not be covered under the PBR Plan. For example, a CPCN project that reduced electric lines losses results in lower purchased power expenses and would pass through automatically because purchased power costs are not part of the PBR Plan mechanism. A similar result would occur for the gas system where new pipe replaces older leakier pipe and the quantity of lost and unaccounted for gas would be reduced. Some O&M expenses such as leak surveys are still required even for new installations so there is no saving at all. Finally, there may be fewer repairs on the new segments of main but it is also true that other segments have aged and the expected repairs increase.

In many cases, new sustaining projects may actually result in O&M cost increases. The “state of the art” has advanced and hence the use of electronic technology (in both gas and electricity) is ubiquitous. Today the Companies have much more monitoring and communications equipment than even 10 years ago. This new equipment has ongoing operating and maintenance costs – and these costs continue to escalate. The benefit to customers is that the new equipment makes the gas and electric systems more reliable and safer since the

Companies understand the state and condition of the systems much better. As well, it is simply not possible to purchase "dumb" devices any more – manufacturers don't even make them (e.g. electromechanical revenue meters for electric have given way to computerized/electronic meters).

It is therefore impossible to conclude that O&M costs and sustaining capital covered by the PBR Plan in general will decline as the result of CPCN projects.

11.4 Do the proposed PBR mechanisms include any provisions to adjust the PBR formula O&M amounts and formula capital expenditures for this effect? If yes, please identify them. If no, please explain why not.

Response:

Please refer to the response to FEI BCUC IR 3a.305.2, being filed concurrently with the PBR Methodology IRs.

11.5 When the Commission is reviewing a CPCN application, should part of its approval of the CPCN be a determination on the effects of the project on O&M and regular capital expenditures, and adjustments to the PBR parameters to recognize these effects? Please give reasons in the response.

Response:

Please refer to the responses to FEI BCUC IR 3a.305.1 and 3a.305.2, being filed concurrently with the PBR Methodology IRs.

12.0 Reference: FBC Exhibit B-7, BCUC 1.58.2, 1.58.2.1

FBC Exhibit B-11, BCPSO 1.11.1, 1.25.1, BCPSO 1.25.2

Actual Capital Expenditures outside 10% Deadband of the Formula-Based Amount

FBC states "O&M will not be rebased during the PBR term but will be reforecast annually." and "Limited rebasing of capital will occur if annual capital expenditures are above or below the formula-based amount by more than 10%." (FBC Exhibit B-1, p. 2)

In a table showing comparative PBR plans for Alberta Electricity and Natural Gas, Union Gas (2008-2012), Enbridge Gas (2008-2012) and OEB 4th Generation IR (Electricity), FBC indicates that for these utilities, "COS rebasing at the end of the PBR period (No annual re-calibrating or true-up)" is the methodology used. (FBC Exhibit B-1, p. 37)

12.1 Explain the difference between re-forecasting and re-basing as referred to in the first preamble.

Response:

In the context of the first quotation O&M re-basing means adjusting in some fashion to actual spending levels. Reforecasting in that context means reapplying the O&M formula with updated cost driver and inflation factor information (i.e. an updated customer count forecast and an updated I-factor based on then-current CPI-BC and AWE forecasts). O&M costs outside the formula such as pension and insurance costs will be reforecast based on the best information at the time.

12.2 Other than the reason that capital expenditures may be "lumpy", please explain the need for the +/-10 percent deadband for FBC as most of the lumpiness should already be accounted for in the non-recurring capital, Major Capital and CPCNs that are classified as non-recurring, Major Capital, or Z-Factors.

Response:

This issue does not pertain to the lumpiness of capital expenditures. Limited rebasing of capital expenditures that are above or below the formula-based amount by more than 10% threshold was designed mainly to address the concerns advanced by some interveners regarding the deferral of expenditures beyond the end of the term of FEI's 2004 PBR plan (For instance please refer to the preamble to FBC COPE IR 1.2.1 or refer to FEI's 2012-2013 RRA Decision,

Page 35, 2nd Paragraph). The interveners' concern was specific to FEI's 2004-2009 PBR plan (FBC's 2007 PBR plan did not include formula–based capital expenditures or a capital incentive component), nevertheless in order to keep consistency between the Electric and Gas PBR Applications, and despite the potential increase in regulatory burden and a decrease in PBR incentives, the Utilities decided to mitigate this concern in their Applications through the limited rebasing of capital expenditures that are above or below the formula-based amount by more than 10 percent.

12.2.1 Why did FBC set the deadband at +/-10 percent instead of, say, +/-5 percent or some other figure?

Response:

Annual recalibrating of capital expenditures, even in the proposed limited form, leads to a decrease in the incentive power of PBR plans[2] and increases the regulatory burden to all stakeholders (this is particularly the case with the limited rebasing since it is more complicated than a complete rebasing). Therefore it is important to strike a balance between the specific objective of limited capital rebasing (please refer to the response to FEI-FBC BCUC PBR IR 3.12.2) and the objectives of the PBR plan.

Assuming that FBC's proposed formula-based capital amounts remain unchanged, on an average annual basis, the 10% trigger will be reached if actual capital spending in the formula-based categories varies by more than $4.6 million[3] from the approved formula amounts. FBC believes that a $4.6 million capital variance amount is reasonable and reflects an appropriate amount that may be achieved through efficiency improvement investments. Further, FBC believes that lower threshold levels than 10% would significantly reduce the incentive power in the PBR and will put the capital component of the PBR plan at greater risk of turning into a complicated cost of service plan with the limited rebasing occurring on an annual basis.

[2] Report of the OEB (18th October, 2012): *"PBR decouples the price (the distribution rate) that a distributor charges for its service from its cost. This is deliberate and is designed to incent the behaviours described by the Board in 2000. This approach provides the opportunity for distributors to earn, and potentially exceed, the allowed rate of return on equity. It is not necessary, nor would it be appropriate, for ratebase to be re-calibrated annually", from* http://www.ontarioenergyboard.ca/OEB/_Documents/Documents/Report_Renewed_Regulatory_Framework_RRFE_20121018.pdf, Page 11

[3] FBC's cumulative formula-based capital is $230.2 million (updated in FBC's Evidentiary Update, Exhibit B-1-6 at Line 15 of Table B6-7) over the 5 years. $23.0 million equals 10 percent of $230.2 million. $23.0 million divided by 5 years equals $4.6 million.

12.3 FBC does not appear to have proposed a ceiling or collar on the actual capital expenditures, either above or below the +/-10 percent deadband. Please provide a ceiling or collar amount for the actual capital expenditures, above and below the +/-10 percent deadband.

Response:

Under the proposed mechanism, no collar is required because actual capital spending above or below the 10% threshold will be rebased for rate setting purposes in the context of an Annual Review.

12.3.1 Please discuss the pro's and con's of a penalty mechanism as an incentive for utilities in a PBR to ensure that their actual capital expenditures come in close to budget.

Response:

There is no reason to attempt to force the utility to adhere to a budgeted level of capital expenditures as it is contrary to PBR principles and reduces the incentive power of the PBR plan. This issue is correctly recognized by OEB in its recent report titled Renewed Regulatory Framework for Electricity Distributors: "*PBR decouples the price that a distributor charges for its service from its cost. This approach provides the opportunity for distributors to earn, and potentially exceed, the allowed rate of return on equity. It is not necessary, nor would it be appropriate, for ratebase to be re-calibrated annually*[4]"

A penalty mechanism can significantly reduce (possibly eliminate) the incentives for savings in Capital expenditures and therefore decreases the productive efficiency of the utility. It can also incent potential strategic behavior and gaming with regard to capital expenditures. For instance if the actual Capex is expected to be less than forecast, the utility may actually be incented to increase its expenditure that could have been deferred to a later period (detriment to ratepayers benefit). Further such a penalty mechanism on capital expenditures may encourage the arbitrage between operating and capital expenditures.

4 http://www.ontarioenergyboard.ca/OEB/_Documents/Documents/Report_Renewed_Regulatory_Framework_RRFE_20121018.pdf , Page 11

12.3.2 Would FBC consider an earnings sharing penalty for increases in actual capital expenditures that exceed 10 percent of the formula-based amount? If not, please explain why not.

Response:

No. An ESM penalty would not be a reasonable response under the PBR Plan where capital expenditures are already subject to the used and useful and prudence tests. Meeting those requirements assures customers that the investments are reasonable and thus fairly subject to full cost recovery with no earnings sharing.

12.3.3 Would FBC consider an earnings sharing penalty for decreases in actual capital expenditures that were less than 10 percent of the formula-based amount? If not, why not?

Response:

A penalty mechanism for decreases in actual Capex compared to formula is contrary to PBR principles. Please refer to the response to FEI-FBC BCUC PBR IR 3.13.1

12.4 Please explain the financial incentive for FBC to contain its actual capital expenditures within, or outside of the +/- 10 percent deadband.

Response:

The incentive with respect to the formula-based capital expenditures all pertains to capital spending variances within the +/- 10% dead-band. FBC receives no financial incentive from rebasing of capital expenditures that are above or below the formula-bases amount by more than 10 percent. This limited rebasing of capital expenditures reduces the incentive power of the

PBR plan. The purpose of including this mechanism is explained in response to FEI-FBC BCUC PBR IR 3.12.2.

12.5 When FBC provides the annual re-forecasts of its O&M expenditures, please explain why FBC did not include a deadband?

Response:

As explained in the response to FBC-FEI BCUC PBR IR 3.12.2, the 10% dead-band on capital expenditure was designed to address the concerns of some interveners in FEI's 2004-2009 PBR regarding the deferral of expenditures beyond the PBR term. Although there was a similar concern for O&M expenditures FBC believes that the O&M formula and the savings below the formula are generally permanent and easier to monitor. Rebasing after the PBR will confirm that the O&M efficiencies gained during the PBR term go to customers going forward. In addition FEI and FBC have both included an O&M component in their proposed Efficiency Carryover Mechanisms which will provide the same incentive each year for the Utilities to continue pursuing additional O&M efficiencies throughout the PBR term.

Another reason that a similar dead-band was not proposed for O&M expenditures lies in the different accounting treatment of O&M expenses relative to capital expenditures. O&M expenses are accounted for as current period expenses. Capital expenses become assets in utility rate base that earn the allowed return and are recovered in rates over time through depreciation expense. A dead-band on O&M expenses would place a limit on the amount of efficiencies that FBC could pursue. If such an O&M dead-band was in place and O&M savings caused the dead-band threshold to be reached, there would be no incentive for FBC to continue to seek other efficiencies (other than offsetting the small percentage increases allowed yearly by the O&M formula). On the other hand, the capital formulas provide a new envelope of spending each year and there is the same incentive each year (assuming the proposed ECM is accepted) to pursue savings of up to the 10% deadband below the formula amount.

12.6 Please explain why limited rebasing of capital expenditures is not considered an off-ramp non-financial trigger.

Response:

The premise of the question is wrong. It is unclear to the Utilities how the potential limited rebasing of the capital expenditure can be considered a "non-financial off-ramp". The 10% threshold for limited rebasing of capital expenditure is neither a non-financial measure, nor an off-ramp. This limited rebasing feature will function as an ongoing provision of the plan that will not trigger any special review or re-opening of the plan. If the +/- 10% threshold is triggered in any year of the term the required adjustment will be made and the PBR Plan will continue as normal subject to the effect of the limited rebasing being carried forward from that point. If the limited rebasing feature is triggered in any year it will be noted in the next annual review process that this has occurred.

12.7 If regular capital expenditures are controllable by FBC, please explain why limited rebasing of capital is necessary.

Response:

Please refer to the response to FEI-FBC BCUC PBR IR 3.12.2.

13.0 Reference: FEI Exhibit B-1, p. 57

FEI Exhibit B-1-1, Appendix B2; FEI Exhibit B-11, BCUC 1.52.1

O&M - Capacity Component

"The influence of the capacity component on O&M costs is not easily measured and would lack transparency if that measure were used. As a result, B&V believes it is appropriate to use customers since system capacity is also related to the number of customers and customer count becomes a reasonable proxy for the capacity variable in the formula. It effectively adds an estimate of additional O&M expense associated with system growth to the plan's revenue adjustment." (Underlined for emphasis) (FEI Exhibit B-1, p. 57)

"The physical capability of the distribution system to deliver gas to customers increases whenever new customers require main extensions or new development cannot be served from the existing main capacity and the system requires looping. The addition of customers at the periphery of the system expands design day delivery capacity. Essentially, conservation by existing customers frees up capacity within the system that for the most part cannot be used by new customers because of the differences in location of the loads on the system." (FEI Exhibit B-11, BCUC 1.52.1)

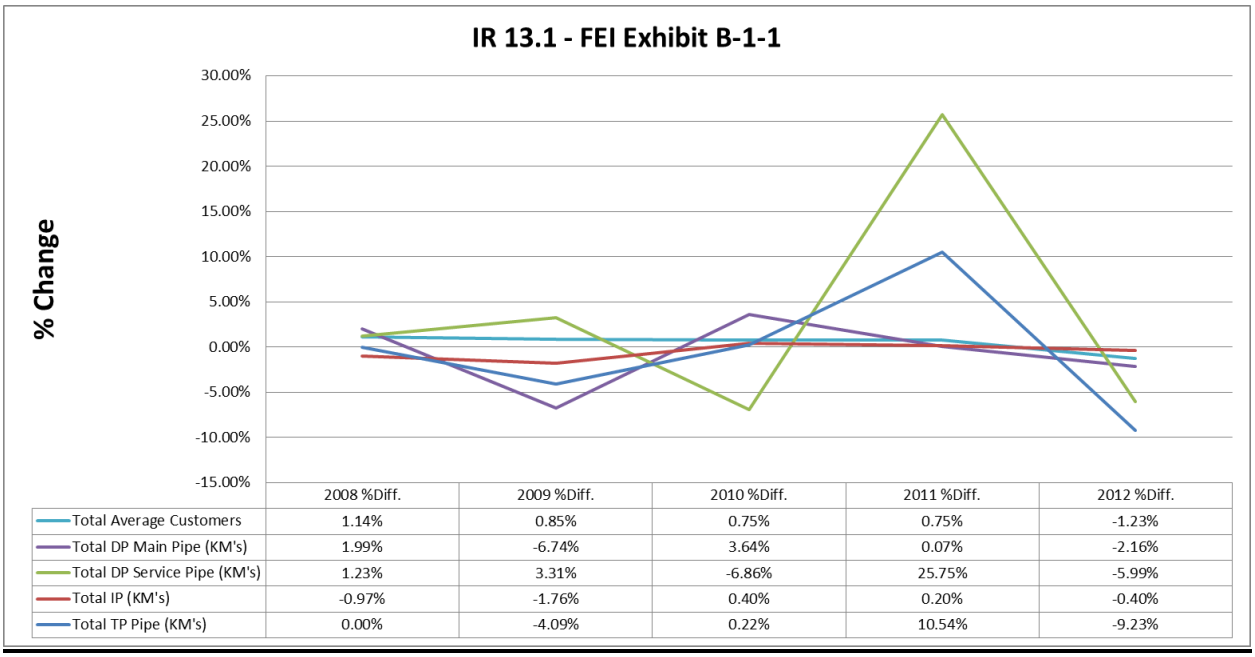
13.1 Using the Pipe Stats information in FEI Exhibit B-1-1, Append B, please prepare one graph showing the percentage change in the following items below from 2007-2012:

- Total Average Customers
- Total TP Pipe (KM's)
- Total IP (KM's)
- Total DP Service Pipe (KM's)
- Total DP Main Pipe (KM's)
- Total LP Pipe (KM's)

Include the requested information in the form of a fully functioning electronic spreadsheet.

Response:

The following graph shows the percentage change for the items requested excluding the LP Pipe (km's); the Low Pressure pipe, which was 24 km in 2008 was removed from the system in 2009.



	2008 %Diff.	2009 %Diff.	2010 %Diff.	2011 %Diff.	2012 %Diff.
Total Average Customers	1.14%	0.85%	0.75%	0.75%	-1.23%
Total DP Main Pipe (KM's)	1.99%	-6.74%	3.64%	0.07%	-2.16%
Total DP Service Pipe (KM's)	1.23%	3.31%	-6.86%	25.75%	-5.99%
Total IP (KM's)	-0.97%	-1.76%	0.40%	0.20%	-0.40%
Total TP Pipe (KM's)	0.00%	-4.09%	0.22%	10.54%	-9.23%

Attachment 13.1 contains the fully functioning Excel spreadsheet.

13.2 Capacity as measured by Total TP Pipe (KM's), Total IP (KM's), Total DP Main Pipe and Total LP Pipe (KM's) has decreased from 2007-2012, while the average number of customers has increased; given this relationship, please explain why customer count is a reasonable proxy for the capacity variable in the O&M formula.

Response:

B&V provides the following response.

Kilometers of main is not a proxy for capacity of mains. As an example, the capacity of transmission pipe segment 5000 meters of 8 inch main at 200 pounds of inlet pressure and 60 pounds of outlet pressure has 164 times less capacity than a 24 inch main operating at 750 pounds of inlet pressure and 60 pounds of outlet pressure but is only 1000 meters in length. Thus, if a longer main segment is replaced by a more direct route that has a shorter distance and uses a higher pressure and larger size of main, Kilometers of main will decline but total

capacity will still increase. We could also see kilometers of main stay the same in total but the kilometers of smaller main increases while larger main kilometers decrease and also see capacity increase because the smaller main operates at higher pressures than the larger main. Customer count is a reasonable proxy for capacity irrespective of the kilometers of main because each customer that takes firm service adds to the capacity requirement of the system even if the system is reconfigured to serve customer loads. A good practical example of this phenomenon is if an isolated part of a system is served off a long medium pressure main that serve no customers and a new higher pressure main is much closer to the system currently, it would make more sense and be less costly to upgrade the pressure in the isolated area by tapping the higher pressure main and abandoning the medium pressure main. This would result in fewer pipe Kilometers but more system capacity. Additionally, the elimination of low pressure mains results from replacing an old system that required larger sizes of mains operating at lower pressures that is typical of cast iron mains. Replacing those mains with smaller diameter plastic or steel at the very least held capacity constant and may well have increased capacity. Finally, given that the Company was serving more customers during this period, there is no reason to believe that system capacity has declined.

13.3 Please provide continuity schedules showing the changes in Total TP Pipe (KM's), Total IP (KM's), Total DP Service Pipe (KM's), Total DP Main Pipe and Total LP Pipe (KM's) for 2007-2013.

Response:

The following table summarizes the changes from 2007-2012:

FEI
Annual Report Statistics

2007-2012	2007	2008	Difference 2007 - 2008	2009	Difference 2008 - 2009	2010	Difference 2009 - 2010	2011	Difference 2010 - 2011	2012	Difference 2011 - 2012
Total Average Customers	816,427	825,696	**9269**	832,751	**7,055**	839,017	**6,266**	845,282	**6,265**	834,888	**- 10,394**
Pipeline Stats:											
Total TP Pipe (KM's)	2,418	2,418	**0**	2,319	**- 99**	2,324	**5**	2,569	**245**	2,332	**- 237**
Total IP (KM's)	516	511	**-5**	502	**- 9**	504	**2**	505	**1**	503	**- 2**
Total DP Service Pipe (KM's)	17,655	17,872	**217**	18,463	**591**	17,196	**- 1,267**	21,624	**4,428**	20,329	**- 1,295**
Total DP Main Pipe (KM's)	19,730	20,123	**393**	18,766	**- 1,357**	19,449	**683**	19,462	**13**	19,041	**- 421**
Total LP Pipe (KM's)	58	24	**-34**	0.5	**- 24**	-	**- 1**	-	**-**	-	**-**
Total Pipeline	40,377	40,948	**571**	40,051	**-898**	39,473	**-578**	44,160	**4687**	42,205	**-1955**

The 2013 comparable average customer and pipeline statistics will not be available until late January 2014. Pipeline statistics are derived from the company's GIS (geographical information systems) which are updated from field completion records throughout the year. The records

1 updates for projects and main and services work typically are substantial in Q4 owing to the
2 completion of field work in the summer and fall.

3

14.0 Reference: FEI Exhibit B-1-1, Appendix D2, p. 4; FEI Exhibit B-1, p. 58, 235

O&M - Capacity Component

"Raising operating pressure is possible so long as the current operating pressure is less than the maximum allowable operating pressure of the pipe. This would allow for added throughput with no additional investment. This option is only viable where load growth is concentrated in an area of existing utility service. Such growth is often referred to as infill. Infill increases productivity because the new capital cost to serve a customer is less than the embedded costs and the incremental O&M is very low." (FEI Exhibit B-1-1, Appendix D2, p.4)

"In 2010, the portion of new services in the Metro region was 29 percent and the portion of new services in the Fraser Valley was 43 percent. In 2012, these percentages are 38 percent and 35 percent respectively. The shift in the composition of the service activity to the Metro areas, Vancouver in particular, is one of the main reasons for an overall increase in aggregate service unit costs in 2012." (FEI Exhibit B-1, p. 235) [Underlined for emphasis]

14.1 Does the increase in the service activity in the Metro areas indicate that infill growth is becoming a larger percentage of new services (i.e. customer additions as defined by the proposed PBR)? Please explain why, or why not.

Response:

Not necessarily. The Metro region includes the larger municipalities of Vancouver, Burnaby, Coquitlam, North Vancouver, New Westminster, Richmond, and West Vancouver together with a few smaller municipalities. The increase in service activity in the Metro area from 2010 to 2012 has been widespread across all these municipalities and represents a mix of services obtained as a result of infill growth as well as greenfield installations. Municipalities such as Coquitlam and Richmond continue to have greenfield activity, while this is less so in built–up mature municipalities such as Vancouver and New Westminster.

FEI does not distinguish between or track a new service coming from an infill attachment versus a new service originating from a greenfield development. Although FEI cannot confirm with empirical data, it is reasonable to conclude that in municipalities where greenfield development activity is less likely (i.e. Vancouver), infill activity is driving service activity levels including the higher activity in 2012.

B&V adds that two data points do not make a trend. However, some basic gas system economics might be useful to address the economics of urban growth. First, the costs of connecting urban customers is, on average, significantly higher than suburban installations. This is the point that Vancouver growth is responsible for the "overall increase in aggregate service unit costs." Second, as the number of connections along a specific pipe segment

increase the pressure available at the end of the segment declines. At some point, the segment will no longer be able to maintain adequate pressures and a new investment will be needed to upgrade the main by increasing the pressure, increasing the diameter of the main or feeding the main from another point on the segment. Since infill initially has no main costs but higher service costs, infill still increases productivity as noted in the response. Mains are subject to the law of diminishing returns and new investment in mains may be required. Third, just as a matter of land use, on average the growth in gas services over time is likely to decrease in the urban areas as saturation of gas to buildings increases and the available developmental space decreases. For purposes of the PBR Plan it is reasonable to assume that infill in urban areas becomes a smaller not larger percentage and that the economics of infill deteriorates faster in urban areas because of the higher costs.

14.2 Given that infill customer increase productivity because the new capital cost to serve a customer is less than the embedded costs and the incremental O&M is very low, could FEI achieve productivity gains purely due the load growth concentrated in an the Metro area? Please explain why, or why not.

Response:

B&V provides the following response.

Please refer to the response to FEI-FBC BCUC PBR IR 3.14.1 above. There is some potential for productivity gains in urban areas over time. However, these gains are captured for customers because the average cost per new customer adjusts based on the changing circumstances occurring to support the derivation of the new customer adjustment. That dollar amount is effectively the weighted average of a mix of new customer services.

14.3 Should infill customers be excluded from the calculation of the "% Change in Customer Additions" given that the "new capital cost to serve a[n infill] customer is less than the embedded costs and the incremental O&M is very low"? Please explain why, or why not.

Response:

B&V provides the following response.

Infill customers should not be excluded because they impact the average cost for new service customers. In fact, it is likely that new infill customers increase the cost of services and reduce the cost of mains. In total, however, these higher average costs need to be reflected in the PBR Plan as proposed.

14.3.1 In Table B6-5, the change in customers from 2013 Base to 2014 Forecast is 4,774 (845,495 - 840,721) or 0.57 percent. Please recalculate Table B6-5 for scenarios that assume 10 percent and 20 percent of new customers are infill customers and are excluded from the calculation of the "% Change in Customer Additions" [i.e. 10 of new customers being infill customers would result in 4,297 (4,774 x 90 percent) being treated as additional customers].

Response:

Implicit in the forecast average number of customers are all adjustments related to customer losses due to retirements/removals, conversions and infill. As such, excluding an additional 10% to 20% from the calculation of the percent change in net customer additions would be inappropriately understating the forecast percent change in customer additions.

B&V notes that there is no basis for the requested calculation given the response to FEI-FBC BCUC PBR IRs 3.14.1 to 3.14.3 above. The table would be premised on an incorrect assumption and would provide no meaningful information.

14.4 Please provide a schedule showing new mains (# of mains and metres) and services (by region (i.e. Metro, Fraser Valley and Kelowna) for 2007-2013. Please include the requested information in the form of a fully functioning electronic spreadsheet.

Response:

Attachment 14.4 contains the fully functioning spreadsheet with two tabs corresponding to each of the tables below. The Table 1 below summarizes the new mains by number of mains and metres by Region for 2007-2013 year to date.

Table 1

Fiscal year	2013 Nov 19 YTD		2012		2011		2010		2009		2008		2007	
Region	# of Orders	M of Pipe	# of Orders	M of Pipe	# of Orders	M of Pipe	# of Orders	M of Pipe	# of Orders	M of Pipe	# of Orders	M of Pipe	# of Orders	M of Pipe
Overall Result	238	55,883 M	352	66,238 M	362	79,355 M	316	81,259 M	377	85,665 M	575	201,788 M	523	157,286 M
CENTRAL OKANAGAN	26	5,362 M	34	10,291 M	60	13,791 M	30	9,261 M	46	11,741 M	53	17,996 M	60	32,062 M
EAST KOOTENAYS	7	1,460 M	11	1,031 M	11	4,482 M	16	10,337 M	12	4,674 M	30	11,704 M	17	3,938 M
LOWER MAINLAND EAST	120	28,741 M	150	28,889 M	128	25,227 M	145	35,842 M	160	36,614 M	256	76,938 M	215	68,144 M
LOWER MAINLAND WEST	49	7,346 M	72	13,978 M	63	10,477 M	48	8,524 M	65	10,254 M	52	13,582 M	67	11,565 M
NORTH OK Z4 - SlmnArm	4	1,855 M	12	731 M	12	2,166 M	6	891 M	19	5,501 M	27	15,297 M	15	4,176 M
NORTH OK Z5 - Vernon	2	149 M	9	2,043 M	12	910 M	13	2,227 M	18	3,511 M	38	17,918 M	32	10,130 M
NORTHERN REGION	8	1,910 M	21	1,920 M	25	8,148 M	13	3,119 M	16	4,491 M	29	8,017 M	37	6,688 M
SOUTH OKANAGAN	8	6,514 M	20	2,024 M	16	6,157 M	16	4,402 M	10	2,055 M	24	6,770 M	20	5,026 M
THOMPSON	11	2,370 M	15	4,886 M	25	6,020 M	23	5,725 M	18	4,509 M	44	20,640 M	42	11,547 M
WEST KOOTENAYS	3	178 M	8	444 M	10	1,978 M	6	931 M	13	2,317 M	22	12,924 M	18	4,011 M

Table 2 summarizes the new services by number by Region for 2007-2013 year to date.

Table 2

FEI Services - Regional Split 2007 to 2013 Nov 19 YTD

Key Figures	**Quantity (EA or each) - number of service risers**						
Fiscal year	2013	2012	2011	2010	2009	2008	2007
Region	# of Risers	# of Risers	# of Risers	# of Risers	# of Risers	# of Risers	# of Risers
Overall Result	6,069 EA	7,898 EA	7,932 EA	9,394 EA	6,831 EA	10,519 EA	11,002 EA
CENTRAL OKANAGAN	563 EA	604 EA	618 EA	733 EA	522 EA	1,272 EA	1,372 EA
EAST KOOTENAYS	120 EA	174 EA	171 EA	241 EA	197 EA	307 EA	263 EA
LOWER MAINLAND EAST	2,148 EA	2,774 EA	3,115 EA	4,098 EA	2,941 EA	3,987 EA	4,566 EA
LOWER MAINLAND WEST	2,266 EA	2,994 EA	2,763 EA	2,694 EA	1,986 EA	2,745 EA	2,448 EA
NORTH OK Z4 - Salmon Arm et al	95 EA	117 EA	113 EA	171 EA	127 EA	392 EA	341 EA
NORTH OK Z5 - Vernon et al	154 EA	198 EA	186 EA	297 EA	229 EA	518 EA	525 EA
NORTHERN REGION	200 EA	320 EA	266 EA	281 EA	206 EA	351 EA	443 EA
SOUTH OKANAGAN	159 EA	210 EA	185 EA	199 EA	170 EA	241 EA	221 EA
THOMPSON	271 EA	355 EA	368 EA	522 EA	308 EA	521 EA	605 EA
WEST KOOTENAYS	93 EA	152 EA	147 EA	158 EA	145 EA	185 EA	218 EA

15.0 Reference: FEI Exhibit B-1, pp. 61-62, 231, 239

Growth Capital

"[29] Average Growth Capital Cost per Service Line Addition includes the average cost of a new service line as well the meter, regulator and average main extension costs." (FEI Exhibit B-1, p. 62)

Table B6-6: 2013 Base Capital ($ thousands)

	2013 Approved	2013 Adjustments: PST	Pension Deferral Amount	Pension Accounting Change	Vehicles	IT Cap	2013 Base
Growth Capital	$ 21,515	$ 367	$ 333	$ 236	$ -	$ -	$ 22,451
Sustainment Capital	$ 75,114	$ 1,280	$ 978	$ 694	$ -	$ -	$ 78,066
Other Capital	$ 26,069	$ 444	$ -	$ -	$ 2,860	$ 1,800	$ 31,173
Total Gross Capital	$ 122,698	$ 2,091	$ 1,311	$ 930	$ 2,860	$ 1,800	$ 131,689
(Contribution in Aid of Construction)	$ (5,400)	$ (92)	$ -	$ -	$ -	$ -	$ (5,492)
Total Net Capital	$ 117,298	$ 1,999	$ 1,311	$ 930	$ 2,860	$ 1,800	$ 126,197

(Source: Exhibit B-1, p. 61)

15.1 Please explain why the Growth, Sustainment and Other types of capital were not shown net of Contribution in Aid of Construction (CIAC).

Response:

For simplicity, CIAC was shown on one line in Table B6-6 and it was all allocated to the Sustainment and Other category in computing the capital formula for Table B6-8. The response to FEI-FBC BCUC PBR IR 3.15.2 shows that in 2013 approximately 69% of CIAC is related to sustainment and 31% related to growth capital, but there is significant variation in the years shown between the two categories. Due to the historic variability, FEI believes that netting all of the 2013 Base CIAC against the sustainment capital category is reasonable.

For comparison, FEI has calculated the impact of a separate allocation to the growth vs. sustainment categories using the 2013 Approved Growth CIAC of $1,373 thousand shown in Table 6.2-26 of FEI's 2012-2013 RRA.

The reallocation of $1,373 thousand of CIAC (plus $23 thousand of PST) to growth capital would have the effect of reducing the 2013 Base Average Growth Capital per Service Line Addition by $175, which results in a decrease in the growth capital component for 2014 by $1,432 thousand. Offsetting this is an increase in the sustainment capital base of $1,396 thousand, which results in an increase in the sustainment capital component for 2014 by $1,429

thousand. Overall the formula-driven capital spending amount would decrease by $3 thousand for 2014.

15.2 Please provide a schedule showing the gross capital, CIAC and net capital by type of capital (Growth, Sustainment and Other) for 2007-2013. Include the requested information in the form of a fully functioning electronic spreadsheet.

Response:

Please refer to Attachment 15.2.

The Contributions In Aid of Construction (CIAC) provided in Attachment 15.2 is related to base capital only (Growth, Sustainment and Other CIAC capital) and does not include contributions associated with retirements and CPCNs which together, account for FEI's total CIAC capital expenditures. Therefore, the total CIAC provided in this response will not equal the CIAC shown in Table C4-1 of FEI's Application (Exhibit B-1).

Table C4-15: Historical Mains Activities, Unit Costs & Expenditures

	2010 Actual	2011 Actual	2012 Actual	2013 Projection	2013 Approved
Activities (meters)	81,259	79,355	65,411	75,000	109,680
Unit Costs ($/meter)	56	59	82	67	59
Expenditures (000's)	4,538	4,510	5,374	5,033	6,500

(Source: FEI Exhibit B-1, p. 231)

15.3 Given that the 2013 Projection of the Mains expenditures are 22.6 percent lower than 2013 Approved expenditures, please explain why the 2013 Projection was not used to determine the 2013 Base capital?

Response:

This IR has been identified as relating to Non-PBR Methodology and will be submitted under separate cover as the responses to BCUC IR2a.

Table C4-17: Historical Service Activities, Unit Costs & Expenditures

	2010 Actual	2011 Actual	2012 Actual	2013 Projection	2013 Approved
Gross Customer Additions	9,587	6,254	8,738	8,624	11,100
Ratio of Service Additions to Gross Customer Adds	0.98	1.27	0.90	0.90	0.72
Activities (riser or services)	9,382	7,958	7,898	7,762	7,989
Unit Costs ($ per service - riser)	1,479	1,775	2,206	2,163	1,616
Expenditures ($000's)	13,874	14,423	17,423	16,791	12,910

(Source: FEI Exhibit B-1, p. 237)

15.4 The cost per service/riser has increased by 46.25 percent (from $1,479 in 2010 to $2,163 in 2013). Given falling use per customer and rising costs, does FEI expect that the CIAC per service/riser will increase during the PBR period? Please explain why, or why not.

Response:

All things being equal, if the Service Line Cost Allowance (SLCA) remains at current levels ($1,535 per service) and the forecast service costs are increasing, the CIAC per service will increase. The CIAC from customers for new services is based on the estimated cost of the service less the SLCA. The estimated service costs are derived from our geo-pricing methodology whereby FEI uses previous year's actual cost experience plus an inflation factor to price out services on a per metre basis by various geographic regions.

Table C4-19: Historical Meter Activities, Unit Costs & Expenditures

	2010 Actual	2011 Actual	2012 Actual	2013 Projection	2013 Approved
Activities (meters)	6,949	5,608	4,720	4,670	6,923
Unit Costs ($/meter)	274	303	297	308	304
Expenditures (000's)	1,905	1,699	1,403	1,438	2,105

(Source: FEI Exhibit B-1, p. 239)

15.5 Given that the 2013 Projection of the Meter expenditures are 31.7 percent lower than 2013 Approved expenditures, please explain why 2013 Projection was not used to determine the 2013 Base capital? Please recalculate the 2013 Base capital using the 2013 Projection Meter expenditures. Please include the requested information in the form of a fully functioning electronic spreadsheet.

Response:

This IR has been identified as relating to Non-PBR Methodology and will be submitted under separate cover as the responses to BCUC IR2a.

15.5.1 Please recalculate the 2013 Base capital in Table B6-6 using the 2013 Projection Main and Meter expenditures. Please include the requested information in the form of a fully functioning electronic spreadsheet.

Response:

This IR has been identified as relating to Non-PBR Methodology and will be submitted under separate cover as the responses to BCUC IR2a.

16.0 Reference: FEI Exhibit B-1, p. 63; FEI Exhibit B-1,-1, Appendix D2, p. 4; Vancouver Sun Article: "Some 85 per cent of new construction in Metro's urban core is multi-family housing," http://www.vancouversun.com/business/city+single+family+homes+dying+breed/9128287/story.html#ixzz2jsgWXENL

Growth Capital

"Infill increases productivity because the new capital cost to serve a customer is less than the embedded costs and the incremental O&M is very low." (FEI Exhibit B-1-1, Appendix D2, p. 4)

"Single family housing accounts for just 15 per cent of new housing construction in the Lower Mainland…

It's this infilling and densification that is driving much of the new housing construction in the built-up areas of Metro Vancouver." (Some 85 percent of new construction in Metro's urban core is multi-family housing)

Based on the information in Table B6-7, Commission Staff has created the example below.

Incremental Growth Capital for Infill Customers (Assuming Mains represent 30% of costs)

	2014 Forecast	2015 Forecast	2016 Forecast	2017 Forecast	2018 Forecast
2014 Average Growth Capital Cost per Service Line Addition	$2,778	$2,842	$2,894	$2,948	$3,001
Less 30 percent of costs related to mains	-$833	-$853	-$868	-$884	-$900
Growth Capital for Infill Customers	$1,945	$1,989	$2,026	$2,064	$2,101

16.1 Should the proposed PBR Growth Capital Formula be adjusted to reflect that new capital cost to serve an infill customer is less than the embedded costs? Please explain why or why not?

Response:

Please refer to the response to FEI-FBC BCUC PBR IR 3.14.3. The base cost for average growth capital per service line addition is already lower to accommodate the proportion of infill customers.

Plant Additions Savings for 1,000 Infill Customers per Year

	2014	2015	2016	2017	2018
Plant Additions savings	$833,400	$852,600	$868,200	$884,400	$900,300

16.2 Using the information above to represent the current year plant additions savings relative to current year allowed plant additions derived from the PBR capital formula, please calculate the annual Revenue Requirements Benefits for the years 2013 to2022, using the ECM and ESM in the 2004 and 2014 PBRs.

Response:

In responding to this IR FEI has assumed for both the 2004 and 2014 PBR plans that the factor that would be representative of Growth Capital assets (Mains, Services and Meters) would be the one for Low Depreciation – Low CCA (Exhibit B-1-1, Appendix D6, Table D6-1, page 5). FEI has used the rate of 9.6% as the benefit factor for determining the ESM benefits during the PBR term. For the years following the PBR period, i.e. the ECM period, FEI has used the approved Rate Base Benefit Factor of 14% and 15% as proposed in the current application for the Efficiency Carryover Mechanism.

The calculation of the estimated annual amounts for the years 2014 through 2022 is in the following table.

As noted in response to FEI-FBC BCUC PBR IR 3.16.1, the existing mix of infill customers is already included in the 2013 Base. Therefore, these savings would not be realized because the information provided by the Commission is based on an incorrect assumption.

FORTISBC ENERGY INC.
2014 - 2018 MULTI-YEAR PBR RATEMAKING PLAN
BCUC PBR IR 2.16.2

Line No.	Particulars	ESM					ECM			
		2014	2015	2016	2017	2018	2019	2020	2021	2022
1	**2004 Plan**									
2	Growth Capital Savings	$ 833,400	$ 852,600	$ 868,200	$ 884,400	$ 900,300				
3	Cumulative Growth Savings	$ 833,400	$1,686,000	$2,554,200	$3,438,600	$4,338,900	$4,338,900	$4,338,900	$4,338,900	
4										
5	x Rate Base Benefit Factor [1]	9.60%	9.60%	9.60%	9.60%	9.60%	14%	14%	14%	
6	Savings for ESM	$ 80,006	$ 161,856	$ 245,203	$ 330,106	$ 416,534				
7	Customers' Share at 50%	$ 40,003	$ 80,928	$ 122,602	$ 165,053	$ 208,267				
8										
9	ECM Capital Benefit						$ 607,446	$ 607,446	$ 607,446	
10	Customer Portion						$ 404,964	$ 506,205	$ 607,446	
11	Company Portion	$ 40,003	$ 80,928	$ 122,602	$ 165,053	$ 208,267	$ 202,482	$ 101,241	$ -	
12										
13	Customers Portion of Benefits	$ 40,003	$ 80,928	$ 122,602	$ 165,053	$ 208,267	$ 404,964	$ 506,205	$ 607,446	$607,446
14										
15	**2014 Plan**									
16	Growth Capital Savings	$ 833,400	$ 852,600	$ 868,200	$ 884,400	$ 900,300				
17	x Rate Base Benefit Factor [1]	9.60%	9.60%	9.60%	9.60%	9.60%	15%	15%	15%	15%
18	Plant Additions Benefit	$ 80,006	$ 81,850	$ 83,347	$ 84,902	$ 86,429	$ 650,835	$ 650,835	$ 650,835	$650,835
19	Customers' Share at 50%	$ 40,003	$ 40,925	$ 41,674	$ 42,451	$ 43,214				
20										
21	Incremental Benefits Sharing									
22	1st Year 2014	$ 40,003	$ 40,003	$ 40,003	$ 40,003	$ 40,003				
23	2nd Year 2015		$ 40,925	$ 40,925	$ 40,925	$ 40,925	$ 63,945			
24	3rd Year 2016			$ 41,674	$ 41,674	$ 41,674	$ 65,115	$ 65,115		
25	4th Year 2017				$ 42,451	$ 42,451	$ 66,330	$ 66,330	$ 66,330	
26	5th Year 2018					$ 43,214	$ 67,523	$ 67,523	$ 67,523	$ 67,523
27	Total of Incremental Benefits Sharing	$ 40,003	$ 80,928	$ 122,602	$ 165,053	$ 208,267	$ 262,913	$ 198,968	$ 133,853	$ 67,523
28										
29	Customers Portion of Benefits	$ 40,003	$ 80,928	$ 122,602	$ 165,053	$ 208,267	$ 387,923	$ 451,868	$ 516,983	$583,313
30										

31 1) For purposes of responding to this IR that Growth Capital savings during the term for both the 2004 and 2014 plans were assumed to have a 5 Year Levelized Rate Base Carrying Cost of 9.6% as a proxy for the pre-sharing ESM benefit during the PBR term. The 2004 Plan had a Rate Base Benefit Factor of 14% for the post-term ECM and the 2014 plan has a benefit factor of 15% applicable to the ECM period. For the 2014 plan years 2019 - 2022 the Plant Additions Benefit is calculated by multiplying the Rate Base Benefit Factor of 15% times the sum of the Growth Capital Savings.

1

2

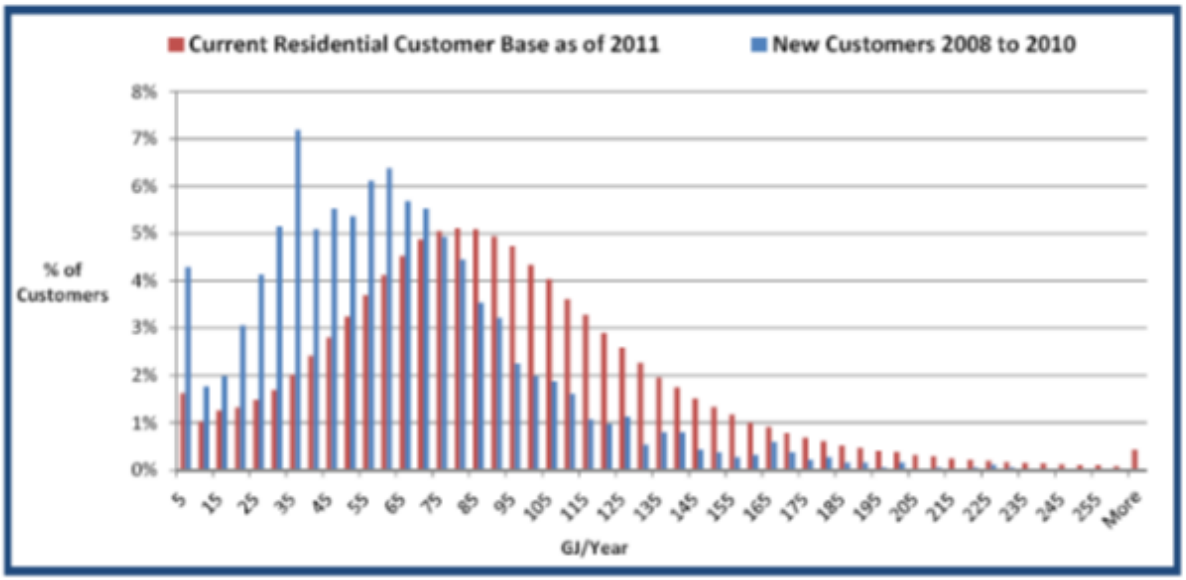
17.0 Reference: FEI Exhibit B-1, pp. 98-99; 2012 Generic Cost of Capital Proceeding (2012 GCOC), Business Risk, Appendix H, p. 34; 2012 GCOC, BCUC 1.108.1

Growth Capital

"The Commission first approved the RSAM in 1994; a deferral account mechanism that stabilizes the margins recovered from residential and commercial customers.[39]

The RSAM stabilizes delivery margin received from residential and commercial customer classes on a UPC basis. If UPC rates vary from the forecast levels used to set the rates, whether due to weather variances or other causes, FEI records the delivery charge differences in the RSAM deferral account for refunding or recovering through a rate rider to the RSAM rate classes." (FEI Exhibit B-1, pp. 98-99)

Figure 23. FEI's Residential Frequency Distribution



Impact of Residential Customer Additions with Low Use

	% of < 5 GJ Customers	Total Customers	Total Customers < 5 GJ	Average UPC (GJ)	Low Volume UPC	Usage Variance per Customer (GJ)	Total Usage Variance (GJ)	Delivery Rate ($/GJ)	Total Delivery Variance ($)
	(A)	(B)	(C)	(D)	(E)	(E)-(D)=(F)	(C)X(F)=G	(H)	
Year 1	1.75	770,000	13,475	96.0	5.0	-91.0	-1,226,225	$3.488	-$4,277,073
Year 5	4.00	792,200	31,688	92.2	5.0	-87.2	-2,763,194	$3.488	-$9,638,019

(Example prepared by Commission staff)

The table above is an example of the impact of residential customer additions with low use.

17.1 Please confirm that the delivery variance of $4.3 million in Year 1 and $9.6 million in Year 5 would be recovered in the Revenue Stabilization Adjustment Mechanism (RSAM). If not, please explain why not.

Response:

This IR has been identified as relating to Non-PBR Methodology and will be submitted under separate cover as the responses to FEI BCUC IR2a.

17.2 Does FEI agree that the addition of low use residential customers will tend to increase rates for existing customers covered by the RSAM? Please explain why, or why not.

Response:

This IR has been identified as relating to Non-PBR Methodology and will be submitted under separate cover as the responses to FEI BCUC IR2a.

17.3 For 2007 to 2012 provide a breakdown of December 31 year-end RSAM balance by rate class (Rate 1, Rate 2 and Rate 3/23) by year.

Response:

This IR has been identified as relating to Non-PBR Methodology and will be submitted under separate cover as the responses to FEI BCUC IR2a.

17.4 Should the PBR include a penalty for the addition of low use customers? Please explain why, or why not.

Response:

No. FEI has an obligation to serve new customers based on both the service line provision of the Tariff and the main extension provision. New customers who only require a service line are not required to have a minimum volume. Under the service line attachment section of the tariff, approved by the Commission, the Company will invest up to $1,535 of the cost of the service line. Anything more than that amount is paid in contribution by the customer.

Under FEI's main extension test, customer consumption is forecast and if the PI is above the threshold approved by the Commission, no contribution is required. If the PI is less than the Commission approved threshold, a customer contribution is required.

The mechanics of the current service line, main extension and attachment policies specifically allow lower use customers to attach; therefore, it wouldn't be logical for there to be a penalty within the PBR for attaching these customers.

17.5 Please confirm that FEI is aware of the declining UPC of new customers, but has not requested changes to the FEI Main Extension Test and customer connection policies.

Response:

This IR has been identified as relating to Non-PBR Methodology and will be submitted under separate cover as the responses to FEI BCUC IR2a.

17.6 Please advise when FEI plans to file its next Cost of Service Allocation / Rate Design application.

Response:

This IR has been identified as relating to Non-PBR Methodology and will be submitted under separate cover as the responses to FEI BCUC IR2a.

18.0 Reference: FEI Exhibit B-6, BCPSO 1.21.2

Sustainment Capital

"Sustainment capital includes the installation of system capacity improvements. System capacity improvements are required when a significant number of additional customers connect to the system and the forecasted pressures within the piping system will be too low to provide adequate gas supply to all customers and generally take the form of the installation of additional mains in parallel with the existing mains. Thus, customer growth within a piping system drives the need for system capacity improvements and sustainment capital expenditures. For a discussion of the difference between sustainment and growth capital please refer to the response to BCPSO IR 1.21.3."

18.1 Please provide the capital expenditures for system capacity improvements due to increased load from 2007 –to 2013 by region (Lower Mainland, Inland, Columbia). Include the requested information in the form of a fully functioning electronic spreadsheet.

Response:

Please refer to Attachment 18.1

19.0 Reference: FEI Exhibit B-1, pp. 210

Sustainment Capital

"Sustainment capital includes expenditures for meter recall or meter exchange programs; system reinforcements to the distribution and transmission systems to maintain capacity to meet existing and forecast load; replacements and upgrades to the distribution and transmission systems to ensure safety, integrity and reliability; and expenditures for mains and service renewals and alterations."

Table C4-4: Historical Sustainment Capital Expenditures ($ thousands)

	2010 Actual	2011 Actual	2012 Actual	2012 Approved	2013 Projection	2013 Approved
System Integrity and Reliability Capital						
Meter Recalls/Exchanges	19,126	22,922	24,197	20,668	25,062	21,272
Transmission System Reinforcements	9,771	10,808	14,964	20,350	18,005	24,386
Distribution System Reinforcements	5,198	7,670	8,574	7,170	8,691	7,610
Distribution Mains and Service Renewals/Alterations	11,342	17,736	16,556	17,330	20,500	21,845
	45,437	**59,137**	**64,291**	**65,517**	**72,258**	**75,114**

19.1 Please provide a schedule showing a breakdown of the total historical sustainment capital by type (i.e. Meter Recalls Exchanges, Transmission System Reinforcements). Include the requested information in the form of a fully functioning electronic spreadsheet.

Response:

The Commission has requested a breakdown of historical sustainment capital by type (Meter Recalls Exchanges, Transmission System Reinforcements). This is in fact what has been provided in Table C4-4 included in the preamble to this question. FEI assumes the Commission is instead interested in a fully functional spreadsheet, and has attached this as Attachment 19.1. This information has previously been provided to Commission staff as a spreadsheet on July 2, 2013 when FEI was requested to file the tables from the Application in excel format.

D. RATE BASE BENEFIT FACTOR

20.0 Reference: FEI Exhibit B-1, p. 75; Exhibit B-1-1, Appendix D6

Rate Base Benefit Factor

FEI states, "The rate base benefit factor is representative of the avoided revenue requirements from reduced capital expenditures, which on average equal approximately 15 percent of the amount of the capital cost saving. The components that make up the avoided revenue requirements are the return on rate base, depreciation expense and associated taxes, sometimes referred to as rate base carrying costs. The calculations supporting the proposed 15 percent rate base benefit factor as well as an illustrative example of the proposed rolling ECM are provided in Appendix D6." (FEI Exhibit B-1, p. 75)

FEI states, "The rate base carrying cost for each of these categories has been calculated as the five-year levelized revenue requirement expressed as a percentage of the initial capital investment." (FEI Exhibit B-1-1, Appendix D6, p. 4)

20.1 Please confirm that the calculation recognized the effect of depreciation expense on rate base.

Response:

Yes, the effects of depreciation expense on rate base and revenue requirements have been included in the rate base carrying cost calculations.

20.2 Please provide the spreadsheet used to calculate the rate base carrying cost of 17.3 percent for Meters shown in Table D6-1 of Appendix D6, p.5.

Response:

The spreadsheet demonstrating the calculation of the rate base carrying cost of 17.3 percent has been provided as Attachment 20.2. (Please note that the calculations supporting Table D6-1 used an earlier depreciation rate for meters of 7.89%. The current depreciation rate for meters is 8.05% which if used in the spreadsheet calculations increases the 5-year levelized carrying cost slightly to 17.4%.)

20.3 Please explain how the three rate base carrying costs shown in Table D6-1 were weighted to arrive at the proposed 15 percent value for the Rate Base Benefit Factor.

Response:

FEI's proposed 15 percent Rate Base Benefit Factor is not arrived at by a particular weighting of the three cases in Table D6-1. The three cases are provided to depict a representative range. There are many other asset types with different depreciation rates and CCA rates. Based on the representative range depicted by the three cases in Table D6-1 FEI believes 15% is a reasonable factor for the Rate Base Benefit Factor to be carried forward in the ECM for the calculation of the pre-sharing capital incentive. The illustrative ECM calculation on page 3 of Appendix D6 applies 50/50 sharing (see line 17) to both the O&M and capital incentive components, meaning that FEI's share of the capital incentive carried forward in the ECM is 7.5%.

20.4 Provide an excel working model to show the carrying cost breakdown of the 15 percent Rate Base Benefit Factor and list all assumptions in the calculation.

Response:

As stated in FEI-FBC BCUC PBR IR 3.20.3. FEI's proposed 15 percent Rate Base Benefit Factor is not arrived at by a particular weighting of the three cases in Table D6-1.There are many other asset types with different depreciation rates and CCA rates. There are also various combinations of asset depreciation rates and CCA rates that would yield a 15% Rate Base Benefit Factor. A 15% Rate Base Benefit Factor is achieved using a depreciation rate of 6.5% and CCA rate of 6%. The weighted average depreciation rate for FEI's projected base capital additions in 2013 is 5.85% and 6.01% for 2014. These average rates are not materially different than the 6.5% rate that yields a 15% rate base benefit factor.

20.5 Please calculate a weighted average depreciation rate by applying the methodology described in response to the previous question to the depreciation rates for the three asset types shown in Table D6-1.

Response:

Please refer to the response to FEI-FBC BCUC PBR IR 3.20.4.

20.6 What are the weighted average depreciation rates for projected base capital additions in 2013 and forecast base capital additions in 2014? If these numbers are materially different from the response to the previous question, please explain.

Response:

Please refer to the response to FEI-FBC BCUC PBR IR 3.20.4.

21.0 Reference: FBC Exhibit B-1, p. 68; Exhibit B-1-1, Appendix D5

Rate Base Benefit Factor

FBC states, "The rate base benefit factor is representative of the avoided revenue requirements from reduced capital expenditures, which on average equal approximately 12 percent of the amount of the capital cost saving. The components that make up the avoided revenue requirements are the return on rate base, depreciation expense and associated taxes, sometimes referred to as rate base carrying costs. The calculations supporting the proposed 12 percent rate base benefit factor as well as an illustrative example of the proposed rolling ECM are provided in Appendix D5." (FBC Exhibit B-1, p. 68)

FBC states, "The rate base carrying cost for each of these categories has been calculated as the five-year levelized revenue requirement expressed as a percentage of the initial capital investment." (FBC Exhibit B-1-1, Appendix D5, p. 4)

21.1 Please confirm that the calculation recognized the effect of depreciation expense on rate base.

Response:

Yes, the effects of depreciation expense on rate base and revenue requirements have been included in the rate base carrying cost calculations.

21.2 Please provide the spreadsheet used to calculate the rate base carrying cost of 10.4 percent for Computer Equipment shown in Table D6-1 on page 5 of Appendix D5. (Presumably table reference should be "Table D5-1")

Response:

The spreadsheet demonstrating the calculation of the rate base carrying cost of 10.4 percent has been provided as Attachment 21.2.

21.3 Please explain how the four rate base carrying costs shown in Table D6-1 were weighted to arrive at the proposed 12 percent value for the Rate Base Benefit Factor.

Response:

The 12 percent Rate Base Benefit Factor is not arrived at by a particular weighting of the four cases in Table D5-1. The four cases are provided to depict a representative range. There are many other asset types with different depreciation rates and CCA rates. Based on the representative range depicted by the four cases in Table D6-1 FBC believes 12% is a reasonable factor for the Rate Base Benefit Factor to be carried forward in the ECM for the calculation of the pre-sharing capital incentive. The illustrative ECM calculation on page 3 of Appendix D5 applies 50/50 sharing (see line 17) to both the O&M and capital incentive components, meaning that FBC's share of the capital incentive carried forward in the ECM is 6%.

21.4 Provide an excel working model to show the carrying cost breakdown of the 12 percent Rate Base Benefit Factor and list all assumptions in the calculation.

Response:

As stated in FEI-FBC BCUC PBR IR 3.21.3 FBC's proposed 12 percent Rate Base Benefit Factor is not arrived at by a particular weighting of the three cases in Table D6-1. There are many other asset types with different depreciation rates and CCA rates. There are also various combinations of asset depreciation rates and CCA rates that would yield a 12% Rate Base Benefit Factor.

A 12% Rate Base Benefit Factor is achieved using a depreciation rate of 4.1% and CCA rate of 6%. The weighted average depreciation rate for FBC's projected base capital additions in 2013 is 3.39% and 3.49% for 2014. While the 2013 and 2014 averages are both lower than the 4.1% rate, the small difference of less than 1% demonstrates that a variation in the asset mix of capital expenditure savings during the PBR period (towards higher depreciation rate assets) could readily provide justification for the 12% Rate Base Benefit Factor.

21.5 Please calculate a weighted average depreciation rate by applying the methodology described in response to the previous question to the depreciations rates for the four asset types shown in Table D6-1.

Response:

Please refer to the response to FEI-FBC BCUC PBR IR 3.21.4.

21.6 What are the weighted average depreciation rates for projected base capital additions in 2013 and forecast base capital additions in 2014? If these numbers are materially different from the response to the previous question, please explain.

Response:

Please refer to the response to FEI-FBC PBR BCUC IR 3.21.4.

21.7 Please explain why FBC did not include interest on the savings shown in the example calculation on page 3 of Appendix D5.

Response:

The illustrative example on page 3 of Appendix D5 demonstrates how the ECM benefit after the PBR term will be calculated. The proposed ECM is a rolling model that aims to maintain the incentive to pursue both O&M and capital efficiencies (the two formula-based controllable cost categories) at the same or very similar level throughout the PBR term. FBC believes its proposed ECM achieves this aim on a straightforward and transparent basis. However, the post-PBR ECM is a notional calculation based on the year-to-year O&M and capital savings that are achieved during the PBR term. Adding interest or other factors to the ECM calculation is unnecessary and would overly complicate the model.

21.8 Would carrying out the calculation on a present value basis materially change the conclusions?

Response:

The 5-year levelized revenue requirement analysis noted in the IR series preamble is a present value analysis so the conclusions would be unchanged.

21.9 Please explain and provide a sample calculation in the form of p. 3 of Appendix D5 for negative amounts of Plant Additions Benefits that result in a negative Total Revenue Requirements Benefit at the end of 2015 and a negative Total Revenue Requirements Benefit at the end of 2018. Please provide in a working excel attachment.

Response:

An Excel model of the hypothetical scenario in the question has been provided in Attachment 21.9. In this model the combination of O&M and Capital spending exceed the allowances under the PBR Formula in 2015 and 2018. This results in a negative total revenue requirement benefit to carry forward in the ECM for these two years.

FBC proposes a rate base benefit factor of 12 percent of the amount of the capital cost saving. FEI's rate base benefit factor is 15 percent.

21.10 FBC/FEI indicates that the rate base benefit factor is representative of the carrying costs on the avoided capital during the PBR period. Given that FBC's allowed ROE is generally higher than FEI's because of its allowed premium in ROE over the benchmark utility, please explain why FBC's rate base benefit factor should not be higher than FEI's rate base benefit factor?

Response:

FBC's higher ROE and equity component in rate base have been incorporated into the calculations. The main factor causing FEI's rate base benefit factor of 15% to be higher than FBC's at 12%, is that FEI's depreciation rates are higher than FBC's. Other than this difference the suggestion in the question that FBC's rate base benefit factor should have been the higher of the two would likely have been correct.

E. EXOGENOUS (Z) FACTORS

22.0 Reference: FBC Exhibit B-1, p. 63

FEI Exhibit B-1, p. 70

Exogenous (Z) Factors

FBC states "In the nomenclature of PBR, non-controllable and unforeseeable costs that flow through to rates are referred to as exogenous factors or Z-Factors. Consistent with the 2007 PBR Plan, FBC proposes that during the term of the proposed PBR Plan, customers' rates will be adjusted for the following exogenous factors that are beyond the control of the Company." (FBC Exhibit B-1, p. 63)

FEI states, "In the nomenclature of PBR, non-controllable and unforeseeable costs that flow-through to rates are referred to as Z-Factors. These factors were referred to in the 2004 PBR Plan as "exogenous factors." Consistent with the 2004 PBR Plan, FEI proposes that during the term of the proposed PBR Plan, customers' rates will be adjusted for the following exogenous factors that are beyond the control of the Company." (FEI Exhibit B-1, p. 70)

22.1 One proposed Z-Factor is "Bypass or similar events." Please provide a complete definition for such events, including the characteristics that would qualify a "similar event" as a Z-factor.

Response:

In the Utility-Customer relationship, Bypass occurs when a customer may be physically taking service from another supplier while remaining within the service territory, and thus making no use of the Company's facilities, or where it has become economic to leave the Company's service area for another location because of rate or other utility policies that have caused the costs to the customer to exceed its standalone costs. In addition, regulated rate-base assets can be bypassed by the customer if for example, a customer-owned substation is built to bypass distribution facilities. This type of Z-Factor event would not occur in an unregulated environment because the Company would be free to adjust its prices between its marginal cost and the standalone cost of its customers. Thus the Company would choose to retain the customer if retention made a positive contribution to fixed costs.

22.2 Why should bypass events not be considered part of business risk that is the responsibility of the utility?

Response:

Bypass risk occurs where rates for a class of service cause one or more customers in that class - in practice, likely a very large customer - to face rates that exceed standalone costs. Regulators can moderate bypass risk by allowing bypass rates. The risk profile of the Company that is the premise of the allowed return for the Company is premised on the risk of bypass being low because there is a mechanism in place to accomplish this objective, and willingness on the part of the Commission to use the mechanism. However, should circumstances change such that the risk of bypass becomes elevated (or in fact materializes) the current allowed return would not reflect that.

The Utilities also note that the treatment of bypass and related concerns is not any different under the proposed PBR plans than it is under cost of service rate setting. If circumstances such as bypass occurred in the middle of a cost of service test period the Utilities would seek relief in the form of a deferral account.

22.3 Please confirm that, by identifying bypass events as Z-factors in PBR, FBC and FEI will not gain better protection from the financial consequences of such events than they would have under normal cost of service regulation where rates are set on a prospective basis. If not, please justify your position.

Response:

Since this type of activity cannot occur instantaneously it is reasonable to assume that a forecast adjustment prior to the event or another regulatory mechanism to address the issue could be incorporated in the context of cost of service. Thus the Z-Factor proposal with respect to bypass or similar events is confirmed as consistent with cost of service regulation.

22.4 Another proposed Z-Factor is “Catastrophic events.” Please define such events and provide illustrations of events that would and would not qualify.

Response:

The Pocket Oxford Dictionary defines catastrophe as "great and usually sudden disaster; disastrous outcome; …".

By catastrophic, what is meant is events, or rulings by a regulatory body or court, that are beyond the control of the utility that negates or imperils the operations of the company. As an example, the list of items in the definition of Force Majeure in FEI's industrial Rate Schedule 22 captures a number of catastrophic events for FEI, including acts of God, strikes, lockouts, or other industrial disturbances, civil disturbances, arrests and restraints of rulers or people, interruptions by government or court orders, present or future valid orders of any regulatory body having proper jurisdiction, acts of the public enemy, wars, riots, blackouts, insurrections, failure or inability to secure materials or labour by reason of regulations or orders of government, serious epidemics, landslides, lightning, earthquakes, fires, storms, floods, washouts, explosions, breakage or accident to machinery or lines of pipes, or freezing of wells or pipelines, or the failure of gas supply, temporary or otherwise, from a supplier of gas.

Please also refer to responses in FEI-FBC CEC PBR IR 3.29.3 and FEI-FBC BCUC PBR IR 3.22.7.

22.5 Is there a minimum threshold in terms of dollar impact on the utility for an event to qualify? If yes, what is it and how was it determined? If no, please explain why not.

Response:

No. Please refer to the responses to FEI BCUC IR 1.22.1 (Exhibit B-11) and FEI BCPSO IR 1.23.2 (Exhibit B-6).

22.6 Please confirm that the adjustment to customer rates will be for incremental costs to deal with the event, including repair of the damage it caused, but will not include contingency measures to deal with or reduce the impact of possible similar events in the future. If not, please explain.

Response:

Not confirmed. The costs will be incremental costs pertaining to the Z-factor event; however it may be a prudent and cost-effective course of action to incorporate such contingency measures into the initial repair process. If this is the case it may be difficult or impossible to distinguish between those costs that are strictly repair-related from those that are for the contingency measure. However Z-factor applications will be brought forward in the Annual Review process so participants will be able to review and comment on them at that time.

22.7 A third Z-factor is “Major seismic incident.” How is this different from a “catastrophic event,” and why is a separate category needed?

Response:

The reference to both catastrophic events and major seismic events is mainly a carry-over to the 2014 PBR of the language that was used in the 2004 PBR negotiated settlement. A major seismic event is also a catastrophic event so the two could be rolled into one “catastrophic events” category. The two categories could be kept separate because of the heightened concern about seismic activity on the west coast of North America.

22.8 In any case, please define "major" and provide and justify the cost threshold for an incident to qualify. If there are different cost criteria for expenses and capital costs, please explain.

Response:

FEI has stated in other responses that it does not have a financial or cost threshold for its exogenous factors. A major seismic event for the purposes of the exogenous factors definition would be any seismic event that causes system damage or requires costs to be incurred to restore service after a seismic-related outage. The term “major” was really intended to distinguish between an event that causes damage/require costs to be incurred to restore service (exogenous) and smaller scale seismic events that can occur without causing damage/requiring costs to be incurred (not exogenous).

22.9 Please discuss the review process proposed to determine the prudency of Z-Factor expenditures.

Response:

The Companies first note that the Z factor may also result in savings being realized.

The Companies propose that the Z-Factor expenditures that have been incurred during a given year during the PBR period be reviewed as part of the Annual Review. This would be in the best interests of regulatory efficiency.

During this review process, the companies will provide a detailed account of the event qualifying as a Z-factor event and the expenditures incurred to address the event. The well-established prudency test can be applied in this review process.

Where a Z factor adjustment has been directed to be included in rates as an adjustment to base rates, the company will make the required adjustment and provide details of the calculation as part of the annual PBR rate adjustment filing.

Where a Z factor adjustment has been directed to be included in rates but not as an adjustment to base rates and therefore outside of the I-X mechanism, the company will calculate a Z factor amount to be included in the annual PBR rate adjustment filing.

Whether the Z factor amount should be recovered or refunded over a single year or portion thereof or will generate costs or savings requiring treatment over a longer term, the recovery period should be considered on a case-by-case basis.

F. MID-TERM REVIEW AND OFF RAMPS

23.0 Reference: FBC Exhibit B-1, pp. 70-1

FEI Exhibit B-1, p. 77

Financial Off-Ramp Trigger

FBC states "FBC is proposing that the PBR Plan be reviewed if the post-sharing earnings of the Company exceeds or drops below the allowed ROE by 200 basis points in any single year of the PBR term." (FBC Exhibit B-1, pp. 70-71)

FEI makes a similar statement. (FEI Exhibit B-1, p. 77)

23.1 Please explain how this trigger would work in practice. For example, if the results for 2016 exceeded the trigger, when would this outcome be known, how and by whom would action under the trigger be initiated, and what process would be used to establish rates for 2017 and 2018?

Response:

Using FBC's 2016 results as the example for illustration, there should be some advance indication in the Annual Review process in the fall of 2016 of whether the post-sharing threshold of plus or minus 200 basis points has the potential to be surpassed. FBC will be providing projected 2016 results in the fall 2016 annual review process in order to calculate the 50/50 earnings sharing that will be provided to (or recovered from) customers in their 2017 rates. If these projected 2016 results were close to or beyond the 200 basis point threshold this would be apparent in FBC's filed annual review materials. The 2017 rates would still be based on the PBR formulas pending final confirmation that the threshold has been exceeded on an actual basis, which would occur after the year-end 2016 financial results are finalized and when FBC files its BCUC annual report with the Commission (i.e. April 30, 2017 for the 2016 results.) At this point, assuming it is confirmed that the 200 basis point threshold has actually been exceeded, FBC would file a letter with the Commission indicating this threshold had been surpassed and asking for a PBR Plan review process to be initiated. In advance of submitting this letter, FBC anticipates that it would seek feedback from stakeholders as to their views on a reasonable path forward and would include in the letter a recommended approach for the review process. The scope of the review process and the decision on what to do going forward would be the Commission's to determine.

23.2 If the post-sharing earnings of the utility dropped below the allowed return on equity (ROE) by 200 basis points in a year, under the proposed PBR mechanism does the utility have an option whether or not to exercise the off-ramp?

Response:

The Companies' proposal is that exceeding the 200 basis points (post-sharing) threshold above or below the approved ROE will trigger a review of the PBR Plan. It is evident that customers will likely want this review to occur if the ROE is above the allowed ROE by 200 basis points or more. Likewise FEI or FBC will be pursuing the Plan review if the ROE is below the allowed ROE by 200 basis points or more. The Companies did not intend this review to be optional but in practice it would likely make no difference whether it is optional or not.

23.3 In the foregoing circumstances, if the utility elected to take the off-ramp, would ratepayers have an option to return to the cost of service model?

Response:

The nature of the regulatory model would be the Commission's decision. If a review of the PBR Plan was triggered by the actual ROE being more than 200 basis points below the approved ROE a return to cost-of-service regulation would be a potential outcome and one that the Companies might well request. If the situation contemplated in the preamble was to occur, the Companies believe that trying to rebase the PBR formulas or make other PBR plan amendments to apply going forward might not be sufficient to yield an acceptable result.

23.4 If the PBR is opened to review under the financial trigger mechanism, is there any requirement that the outcome will be some form of PBR mechanism? If yes, please explain why termination of the PBR and return to cost of service rate setting should not be one possible outcome.

Response:

Please refer to the response to FEI-FBC BCUC PBR IR 3.23.3.

24.0 Reference: FBC Exhibit B-1, p. 63

FEI Exhibit B-1, p. 76-7; FEI Exhibit B-6, BCPSO 1.12.1, 1.12.2

Mid-term Review

FBC states "The mid-term review as part of the third Annual Review is intended to be a "checkpoint" to permit stakeholders to review the performance over the first three years and to address specific and discrete flaws with an otherwise workable plan. This limitation is important. Off-ramps exist for more fundamental flaws with the PBR Plan as a whole, and short of triggering those off-ramps, the PBR Plan should be allowed to play out unless there is consensus that an element of the plan is capable of being improved for the mutual benefit of stakeholders.

The terms of reference of the Mid-term Assessment Review will be:

11. If any one (or more) particular element of the PBR Plan appears to be inducing unintended outcomes or results in continuous material changes to service quality, then stakeholders will work to identify a change that can address that element and put it forward to the Commission.

12. If the results of operating under the PBR Plan have caused financial distress and, if so, to implement a change (an example might be significant inflationary pressures on sustainment capital expenditures that are not reflected in the province-wide CPI or AWE measures)."
(FBC Exhibit B-1, p. 63)

FEI makes a similar statement. (FEI Exhibit B-1, pp. 76-77)

24.1 The second term of reference for the Mid-term Review provides for the implementation of a change to the PBR mechanism in response to "financial distress." Is this financial distress only on the part of the utility? If not, please provide examples of financial distress to other stakeholders that would qualify.

Response:

Confirmed. The "financial distress" referenced is only on the part of the utility.

24.2 Please confirm that Commission approval would be required for any change to the PBR that would result.

Response:

Confirmed.

24.3 Please confirm that the circumstances that would justify a change to the PBR under this provision of the Mid-term Review would not trigger an off-ramp in the PBR.

Response:

The "financial distress" reference made with respect to the Mid-term Review is not an off-ramp in the sense of triggering an automatic review of the whole plan or termination of it. It is meant to provide an opportunity to consider and perhaps amend the PBR plan to address material unanticipated negative outcomes that are outside of the Utilities' control and cannot be rectified by an exogenous factor application.

24.4 FBC and FEI state that "Off-ramps exist for more fundamental flaws." Do FBC and FEI believe there is a need for some sort of general provision for changing financial circumstances that are in addition to the off-ramps in the proposed PBR? If yes, please explain and provide a complete definition of the circumstances that would justify a change to the PBR. If no, why is the second term of reference for the Mid-term Review needed?

Response:

FEI and FBC believe that their respective PBR plan proposals are balanced and based on previous plans, and the likelihood of needing to call on the financial distress provision at the mid-term review may be small. Nevertheless, it is possible that external or business circumstances may change in some unanticipated fashion that hinders the ability of either or both of the Utilities to pursue the goals of their PBR Plan, such as the desired efficiency gains.

It isn't possible to define these circumstances exhaustively. In principle, if these changes are uncontrollable by the utility but not clearly identifiable as an exogenous factor it may be necessary to implement changes to the PBR Plan(s) to remedy the problem. However it would be incumbent upon FEI or FBC to provide evidence at the Mid-term Review justifying the need for any proposed change to the Plan, and BCUC approval would be required in any case.

25.0 Reference: FBC Exhibit B-1, pp. 71, 77

FEI Exhibit B-1, pp. 77, 78

Non-Financial Triggers for Complete Review of PBR Plan

FBC states, "In addition to the earnings based off-ramp provision, FBC proposes a number of non-financial SQIs to assist with the review and analysis of annual performance. The SQIs will provide a framework for determining whether there is a need for a complete regulatory review of the PBR Plan during the mid-term assessment review. Failure to meet one (or more) SQI benchmarks does not necessarily constitute unacceptable performance. Reasons provided by the Company as to why certain service quality indicator benchmarks were not met will be taken into account, recognizing that variances in performance may occur due to random events or events beyond the full control of FBC. Triggering of the off-ramp provision would be warranted only if there is sustained serious degradation of the SQIs." (FBC Exhibit B-1, p. 71)

FEI makes a similar statement. (FEI Exhibit B-1, p. 78)

25.1 Please confirm that the off-ramp related to unsatisfactory performance as measured by non-financial SQIs would only be addressed during the Mid-term Assessment Review, or explain.

Response:

Confirmed.

As indicated in FEI's Application (Exhibit B-1), page 76 Section B6.7.1 Mid Term Assessment Review and in FBC's Application (Exhibit B-1), page 69 Section B6.7.1 Mid Term Assessment, the proposed Mid-term Assessment Review provides an opportunity for all the stakeholders to review the outcomes of the PBR and suggest adjustments to certain plan parameters (if required). The Mid-term review as part of the third Annual Review is intended to be a "checkpoint" to permit stakeholders to review the performance over the first three years and to address specific and discrete flaws with an otherwise workable plan. This limitation is important. Off-ramps exist for more fundamental flaws with the PBR Plan as a whole, and short of triggering those off-ramps, the PBR Plan should be allowed to play out unless there is consensus that an element of the plan is capable of being improved for the mutual benefit of stakeholders.

With respect to unsatisfactory performance as measured by non-financial SQI's, the Companies believe it more appropriate to assess at the mid-term review to allow the performance to be measured over a longer horizon to allow an understanding of the nature of the degradation, if any, and whether it is temporary or of a more permanent nature.

25.2 Please explain how this off-ramp provision differs from and would work in conjunction with the assessment of changes to service quality that is referred to in the first term of reference for the Mid-term Review.

Response:

FEI and FBC have interpreted this question to be referring to how the mid-term review process is intended to be different than the off-ramp provision.

As indicated in FEI Application (Exhibit B-1), pages 76 and 77, the mid-term review process is intended to be a "checkpoint" to permit stakeholders to review the performance over the first three years and to address specific and discrete flaws with an otherwise workable plan.

On the other hand, an "off-ramp provision" is a term of a PBR Plan that contemplates a complete regulatory review of the PBR Plan in particular limited circumstances. The Utilities have proposed both financial (ROE achieved) and non-financial triggers (SQIs) for the trigger of the off-ramp provision.

Regarding the assessment of service quality indicators, under the off-ramp provision, triggering of the provision would be warranted only if there was sustained serious degradation of the SQIs. Under the mid-term review process, FEI and FBC will review the SQI results and work co-operatively with interveners and the Commission to address any performance deficiencies. This may prevent the trigger of the off-ramp provision.

25.3 Please explain why FBC and FEI propose this off-ramp for unsatisfactory performance as measured by non-financial SQIs, rather than financial penalties/rewards or some other mechanism that would be a more graduated and incremental reaction to less-than-satisfactory performance?

Response:

Financially rewarding or penalizing the Companies in the proposed PBR Plan is best addressed through the different incentive mechanisms including the O&M and Capital efficiency incentive mechanisms, whereas the proposed SQIs serve to provide the framework and reference points

necessary to ensure overall service quality is not compromised while the Company is pursuing efficiencies under the PBR Plan.

FEI and FBC believe that SQIs should not have penalties/rewards attached to their individual performance as compared to their benchmarks as it may lead to inappropriate incentives (disincentives) provided to the Companies. As indicated in the preamble to this question, there may be circumstances beyond the Companies' control that contribute to variances in the performance of SQIs. For instance in the case of FEI, colder than normal weather coupled with higher gas costs can increase call center volume dramatically and result in a one-time reduction in SQI beyond the reasonable control of the Company. The Companies should not necessarily be rewarded or penalized under such circumstances.

25.4 Who would determine whether a complete review of the PBR Plan is needed, and when would they make this determination?

Response:

FEI and FBC interpret the reference to "a complete review of the PBR Plan is needed" as equivalent to the trigger of the off-ramp provision for a complete review of the PBR plan elements.

Please refer to the response to FEI COPE IR 1.7.1 (Exhibit B-9).

As indicated in the response, the Commission and interveners will have the opportunity to review the Utilities' SQI results during the Annual Reviews and Mid-term Review. In the case of a sustained and significant degradation of SQI results, the Commission's recourse would be to explore with the Utilities potential means of rectifying the issue, or if the issues cannot be rectified then the Commission could trigger the off-ramp provision for the complete review of the PBR plan elements or its possible termination. In determining whether to trigger the off-ramp provision, the Commission should consider whether or not the source of the possible degradation is under the control of management.

25.5 What would constitute "unacceptable performance"? Please provide a full and complete definition, including the number of SQIs that would need to fail to meet

expectations, how much a SQI would need to fail to meet Benchmark by, and the period over which the failure could occur.

Response:

Please refer to the response to FEI CEC IR 1.52.1 (Exhibit B-8) in which FEI discussed what would constitute "unacceptable performance" or a "sustained serious degradation" of the SQIs.

As previously indicated, FEI and FBC do not believe that "sustained serious degradation" can be defined in a manner that would foresee all circumstances. For example, a fire or other unexpected event might lead to a short term degradation of certain SQIs. Such a circumstance might not be considered as a sustained serious degradation while a lesser but persistent long-term degradation of the same SQIs might be regarded as a sustained serious degradation.

25.6 If FBC and FEI cannot define unacceptable performance, what value and protection does this off-ramp provide to customers?

Response:

While defining "unacceptable performance" in a manner that would foresee all circumstances is difficult, particularly for events that are outside of management's control, FEI and FBC believe that they have proposed a review process including the Annual Reviews and Mid-term Review that provides an effective route for Commission and interveners to express concerns about sustained and significant degradation of SQI results of the Utilities. This will help to ensure there is an avenue by which Commission and interveners can explore SQI degradation issues with the Utilities and possibly trigger the off-ramp provision.

Please refer to the response to FEI-FBC BCUC PBR IR 3.25.4.

G. EARNINGS SHARING MECHANISM (ESM)

26.0 Reference: FBC Exhibit B-1-1, Appendix D5, p. 3

Earnings Sharing Mechanism

FBC provided an illustrative example of the Earning Sharing Mechanism in its Appendix D5, p. 3. A partial section of the table is provided below for discussion:

a).	O&M Benefits achieved ($ Thousands)						
	Allowed O&M per PBR formula (net of OH Capitalized)	$ 49,073	$ 49,366	$ 48,746	$ 49,879	$ 50,620	
	Actual O&M	$ 48,500	$ 48,200	$ 47,200	$ 48,500	$ 49,000	
	O&M Savings Achieved	$ 573	$ 1,166	$ 1,546	$ 1,379	$ 1,620	
	Incremental O&M Savings over prior year cumulative savings	**$ 573**	**$ 593**	**$ 380**	**$ (167)**	**$ 241**	
b).	Capital Expenditures Benefits achieved ($ Thousands)						
	Capital Expenditures allowed per PBR formula	$ 72,728	$ 69,087	$ 52,397	$ 53,632	$ 54,624	
	Actual Capital Expenditures	$ 70,000	$ 70,500	$ 50,000	$ 52,000	$ 52,500	
	Capital Expenditure Savings	$ 2,728	$ (1,413)	$ 2,397	$ 1,632	$ 2,124	
	x Rate Base Benefit Factor	12%	12%	12%	12%	12%	
	Plant Additions Benefit	**$ 327**	**$ (170)**	**$ 288**	**$ 196**	**$ 255**	
c).	Total Annual Revenue Requirement Benefits (Σ Lines 7+14)	$ 900	$ 423	$ 668	$ 29	$ 496	
	x 50% Earnings Sharing 50.00%	**$ 450**	**$ 212**	**$ 334**	**$ 15**	**$ 248**	

26.1 The illustrative example above suggests that the "Plant Additions Benefit" can be achieved by simply not expending or expending lower than the allowed capital amounts under the PBR formula; both of which are within the control of the company. Please explain how these non-expenditures or under-expenditures on capital can be construed to be equivalent to savings or efficiencies for FBC?

Response:

The capital formula includes a productivity factor and will be applied to an approved 2013 Base Capital amount. If the utility spends less than the formula amount during the term of the PBR, then it is exceeding the productivity factor and by an objective and preapproved measure is using its capital efficiently. There will be savings for ratepayers when there are lower expenditures as compared to what has been included in rates, and PBR provides incentives for a utility to discover new ways to reduce expenditures, through efficiencies, productivity improvements or otherwise.

"The savings from efficiencies can be calculated by determining the difference between the expected cost-of-service impact of the formula-based expenses under the PBR Plan with the actual cost-of-service impact from the actual level of those expenses. The difference represents the full savings from efficiency initiatives in the controllable expense categories without taking into account the temporary benefits or costs of revenue variances or flow-through expense variances. The incremental annual savings for the purposes of the ECM are calculated as the sum of:

1. Current year O&M savings relative to the current year formula-based O&M less cumulative O&M savings up to the prior year (relative to the prior year O&M formula amount); and

2. Capital expenditure savings multiplied by a rate base benefit factor of 12 percent."

(FBC Exhibit B-1-1, Appendix D5, pp. 1-2)

"The example illustrates how the ECM benefits accrue during the term of the PBR, and continue to benefit both customers and the Company beyond the term of the PBR Plan. Customers receive benefits in two ways: (1) through the incentives in the PBR Plan keeping O&M and capital spending low going in to the next revenue requirements application, and (2) through earnings sharing during the PBR term."

(FBC Exhibit B-1-1, Appendix D5, p. 2, lines 27-31)

Further, FBC provided an illustrative numerical example calculating the annual earnings sharing and the Efficiency Carry-over Mechanism on page 3 of FBC Exhibit B-1-1, Appendix D5.

26.2 Please explain why only the "incremental O&M Savings over prior year cumulative savings" are included in the earnings sharing calculation? Please provide justification for why the entire annual O&M savings should not be included in the earnings sharing formula?

Response:

Appendix D5 of FBC's 2014 PBR Application (Exhibit B-1-1) deals only with the Efficiency Carryover Mechanism (ECM) and illustrates the calculation of the benefits that FBC will be able to retain under the proposed ECM in the years following the five-year PBR term. Appendix D5 does not deal with earnings sharing during the PBR term. During the PBR term there will be 50/50 earnings sharing on all O&M variances from the formula amount in each year of the PBR term.

The reason that the illustrative ECM example in Appendix D5 makes reference to 50/50 earnings sharing for the ECM is to keep FBC's ECM benefit at the same level after the PBR term as the 50/50 sharing of the benefit that will have occurred during the PBR term. Keeping track of the incremental O&M savings relative to the previous year's achieved savings is necessary because the proposed ECM is a rolling 5-year model. Therefore, only the incremental savings need to be incorporated into each subsequent year.

26.3 Please discuss how this methodology is the same or different than what was approved in the previous PBR plans for FBC.

Response:

FBC did not have an ECM in its previous PBR, therefore this is a new feature proposed for the 2014 PBR. The logic and benefits of incorporating the proposed ECM have been described in FBC Exhibit B-1-1, Appendix D5 and FBC Exhibit B-6.

26.4 Given that O&M savings may not be directly attributable to FBC's actions (e.g. lower external audit fees, lower executive cost allocations), please explain why the incremental annual savings calculation for the purposes of the ESM is reasonable?

Response:

First, FBC notes that the ESM does not incorporate an "incremental annual savings calculation" approach. For the ESM, all variances between the allowed and achieved earnings are shared on a 50/50 basis. It is the ECM calculation (for the carryover of benefits after the PBR term) that takes an incremental approach. The incremental approach is necessary to accommodate the rolling approach to the ECM that FBC has proposed. The appropriateness of FBC's proposed ECM and the rolling approach are described in detail in FBC Exhibit B-6, an undertaking filed in response to a procedural conference request from the Commission Panel.

FBC also responds to the question of whether there should be some attempt to differentiate savings that are directly attributable to FBC's actions from savings that would have occurred otherwise. A differentiation of this type would be administratively challenging and speculative at best. The O&M is a formula-driven amount and all variances are considered in the earnings-

sharing calculation since they all result in savings to customers. Other than costs such as, for example, pensions and insurance, that have been identified as uncontrollable and outside the formula, the company-wide O&M formula places the onus on all levels of management to seek efficiencies and manage their department budgets effectively. A company-wide O&M formula also allows the flexibility to adapt to changing conditions and provides diversity across departments to manage unanticipated costs in one area by making reductions in other areas.

Please also refer to the response to FEI-FBC BCUC PBR IR 3.26.1.

26.5 In the example provided in Appendix D5, please explain what happens to the difference between line 6 and line 7. For example, would the $4.7 million differential in O&M savings over the 5 year period be split 50/50 under the Earnings Sharing Mechanism?

Response:

It is important to note that Appendix D5 represents an illustrative calculation of the ECM only, i.e. the carryover of efficiency benefits after the PBR term. During the PBR term the full variance between the actual ROE and the approved ROE will be subject to 50/50 sharing under the Earnings Sharing Mechanism (ESM). With the foregoing as background, during the PBR term the full O&M savings identified in line 6 (if those illustrative savings turned out to be the actual savings) would go into the ROE variance for that year (along with other factors) and would be subject ultimately to 50/50 sharing via the ESM.

26.6 In the example provided in Appendix D5, please explain the concept of the "50% Earnings Sharing" calculated on line 17. How does this 50 percent Earnings Sharing apply to the customer's benefit? For example, is the remainder of the calculations the amount to be provided to FBC, and there would be an equal amount to be returned to the Ratepayers, but in the year of the saving?

Response:

The 50% Earnings Sharing factor in Line 17 is applied to the amounts in lines 7 and 14 to ensure that ECM amounts carried forward after the PBR term have been adjusted for earnings sharing to the same degree that they have been adjusted (implicitly) for earnings sharing during

the PBR term. Customers will benefit from 50/50 sharing of the savings during the PBR term and full rebasing after the PBR term (subject to the rolling phase-out of ECM benefits retained by the Company). The simplified (O&M only) ECM model provided in Exhibit B-6, Attachment 3, Scenario 2 may illustrate these concepts more clearly.

26.6.1 Please explain how Line 17 will impact rates for each of the years in the PBR? Provide an illustrative example.

Response:

Line 17 will not impact rates during the PBR term. Appendix D5 deals with the carry-over of efficiency benefits after the PBR term. This is confirmed by Line 28 in the illustrative example which indicates that the ECM rate adjustments are all marked with an "N" for no during the PBR term and "Y" for yes in the four years following the PBR term.

26.7 If the 50/50 sharing mechanism were set to zero, what adjustment in FBC productivity factor would be appropriate and why?

Response:

B&V provides the following response.

The ESM is designed to provide protection for both the Company and customers and has a long history of successful use in the PBR Plans of the Company. Eliminating the ESM would adversely impact the shareholder risk given the large magnitude of the implied stretch factor. If the elimination of the ESM were the only change to the proposed Plan, the X-Factor would need to be reduced and should be a negative value.

This question was also answered in the first round of information requests in the FEI 2014 PBR Application and those answers are equally applicable to FBC. Please refer to the responses to FEI BCUC IRs 1.23.2 and 1.23.3 (Exhibit B-11).

26.8 In the example provided Appendix D5, please confirm, or otherwise explain, that the amount to be distributed to FBC over the 5 years would be $1.26 million (total of line 17)

Response:

FBC has two points to mention in terms of the wording of the question. The first is a reminder that Appendix D5 is an illustrative example of the **ECM** and not a calculation of the **ESM**. The second is that ESM amounts will not be **distributed to** FBC; they will be **retained by** FBC, and it is the customers' share that is distributed.

With that background, FBC confirms that the amounts shown in Line 17 which equal $1.26 million would equal the 50% earnings sharing amounts retained by FBC over the five years only if the actual rate base benefit factor during that period equalled 12%. Although the Rate Base Benefit Factor of 12% is a reasonable proxy of the capital incentive included in the PBR plan (and appropriate for use in the ECM after the PBR term), the actual capital incentive benefit that will accrue in each year during the PBR term will depend on the asset mix of the capital savings at the time. This mix of savings will vary from year to year, meaning that the actual capital incentive calculated through the ESM may be above or below the 12% factor used in the ECM calculation.

On page 31 of the FBC Application, it states "[a]s well, an earnings sharing mechanism replaced the previously-existing line-by-line review used to determine the level of any incentive sharing between the Company and its customers."

26.9 Please clarify whether the above statement is referring to the 2007 plan or the current 2014-2018 PBR plan?

Response:

The statement quoted in the question preamble is referring to the 2007 plan.

27.0 Reference: FEI Exhibit B-1-1, Appendix D6, p. 3

Earnings Sharing Mechanism

FEI provided an illustrative example of the Earning Sharing Mechanism in its Appendix D6, p. 3.

A partial section of the table is provided below for discussion:

a).	O&M Benefits achieved ($ Millions)					
	Allowed O&M per PBR formula (net of OH Capitalized)	$ 202.4	$ 206.3	$ 210.2	$ 214.5	$ 219.8
	Actual O&M (Illustrative)	200.0	201.3	203.2	208.5	210.8
	O&M Savings Achieved	2.4	5.0	7.0	6.0	9.0
	Incremental O&M Savings over prior year cumulative savings	**$ 2.4**	**$ 2.6**	**$ 2.0**	**$ (1.0)**	**$ 3.0**
b).	Capital Expenditures Benefits achieved ($ Millions)					
	Capital Expenditures allowed per PBR formula	$ 124.2	$ 127.8	$ 131.2	$ 134.0	$ 136.6
	Actual Capital Expenditures (Illustrative)	118.2	129.8	126.1	129.5	129.6
	Capital Expenditure Savings	$ 6.0	$ (2.0)	$ 5.1	$ 4.5	$ 7.0
	x Rate Base Benefit Factor	15%	15%	15%	15%	15%
	Plant Additions Benefit	**$ 0.9**	**$ (0.3)**	**$ 0.8**	**$ 0.7**	**$ 1.1**
c).	Total Annual Revenue Requirement Benefits (Σ Lines 7+14)	$ 3.3	$ 2.3	$ 2.8	$ (0.3)	$ 4.1
	x 50% Earnings Sharing 50.00%	**$ 1.65**	**$ 1.15**	**$ 1.38**	**$ (0.16)**	**$ 2.03**

27.1 The illustrative example above suggests that the "Plant Additions Benefit" can be achieved by simply not expending or expending lower than the allowed capital amounts under the PBR formula; both of which are within the control of the company. Please explain how these non-expenditures or under-expenditures on capital can be construed to be equivalent to savings or efficiencies for FEI?

Response:

Please refer to the response to FEI-FBC BCUC PBR IR 3.26.1.

"The savings from efficiencies can be calculated by determining the difference between the expected cost-of-service impact of the formula-based expenses under the PBR Plan with the actual cost-of-service impact from the actual level of those expenses. The difference represents the full savings from efficiency initiatives in the controllable expense categories without taking into account the temporary benefits or costs of revenue variances or flow-through expense variances. The incremental annual savings for the purposes of the ECM are calculated as the sum of:

1. Current year O&M savings relative to the current year formula-based O&M less cumulative O&M savings up to the prior year (relative to the prior year O&M formula amount); and

2. Plant additions savings (equal to current year formula-based plant additions less current year a**c**tual regular capital expenditures) multiplied by a rate base benefit factor of 15 percent."

(FEI Exhibit B-1-1, Appendix D6, pp. 1-2)

"The example illustrates how the ECM benefits accrue during the term of the PBR, and continue to benefit both customers and the Company beyond the term of the PBR Plan. Customers receive benefits in two ways: (1) through the incentives in the PBR plan keeping O&M and capital spending low going in to the next revenue requirements application, and (2) through earnings sharing during the PBR term."

(FEI Exhibit B-1-1, Appendix D6, p. 2, lines 30-34)

Further, FEI provided an illustrative numerical example calculating the annual earnings sharing and the Efficiency Carry-over Mechanism on page 3 of FEI Exhibit B-1-1, Appendix D6.

27.2 Please explain why only the "incremental O&M Savings over prior year cumulative savings" are included in the earnings sharing calculation? Please provide justification for why the entire annual O&M savings should not be included in the earnings sharing formula?

Response:

Please refer to the response to FEI-FBC BCUC PBR IR 3.26.2. The response in that IR for FBC is equally applicable to FEI.

27.3 Please discuss how this methodology is the same or different than what was approved in the previous PBR plans for FEI.

Response:

The ECM approved in FEI's 2004 PBR Plan was based on capital savings only (i.e. no O&M component) and it was not a rolling model. The proposed ECM includes both O&M and capital

components and is a rolling five-year model. The logic for making these changes and benefits of the proposed ECM have been described in detail in FEI Exhibit B-1-1, Appendix D6 and in FEI Exhibit B-16.

27.4 Given that O&M savings may not be directly attributable to FEI's actions (i.e. lower postage and bill processing costs due to customers switching to electronic billing), please explain why the incremental annual savings calculation for the purposes of the ESM is reasonable?

Response:

Please refer to the response to FEI-FBC BCUC PBR IR 3.26.4. The discussion in that response for FBC is equally applicable to FEI.

27.5 In the example provided in Appendix D6, please explain what happens to the difference between line 6 and line 7. For example, would the $20.4 million differential in O&M savings over the 5 year period be split 50/50 under the Earnings Sharing Mechanism?

Response:

It is important to note that Appendix D6 represents an illustrative calculation of the ECM only, i.e. the carryover of efficiency benefits after the PBR term. During the PBR term the full variance between the actual ROE and the approved ROE will be subject to 50/50 sharing under the Earnings Sharing Mechanism (ESM). With the foregoing as background, during the PBR term the full O&M savings identified in line 6 (if those illustrative savings turned out to be the actual savings) would go into the ROE variance for that year (along with other factors) and would be subject ultimately to 50/50 sharing via the ESM.

27.6 In the example provided in Appendix D6, please explain the concept of the "50% Earnings Sharing" calculated on line 17. How does this 50 percent Earnings

Sharing apply to the customer's benefit? For example, is the remainder of the calculations the amount to be provided to FEI, and there would be an equal amount to be returned to the Ratepayers, but in the year of the saving?

Response:

The 50% Earnings Sharing factor in Line 17 is applied to the amounts in lines 7 and 14 to ensure that ECM amounts carried forward after the PBR term are adjusted for earnings sharing to the same degree they will have been adjusted (implicitly) for earnings sharing during the PBR term. Customers will benefit from 50/50 sharing of the savings during the PBR term and full rebasing after the PBR term (subject to the rolling phase-out of ECM benefits retained by the Company). The simplified (O&M only) ECM model provided in FEI Exhibit B-16, Attachment 3, Scenario 2 may illustrate these concepts more clearly.

27.6.1 Please explain how Line 17 will impact rates for each of the years in the PBR? Provide an illustrative example.

Response:

Line 17 will not impact rates during the PBR term. Appendix D6 deals with the carry-over of efficiency benefits after the PBR term. This is confirmed by Line 28 in the illustrative example which indicates that the ECM rate adjustments are all marked with an "N" for no during the PBR term and "Y" for yes in the four years following the PBR term.

27.7 If the 50/50 sharing mechanism were set to zero, what adjustment in FEI's productivity factor would be appropriate and why?

Response:

Please refer to the response to FEI-FBC BCUC PBR IR 3.26.7.

27.8 In the example provided in Appendix D6, please confirm, or otherwise explain, that the amount to be distributed to FEI over the 5 year period would be $6.05 million (total of line 17).

Response:

FEI has two points to mention in terms of the wording of the question. The first is a reminder that Appendix D6 is an illustrative example of the **ECM** and not a calculation of the **ESM**. The second is that ESM amounts will not be **distributed to** FEI; they will be **retained by** FEI, and it is the customers' share that is distributed through a rate rider.

With that background, FEI confirms that the amounts shown in Line 17 which equal $6.05 million would equal the 50% earnings sharing amounts retained by FEI over the five years only if the actual rate base benefit factor during that period equalled 15%. Although the Rate Base Benefit Factor of 15% is a reasonable proxy of the capital incentive included in the PBR plan (and appropriate for use in the ECM after the PBR term), the actual capital incentive benefit that will accrue in each year during the PBR term will depend on the asset mix of the capital savings at the time. This mix of savings will vary from year to year, meaning that the actual capital incentive calculated through the ESM may be above or below the 15% factor used in the ECM calculation.

28.0 Reference: FBC Exhibit B-1, pp. 73-74

FEI Exhibit B-1, pp. 80-81

Comparative PBR Plans

In Table B6-9 on pages 73-74 of the FBC Application, a comparison of the 2007 PBR and 2014 PBR is made. A partial table from the FBC application is shown below for discussion:

Item	2007 PBR Plan	2014 PBR Application
…	…	…
Earnings Sharing Mechanism	A 50/50 earnings sharing mechanism was applied during this PBR. The difference between the allowed and actual ROE (within 2 percent of allowed) was shared equally between customers and shareholders.	Earnings sharing will be the same as in 2007 PBR - equal earnings sharing above and below the approved ROE.
End of Term Efficiency (Efficiency Carry-Over Mechanism)	None.	An ECM is proposed that considers capital and O&M benefits on a rolling five year basis.

(Source: FBC Exhibit B-1, p. 73) [Emphasis added]

28.1 Using the illustrative example provided on page 3 of Appendix D5, but showing only the O&M portion of the table (i.e. ignore capital), please re-create the illustrative example using the same numbers for Line 4 & 5, but using the 2007 method of Earnings Sharing Mechanism (ESM) and Efficiency Carry-Over Mechanism (ECM). Show the amount of O&M savings that would apply to the ESM if the 2007 method were applied.

Response:

The Earnings Sharing Mechanism in the proposed PBR Plan is the same as that in FBC's 2007 PBR Plan (with the exception that in the 2007 Plan, earnings variances of more than 2 percent were placed in a deferral account). FBC's 2007 Plan did not employ an Efficiency Carry-Over Mechanism. Therefore the O&M savings that would apply to the Earnings Sharing Mechanism is one-half of the total O&M variance at Line 6 of the table.

In Table B6-10 on pages 80-81 of the FEI Application, a comparison of the 2004 PBR and 2014 PBR is made. A partial table from the FBC application is shown below for discussion:

Item	2004 PBR	2014 PBR Application
…	…	…
Earnings Sharing Mechanism	A 50/50 earnings sharing mechanism was applied during this PBR. The difference between the allowed and actual ROE was shared equally between customers and shareholders.	Earnings sharing will be the same as in 2004 PBR at 50/50 earnings sharing above and below the approved ROE.
End of Term Efficiency (Efficiency Carry-Over Mechanism)	At the end of the PBR term, cumulative capital savings were returned to customers over a two year period, with one third being refunded in the first year and two thirds refunded in the second year.	An enhanced ECM is proposed that considers capital and O&M benefits on a rolling five year basis.

28.2 Using the illustrative example provided on page 3 of Appendix D6, showing both the O&M and capital figures, but using the 2004 method of ESM and ECM. Show the amount of O&M and capital savings that would apply to the ESM if the 2004 method were applied. Show the results for the period 2014-2022.

Response:

The illustrative example on page 3 of Appendix D6 is an ECM model for carryover of efficiency benefits after the PBR term rather than an earnings sharing during the term. However, the incentive structure for O&M and capital, and 50/50 earnings sharing within the PBR term is the same for FEI in both the 2004 PBR Plan and the 2014 PBR Plan (other than the limited capital rebasing if actual capital spending is more than 10% above or below the formula-based capital allowance). Since the capital spending variations in the Appendix D6 illustrative ECM example are all within the +/- 10% dead-band, the 50/50 earnings sharing during the PBR term from the illustrative stream of O&M and capital savings will be *exactly the same amount* for the 2004 PBR ESM methodology or the 2014 PBR ESM methodology.

The ECM in the 2004 PBR pertained to capital savings only and was based on the cumulative savings achieved throughout the term, then applied a 14% Rate Base Benefit Factor, a 50% factor to adjust for earnings sharing and then a 2/3 and 1/3 phase-out factor respectively in the two years immediately following the PBR term. The cumulative capital savings in the Appendix D6 illustrative ECM example are $20.6 million (sum of the 5 yearly amounts in line 12). Thus the 2004 ECM model would produce an ECM benefit for the utility of $0.96 million in 2019 ($20.6 million x 14% x 0.5 x 2/3) and $0.48 million in 2020 ($20.6 million x 14% x 0.5 x 1/3).

These amounts are considerably less than the stream of benefits in the proposed ECM (see line 31, $4.40 million in 2019, $3.25 million in 2020, $1.86 million in 2021 and $2.03 million in 2022). The capital-only nature of the 2004 PBR ECM meant that the incentive to pursue O&M efficiencies diminished over time in that Plan. This imbalance has been rectified in the proposed ECM for the 2014 PBR.

29.0 Reference: FEI Exhibit B-1, p. 31, 204

Cost Shifting Strategies and Earnings Sharing Mechanism

"Concerns are sometimes expressed that a utility under PBR may defer capital or O&M costs to outside the PBR term, or adopt other cost shifting strategies that do not produce true efficiency gains in order to obtain benefits under the PBR." (FEI Exhibit B-1, p. 31)

"FEI's 2012 actual capital spending was approximately $8.5 million less than approved as FEI was not able to complete its planned capital work for 2012 partly due to the timing of the 2012-2013 RRA Decision. However, 2013 spending is projected to be approximately $6.5 million higher than 2013 approved amounts." (FEI Exhibit B-1, p. 204)

"The Gas Asset Records Project is progressing well. There have been challenges in attracting experienced technical staff from the current labour market, resulting in a longer ramp-up time for the project than first anticipated. The completion of this project is expected to extend from 2015 to 2017." (FEI Exhibit B-1, p. 301)

"[BCOneCall Project] The completion of the Data Consistency Stream has been extended from 2014 to 2017 to take advantage of resource synergies with the Conflation Stream." (FEI Exhibit B-1, p. 301)

29.1 Could the delay in the completion efficiency projects prior to the PBR result in greater efficiency gains during the PBR? Please explain why, or why not.

Response:

There are three specific items discussed in the preamble to this IR and FEI addresses each one below.

First, the fact that FEI's actual capital spending was delayed from 2012 to 2013 does not impact this PBR in any way. FEI is using 2013 Approved Base Capital for the 2014-2018 formula. The higher spending in 2013 does not impact the formula.

Second, both the Gas Asset Records Project and the BC One Call Project discussed above are deferral account items, and do not affect the PBR formula amounts. The deferral accounts will be re-forecast each year and only the actual costs will be amortized to customers, outside of the PBR formula.

Overall, there is no evidence of a delay in the completion of efficiency projects impacting the PBR. FEI does not have any plans to delay capital spending to the start of the PBR Period as evidenced by the high-level capital forecasts provided in FEI's Application (Exhibit B-1), Section

C4 Table C4-3; such a delay would have a negative impact on earnings sharing during the PBR period.

> "…FEI believes that an earnings sharing mechanism continues to be beneficial and proposes an ESM similar to the 2004 PBR Plan with a 50:50 basis sharing between customers and the Company for earnings above and below the allowed ROE established for each year by the Commission." (FEI Exhibit B-1, p. 72)

	IMPLEMENTATION ($)		BENEFIT REALIZATION ($)							5-YR PBR
YEAR	**2012**	**2013**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	Benefit
Project A - Original Implementation	10,000			1,000	1,000	500	500	500	500	3,000
Project A - Revised Implementation		10,000			1,000	1,000	500	500	500	3,500

29.2 Assuming that the benefit realization in the table above represent earnings above "the allowed ROE established for each year by the Commission", please calculate the earnings sharing between customers and the Company using the 2004 ESM and the ESM proposed in the Application for the Project A - Original Implementation year and the Project A - Revised Implementation year.

Response:

The ESM calculation in the 2004-2009 PBR Plan is the same as the ESM calculation proposed in this PBR Plan.

Assuming "benefit realization" is all tax-deductible O&M and that the amounts shown above are cumulative and are O&M savings realized above the formula amount, then the ESM amounts received by customers for Project A would be $1,500 for the PBR term (half of $3,000). The ESM amounts received by customers for Project A with a Revised Implementation would be $1,750 for the PBR term (half of $3,500).

Under the Companies' ECM proposal, in addition to the ESM, there would be an ECM calculation. The ECM that customers would pay the Company for Project A would be $250 in

year 2019. The ECM that customers would pay the Company for Project A with a Revised Implementation would be $250 in 2019 and a further $250 in 2020 for a total of negative $500.

When considering both the ESM and the ECM, both Project A and Project A with a Revised Implementation have a total impact to customers through the ESM and ECM of $1,250 ($1,500 less $250 for Project A and $1,750 less $500 for Project A with a Revised Implementation). This calculation demonstrates the benefits of the Companies' proposed ECM.

30.0 Reference: FEI Exhibits B-1, B-1-1 Appendices D5 and D6

Earnings Sharing Mechanism

"The utility can only pass on the costs implicit in the PBR formulas that determine the rate adjustments. If the PBR includes an earnings sharing mechanism some additional costs or cost savings may be passed on indirectly." (FEI Exhibit B-1, p. 209, footnote)

"During the PBR period, FEI found efficiencies to meet the productivity improvement requirements in the PBR formula and exceed the O&M targets by an aggregate amount of $87 million over the six years. Customers received 50 percent of this or $43.5 million back via the earnings sharing mechanism."
(FEI Exhibit B-1, p. 37, lines 25-28)

"Earnings Sharing Mechanism … The PBR includes a 50/50 earnings sharing mechanism for returns above or below the approved return on equity." (FEI Exhibit B-1, p. 44, excerpt from Table B6-1)

"FEI believes that an earnings sharing mechanism continues to be beneficial and proposes an ESM similar to the 2004 PBR Plan with a 50:50 basis sharing between customers and the Company for earnings above and below the allowed ROE established for each year by the Commission."
(FEI Exhibit B-1, p. 72, lines 6-9)

30.1 Please confirm, or otherwise explain, that the footnote on page 209 of Exhibit B-1 explains that FEI would recover from the ratepayers fifty percent of the actual return on equity below FEI's approved return on equity.

Response:

Confirmed. The ESM is symmetric above and below the BCUC-approved ROE. This is the same ESM provision as was included in FEI's prior PBR plans

30.2 Please explain further how the ESM is proposed for the 2014-18 periods, particularly with respect to "efficiencies to meet the productivity improvement requirements in the PBR formula and exceed the O&M targets … Customers received 50 percent of this …" and how this relates to the "PBR includes a 50/50 earnings sharing mechanism for returns above or below the approved return on equity" reference. Please include in the explanation the direct correlation

between a change in the PBR actual O&M, FEI's actual return on equity, and the amount to be included in the ESM.

Response:

O&M variations from the formula-allowed O&M will in effect be shared 50/50 with customers. A $1 million O&M savings will provide $0.5 million of earnings sharing to be given back to customers in the following year. O&M variances (taken in isolation) will affect ROE on a net-of-tax basis. Since O&M is a tax deductible expense $1 million of O&M savings will (assuming a 25% tax rate) provide a $0.75 million contribution to the return on equity. However when the 50% earnings sharing for customers is calculated the customer share for refund or $0.375 million (i.e. ½ of the $0.75 million) is grossed back up to the pre-tax equivalent or $0.5 million.

While the steps and process described above for calculating the earnings sharing for O&M on its own may seem somewhat cumbersome, in practice O&M variations will not occur alone but will be blended with other items that contribute to ROE variations, such as the net benefits of capital spending savings. Since capital expenditure variations do not have the same simple tax treatment as O&M savings do, the process of grossing up the 50% customer share of the ROE variations from allowed to a pre-tax equivalent is a straightforward way of calculating the appropriate amount for earnings sharing.

30.3 Please provide a numerical example, on paper and in a working Excel spreadsheet, showing the Formulaic O&M, as derived in Appendix D5 of Exhibit B-1-1, and FEI's resulting approved return on equity, and the amount of earnings which would be subject to the ESM from a change in the O&M similar to the presentation in the example of the ECM in Appendix D6 of Exhibit B-1-1.

Response:

Attachment 30.3 contains a working spreadsheet of the table below which provides the requested calculations using the illustrative O&M values in Appendix D5. As a rule of thumb for FEI a $1 million O&M savings would yield an after-tax net benefit of $740 thousand ($1 million x (1-tax rate of 26%)) and an equity return change of 0.07% or 7 basis points ($0.74 million / (~$2.8 billion Rate Base x 38.5% equity component)). The 7 basis point ROE change would be subject to 50/50 earnings sharing so the utility would retain 3.5 basis points. The customers 50% share would be grossed back up to the pre-tax amount i.e. $500 thousand.

BCUC IR2.30.3 Attachment
FortisBC Energy Inc.
2014 - 2018 PBR Plan
Illustrative Example of O&M Return on Equity Impact

Line No.	Particulars	2013	2014	2015	2016	2017	2018
1	**O&M Savings - Return on Equity Impact**						
2							
3	O&M Benefits achieved ($ Millions)						
4	Allowed O&M per PBR formula (net of OH Capitalized) [2]		$ 202.4	$ 206.3	$ 210.2	$ 214.5	$ 219.8
5	Actual O&M (Illustrative) [2]		200.0	201.3	203.2	208.5	210.8
6	O&M Savings Achieved		2.4	5.0	7.0	6.0	9.0
7	Tax Rate %		26.0%	26.0%	26.0%	26.0%	26.0%
8	O&M Savings After Tax		1.8	3.7	5.2	4.4	6.7
9							
10	Utility Return						
11	Utility Rate Base[1]		2,791.7	2,852.3	2,904.0	2,938.3	2,966.0
12	Equity Ratio %		38.5%	38.5%	38.5%	38.5%	38.5%
13	Return on Equity %		8.75%	8.75%	8.75%	8.75%	8.75%
14	Return on Equity		94.0	96.1	97.8	99.0	99.9
15							
16	O&M Savings and Utility Return						
17	O&M Savings After Tax		1.8	3.7	5.2	4.4	6.7
18	Utility Return on Equity		94.0	96.1	97.8	99.0	99.9
19	Total Return		95.8	99.8	103.0	103.4	106.6
20	Realized Return on Equity %		8.92%	9.09%	9.21%	9.14%	9.33%
21	Increase in Return on Equity % Pre Earnings Sharing		0.17%	0.34%	0.46%	0.39%	0.58%
22							
23	Earnings Sharing						
24	O&M Savings After Tax		1.8	3.7	5.2	4.4	6.7
25	x 50% Earnings Sharing		0.9	1.9	2.6	2.2	3.3
26	Increase in Return on Equity %		0.08%	0.17%	0.23%	0.20%	0.29%
27							
28	Notes						
29	1: Forecast Utility Rate Base, Evidentiary Update - September 6, 2013						
30	2: Illustrative Example of End-of-Term Efficiency Sharing Mechanism, Appendix D6 of Exhibit B-1-1						

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31.0 Reference: FBC Exhibits B-1, B-1-1 Appendices D4 and D5

Earnings Sharing Mechanism

"The utility can only pass on the costs implicit in the PBR formulas that determine the rate adjustments. If the PBR includes an earnings sharing mechanism some additional costs or cost savings may be passed on indirectly." (FBC Exhibit B-1, p. 26, footnote)

"Earnings Sharing Mechanism … The PBR Plan includes an equal earnings sharing between Customers and the Shareholder for returns above or below the approved return on equity."
(FBC Exhibit B-1, p. 40, extract from Table B6-1)

"FBC believes that an earnings sharing mechanism continues to be beneficial and proposes an ESM similar to the 2007 PBR Plan with an equal sharing between customers and the Company for earnings above and below the allowed ROE established for each year by the Commission."
(FBC Exhibit B-1, p. 65, lines 4-7)

31.1 Please confirm, or otherwise explain, that the footnote on page 26 of Exhibit B-1 explains that FBC would recover from the Ratepayers fifty percent of the actual return on equity below FBC's approved return on equity.

Response:

Confirmed. The ESM is symmetrical for actual ROE results above or below the BCUC-allowed ROE.

31.2 Please explain further how the ESM is proposed for the 2014-18 periods, particularly with respect to the direct correlation between a change in the PBR actual O&M, FBC's actual return on equity, and the amount to be included in the ESM and in the ECM.

Response:

Please refer to the response to FEI-FBC BCUC PBR IR 3.30.2. The response for FEI in that IR is equally applicable to FBC.

31.3 Please provide a numerical example, on paper and in a working Excel spreadsheet, showing the Formulaic O&M, as derived in Appendix D4 of Exhibit B-1-1, and FBC's resulting approved return on equity, and the amount of earnings which would be subject to the ESM from a change in the O&M similar to the presentation in the example of the ECM in Appendix D5 of Exhibit B-1-1.

Response:

Attachment 31.3 contains a working spreadsheet of the table below which provides the requested calculations using the illustrative O&M values in Appendix D5. As a rule of thumb for FBC a $1 million O&M savings would yield an after-tax net benefit of $740 thousand ($1 million x (1-tax rate of 26%)) and an equity return change of 0.14% or 14 basis points ($0.74 million / (~$1.3 billion Rate Base x 40% equity component)). The 14 basis point ROE change would be subject to 50/50 earnings sharing so the utility would retain 7 basis points. The customers 50% share would be grossed back up to the pre-tax amount i.e. $500 thousand.

BCUC IR2.31.3 Attachment
FortisBC Inc.
2014 - 2018 PBR Plan
Illustrative Example of O&M Return on Equity Impact

Line No.	Particulars	2013	2014	2015	2016	2017	2018
1	**O&M Savings - Return on Equity Impact**						
2							
3	O&M Benefits achieved ($ Millions)						
4	Allowed O&M per PBR formula (net of OH Capitalized) [2]		$ 49.1	$ 49.4	$ 48.7	$ 49.9	$ 50.6
5	Actual O&M (Illustrative) [2]		48.5	48.2	47.2	48.5	49.0
6	O&M Savings Achieved		0.6	1.2	1.5	1.4	1.6
7	Tax Rate %		26.0%	26.0%	26.0%	26.0%	26.0%
8	O&M Savings After Tax		0.4	0.9	1.1	1.0	1.2
9							
10	Utility Return						
11	Utility Rate Base[1]		1,191.7	1,244.2	1,288.5	1,304.4	1,312.0
12	Equity Ratio %		40.0%	40.0%	40.0%	40.0%	40.0%
13	Return on Equity %		9.15%	9.15%	9.15%	9.15%	9.15%
14	Return on Equity		43.6	45.5	47.2	47.7	48.0
15							
16	O&M Savings and Utility Return						
17	O&M Savings After Tax		0.4	0.9	1.1	1.0	1.2
18	Utility Return on Equity		43.6	45.5	47.2	47.7	48.0
19	Total Return		44.0	46.4	48.3	48.8	49.2
20	Realized Return on Equity %		9.24%	9.32%	9.37%	9.35%	9.38%
21	Increase in Return on Equity % Pre Earning Sharing		0.09%	0.17%	0.22%	0.20%	0.23%
22							
23	Earnings Sharing						
24	O&M Savings After Tax		0.4	0.9	1.1	1.0	1.2
25	x 50% Earnings Sharing		0.2	0.4	0.6	0.5	0.6
26	Increase in Return on Equity %		0.04%	0.09%	0.11%	0.10%	0.11%
27							
28	Notes						
29	1: Forecast Utility Rate Base, Evidentiary Update - October 18, 2013						
30	2: Illustrative Example of End-of-Term Efficiency Sharing Mechanism, Appendix D5 of Exhibit B-1-1						

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32.0 Reference: FBC Exhibits B-7, BCUC 1.40.3

FEI Exhibit B-8, CEC 1.48.3

Earnings Sharing Mechanism

FBC state "In addition to the symmetrical 50/50 earnings sharing approach proposed by FBC, various other approaches have been proposed and adopted for ESM elsewhere such as no earnings sharing, asymmetric earnings sharing, earnings sharing outside of a dead-band, increasing percentages of earnings sharing at prescribed ROE levels relative to a benchmark and decreasing percentages of earnings sharing at prescribed ROE levels relative to a benchmark, to name some….FBC's ESM will generate less controversy and regulatory process around the calculation of earnings sharing than with dead bands or where sharing percentages change at certain ROE levels." (FBC Exhibit B-7, BCUC 1.40.3)

FEI makes a similar statement in its response to CEC 1.48.3. (FEI Exhibit B-8)

32.1 Please explain the pros and cons for each of the above approaches to ESM.

Response:

B&V provides the following response.

It is not possible to fully explain the pros and cons of alternative sharing mechanisms since each mechanism is associated with plans that have a variety of other differences relative to the proposed plan in this proceeding. As a general proposition, earnings sharing provides regulatory credibility for a PBR Plan by protecting all stakeholders from adverse consequences of inadequate earnings or high earnings at the customers expense. Each of the methods discussed above except for no earnings sharing provides plan credibility while at the same time changing the efficiency incentives for the Company. The balanced approach represents the optimal sharing method due to consistency in the treatment of all efficiency investments.

32.2 Please explain why the proposed approach to symmetrical sharing will be will "generate less controversy?"

Response:

FBC's and FEI's ESMs are less controversial due to the no dead-band policy and symmetrical feature of the sharing mechanism.

As stated in response to FEI BCUC IR 1.24.1 (Exhibit B-11) a review of ESM structures with dead-band in other Canadian jurisdictions indicates that the inclusion of a dead-band has the potential for controversy. For instance the OEB's consultant reviewed the ESM structure of Enbridge and Union during their 2008-2012 PBR Plans and concluded that "computing the returns to be shared in an ESM is an inherently controversial issue, and this process sometimes leads to mini rate cases that involve significant regulatory costs and delays." The reason is that in theory, an ESM with dead-band may create potential incentives to keep costs in the dead-band and avoid sharing the PBR incentives with ratepayers. No such an incentive exists for a symmetric ESM model without dead-band since the utility shares 50 percent of the variance between formula and actual amounts irrespective of the earned ROE (up to the off-ramp trigger point). Please also refer to response to FEI-FBC CEC PBR IR 3.36.1.

Further, although fairness is an abstract concept, asymmetric ESMs can be generally regarded as unfair and therefore can create additional controversy.

H. EFFICIENCY CARRY-OVER MECHANISM (ECM)

33.0 Reference: FBC Exhibit B-1, p. 64, Exhibit B-7, BCUC 1.40.3
FEI Exhibit B-1, p. 73, Exhibit B-8, CEC 1.48.3
Efficiency Carry-Over Mechanism

FBC states "A well-designed ECM decouples the link between the timing of efficiency gains and the PBR incentives and ensures that the stream of savings resulting from an investment in efficiencies will be allocated to help repay the investment regardless of how close the investment is to the end of the term of the PBR plan." (FBC Exhibit B-1, p. 64)

FEI makes a similar statement. (FEI Exhibit B-1, p. 73)

33.1 Please explain and illustrate the "investments" that are referred to.

Response:

A similar question has been answered in response to FEI CEC IR 1.49.1 (Exhibit B-8) where it is indicated that "Investment in new efficiencies may involve either O&M or capital expenditures that can increase the productivity through technological, operational and managerial improvements in FEI's activities. For instance, as indicated in section C3.14.3 of the Application, the HR department was able to offset the need for increased HR services due to the insourcing of the customer care function through the use of Employee Self-Serve and Manager Self-Serve (ESS/MSS) programs by investing in self-serve technology in SAP. The total impact of efficiency improvement projects such as ESS/MSS will bring benefits to FEI's customers over the long- term period."

B&V adds the following response.

The concept of investment in this context could have two connotations. First, this investment could be adding new capital investment that improves productivity. Second, this investment may be incurring an added expense that will reduce expenses in the future. In either case, there is an earnings impact in the year the investment occurs although the impact in that year differs between capital and expense items. It is not possible to provide an illustration of these investments that may occur in the future because it is impossible to know what actions may be taken to improve efficiency. Historically, this might include training distribution personnel to do live main inserts where the training is an expense and also investing in the capital equipment needed to do the work.

33.2 Where the investments are capital expenditures, please identify any that FBC or FEI will not include in rate base and recover in rates.

Response:

During the PBR term, the capital expenditures that are included in rate base and used to set rates will be the formula-driven amounts (for those categories of capital included in the PBR formula). After the PBR period is complete the actual capital expenditures will be included in rate base and be recovered in rates for the remainder of their service life.

The direct connection between the costs of assets in rate base and recovery in rates is modified by the PBR (i.e. no capital rebasing during term, with ESM during the PBR term and applicable ECM benefits/costs after the term).

33.3 Where the investments involve executive or staff time, or services from outside the company, please identify any that FBC or FEI will not recover in rates.

Response:

As noted in the response to FEI-FBC BCUC PBR IR 3.33.1, it is not possible to know what actions may be taken to improve efficiency as it relates to executive or staff time or outside services. Under PBR those decisions are made during the pendency of the Plan based on the flexibility of management to respond in ways that improve efficiency.

Through the ESM customer will receive a 50% share of the net benefits (investments less savings) achieved from the efficiency initiatives undertaken.

34.0 Reference: FBC Exhibit B-1, p. 67

FEI Exhibit B-1, p. 74

Efficiency Carry-Over Mechanism

FBC states "While the FEI 2004 PBR Plan mechanism increased the overall incentive power of the plan, it did not provide the optimal balance of incentive power between O&M and capital efficiencies over the whole term of the PBR. Under the approved capital-only approach, the incentive power in the first and early years of the PBR was higher than the later years of the PBR plan." (FBC Exhibit B-1, p. 67)

FEI makes similar statements. (FEI Exhibit B-1, p. 74)

34.1 Please explain why FBC and FEI consider that the lack of an ECM in the FEI 2004 PBR did not provide the optimum balance of incentive powers between O&M and capital efficiencies over the whole term of the PBR. Please include a definition of "efficiency" in a PBR, and provide empirical evidence in support of the statement.

Response:

The premise of this question is incorrect. As stated in FEI Application (Exhibit B-1), Section B6.5.2, FEI's 2004 PBR plan included an ECM for capital expenditures. However FEI's 2004 ECM didn't recognize the permanent efficiency gains that were achieved in operational expenditures and therefore during the last years of the Plan, the plan removed the desired incentive to also invest in incremental O&M related efficiencies where the payback would have to be achieved over time. For discussions around the evidence in support of this sentence please refer to the response to FEI BCUC IR 3a.259.2 being filed concurrently with the PBR Methodology IRs. The equal treatment of cost savings between capital and O&M expenditures encourages the utility to seek the most efficient combination of these expenditure types throughout the PBR term.

The O&M and capital efficiencies refer to a decrease in expenditures triggered by investments that can increase the productivity through technological, operational and managerial improvements. Please also refer to the response to FEI-FBC BCUC PBR IR 3.33.1 and FEI CEC IR 1.49.1 (Exhibit B-8).

34.2 O&M savings are realized and shared much more immediately than reductions in capital expenditures, as FBC and FEI recognize in the use of the "rate base

benefit factor." Please discuss whether this fundamental difference in the nature of the two types of savings that may be gained under a PBR, supports, if not requires, a difference in the need for a carry-over mechanism to balance the strengths of incentives for O&M versus capital?

Response:

No. The immediate and permanent nature of O&M savings should be a reason for the stakeholders to include the O&M savings in the ECM. Without an ECM for O&M savings the Utilities will have very little incentive to strive for incremental O&M efficiencies in the latter years of the PBR plan and therefore for these years there would be no substantial O&M savings to be shared with ratepayers (i.e. within the PBR term) in the first place.

34.3 Please provide any available studies or other evidence that addresses the effect of ECM on the balance between O&M and capital incentives under a PBR.

Response:

Please refer to Section 4.5 (expenditure neutrality) of the report titled Efficiency Carryover Mechanism filed with the Commission on September 20, 2013 in Attachment 1of FEI-FBC joint procedural conference response to undertaking (Exhibit B-16) for evidence.

35.0 Reference: FEI Exhibit B-16, p. 7, Attachment 3

Efficiency Carry-Over Mechanism

FEI and FBC state "In addition, the Companies provide the example in Attachment 3 of a simplified calculation that only focuses on O&M efficiencies, and contrasts a PBR without an ECM to a PBR with an ECM of the type proposed by FEI and FBC." (FEI Exhibit B-16, p. 7)

Attachment 3 sets out two scenarios to illustrate calculations under an ECM. While recognizing that the scenarios are presented for illustrative purposes, staff wish to use them to consider certain issues about the proposed ECM. The first issue is that FEI and FBC assume that no incremental savings will be achieved in years 4 and 5.

35.1 Without an ECM, there is still a substantial incentive for efficiency gains in years 4 and 5, as shown by the additional $1.5 million in 2017 and additional $3 million in 2018 under Scenario 2. Moreover, one might expect that the incentives in the earlier years of the PBR will have infused a culture for seeking efficiency gains in each utility. Do FEI and FBC believe that an assumption of no incremental efficiency gains in years 4 and 5 under Scenario 1 is reasonable? If yes, please explain why.

Response:

Yes FEI and FBC believe that without an ECM it is realistic to assume that there would be no incremental efficiency gains in years 4 and 5. With no ECM benefit to be achieved from potential efficiencies in those years, the Utilities would be faced with rebasing in a short period of time. There would be a real prospect that rebasing would strip away ongoing benefits before the costs of any initial investment in measures intended to generate incremental efficiency savings could be recovered.

35.1.1 If FEI and FBC do not believe that an assumption of no efficiency gains in years 4 and 5 is reasonable, please provide what would be a reasonable assumption of incremental efficiency gains.

Response:

Please refer to the response to FEI-FBC BCUC PBR IR 3.35.1.

The second issue is the value proposition to ratepayers of an ECM.

35.2 Please confirm that Scenario 2 in Attachment 3 indicates that an ECM will cause ratepayers to pay an additional $15 million over the years 2019 to 2022.

Response:

Not confirmed. From 2019 to 2022 Customers will pay $10.3 million less under Scenario 2 with an ECM than under Scenario 1 with no ECM. The total O&M collected in rates in Scenario 1 from 2019 to 2022 is $883 million. The total O&M and ECM payments collected in rates in Scenario 2 from 2019 to 2022 is $872.7 million ($857.7 million O&M and $15 million ECM).

35.3 Considering that ratepayers would have received an additional $4.5 million in 2017 and 2018, would the net additional payout under an ECM be $11.5 million?

Response:

No. Between the $4.5 million received in greater earnings sharing for 2017 and 2018 and the additional $10.3 million of savings for ratepayers in 2019 to 2022 there is a net benefit for ratepayers of $14.8 million under Scenario 2 (with an ECM) over Scenario 1 (without an ECM).

35.4 Scenario 2 also indicates an allowed O&M in 2019 that is $6.1 million lower. Please confirm that approximately two years of this reduction (over 2019 and 2020) is required to offset the net additional payment under an ECM.

Response:

Yes approximately two years of the O&M savings in Scenario 2 of the illustrative example in Attachment 3 would pay for the net cost of the ECM relative to Scenario 1.

35.5 Please re-run Attachment 3 using the assumption that the incremental efficiency gains in Scenario 1 without an ECM will be one-half of those assumed in Scenario 2, and calculate the number of years after 2018 required to offset the ECM payment.

Response:

Please find below an updated model for Scenario 1 using the assumption that the incremental efficiency gains in no ECM model are one-half of those assumed in Scenario 2. Under this scenario ECM payments will be offset in less than a year.

Scenario 3: No ECM (incremental efficiency gains are half of those in Scenario 2 - With ECM)	PBR/Earnings Sharing Period					ECM Period			
	2014	2015	2016	2017	2018	2019	2020	2021	2022
Allowed O&M	$202.4	$206.4	$210.5	$214.7	$219.0	$215.7	$220.0	$224.4	$228.9
Actual O&M	200.9	203.4	206.0	208.7	211.5				
O&M Savings Achieved by the Utility	1.5	3.0	4.5	6.0	7.5				
Less 50% Earnings Sharing with Customers	(0.8)	(1.5)	(2.3)	(3.0)	(3.8)				
O&M Savings Retained by the Utility	0.8	1.5	2.3	3.0	3.8				
Composed of:									
Benefit from 2014 incremental Savings (after ESM)	0.75	0.75	0.75	0.75	0.75				
Benefit from 2015 incremental Savings (after ESM)		0.75	0.75	0.75	0.75				
Benefit from 2016 incremental Savings (after ESM)			0.75	0.75	0.75				
Benefit from 2017 incremental Savings (after ESM)				0.75	0.75				
Benefit from 2018 incremental Savings (after ESM)					0.75				
	0.8	1.5	2.3	3.0	3.8				

If the question is asking for the mentioned assumption to be used only in last two years of the PBR term, then the updated model will be as demonstrated below and the number of years beyond PBR required to offset the ECM payments in this scenario is approximately four years.

Scenario 4: No ECM (Incremental efficiency gains for the last two years of the PBR are half of those in Scenario 2 - With ECM)	PBR/Earnings Sharing Period					ECM Period			
	2014	2015	2016	2017	2018	2019	2020	2021	2022
Allowed O&M	$202.4	$206.4	$210.5	$214.7	$219.0	$211.1	$215.3	$219.6	$224.0
Actual O&M	199.4	200.4	201.5	204.2	207.0				
O&M Savings Achieved by the Utility	3.0	6.0	9.0	10.5	12.0				
Less 50% Earnings Sharing with Customers	(1.5)	(3.0)	(4.5)	(5.3)	(6.0)				
O&M Savings Retained by the Utility	1.5	3.0	4.5	5.3	6.0				
Composed of:									
Benefit from 2014 incremental Savings (after ESM)	1.5	1.5	1.5	1.5	1.5				
Benefit from 2015 incremental Savings (after ESM)		1.5	1.5	1.5	1.5				
Benefit from 2016 incremental Savings (after ESM)			1.5	1.5	1.5				
Benefit from 2017 incremental Savings (after ESM)				0.75	0.75				
Benefit from 2018 incremental Savings (after ESM)					0.75				
	1.5	3.0	4.5	5.3	6.0				

The third issue is whether the concern of FEI and FBC about the reduced effectiveness of PBR incentives in years 4 and 5 should be addressed in a more direct and focused manner.

35.6 What incremental efficiency gains do FEI and FBC expect if the ECM provided for two years of carry-over (i.e. to 2019 for 2017 incremental savings and to 2019 and 2020 for 2018 incremental savings)? Please re-run Scenario 2 of Attachment 3 using this scenario.

Response:

FEI and FBC do not know what incremental efficiencies might be achieved for 2017 and 2018. This alternative ECM proposal in the question is quite front-end weighted. Efficiency initiatives in

the first year would have four years in addition to the first year to achieve payback and a return. Efficiency initiatives in the second year would have three years after the year of investment to achieve payback and a return. Efficiency initiatives in each of years three, four and five would have only two years after the year of investment to achieve payback and a return. The Utilities believe this front end weighting would favour the pursuit of early efficiency gains over those in the latter half but there is no way to assess this alternative ECM quantitatively at this time.

35.7 Please discuss whether providing the utility with a larger share of any incremental savings in the last, and perhaps the penultimate year of a PBR, would be a reasonable alternative to an ECM? What share to the utility would be appropriate? Please discuss.

Response:

B&V provides the following response.

Under the PBR Plan as proposed, there is no practical way to provide the utility with a larger share of the savings in the later years except by reducing the ESM benefit for customers in those years. To the extent that the larger share of incremental savings were determined in advance, the mechanism could be acceptable but not necessarily optimal. The ECM creates the appropriate incentive and maintains the same incentive throughout the years and does so through a transparent and predetermined process that provides certainty of treatment for savings for all stakeholders. As a result, the Companies have not attempted to determine the mechanics of a sub-optimal method.

36.0 Reference: FBC Exhibit B-1-1, Appendix D5, p. 3

Efficiency Carry-Over Mechanism

The following is an excerpt from the illustrative example provided on page 3 of Appendix D5 of the FBC Application:

20	Incremental Benefits Sharing for Phase-out ($ Thousands)																		
21	1st Year - 2014	$	450	$	450	$	450	$	450	$	450								
22	2nd Year - 2015			$	212	$	212	$	212	$	212	$	212						
23	3rd Year - 2016					$	334	$	334	$	334	$	334	$	334				
24	4th Year - 2017							$	15	$	15	$	15	$	15	$	15		
25	5th Year - 2018									$	248	$	248	$	248	$	248	$	248
26	Total Incremental Benefits Sharing	$	450	$	662	$	996	$	1,010	$	1,258	$	808	$	596	$	262	$	248
27																			
28	Rate adjustment permitted? (Y/N)		N		N		N		N		N		Y		Y		Y		Y
29																			
30																			
31	Revenue Impact of End-of-Plan Benefits Phase-Out ($ Thousands)											$	808	$	596	$	262	$	248

36.1 Please explain line 28 "Rate adjustment permitted? (Y/N)" in the table above.

Response:

The ECM benefit that will be retained by the Utility will only occur after the PBR term. Thus, the "Rate adjustment permitted? (Y/N)" line in the illustrative ECM example indicates "N" in each year of the five-year PBR term (meaning there is no ECM benefit) and "Y" for the four years after the PBR term (meaning the Utility will be allowed to recover the net ECM benefits in rates in those years, over and above the revenue requirements that are otherwise approved for those years. Since FBC has proposed a rolling five-year ECM, the calculations in the years within the PBR term (those marked with an "N") are necessary to undertake in order to calculate the ECM amounts that are to be carried forward after the PBR term.

36.2 Please clarify whether the totals in line 26 will be the amount shared with customers for each of the PBR years or whether this sharing will only apply to the 4 years subsequent to the PBR period (2019 – 2022).

Response:

Since the illustrative example in FBC Appendix D5 is about the Efficiency Carry-over Mechanism (ECM) only, the purpose of line 26 is to calculate the amount of the shared benefit that will be carried forward after the PBR term. The shared amounts shown in line 26 for the columns for 2014 to 2018 will be similar to but not exactly the same as the 50/50 earnings sharing (from O&M and capital expenditure variances) that would occur in the respective years of the PBR term.

To be clear the ECM and the Earnings Sharing Mechanism (ESM) are separate features of the proposed PBR Plan and are calculated separately. During the PBR term the Earnings Sharing Mechanism (ESM) will be based on a 50/50 sharing of the difference between the achieved ROE and the approved ROE for each year. The capital incentive portion of the 50/50 ESM during the PBR term will be based on the actual spending variances by asset type. This means that the actual capital incentive during the term could be higher or lower than the "Rate Base Benefit Factor" of 12%. However, the 12% Rate Base Benefit Factor is an appropriate proxy for carrying forward the capital incentive benefit in the ECM.

36.3 For Line 31, please explain how these figures will impact rates for each of the years 2019 to 2022? Will these figures apply 100 percent as a revenue offset on the total revenue requirements for that year? Or will only 50 percent apply? Please show an illustrative example.

Response:

The illustrative amounts in line 31 represent an incremental amount that FBC would be able to collect in rates (possibly through a rate rider) over and above the 2019 to 2022 revenue requirements that are approved for those years. Since the amounts in line 31 have already been adjusted in line 17 to 50% of the total benefit, it is the full amount shown in line 31 that represents the revenue benefit to FBC.

It should be noted that customers will have the benefit of full rebasing of O&M and capital savings achieved over the entire five-year PBR term in their 2019 rates and going forward. The ECM amount in line 31 is therefore a temporary revenue adder to the rebased rates to incent FBC to continue pursuing savings and efficiencies over the full PBR term.

36.4 Please confirm, or otherwise explain, that the example in Appendix D5 should spread the FBC portion of the earnings savings for a specific year over a five year period starting in that year.

Response:

The ECM does not spread the FBC portion of earnings sharing over five years. The ECM allows FBC to retain its 50% share of efficiencies achieved in each year for a period of five years

(including the year in which the efficiencies are achieved as the first of the five years). Customers also receive a 50% share of savings and efficiencies achieved each year until the five-year ECM period for that particular year has passed and after that the full benefit in rates going forward. The rationale for FBC's proposed five year rolling ECM is described in Appendix D5 and further explained in an undertaking from the procedural conference (FBC Exhibit B-6).

36.5 Please confirm, or otherwise explain, that the concept of the ECM is to separate the incremental annual O&M savings from the ESM amount, add the plant additions benefit, and then spread the annual amounts over a five year period, to match the PBR timeframe, resulting in a portion of the benefits accruing to FBC in the four years after the end of the PBR period.

Response:

Not confirmed. In order to provide an equal incentive for FBC to pursue efficiencies throughout the PBR term, the ECM is structured to allow the Utility to retain the yearly benefits achieved (through both O&M and capital savings) for a period of five years. Please refer to the response to FEI-FBC BCUC PBR IR 3.36.4.

36.6 Please explain if there are any income tax effects on the amounts in the Appendix D5 example.

Response:

The amounts in Appendix D5 are presented on a pre-tax basis. Thus illustrative amounts in line 31 would not be adjusted by any tax effect in order to calculate the impact on rates.

36.7 Please confirm, or otherwise explain, that FBC would expect to hold the FBC portion of the "Incremental Benefits Sharing" in a rate base deferral account.

Response:

Confirmed, although this amount would not be calculated and placed into the deferral account until the end of the PBR term.

37.0 Reference: FEI Exhibit B-1-1, Appendix D6, p. 3

Efficiency Carry-Over Mechanism

The following is an excerpt from the illustrative example provided on page 3 of Appendix D6 of the FBC Application:

20	Incremental Benefits Sharing for Phase-out ($ Millions)									
21	1st Year - 2014	$ 1.65	$ 1.65	$ 1.65	$ 1.65	$ 1.65				
22	2nd Year - 2015		1.15	1.15	1.15	1.15	$ 1.15			
23	3rd Year - 2016			1.38	1.38	1.38	1.38	$ 1.38		
24	4th Year - 2017				(0.16)	(0.16)	(0.16)	(0.16)	$ (0.16)	
25	5th Year - 2018					2.03	2.03	2.03	2.03	$ 2.03
26	Total Incremental Benefits Sharing	$ 1.65	$ 2.80	$ 4.18	$ 4.02	$ 6.05	$ 4.40	$ 3.25	$ 1.86	$ 2.03
27										
28	Rate adjustment permitted? (Y/N)	N	N	N	N	N	Y	Y	Y	Y
29										
30										
31	Revenues to FEI of ECM Benefits Phase-Out ($ Millions) - Increase / (Decrease)						$ 4.40	$ 3.25	$ 1.86	$ 2.03

37.1 Please explain line 28 "Rate adjustment permitted? (Y/N)" in the table above.

Response:

The ECM benefit that will be retained by the Utility will only occur after the PBR term. Thus, the "Rate adjustment permitted? (Y/N)" line in the illustrative ECM example indicates "N" in each year of the five-year PBR term (meaning there is no ECM benefit) and "Y" for the four years after the PBR term (meaning the Utility will be allowed to recover the net ECM benefits in rates in those years, over and above the revenue requirements that are otherwise approved for those years. Since FEI has proposed a rolling five-year ECM, the calculations in the years within the PBR term (those marked with an "N") are necessary to do in order to calculate the ECM amounts that are to be carried forward after the PBR term.

37.2 Please clarify whether the totals in line 26 will be the amount shared with customers for each of the PBR years or whether this sharing will only apply to the 4 years subsequent to the PBR period (2019 – 2022).

Response:

Since the illustrative example in FEI Appendix D6 is about the Efficiency Carry-over Mechanism (ECM) only, the purpose of line 26 is to calculate the amount of the shared benefit that will be carried forward after the PBR term. The shared amounts shown in line 26 for the columns for 2014 to 2018 will be similar to but not exactly the same as the 50/50 earnings sharing (from

O&M and capital expenditure variances) that would occur in the respective years of the PBR term.

To be clear the ECM and the Earnings Sharing Mechanism (ESM) are separate features of the proposed PBR Plan and are calculated separately. During the PBR term the ESM will be based on a 50/50 sharing of the difference between the achieved ROE and the approved ROE for each year. The capital incentive portion of the 50/50 ESM during the PBR term will be based on the actual spending variances by asset type. This means that the actual capital incentive during the term could be higher or lower than the "Rate Base Benefit Factor" of 15%. However, the 15% Rate Base Benefit Factor is an appropriate proxy for carrying forward the capital incentive benefit in the ECM.

37.3 For Line 31, please explain how these figures will impact rates for each of the years 2019 to 2022? Will these figures apply 100 percent as a revenue offset on the total revenue requirements for that year? Or will only 50 percent apply? Please show an illustrative example.

Response:

The illustrative amounts in line 31 represent an incremental amount that FEI would be able to collect in rates (possibly through a rate rider) over and above the 2019 to 2022 revenue requirements that are approved for those years. Since the amounts in line 31 have already been adjusted in line 17 to 50% of the total benefit, it is the full amount shown in line 31 that represents the revenue benefit to FEI.

It should be noted that customers will have the benefit of full rebasing of O&M and capital savings achieved over the entire five-year PBR term in their 2019 rates and going forward. The ECM amount in line 31 is therefore a temporary revenue adder to the rebased rates to incent FEI to continue pursuing savings and efficiencies over the full PBR term.

37.4 Please confirm, or otherwise explain, that the model in the example in Appendix D6 should spread the FEI portion of the earnings savings for a specific year over a five year period starting in that year.

Response:

The ECM does not spread the FEI portion of earnings sharing over five years. The ECM in effect allows FEI to retain its 50% share of efficiencies achieved in each year for a period of five years (including the year in which the efficiencies are achieved as the first of the five years). Customers also receive a 50% share of savings and efficiencies achieved each year until the five-year ECM period for that particular year has passed and after that the full benefit in rates going forward. The rationale for FBC's proposed five year rolling ECM is described in Appendix D6 and further explained in an undertaking from the procedural conference (FEI Exhibit B-16).

37.5 Please confirm, or otherwise explain, that the concept of the ECM is to separate the incremental annual O&M savings from the ESM amount, add the plant additions benefit, and then spread the annual amounts over a five year period, to match the PBR timeframe, resulting in a portion of the benefits accruing to FEI in the four years after the end of the PBR period.

Response:

Not confirmed. In order to provide an equal incentive for FEI to pursue efficiencies throughout the PBR term, the ECM is structured to allow the Utility to retain the yearly benefits achieved (through both O&M and capital savings) for a period of five years. Please refer to the response to FEI-FBC BCUC PBR IR 3.37.4.

37.6 Please explain if there are any income tax effects on the amounts in the Appendix D6 example.

Response:

The amounts in Appendix D6 are presented on a pre-tax basis. Thus illustrative amounts in line 31 would not be adjusted by any tax effect in order to calculate the impact on rates.

37.7 Please confirm, or otherwise explain, that FEI would expect to hold the FEI portion of the "Incremental Benefits Sharing" in a rate base deferral account.

Response:

Response:

Confirmed, although this amount would not be calculated and placed into the deferral account until the end of the PBR term.

38.0 Reference: FBC Exhibit B-1, pp. 65-68, FBC Exhibit B-1-1, Appendix D5, p. 3

FEI Exhibit B-1, pp. 72-75; Exhibit B-16, Attachment 1; FEI Exhibit B-1-1, Appendix D5, p. 3

Efficiency Carry-Over Mechanism

FBC states "The effect of the Earnings Sharing Mechanism extends beyond the PBR Plan term in the calculation of the ECM benefits that go to the customers through rate rebasing and the other half that is available to the Company through the rolling efficiency carry-over mechanism. This means the ECM phase-out of savings has the same earnings sharing effect as the ESM does for the O&M and capital efficiencies during the PBR term." (FBC Exhibit B-1, p. 68)

FEI makes a similar statement (FEI Exhibit B-1, p. 75)

38.1 Please discuss the fairness of the proposed five year carry over to the ratepayers that may move outside the FBC service area.

Response:

Fairness has no objective standard. So long as rates meet the just and reasonable test there will always be inter temporal impacts. This would include impacts of any investment with or without the carry over. The carry over provision is designed to support long-term incentives to improve efficiency. New customers benefit from prior period efficiencies and departing customers never realize the full benefit of those efficiencies. There is no practical way to change these results.

38.2 Please explain why FBC chose the rolling average approach for the ECM rather than another method such as the glide path approach described on p. 6 of the Queensland Competition Authority, Issues Paper (FEI Exhibit B-16, Attachment 1).

Response:

FEI and FBC chose the rolling carryover approach for the proposed ECM because this approach blends more or less seamlessly into the PBR Plans proposed by the Utilities. FEI had experience in its 2004-2009 PBR with an ECM that had a capital incentive only employing a Rate Base Benefit Factor. The inclusion in the ECM of both O&M and capital components (the two formula-based (controllable) cost categories) and the rolling five-year design which

maintains the same level of incentive in both categories throughout the term were a natural evolution from past experience. Adopting the glide path approach or another different approach to ECM did not have the benefit of this past experience as background.

The advantages of the rolling carryover approach over the glide-path method have also been described in an Issues Paper from the Queensland Competition Authority titled 'Efficiency Carryover Mechanism' which was filed with the Commission on September 20th,2013 as Attachment 1 of the undertaking from the September 5th, 2013 joint procedural conference as follows:

> *"The major advantage of a rolling carryover mechanism is that it eliminates the timing issue (in nominal terms at least) from the decision making process. Regardless of when an efficiency gain is introduced or achieved, the benefits will be retained for the same period of time. In this way, it provides a continuous incentive for businesses to seek efficiencies throughout the regulatory period. The mechanism also provides transparency in terms of the number of years and the proportion of any cost savings that can be retained by the business on an ex ante basis."*

38.3 Please explain "rate rebasing" as used in the context of the above preamble. When will rate rebasing occur? During the PBR term or subsequent to the PBR term?

Response:

Rate rebasing in the context of the question preamble and FEI's and FBC's proposed PBR Plans will occur in the year following the 5-year PBR term (i.e. 2019). At that time rates will be adjusted for the cumulative O&M and capital savings that have been achieved over the five years. Any benefits coming to FEI and FBC under their ECM provisions would be a temporary revenue adder or rate rider phased out over the years following the PBR term.

38.4 Please discuss the disadvantages to the ratepayers if the Earnings Sharing Mechanism is not implemented.

Response:

B&V provides the following response.

First, it is possible that without the ESM the level of over earning could be extremely large if the Company was able to realize large productivity improvements.

Second, it is possible that without ESM the level of under earning could be extremely large implying that shareholders are not earning a just and reasonable return. In the latter case, persistent under earning may negatively impact the bond rating and that would increase the long-term cost of capital or impair the utilities' ability to access capital on reasonable terms in adverse market conditions. This is particularly true where the equity component of the capital structure is relatively thin.

Third, absent earnings sharing, customers see no short-term benefits from the PBR Plan (other than those benefits that are reflected in the X-Factor value). Rates increase each year and there is no tangible benefit of efficiency gains until the regulatory reset after the PBR term.

38.5 Please explain how FBC will handle any windfall gains or losses, within the ECM.

Response:

The carry-over of windfall losses and gains to the ECM will not occur since the ECM carry-over amounts pertain only to the formula-based O&M and capital expenditures. O&M and base capital expenditures are the controllable cost categories that are the incentivized components in the PBR. The other cost items in the PBR that may have incidental small "windfall" losses or gains during the PBR term are not part of the ECM. Overall the PBR is subject to appropriate regulatory safeguards (ESM, flow-throughs & exogenous factors, and off-ramp provisions) that protect the ratepayers and the Companies from what might be considered "windfall" gains or losses on a larger scale.

38.6 If the PBR term is extended beyond the proposed five year term, please describe the treatment of the ECM gains or losses that will occur at the outset of the next PBR term.

Response:

The current proposed ECM is only applied to gains and losses during the proposed 5-year term. If the PBR set is extended, appropriate modifications to the ECM to deal with efficiency gains and losses during the extension period should be developed; however this issue should be studied and determined in the related proceeding, together with any other provisions of the extension.

I. PERFORMANCE INDICATORS

39.0 Reference: FBC Exhibit B-1, p. 33

Performance Standards

FBC state that in the 2007 PBR plan:

> "FBC established a number of non-financial performance standards to provide an overall assessment of the Company's performance for the purpose of determining its eligibility for any incentive earned under the PBR sharing mechanism. The performance standards and associated targets agreed to as part of the 2006 and 2009 NSAs were intended to ensure the Company continued to maintain a high level of service quality, and that cost reductions did not come at the expense of service and system standards. The test for inadequate performance and, hence, consideration for disqualifying the Company from receiving a financial incentive was:
>
> > *If the Company earned a financial incentive, did it do so as a direct result of allowing or causing its performance to deteriorate in a material way.[16]" (FBC, Exhibit B-1, p. 33)*

39.1 Please discuss and provide details on how FBC and FEI would monitor the reliability and safety of each of its respective utilities in order to ensure that any non-expenditures or under-expenditures in capital would not have any detrimental effects during the PBR term? (Please respond specifically for each utility).

Response:

FEI

Please refer to the response to FEI BCUC IR 2.341.1 (Exhibit B-24) for discussion of FEI's approach and its Integrity Management Plan (IMP) for monitoring the condition of its gas system.

As part of the 2014 – 2018 PBR Plan, FEI will continue to maintain the condition of the system according to existing codes and standards. This is the minimum expectation in terms of the safety and reliability of the gas system and is considered a non-discretionary obligation of the Company. As a result, FEI has not included reporting or proposed SQIs on the IMP as part of the PBR Plan. Any non-expenditure or under-expenditure in capital would not necessarily have a direct link to the gas system's reliability. For safety, FEI has included two information indicators, the All Injury Frequency Rate (employee safety) and the Public Contacts with Pipelines (public safety) as part of the suite of proposed SQIs.

The proposed PBR Plan provides for an "off-ramp" should there be a serious, sustained and unjustified degradation of service quality.

FBC

As part of the 2014 - 2018 PBR Plan, FBC is proposing to continue reporting on safety and system reliability performance. There are many factors that are outside the control of the Company that can impact reliability performance. Therefore, slight decreased or increased reliability in a year is not necessarily a direct link to any non-expenditure or under-expenditure in capital.

The proposed PBR Plan provides for an "off-ramp" should there be a serious, sustained and unjustified degradation of service quality in terms of safety or reliability.

39.2 Please discuss and provide details on how FBC and FEI would monitor the reliability and safety of each of its utilities in order to ensure that any non-expenditures or under-expenditures in capital would not have any detrimental effects subsequent to the PBR period, particularly when there is a rebasing of costs subsequent to the PBR period? (Please respond specifically for each utility).

Response:

Please refer to the response to FEI-FBC BCUC PBR IR 3.39.1.

FEI and FBC would continue to use the same approach and metrics to monitor the reliability and safety of their systems subsequent to the PBR period as during the PBR period.

During the joint Procedural Conference held on September 5, 2013, FBC/FEI counsel stated that "[t]here is no link between SQIs, the balance scorecard, and incentive pay, which is why the companies did not address it in the application. There is no link." (Transcript Vol. 1, p. 29)

39.3 Given that the SQI's are intended to provided an overall assessment of the Company's performance during a PBR period, would it be reasonable that

individuals' scorecards (which are linked to individual incentive pay) should be aligned? In other words, shouldn't individual employee's targets be aligned with the overall corporate targets to ensure that all members of the organization are working towards common goals? Please discuss, otherwise please explain why "there is no link."

Response:

FEI and FBC confirm that there is no link between the balanced scorecard and the SQIs proposed as part of the PBR Plan. The balanced scorecard as employed by FortisBC is a management tool linked to compensation, and its design and implementation for that purpose falls outside of the Commission's jurisdiction. The balanced scorecard differs from PBR SQI's in this regard. However, the Companies provide the following in the interest of being responsive.

The balanced scorecard is used to provide focus on a number of key success measures critical to the businesses. These measures may or may not be the same as those proposed for the SQIs. Each of the measures on the corporate scorecard has assigned targets, providing a focus for all employees, where many employees' compensation is linked to corporate scorecard performance.

For SQIs, the metrics are chosen to reflect a broad range of business processes that are important elements of the customer experience which is different than the balanced scorecard that covers a wider range of metrics including financial, safety, regulatory and customer. The purpose of the SQIs is to ensure that service quality to customers is maintained at acceptable levels throughout the term of PBR Period, providing a framework for determining whether there is a need for a complete regulatory review of the PBR Plan during the mid-term assessment review.

Additionally, unlike the balanced scorecard where targets are established for each of the measures, the proposed benchmarks for the SQIs are not to be considered as a minimum threshold to achieve and instead as reference points against which levels of service quality can be compared. Failure to meet one (or more) SQI benchmarks does not necessarily constitute unacceptable performance that would trigger the off-ramp provision.

40.0 Reference: Exhibit B-1, pp. 70-71; Exhibit B-13, COPE 1.3.9

Service Quality Indicators (SQIs)

FBC states "The SQIs will provide a framework for determining whether there is a need for a complete regulatory review of the PBR Plan during the mid-term assessment review. Failure to meet one (or more) SQI benchmarks does not necessarily constitute unacceptable performance. Reasons provided by the Company as to why certain service quality indicator benchmarks were not met will be taken into account, recognizing that variances in performance may occur due to random events or events beyond the full control of FBC. Triggering of the off-ramp provision would be warranted only if there is **sustained serious degradation of the SQIs**." (FBC Exhibit B-1, p. 71) (Emphasis added)

40.1 Please define acceptable and unacceptable performance for the SQI including the proposed Informational indicators. How are they objectively and quantitatively measured? Please explain in detail for each SQI.

Response:

Please refer to the response to FEI CEC IR 1.52.1 (Exhibit B-8) in which FEI discussed what would constitute "unacceptable performance" or a "sustained serious degradation" of the SQIs. The same definition of "unacceptable performance" would apply to FBC.

Please refer to FEI-FBC BCUC PBR IR 3.40.2.1 for discussion of how the informational SQIs may fit into defining sustained serious degradation of the SQIs.

40.2 Please provide a more precise definition for "sustained serious degradation of the SQIs" with a time duration specified. Who will determine if such an event has occured?

Response:

Please refer to the response to FEI CEC IR 1.52.1 (Exhibit B-8) in which FEI discussed what would constitute "unacceptable performance" or a "sustained serious degradation" of the SQIs. The same definition of "unacceptable performance" would apply to FBC.

Please refer to the response to FEI COPE IR 1.7.1 (Exhibit B-9). As indicated in the response, the Commission and interveners will have the opportunity to review the Utilities' SQI results during the Annual Reviews and Mid-term Review. In the case of a sustained and significant degradation of SQI results, the Commission's recourse would be to explore with the Utilities

potential means of rectifying the issue, or if the issues cannot be rectified then the Commission could trigger the off-ramp provision for the complete review of the PBR plan elements or its possible termination. In determining whether to trigger the off-ramp provision, the Commission should consider whether or not the source of the possible degradation is under the control of management.

40.2.1 Please explain how the informational SQIs may fit into defining "sustained serious degradation of the SQIs"?

Response:

Please refer to the response to FBC BCUC IR 1.60.1.1 (Exhibit B-7) regarding SAIDI and SAIFI as informational indicators and page 10 of Appendix D6 (Exhibit B-1-1) in FBC's Application regarding the Customer Satisfaction Index, for explanations as to why these SQIs are considered informational in nature.

The interpretation of the informational SQIs may be used to corroborate whether overall performance of the Company is considered unacceptable. For example, if the performance of the SQIs with benchmarks failed to meet their targets, the informational SQIs results can be used to further validate if there is a serious degradation of overall performance. While it is difficult to establish benchmarks for the SAIDI, SAIFI and Customer Satisfaction informational indicators given that they can be influenced by events outside of the Company's control, the measures provide an overall indication of the reliability of the system and customers' overall satisfaction with the Company. These are important considerations to take into account in determining if overall performance has been unacceptable.

Failure to meet one (or more) SQI benchmarks does not necessarily constitute unacceptable performance. Consideration must be given for the performance of all the SQIs and what events occurred that were outside of the Company's control.

40.2.2 Please provide a more precise definition and criteria for measuring "short term" degradation of the SQIs with a time duration specified.

Response:

Please refer to the responses to FEI-FBC BCUC PBR IR 3.40.2 and FEI CEC IR 1.52.1 (Exhibit B-8).

As indicated in the response to FEI CEC IR 1.52.1 (Exhibit B-8), it is difficult to define "sustained serious degradation" in a manner that could foresee all circumstances. Instead, FBC provides an illustrative example only to help clarify what are some considerations in determining what would be a sustained serious degradation of the SQIs.

For example, a fire or other unexpected events might lead to a short term degradation of the emergency response time. If the unexpected events (i.e. fire) are one-time in nature, then it would be reasonable to expect the average emergency response time to improve in the months following the incident and trend closer to the benchmark. In this illustrative example, the degradation can be considered short term given that it was driven by a one-time event for a short duration of time.

However, a lesser but persistent long-term degradation of the same SQI might be regarded as a sustained serious degradation. For example, if the performance of the emergency response time continued to exceed the benchmark (i.e. slower response time) for a long period of time (i.e. many months) and the contributing factors were within the control of the company, it may be an example of "persistent long-term degradation".

The circumstances regarding the performance of SQIs that contribute to the failure to meet the SQI benchmarks need to be considered in the determination of a "sustained serious degradation". Failure to meet one (or more) SQI benchmarks does not necessarily constitute unacceptable performance. FBC believes that the proposed Annual Review and Mid-term Assessment Review processes are effective means by which stakeholders and the Commission can raise concerns regarding the serious degradation of service quality.

40.2.3 Please provide a more precise definition and criteria for measuring "a lesser but persistent long-term" degradation of the SQIs with a time duration specified.

Response:

Please refer to the response to FEI-FBC BCUC PBR IR 3.40.2.2.

41.0 Reference: FBC Exhibit B-1, p. 69; Exhibit B-7, BCUC 1.61.1, & BCUC 1.61.3
FBC Exhibit B-1-1, Appendix D6, Table D6-2, p. 3
Service Quality Indicators

FBC states that "Service Quality Indicators (SQIs) are used in the context of PBR to ensure that the utility is encouraged to pursue efficiencies that do not sacrifice service quality." (Exhibit B-1, p. 69) In Table B6-8 of the Application, FBC provides its proposed SQI's for the PBR.

41.1 Please fill out the following table to show the weightings for each of FBC's proposed SQIs, including a calculation of the weighted average score (if possible). Please include an explanation for how each of the benchmark indicator scores were determined:

Performance measure	Indicator	Benchmark	Benchmark Weighting	Explanation for Benchmark
Emergency response time	Percent of calls responded to within two hours	85%		
Telephone service factor	Percent of calls answered within 30 seconds or less	70%		
First contact resolution	Percent of customers who achieved call resolution in one call	78%		
Billing index	Measure of customer bills produced meeting performance criteria	5		
Meter reading accuracy	Number of scheduled meters that were read	97%		
System Average Interruption Duration Index	Informational indicator-3 year rolling average of SAIDI (average cumulative customer outage time)	---		
System Average Interruption Frequency Index	Informational indicator-3 year rolling average of SAIFI (average customer outages)	---		
All injury frequency rate	Informational indicator -3 year rolling average of lost time injuries plus medical treatment injuries per 200,000 hours worked	---		
Customer satisfaction index	Informational indicator	---		
Weighted Average				

Response:

FBC's PBR Plan does not propose an aggregation of the SQIs into a single measure, therefore no weighting of benchmarks is necessary. The explanation for the benchmark values is included in the table below.

Performance measure	Indicator	Benchmark	Explanation for Benchmark
Emergency response time	Percent of calls responded to within two hours	85%	Continuation of previous benchmark
Telephone service factor	Percent of calls answered within 30 seconds or less	70%	Continuation of previous benchmark
First contact resolution	Percent of customers who achieved call resolution in one call	78%	New SQI: Consistent with FEI benchmark
Billing index	Measure of customer bills produced meeting performance criteria	5	New SQI: Consistent with FEI benchmark
Meter reading accuracy	Number of scheduled meters that were read	97%	Continuation of previous benchmark
System Average Interruption Duration Index	Informational indicator-3 year rolling average of SAIDI (average cumulative customer outage time)	---	Continuation of previous methodology
System Average Interruption Frequency Index	Informational indicator-3 year rolling average of SAIFI (average customer outages)	---	Continuation of previous methodology
All injury frequency rate	Informational indicator -3 year rolling average of lost time injuries plus medical treatment injuries per 200,000 hours worked	---	Continuation of previous methodology
Customer satisfaction index	Informational indicator	---	Continuation of previous methodology

41.2 Please discuss how each of the SQIs will be reviewed in the PBR term? How will each of the indicators impact on the proposed symmetrical ESM?

Response:

At the Annual Review workshop, year-to-date SQI results along with projected year end results will be presented along with commentary on the results. Discussion of the Company's performance in regard to the SQIs will serve to provide a better understanding of any issues affecting the Company's ability to meet the established benchmarks. For those SQIs that are informational in nature, the trend of recent results provides a basis for understanding of the SQIs performance. Failure to meet one (or more) SQI benchmarks does not necessarily constitute unacceptable performance as there may be events beyond the full control of FBC. Please refer to the FBC Application (Exhibit B-1-1), pages 71 for discussion of the Annual Review process.

At the Mid-Term Review process which is scheduled to be held prior to the end of the third year (2016) of the term as part of the third Annual Review, the SQI results to date during the term of PBR will be reviewed to determine if there is a sustained serious degradation of the SQIs. FBC will review the SQI results and work co-operatively with interveners and the Commission to address any performance deficiencies and prevent the trigger of the off-ramp provision.

Under FBC's proposed PBR Plan, the SQIs do not impact the proposed symmetrical ESM. The SQIs have been proposed as a way to ensure service quality is not sacrificed in the pursuit of efficiencies by the utility.

41.2.1 Please explain whether each of the indicators must be equal to or exceed the indicated benchmarks in order for FBC to earn its portion of the ESM? What happens when one or more SQI's fall below the indicated benchmarks?

Response:

There is no relationship between the Companies' proposed ESM and attainment of service quality indicators.

As indicated in FBC's Application (Exhibit B-1), Section B6.7.2.2 Non-Financial Triggers, the SQIs provide a framework for determining whether there is a need for a complete regulatory review of the PBR Plan during the mid-term assessment review. Failure to meet one (or more) SQI benchmarks does not necessarily constitute unacceptable performance. Reasons provided by the Company as to why certain service quality indicator benchmarks were not met will be taken into account, recognizing that variances in performance may occur due to random events or events beyond the full control of FBC. Triggering of the off-ramp provision would be

warranted only if there is sustained serious degradation of the SQIs. Additionally, the proposed benchmarks are not to be considered as a minimum threshold to achieve and instead are reference points against which levels of service quality can be compared.

41.2.2 If the proposed SQIs and informational SQIs are not directly applied to the ESM, please discuss why there is a need for symmetric protection for all stakeholders (shareholders and ratepayers) when the good or poor performance of FBC would only alter its portion of the ESM.

Response:

There is no relationship between the Companies' proposed symmetrical ESM and attainment of SQIs.

The issue of symmetrical ESMs and the merit of having an ESM for both gains and losses have been discussed in a number of IRs. The following is the summary of responses to some of these IRs.

Response to FEI CEC IR 1.48.3 (Exhibit B-11):

"The 50/50 symmetrical earnings sharing model has been successfully employed in FEI's two previous PBR plans. FEI's (and FBC's) ESM provides a consistent business case metric for pursuing additional efficiencies at all levels of ROE achievement (short of reaching the off ramp)."

FEI BCUC IR 1.23.2 (Exhibit B-11):

"The absence of an ESM changes the risk profile for FEI (and FBC) because there is no longer a sharing of the shortfalls or gains. With the positive X-factor that is well above the negative TFP value, over the term of the PBR, it is uncertain as to the likelihood of achieving or surpassing the productivity target. The ESM, while ensuring customers benefit from positive performance, somewhat mitigates the Company's downside risk associated with the aggressive positive X-factor".

FEI-FBC BCUC PBR IR 3.38.4:

"It is possible that without ESM the level of under earning could be extremely large implying that shareholders are not earning a just and reasonable return. In the latter case, persistent under earning may negatively impact the bond rating and that would increase the long-term cost of

capital or impair the utilities' ability to access capital on reasonable terms in adverse market conditions. This is particularly true where the equity component of the capital structure is relatively thin".

41.3 Please discuss the impact to the amount of available ESM for the shareholders and ratepayers if 1) the actual total weighted average SQIs exceed the indicated benchmarks; 2) the actual total weighted average SQIs fall below the indicated benchmarks.

Response:

Please refer to the response to FEI-FBC BCUC PBR IR 3.41.1.

FBC's PBR Plan does not propose an aggregation of the SQIs into a single measure, therefore no weighting of benchmarks have been determined. Further there is no relationship between ESM and attainment of SQIs in the Companies' proposed PBR plans.

42.0 Reference: Exhibit A2-20, Staff Report to the Board, Ontario Energy Board, EB-2010-0379

Service Quality Indicators

Exhibit A2-20 contains an excerpt from the Ontario Energy Board's Staff Report to the Board on Performance Measurement and Continuous Improvement for Electricity Distributors, dated July 4, 2013. On page 52, it states that **"Staff recommends that the Board monitor the effectiveness of the Scorecard** as a performance monitoring tool and work with stakeholders to ensure that it continues to support the Board's objectives." [Emphasis in original]

Ontario Energy Board (OEB) staff also provided its recommended scorecard including several performance categories, measures, trends, and industry results.

42.1 Please discuss the various aspects of the OEB staff proposed scorecard and compare it with the FBC's proposed performance indicators. Please explain whether the OEB staff recommended scorecard should or should not apply to FBC and why.

Response:

FEI wishes to ensure that there is no confusion about the OEB reference to "scorecard" and the "balanced scorecard" that FEI uses. They are different. For clarity, the OEB's "scorecard" includes SQI's for regulatory purposes, and is more akin to the SQI's that the Utilities are proposing for PBR purposes. The OEB "scorecard" is not akin to FortisBC's "balanced scorecard". FEI's "balanced scorecard" is only used internally for management purposes related to compensation, and its design is not something over which the Commission has jurisdiction.

The OEB's staff report is a preliminary report. The Ontarian Electric distributors have raised number of concerns regarding the scope and comparability of the proposed metrics that merit to be explored.

For instance Hydro One stated that "*the total number of proposed measures in the Scorecard is much larger than the norm … research on the use of Scorecards has shown that when the number of measures becomes inflated it is difficult to evaluate overall performance.*" Further Ontario's Electric Distribution Association questioned the use of financial metrics in SQI and explained that "displaying financial ratios such as current ratio or debt equity ratio on the scorecard is not meaningful for consumers. Similarly, the regulatory return on equity is also not an easy metric to comprehend and such data would not be easily understood by consumers". Elsewhere Toronto Hydro raised its concerns with regards to cross-industry comparison and indicated that "*Without a normalization methodology that accounts for differences in asset age, customer density and system configuration, comparisons of OM&A or Net Plant, unit costs*

between otherwise similar utilities are unlikely to be of value to the OEB or LDCs". B&V has also raised the same concern in response to FEI-FBC BCUC PBR IR 3.42.1.1.

Based on a review of the scorecard it is reasonable to conclude that the SQI's used by FBC include a number of the same features however as for adapting the whole scorecard, it is not reasonable or practical because of specific differences between the regulatory environments. FBC shares similar concerns that other utilities have noted regarding the scope and comparability of the proposed metrics.

42.1.1 Assuming that the electricity-specific reliability indicators were replaced with gas-specific reliability indicators (such as, measuring Gas Escape and Customer Interruptions), could the OEB staff recommended scorecard also apply to FEI? Please discuss why or why not.

Response:

Please refer to the response to FEI-FBC BCUC PBR IR 3.42.1.

In addition B&V provides the following response.

Based on a review of the scorecard it is reasonable to conclude that the SQIs used by FEI contain a number of the same features. As for adapting the whole scorecard, it is not reasonable or practical because of specific differences between the regulatory environments.

For example, the benchmarking concepts for efficiency, costs and cost performance could not be used in BC because of the lack of peer utilities subject to regulation whereas in Ontario there are numerous electric distribution companies to develop econometric estimates while still retaining a reasonable level of degrees of freedom in the econometric analysis. No such comparable sample exists for FEI subject to BCUC regulation.

Further, there are a significant number of environmental and operating variables that must be controlled for in making the comparison to develop valid benchmarks. Some simple examples will illustrate the types of issues that would impact cost benchmarks. Some gas utilities receive pipeline service at the state border requiring that they build their own transmission system and city gates within the state (California and South Carolina are examples). Other gas utilities own no transmission in their service area but nonetheless pay for transmission services and city gates through pipeline demand costs. Finally, some utilities have a combination of interstate transmission and intrastate transmission within their service territory for both operating and economic reasons. This is just one example of how the same ultimate service has different cost

for utilities based on how the service is provided. Obviously, a utility that has transmission is going to have higher capital and O&M costs on its books than a utility that pays these costs as part of purchased gas costs. Other factors that impact these benchmark costs include system density, general terrain considerations, government policies associated with franchise areas, payments for right of way, extent of unionized work force, age of assets, meter location rules (some utilities do not own service lines if meters are set at the property line), customer mix and relative size of customers in the largest service classes, the level of required customer service (unbundled utilities may or may not bill the marketers customers for example), distance of the service area from the nearest gas supply source and so forth. Some of the measures such as cost per kWh do not have a comparable basis in gas. Some LDCs bill on a volume measure and not a BTU measure. That creates an inconsistency even if the BTU content of the gas is from the same pipeline. That issue is even larger if the BTU content is impacted by local production that raises the BTU content of the delivered gas. Since consumption is based on BTU content, measurement on CCF or cubic meters would result in non-comparable measures of volumetric consumption.

This list is not exhaustive as environmental measures such as annual HDDs and Design Day Temperatures would also impact costs. Even as electric measures in the same province these measures are not as precise as the OEB Staff seems to assume. If two electric utilities were identical in every respect except that one utility had more three phase customers than another, the utility with more three phase service would have higher costs for the same circuit miles. This is why benchmarking to determine overall productivity is inordinately imprecise as a measure for evaluating service performance.

Commission Staff prepared the following table of performance indicators which is a combination of FBC's proposed SQIs, plus the reliability indicators from the Canadian Electrical Association (SAIDI, SAIFI, AIFR), plus those that are recommended by the OEB Staff Report:

	Performance measure	Indicator	Benchmark (Based on 7-year Historical Average)	Benchmark Weighting
CUSTOMER RELATED	Customer satisfaction index (Existing)	Survey results	---	
	Emergency response time (Existing)	Percent of calls responded to within two hours	85%	

	Performance measure	Indicator	Benchmark (Based on 7-year Historical Average)	Benchmark Weighting
	Telephone service factor (Existing)	Percent of calls answered within 30 seconds or less	70%	
	First contact resolution (New)	Percent of customers who achieved call resolution in one call	78%	
	Billing index (Existing-Redefined)	Measure of customer bills produced meeting performance criteria	5	
	Meter reading accuracy (Existing)	Number of scheduled meters that were read	97%	
	Residential Connections Completion Time (Existing)			
	Residential Extensions Time to Quote (Existing)			
	Residential Extensions Completion Time (Existing)			
RELIABILITY	System Average Interruption Duration Index (Existing)	Annual unadjusted SAIDI (average cumulative customer outage time)		
	System Average Interruption Frequency Index (Existing)	Annual unadjusted SAIFI (average customer outages)		
	Momentary Average Interruption Frequency Index	Annual unadjusted MAIFI average number of customer momentary interruptions)		
	Generator Forced Outages (Existing)			
	Generator Availability Factor (Added)	Operating Time + Available-but-not-operating time / In Commercial Service Time.		
	Generator Forced Outage Count (Added)	Average Number of Forced Outages/Unit/Year (including starting failures)(Internal)		
	Generator Forced Outage Factor (Added)	Forced Outage Time (including starting failures) (Internal) / In Commercial Service Time.		

	Performance measure	Indicator	Benchmark (Based on 7-year Historical Average)	Benchmark Weighting
	Generator Failure Rate (Added)	Forced Outage Count (excluding Starting Failures) (Internal)/Operating Time X In Commercial Service Time.		
SAFETY	All injury frequency rate (New)	7 year rolling average of lost time injuries plus medical treatment injuries per 200,000 hours worked		
	Injury Frequency Rate (Existing)	Reported Annually		
	Injury Severity Rate	Reported Annually		
	Vehicle Incident Rate.	Reported Annually		
	Weighted Average			

42.2 Please fill out the blanks in the above table:

1. Provide reasonable "indicators" for all the SQI's shown.
2. Edit the "Benchmark" Column to show FBC's actual results, based on its 7-year average. If this number is different than the benchmark figures provided, please edit the data using the 7-year historical average.
3. Please also provide the weightings for each category and the weighted average total score.

Response:

As stated in response to FEI-FBC BCUC PBR IR 3.41.1, FBC's PBR Plan does not propose an aggregation of the SQIs into a single measure, therefore no weighting of benchmarks is necessary. The requested table is provided below.

	Performance measure	Indicator	Benchmark (Based on 7-year Historical Average)	Notes
CUSTOMER RELATED	Customer satisfaction index (Existing)	Survey results	8.6	
	Emergency response time (Existing)	Percent of calls responded to within two hours	92%	Metric not tracked previous to 2007 PBR Plan, historical average based on 6 years (2007-2012)
	Telephone service factor (Existing)	Percent of calls answered within 30 seconds or less	70%	Metric not tracked previous to 2007 PBR Plan, historical average based on 6 years (2007-2012)
	First contact resolution (New)	Percent of customers who achieved call resolution in one call	78%	No history
	Billing index (Existing-Redefined)	Measure of customer bills produced meeting performance criteria	5	No history
	Meter reading accuracy (Existing)	Number of scheduled meters that were read	98%	Metric not tracked previous to 2007 PBR Plan, historical average based on 6 years (2007-2012)
	Residential Connections Completion Time (Existing)	percentage of time service connected within 6 business days	91%	Metric not tracked previous to 2007 PBR Plan, historical average based on 6 years (2007-2012)
	Residential Extensions Time to Quote (Existing)	percentage of time quoted within 35 working days of initial request	96%	Metric not tracked previous to 2007 PBR Plan, historical average based on 6 years (2007-2012)
	Residential Extensions Completion Time (Existing)	percentage of time completed within 30 working days of customer acceptance of quote	94%	Metric not tracked previous to 2007 PBR Plan, historical average based on 6 years (2007-2012)

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	Performance measure	Indicator	Benchmark (Based on 7-year Historical Average)	Notes
RELIABILITY	System Average Interruption Duration Index (Existing)	Annual unadjusted SAIDI (average cumulative customer outage time)	3.23	
	System Average Interruption Frequency Index (Existing)	Annual unadjusted SAIFI (average customer outages)	2.31	
	Momentary Average Interruption Frequency Index	Annual unadjusted MAIFI average number of customer momentary interruptions)	N/A (see response to BCUC IR 1.61.4)	
	Generator Forced Outages (Existing)		1.14%	
	Generator Availability Factor (Added)	Operating Time + Available-but-not-operating time / In Commercial Service Time.	94%	
	Generator Forced Outage Count (Added)	Average Number of Forced Outages/Unit/Year (including starting failures)(Internal)	28	Measures internal causes only. Outages with causes that are external to Generation, such as Transmission System forced outages are excluded from this measure.
	Generator Forced Outage Factor (Added)	Forced Outage Time (including starting failures) (Internal) / In Commercial Service Time.	see Forced Outage Rate	
	Generator Failure Rate (Added)	Forced Outage Count (excluding Starting Failures) (Internal)/Operating Time X In Commercial Service Time.	3.52	

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	Performance measure	Indicator	Benchmark (Based on 7-year Historical Average)	Notes
SAFETY	All injury frequency rate (New)	7 year rolling average of lost time injuries plus medical treatment injuries per 200,000 hours worked	1.87	
	Injury Frequency Rate (Existing)	Reported Annually	see All Injury Frequency Rate	
	Injury Severity Rate	Reported Annually	20.56	
	Vehicle Incident Rate.	Reported Annually	1.37	
	Weighted Average	N/A	N/A	N/A

42.3 Please explain why financial portfolio management for capital expenditures (eg. Assessment of capital projects being on-time and on-budget) is not considered as financial performance indicator in addition to the informational SQIs proposed by FBC?

Response:

The primary purpose of the proposed SQIs is to monitor non-financial performance to ensure there is no sustained serious degradation of service quality during the term of the PBR Plan and not for measuring the financial performance of capital expenditures.

Additionally, FBC believes the assessment of capital expenditure efficiency is already appropriately captured in the proposed formula based capital expenditure approach for the PBR Plan, which also includes a productivity factor in the determination of the allowed capital expenditures. Managing capital expenditures (i.e. being on-time and on-budget) is more about productivity and efficiency in the Company than it is overall service quality impacting customers. Please refer to the response to FEI CEC IR 2.36.2 (Exhibit B-23) for discussion of the different factors used in measuring productivity for capital project type work.

43.0 Reference: FBC Exhibit B-1-1, Appendix D6, p. 8; FBC Exhibit B-7, BCUC 1.61.1 – 1.61.3

System Reliability Indicators

"FBC proposes to continue measuring transmission and distribution system reliability as adjusted by the Institute of Electrical and Electronics Engineers (IEEE) method of normalizing reliability statistics by excluding "major events". Major events are identified as those that cause outages exceeding a threshold number of customer-interruptions or customer-hours. Threshold values are calculated by applying a statistical method called the "2.5 Beta" adjustment to historical reliability data."

43.1 Please confirm whether the Commission has approved the use of the IEEE 2.5 Beta Method for adjusting SAIDI and SAIFI.

Response:

FBC has been using the IEEE 2.5 Beta Method to adjust SAIDI and SAIFI since at least 2000 and disclosing that fact during each affected regulatory process. This method has been accepted by stakeholders through various Negotiated Settlement Agreements.

Order G-52-05, approving FBC's 2005 Revenue Requirements Application, directed FBC to file for review and approval, objective and measurable performance metrics and targets to be achieved in 2005. FBC filed a report on its proposed metrics and targets on July 28, 2005, which proposed SAIDI and SAIFI targets adjusted for major events using the 2.5 Beta Method. Commission Order G-75-05 accepted the performance metrics and targets for 2005 contained in FBC's report.

In 2006, FBC proposed SAIDI and SAIFI performance standard metrics and targets to be normalized by the 2.5 Beta Method for use in the 2007 to 2011 PBR period. Commission Order G-58-06 approved the Negotiated Settlement Agreement which contained agreement from all stakeholders to normalize SAIDI and SAIFI targets and metrics for the PBR period using the 2.5 Beta Method.

Given the above, FBC considers that the Commission has approved FBC's use of the IEEE 2.5 Beta Method for adjusting SAIDI and SAIFI.

43.2 Please provide a list of Canadian regulators that have and those that have not approved the use of the IEEE 2.5 Beta Method for adjusting SAIDI and SAIFI.

Response:

Below is a list of jurisdictions that have a prescribed methodology for normalization.

Regulator	Methodology
Alberta Utilities Commission (AUC)	AUC Rule 002 prescribes similar methodology to 2.5 Beta Method. Major event day is defined as a day where daily SAIDI/SAIFI exceeds a threshold value (T_{MED}). T_{MED} is calculated using five years of reliability data to set the threshold for the sixth year.
Ontario Energy Board (OEB)	Each interruption is to be given a specific cause code as set out in the Electricity Reporting & Record Keeping Requirements. Cause codes range from Scheduled Outage to Adverse Weather.
Prince Edward Island (Maritime Electric)	Major events defined as outages affecting more than 10 percent of customers for more than 10 minutes.
Newfoundland Public Utilities Board	Utilities report unadjusted reliability stats to the PUB on a quarterly basis. A review of any major events, as determined by the utility, that occurred in the quarter are also included. Major events are typically determined to be single events that distort normal year over year reliability trends.
Nova Scotia Utility and Review Board	No information on normalization methodology found.
Manitoba Public Utilities Board	No information on normalization methodology found.
Saskatchewan (SaskPower)	No information on normalization methodology found.

43.3 For those Canadian regulators that do not use the IEEE 2.5 Beta Method for adjusting SAIDI and SAIFI, please explain how, or if, they adjust the reliability data.

Response:

Please refer to the response to FEI-FBC BCUC PBR IR 3.43.2.

In response to BCUC 1.61.2 to 1.61.3, FBC provides comparative charts of its reliability indicators compared to those from the Canadian Electrical Association (CEA).

43.4 For each of FBC's SAIDI and SAIFI values, please comment on whether they are better than or worse than those published by CEA. Please explain why.

Response:

FBC's historical normalized SAIDI and SAIFI performance compared to the normalized CEA Canadian Composite is provided in response to FBC BCUC IR 1.61.1 (Exhibit B-7). As is shown in the graphs provided in response to BCUC IR 1.61.1, FBC's reliability performance has been better than the CEA Composite in all years shown for SAIDI and better in all but one year for SAIFI.

The CEA Composite encompasses a number of electrical utilities across Canada, and these utilities are often significantly dissimilar in size compared to FBC, have a differing makeup of urban versus rural customers, experience widely varying weather and environmental conditions and have a wide range of system configurations (i.e. underground vs. overhead and radial vs. networked transmission). These are all factors that would impact FBC's reliability performance relative to the normalized CEA Canadian Composite.

43.4.1 Please explain the possible cost reductions that could be available by allowing the FBC SAIDI and SAIFI values to approach the CEA values without overly comprising reliability.

Response:

The implication of the question is that CEA SAIDI and SAIFI values somehow represent an "acceptable" level of reliability when compared to current FBC reliability statistics. FBC strongly disagrees with this position as the CEA values are simply an average of the actual results of many different utilities. As noted in the response to FEI-FBC BCUC PBR IR 3.43.4, these utilities are often significantly dissimilar in size compared to FBC, have a differing makeup of urban versus rural customers, experience widely varying weather and environmental conditions and have a wide range of system configurations (i.e. underground vs. overhead and radial vs. networked transmission). FBC's improvement in system reliability in recent years is primarily due to the completion of major transmission upgrade projects which have enhanced and strengthened the Company's backbone transmission system.

Further, it is important to note that safety and reliability are inextricably linked; reducing capital and O&M expenditures would have consequent negative impacts on both reliability and safety. For example, reductions in line maintenance (such as right of way brushing) would decrease line reliability as well as increase the potential for line contacts resulting in forest fires during dry

periods. Reduced substation maintenance and/or equipment replacement would increase the risk of equipment failures and would also result in greater hazards to employees and the public due to equipment fires or arc flashes.

FBC is unable to provide a direct quantitative relationship between capital and O&M cost reductions and the resulting changes to SAIDI and SAIFI. Finally, FBC notes that "reliability" consistently ranks as one of the top two areas of importance cited in the Company's customer satisfaction surveys (typically alternating with "cost" as the other area of importance). Thus customers themselves place varying priorities on these two areas depending on their own personal experience and service reliability.

In Exhibit A2-21, is a document titled "Utilizing Bulk Electric System Reliability Performance Index Probability Distributions in a Performance Based Regulation Framework," which is written by Roy Billinton, Fellow, IEEE, and Wijarn Wangdee, Student Member, IEEE. On page 1, it states "Reliability performance measures such as SAIFI and SAIDI can be used as integral elements in a PBR mechanism to provide power utilities with economic incentives to maintain and improve service reliability, and at the same time to discourage them from sacrificing service reliability in the pursuit of economic objectives."

43.5 Please explain why the reliability indicators of SAIDI and SAIFI are now being proposed to be Informational Indictors only for FBC instead if being tied to the financial incentives of the PBR plan?

Response:

FBC considers the result for the SAIDI & SAIFI metrics to be informational in nature and not tied to any financial incentives as there may be external factors that can influence the results. Due to events beyond the Company's control, such as local and severe weather conditions and third party damage, there may be considerable annual variation in the results.

Recognizing the importance of the need to measure transmission and distribution system reliability, FBC proposes to continue to report SAIDI and SAIFI results. The PBR Plan provides an "off-ramp" should there be a serious, sustained and unjustified degradation of service quality.

Please also refer to the response to FEI-FBC BCUC PBR IR 3.25.2.

43.6 Using the past 7 years of FBC historical data for the adjusted (IEEE 2.5 Beta Method) SAIDI, SAIFI and MAIFI values, please provide the mean, the standard deviation and the expected reward/penalty payments using the mathematical model presented in Exhibit A2-21.

Response:

	Mean	Standard Deviation	Expected Reward/Penalty Payments
SAIDI (Normalized) (2006-2012)	2.40	0.41	0.00
SAIFI (Normalized) (2006-2012)	2.10	1.00	0.05

FBC does not historically track MAIFI values for the reasons noted in response to FBC BCUC IR 1.61.4 (Exhibit B-7).

43.7 Using the same 7 years of CEA historical data for the unadjusted SAIDI, SAIFI and MAIFI values; please provide the mean, the standard deviation and the expected reward/penalty payments using the mathematical model presented in Exhibit A2-21.

Response:

	Mean	Standard Deviation	ERP
CEA Composite SAIDI (2006-2012) (unadjusted)	5.69	1.21	0.10
CEA Composite SAIFI (2006-2012) (unadjusted)	2.36	0.22	-0.02

43.7.1 Please discuss why a dead-band may not be required if FBC uses adjusted SAIDI, SAIFI and MAIFI data.

Response:

FBC is not proposing to tie its SQI results to any financial metric, and therefore the PBR mechanism set out in the above-referenced paper (Exhibit A2-21) is not appropriate for the purposes of FBC's proposed 2014-2018 PBR Plan. Nonetheless, normalization only removes uncontrollable events from the SAIDI and SAIFI metrics that are above a certain calculated threshold. Normalized SAIDI and SAIFI results still reflect many outage events that are outside the control of the Company. Therefore a dead-band is still appropriate for normalized SAIDI and SAIFI values to account for yearly variations in SAIDI and SAIFI as a result of events that are outside the control of the Company, but that do not meet the normalization threshold.

43.8 Please provide the annual cost or value of FBC's interrupted energy assessment rate or value of lost load, and the value annual energy not served.

Response:

The value of lost load or energy not served is a function of the opportunity cost for the customers plus the cost to restore service to the utility. The opportunity cost for customers varies with any number of factors such as the time of day, the season of the year, the duration of the loss, the customer type, the electrical equipment impacted and so forth. Likewise the cost to the utility varies based on a variety of factors. No exact quantification is available to estimate these costs.

44.0 Reference: Exhibit B-1-1, Appendix D6, p. 6

Customer Satisfaction Indicator

FBC states that "First contact resolution (FCR) is an area of focus for FBC as both independent and primary research conducted by FBC suggests that it is the single most important driver of customer satisfaction….Since 1996, the Service Quality Measurement (SQM) group has been a leading North

American call center industry research firm expert for improving organizations' FCR, operating costs, employee and customer satisfaction…. FBC intends to use the same methodology as is currently in place at the gas contact centers. This will involve using SQM to contact customers who have recently had an interaction with the Company."

44.1 Please provide the proposed list of questions that will be asked by the Service Quality Measurement group to evaluate customer satisfaction.

Response:

SQM asks gas and electric customers two questions to evaluate their satisfaction. Question 2 on the SQM survey asks customers, "Based on your last call to FortisBC Electric/Gas, overall how satisfied are you with our call centre?" Question 10 asks customers, "Overall, how satisfied were you with the customer representative who handled your call?" The responses to these two questions determine customer satisfaction for the contact centers and the customer service representatives.

FBC also continues to administer the company's historical CSI, which was used during the last PBR period to determine customer satisfaction. The SQM survey supplements CSI research with timelier, in-depth analysis of contact centre transaction quality allowing the company to better identify and correct process weaknesses.

44.2 Please provide the proposed list of questions that were asked by FBC during the previous PBR term to evaluate customer satisfaction.

Response:

During the last PBR period (2007-2011), a Customer Service Index (CSI) study was conducted to measure customer satisfaction with various aspects of FBC's customer operations as well as their overall satisfaction with FBC. The survey questionnaire is provided in Attachment 44.2.

According to the Public Service Commission of the Commonwealth of Kentucky, it states that "[t]he Commission is not persuaded that customer satisfaction is properly calculated from the results of the Customer Satisfaction Survey and Customer Callback Survey. The intervenors' challenges to the development of the customer surveys and the manner in which they will be used to measure customer satisfaction have merit. Absent any compelling arguments to the contrary we find that using only one question out of 70 in the Customer Satisfaction Survey as a factor in the SQ renders the use of the survey highly suspect. Further, the surveys are subjective in nature and, as such, the results may or may not be accurate. The analysis in the Christensen Report clearly provides that service quality measures should be objective and have measurable benchmarks. [5]" (Kentucky Public Service Commission Order, p. 32)

44.3 Please comment on how FBC will ensure that the service quality measures will be objective and have measurable benchmarks, particularly when FBC is proposing that the Customer Satisfaction Index be only an "Informational indicator"?

Response:

As discussed in FBC's Application (Exhibit B-1-1) Appendix D6 Service Quality Indicator Report, FBC has proposed a number of service quality measures that have specific, measurable targets. The Customer Satisfaction Index, as an informational indicator will not have an objective measurable benchmark as proposed, which the Company believes is appropriate.

The Customer Satisfaction Index has been proposed as an informational indicator due to external factors outside of the Company's control that can influence customer satisfaction scores both positively and negatively. Examples include storm related unplanned outages, media coverage, and customer concerns about tiered electricity prices or collection policies. Additionally, FBC recognizes that not all factors influencing customer satisfaction scores can be objectively measured like a physical event such as a system outage. While the survey used to collect the Customer Satisfaction scores is defined in an objective manner, the results themselves are subject to the influence of customers' interpretation and perception of the issues. Examples of this include customers' interpretation of the introduction of tiered electricity prices in 2013 and FBC's Advanced Metering Infrastructure project, both which negatively impacted Customer Satisfaction scores.

For the stated reasons, FBC proposes the Customer Satisfaction Index be only an information indicator for the purpose of the PBR Plan.

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[5] http://psc.ky.gov/agencies/psc/hot_list/m_audit/ku_lge/1998-426_010700.pdf

45.0 Reference: FEI Exhibit B-1, p. 76

Quality Indicators

45.1 For FEI and FBC provide the Response Time to Site Emergency Calls (the time from when an Emergency Call is received to when utility staff arrive at the site of the emergency) for 2007- 2013.

Response:

For FEI, the 2007-2012 historical results are provided in Appendix B2, Key Operating Facts, page 1, under "Emergency Response Time (minutes)". The October 2013 year to date result is 24:06 minutes.

For FBC, the 2007–2012 historical results are provided below:

Average Response Time (Hour:Minutes)

2007	0:51
2008	0:55
2009	0:58
2010	0:45
2011	0:59
2012	1:47
2013	Data not currently available due to ongoing labour dispute.

46.0 Reference: FBC Exhibit B-18, COPE Supp. 1.9.4

Reporting and Measurement of SQIs

FortisBC states "To ensure the accuracy of the data reported for the SQIs, the Company assigns owners to be accountable for each of the SQIs. These owners represent departments in the Company that would be most knowledgeable of the indicators' results and are in the best position to ensure the accuracy of the data reported. Additionally, further validation is performed from an overall perspective when the data for all the service quality indicators are collected, tracked and reported centrally. This is currently done by the Regulatory group for reporting purposes. Before the actual results are published, the owners of the service quality indicators are asked to review and confirm the results. Further validation of the data accuracy will also be completed under the Company's proposed Annual Review process. As part of the proposed Annual Review process, the Company will be discussing its current year service quality results. At that time, stakeholders will have an opportunity to discuss any of the reported SQI results. FBC believes the described process is appropriate to ensure the accuracy of the data reported for the SQI results."

46.1 Please explain in detail what "[f]urther validation of the data accuracy" will be completed under the proposed Annual Review process. Please explain for both FBC and FEI.

Response:

The response to COPE Supplemental IR 1.9.4.1 (Exhibit B-18) referencing "further validation of the data accuracy will also be completed under the proposed Annual Review Process" recognizes that as part of the Annual Review process, stakeholders will have the opportunity to discuss any of the reported SQI results. With this opportunity for review and discussion with stakeholders, the Companies believe further validation of the SQI results is achieved as stakeholders can provide feedback confirming that the SQIs results reported is representative of their understanding of results.

46.2 Please explain why it is proposed that various internal personnel / departments be responsible for the collection, reporting, and validation of the actual SQI results? Please explain why there should not be an external third party involved in any step of either the collection, reporting, and/or validation of the actual SQI results?

Response:

As outlined in the pre-amble to this question, FBC and FEI follow an existing process which reports SQI results that are accurate and representative of their performance. The existing reporting process has been used successfully in past PBR agreements to report on similar SQI data. As such, FBC and FEI do not believe such an external audit is necessary. Further, the Companies believe that the additional costs that would need to be incurred to perform such an external audit would not be warranted or in the customers' best interest.

46.3 Please provide the estimated cost for an external audit of all SQIs including the informational SQIs.

Response:

FBC and FEI estimates that the annual cost for an external audit of the SQIs would be approximately $35 thousand to $60 thousand in total for both Companies. The cost is dependent on the number of SQIs and the nature of data collection procedures.

Please refer to the response to FEI-FBC BCUC PBR IR 3.46.2 for discussion of why FBC and FEI do not believe such an external audit is necessary.

J. PBR FORMULA AND SENSITIVITY ANALYSIS

47.0 Reference: FEI Exhibits B-1, B-1-1 Appendix D5

Operating and Maintenance (O&M) Formula – Sensitivity Analysis

"The O&M allowed under the PBR Plan is shown in Table B6-5. As indicated above, the O&M allowed under PBR will be revised yearly in the PBR Annual Review, recalculated based on both the re-forecasted number of customers and the re-forecasted composite inflation rate for the upcoming year. The X-Factor, however, remains constant throughout the PBR Period." [FEI Exhibit B-1, p. 57, lines 21-24]

The Formulaic O&M calculation which results in the data in Table B6-5 is in Appendix D5 of Exhibit B-1-1.

47.1 Using the model in Appendix D5 as the basis, please provide a working sensitivity analysis model which will allow for calculation of the change in the Formulaic O&M as a result of a change, for each year of the five year period, in any one, or all, of the variables: CPI percentage, AWE percentage, Productivity Factor percentage, and Customer Growth percentage.

Response:

Attachment 47.1 contains a working sensitivity analysis model which satisfies the requirements in FEI-FBC BCUC PBR IRs 3.47.1, 3.47.2, 3.48.1 and 3.48.2. The analysis provided in this model is for informational purposes only and is not intended to be an accurate indication of actual company expenditures and/or savings over the PBR period. The figures represented are based on the high level 5 year forecast level of variables including, but not limited to, O&M and Capital expenditures, inflation rates, customer growth rates and service lines additions, each of which are subject to change according to updated forecasts to be conducted at the PBR Annual Reviews.

In addition, FEI notes that the Commission has not requested that analysis be provided on the ECM impacts of O&M variances, or on the ESM impacts of capital variances; accordingly this information has not been provided in Attachment 47.1.

47.2 Please add to the model the calculation of the dollar amount of the Formula Earned Return on Equity for the years 2014 through 2018, and show the change that results in the Formula Earned Return on Equity from a change in the variables identified above. This change in the amount of earned return on equity

would be the dollar amount that would be available for distribution under the ESM.

Response:

Please refer to the working sensitivity model filed Attachment 47.1 provided in response to FEI-FBC PBR BCUC IR 3.47.1.

47.3 Please provide a table, as in the example below, of the dollar amount in Formulaic O&M that results from each of the changes in the individual variables as identified below. Include in the table the total change in Formulaic O&M for the five years and the total available for ESM over the five years. The sensitivity change, to the base variable data as presented in Appendix D5, will be to each of the five years in the same amount. For example, a change to the CPI percentage of +0.5% / -1.0% would be to 2.33% vs 1.83% vs 0.83% for 2014 and 2.57% vs 2.07% vs 1.07% in 2015. The sensitivities to be analyzed are:

CPI percentage	+ 0.50% / - 1.00%
AWE percentage	+ 0.20% / - 1.00%
Productivity Factor percentage	+ 0.05% / - 0.05%
Customer Growth percentage	+ 0.05% / - 0.05%

Response:

The analysis provided in this model is for informational purposes only and is not intended to be an accurate indication of actual company expenditures and/or savings and/or sharing over the PBR period. The figures represented are based on the high level 5 year forecast level of variables including, but not limited to, O&M and Capital expenditures, inflation rates, customer growth rates and service lines addition, each of which are subject to change according to updated forecasts to be conducted for the PBR Annual Review. The last column represents the total dollars shared under the Earnings Sharing Mechanism (not just the change in the amount caused by the change in the variable), which is 50 percent of the available dollars for sharing. . FEI notes that the ESM amounts are negative because FEI's high level forecast O&M is higher than the formula-driven amounts. These negative amounts represent amounts that would be collected from customers under the proposed ESM model. Results from the table can be recreated with the working sensitivity model filed in Attachment 47.1, provided in response to FEI-FBC BCUC PBR IR 3.47.1.

1

O&M Sensitivity Analysis	Sensitivity Change	2014 Formula		2015 Formula		2016 Formula		2017 Formula		2018 Formula		Total $ Change 2014-2018		Total $ Shared under ESM 2014-2018
												PBR Total:		
Proposed Scenario	**0.0%**	**$ 235,241**		**$ 239,788**		**$ 244,264**		**$ 249,190**		**$ 255,370**		**$ 1,223,854**		**$ (20,753)**
Variable														
CPI Percentage	**+0.50%**	$ 235,686	**0.19%**	$ 240,701	**0.38%**	$ 245,689	**0.58%**	$ 251,155	**0.79%**	$ 257,878	**0.98%**	**$ 7,255**	**0.59%**	**$ (17,125)**
	-1.00%	$ 234,332	**-0.39%**	$ 237,928	**-0.78%**	$ 241,411	**-1.17%**	$ 245,299	**-1.56%**	$ 250,399	**-1.95%**	**$ (14,484)**	**-1.18%**	**$ (27,995)**
AWE Percentage	**+0.20%**	$ 235,463	**0.09%**	$ 240,244	**0.19%**	$ 244,965	**0.29%**	$ 250,149	**0.38%**	$ 256,599	**0.48%**	**$ 3,567**	**0.29%**	**$ (18,969)**
	-1.00%	$ 234,129	**-0.47%**	$ 237,516	**-0.95%**	$ 240,780	**-1.43%**	$ 244,442	**-1.91%**	$ 249,306	**-2.37%**	**$ (17,680)**	**-1.44%**	**$ (29,593)**
Productivity Percentage	**+0.05%**	$ 235,140	**-0.04%**	$ 239,581	**-0.09%**	$ 243,946	**-0.13%**	$ 248,755	**-0.17%**	$ 254,814	**-0.22%**	**$ (1,618)**	**-0.13%**	**$ (21,562)**
	-0.05%	$ 235,342	**0.04%**	$ 239,995	**0.09%**	$ 244,582	**0.13%**	$ 249,626	**0.17%**	$ 255,928	**0.22%**	**$ 1,620**	**0.13%**	**$ (19,943)**
Customer Growth Percentage	**+0.05%**	$ 235,343	**0.04%**	$ 239,998	**0.09%**	$ 244,586	**0.13%**	$ 249,631	**0.18%**	$ 255,935	**0.22%**	**$ 1,640**	**0.13%**	**$ (19,933)**
	-0.05%	$ 235,139	**-0.04%**	$ 239,579	**-0.09%**	$ 243,942	**-0.13%**	$ 248,750	**-0.18%**	$ 254,807	**-0.22%**	**$ (1,638)**	**-0.13%**	**$ (21,572)**

2

3

4

Variable	Sensitivity change	Change in Formulaic O&M in 2014	Change in Formulaic O&M in 2015	Change in Formulaic O&M in 2016	Change in Formulaic O&M in 2017	Change in Formulaic O&M in 2018	Total $ change in Formulaic O&M over 2014-18	Total $ amount available for ESM over 2014-18
CPI percentage	+x.xx%							
	-x.xx%							
AWE percentage	+y.yy%							
	-y.yy%							
Productivity percentage	+z.zz%							
	-z.zz%							
Customer Growth percentage	+w.ww%							
	-w.ww%							

47.4 Please confirm, or otherwise explain, that the Excel model provided above will work correctly to provide any range of sensitivity analysis required.

Response:

Confirmed.

48.0 Reference: FEI Exhibits B-1, B-1-1 Appendix D5

Capital Formula – Sensitivity Analysis

"The Average Growth Capital Cost per Service Line Addition allowed under the PBR Plan is shown in Table B6-7. As indicated above, the Average Growth Capital Cost per Service Line Addition allowed under PBR will be revised yearly in the PBR Annual Review, recalculated based on both the re-forecasted level of service line additions and the re-forecasted composite inflation rate for the upcoming year."
(FEI Exhibit B-1, p. 63, lines 3-7)

"The Sustainment and Other Capital allowed under the PBR Plan is included below in Table B6-8. As indicated above, the Sustainment and Other Capital allowed under PBR will be revised yearly in the PBR Annual Review, recalculated based on both the re-forecast number of customers and the re-forecast composite inflation rate for the upcoming year." (FEI Exhibit B-1, p. 64, lines 15-18)

The Formulaic Capital calculation which results in the data in Tables B6-7 and B6-8 is in Appendix D5. This single model provides, separately, the Growth, Sustainment, and Other Capital.

48.1 Using the model in Appendix D5 as the basis, please provide a working sensitivity analysis model which will allow for calculation of the change in the Formulaic Capital as a result of a change, for each year of the five year period, in any one, or all, of the variables: CPI percentage, AWE percentage, Productivity Factor percentage, Customer Growth percentage, and Forecast Service Line Additions.

Response:

Please refer to the working sensitivity model filed in Attachment 47.1 provided in response to FEI-FBC BCUC PBR IR 3.47.1.

48.2 Please add to the model the calculation of the 15 percent Rate Base Benefit Factor for the years 2014 through 2018, for example, as shown in Appendix D6 of B-1-1, and show in this model the change that results in the Plant Additions Benefit from a change in the variables identified above. This change in the Plant Additions Benefit would be the dollar amount that would be available for distribution under the ECM.

Response:

Please refer to the working sensitivity model filed in Attachment 47.1 provided in response to FEI-FBC BCUC PBR IR 3.47.1.

48.3 Please provide a table, similar to that in the previous IR but with addition of the Forecast Service Line Additions, of the dollar amount in Formulaic Capital that results from each of the changes in the individual variables as identified below. Include in the table the total change in Formulaic Capital for the five years and the total available for ECM over the five years. The sensitivity change, to the base variable data as presented in Appendix D5, will be to each of the five years in the same amount. For example, a change to the CPI percentage of +0.5% / -1.0% would be to 2.33% vs 1.83% vs 0.83% for 2014 and 2.57% vs 2.07% vs 1.07% in 2015. The sensitivities to be analyzed are:

CPI percentage	+ 0.50% / - 1.00%
AWE percentage	+ 0.20% / - 1.00%
Productivity Factor percentage	+ 0.05% / - 0.05%
Customer Growth percentage	+ 0.05% / - 0.05%
Forecast Service Line Additions	+ 350 / - 175

Response:

The analysis provided is for informational purposes only and is not intended to be an accurate indication of actual company expenditures and/or savings and/or sharing over the PBR period. The figures represented are based on the high level 5 year forecast level of variables including, but not limited to, O&M and Capital expenditures, inflation rates, customer growth rates and service lines addition, each of which are subject to change according to updated forecasts to be conducted for the PBR Annual Review. The results of this table can be recreated using the working sensitivity model filed in Attachment 47.1 provided in response to FEI-FBC BCUC PBR IR 3.47.1. In the ECM columns, positive amounts represent an amount to be collected from customers, and negative amounts represent an amount to be returned to customers.

1

Capital Sensitivity Analysis	Sensitivity Change	2014 Formula		2015 Formula		2016 Formula		2017 Formula		2018 Formula		Total $ Change 2014-2018		Total $ Efficiency Carry-Over for 2019-2022 High Construction Scenario	Total $ Efficiency Carry-Over for 2019-2022 Low Construction Scenario
												PBR Total:			
Proposed Scenario	**0.0%**	**$ 129,030**		**$ 132,921**		**$ 136,348**		**$ 139,174**		**$ 142,146**		**$ 679,619**		**$ (1,720)**	**$ 2,600**
Variable															
CPI Percentage	**+0.50%**	$ 129,305	**0.21%**	$ 133,488	**0.43%**	$ 137,235	**0.65%**	$ 140,393	**0.88%**	$ 143,694	**1.09%**	**$ 4,495**	**0.66%**	**$ (806)**	**$ 3,514**
	-1.00%	$ 128,469	**-0.43%**	$ 131,766	**-0.87%**	$ 134,572	**-1.30%**	$ 136,761	**-1.73%**	$ 139,077	**-2.16%**	**$ (8,974)**	**-1.32%**	**$ (3,536)**	**$ 783**
AWE Percentage	**+0.20%**	$ 129,167	**0.11%**	$ 133,204	**0.21%**	$ 136,785	**0.32%**	$ 139,769	**0.43%**	$ 142,904	**0.53%**	**$ 2,210**	**0.33%**	**$ (1,272)**	**$ 3,048**
	-1.00%	$ 128,344	**-0.53%**	$ 131,510	**-1.06%**	$ 134,180	**-1.59%**	$ 136,229	**-2.12%**	$ 138,403	**-2.63%**	**$ (10,954)**	**-1.61%**	**$ (3,937)**	**$ 383**
Productivity Percentage	**+0.05%**	$ 128,968	**-0.05%**	$ 132,792	**-0.10%**	$ 136,150	**-0.15%**	$ 138,904	**-0.19%**	$ 141,802	**-0.24%**	**$ (1,002)**	**-0.15%**	**$ (1,923)**	**$ 2,397**
	-0.05%	$ 129,093	**0.05%**	$ 133,050	**0.10%**	$ 136,546	**0.15%**	$ 139,444	**0.19%**	$ 142,490	**0.24%**	**$ 1,004**	**0.15%**	**$ (1,516)**	**$ 2,803**
Customer Growth Percentage	**+0.05%**	$ 129,082	**0.04%**	$ 133,028	**0.08%**	$ 136,512	**0.12%**	$ 139,398	**0.16%**	$ 142,433	**0.20%**	**$ 833**	**0.12%**	**$ (1,551)**	**$ 2,769**
	-0.05%	$ 128,978	**-0.04%**	$ 132,815	**-0.08%**	$ 136,185	**-0.12%**	$ 138,950	**-0.16%**	$ 141,860	**-0.20%**	**$ (832)**	**-0.12%**	**$ (1,889)**	**$ 2,431**
Forecast Service Line Additions	**+350**	$ 130,006	**0.76%**	$ 133,916	**0.75%**	$ 137,361	**0.74%**	$ 140,206	**0.74%**	$ 143,196	**0.74%**	**$ 5,066**	**0.75%**	**$ (946)**	**$ 3,374**
	-175	$ 128,542	**-0.38%**	$ 132,424	**-0.37%**	$ 135,842	**-0.37%**	$ 138,658	**-0.37%**	$ 141,621	**-0.37%**	**$ (2,533)**	**-0.37%**	**$ (2,107)**	**$ 2,213**

2

48.4 Please confirm, or otherwise explain, that the Excel model provided above will work correctly to provide any range of sensitivity analysis required.

Response:

Confirmed.

49.0 Reference: FBC Exhibits B-1, B-1-1 Appendix D4

Operating and Maintenance (O&M) Formula – Sensitivity Analysis

"The O&M allowed under the PBR Plan is included in Table B6-5. As indicated above, the O&M allowed under PBR will be recalculated yearly in the PBR Annual Review, based on updated forecasts of customers composite inflation rates, and those items tracked outside of the formula, for the upcoming year. The X-Factor, however, remains constant throughout the PBR Period." (FBC Exhibit B-1, p. 53, lines 12-15)

The Formulaic O&M calculation which results in the data in Table B6-5 is in Appendix D4 of Exhibit B-1-1.

49.1 Using the model in Appendix D4 is the basis, please provide a working sensitivity analysis model which will allow for calculation of the change in the Formulaic O&M as a result of a change, for each year of the five year period, 2014-2018, in any one, or all, of the variables: CPI percentage, AWE percentage, Productivity Factor percentage, and Customer Growth percentage.

Response:

Attachment 49.1 contains a working sensitivity analysis model which satisfies the requirements of FEI-FBC BCUC PBR IRs 3.49.1, 3.49.2, 3.50.1 and 3.50.2. The analysis provided in this model is for informational purposes only and is not intended to be an accurate indication of actual company expenditures and/or savings over the PBR period. The figures represented are based on the high level 5 year forecast level of variables including, but not limited to, O&M and Capital expenditures, inflation rates and customer growth rates, each of which are subject to change according to updated forecasts to be conducted at the PBR Annual Review.

In addition, FBC notes that the Commission has not requested that analysis be provided on the ECM impacts of O&M variances, or on the ESM impacts of capital variances; accordingly this information has not been provided in Attachment 49.1.

49.2 Please add to the model the calculation of the dollar amount of the Formula Earned Return on Equity for the years 2014 through 2018, and show the change that results in the Formula Earned Return on Equity from a change in the variables identified above. This change in the amount of earned return on equity would be the dollar amount that would be available for distribution under the ESM.

Response:

Please refer to the working sensitivity model filed in Attachment 49.1 provided in response to FEI-FBC BCUC PBR IR 3.49.1.

49.3 Please provide a table, as in the example below, of the dollar amount in Formulaic O&M that results from each of the changes in the individual variables as identified below. Include in the table the total change in Formulaic O&M for the five years and the total available for ESM over the five years. The sensitivity change, to the base variable data as presented in Appendix D4, will be to each of the five years in the same amount. For example, a change to the CPI percentage of +0.5% / -1.0% would be to 2.33% vs 1.83% vs 0.83% for 2014 and 2.57% vs 2.07% vs 1.07% in 2015. The sensitivities to be analyzed are:

CPI percentage	+ 0.50% / - 1.00%
AWE percentage	+ 0.20% / - 1.00%
Productivity Factor percentage	+ 0.05% / - 0.05%
Customer Growth percentage	+ 0.05% / - 0.05%

Response:

The analysis provided is for informational purposes only and is not intended to be an accurate indication of actual company expenditures and/or savings and/or sharing over the PBR period. The figures represented are based on the high level 5 year forecast level of variables including, but not limited to, O&M and Capital expenditures, inflation rates and customer growth rates, each of which are subject to change according to updated forecasts to be conducted for the PBR Annual Review. The last column represents the total actual dollars shared under the Earnings Sharing Mechanism (not just the change in the amount caused by the change in the variable), which is 50 percent of the available dollars for sharing. FBC notes that the ESM amounts are negative where FBC's high level forecast O&M is higher than the formula-driven amounts. The negative amounts represent amounts that would be collected from customers under the proposed ESM model whereas positive amounts represent amounts returned to customers. Results of this table can be recreated using the working sensitivity model filed in Attachment 49.1, provided in response to FEI-FBC PBR BCUC IR 3.49.1.

1

O&M Sensitivity Analysis	Sensitivity Change	2014 Formula		2015 Formula		2016 Formula		2017 Formula		2018 Formula		Total $ Change 2014-2018		Total $ Shared under ESM 2014-2018
												PBR Total:		
Proposed Scenario	**0.0%**	**$ 61,386**		**$ 61,744**		**$ 60,960**		**$ 62,378**		**$ 63,302**		**$ 309,770**		**$ 818**
Variable														
CPI Percentage	**+0.50%**	$ 61,502	**0.19%**	$ 61,982	**0.38%**	$ 61,332	**0.61%**	$ 62,892	**0.82%**	$ 63,960	**1.04%**	**$ 1,898**	**0.61%**	**$ 1,767**
	-1.00%	$ 61,150	**-0.38%**	$ 61,260	**-0.78%**	$ 60,216	**-1.22%**	$ 61,359	**-1.63%**	$ 61,996	**-2.06%**	**$ (3,788)**	**-1.22%**	**$ (1,076)**
AWE Percentage	**+0.20%**	$ 61,444	**0.09%**	$ 61,863	**0.19%**	$ 61,143	**0.30%**	$ 62,629	**0.40%**	$ 63,624	**0.51%**	**$ 933**	**0.30%**	**$ 1,285**
	-1.00%	$ 61,098	**-0.47%**	$ 61,153	**-0.96%**	$ 60,051	**-1.49%**	$ 61,135	**-1.99%**	$ 61,709	**-2.52%**	**$ (4,624)**	**-1.49%**	**$ (1,494)**
Productivity Percentage	**+0.05%**	$ 61,360	**-0.04%**	$ 61,690	**-0.09%**	$ 60,877	**-0.14%**	$ 62,264	**-0.18%**	$ 63,155	**-0.23%**	**$ (423)**	**-0.14%**	**$ 607**
	-0.05%	$ 61,413	**0.04%**	$ 61,798	**0.09%**	$ 61,043	**0.14%**	$ 62,492	**0.18%**	$ 63,448	**0.23%**	**$ 424**	**0.14%**	**$ 1,030**
Customer Growth Percentage	**+0.05%**	$ 61,413	**0.04%**	$ 61,799	**0.09%**	$ 61,044	**0.14%**	$ 62,493	**0.18%**	$ 63,449	**0.23%**	**$ 428**	**0.14%**	**$ 1,032**
	-0.05%	$ 61,360	**-0.04%**	$ 61,690	**-0.09%**	$ 60,876	**-0.14%**	$ 62,263	**-0.18%**	$ 63,154	**-0.23%**	**$ (427)**	**-0.14%**	**$ 605**

2

3

4

Variable	Sensitivity change	Change in Formulaic O&M in 2014	Change in Formulaic O&M in 2015	Change in Formulaic O&M in 2016	Change in Formulaic O&M in 2017	Change in Formulaic O&M in 2018	Total $ change in Formulaic O&M over 2014-18	Total $ amount available for ESM over 2014-18
CPI percentage	+x.xx%							
	-x.xx%							
AWE percentage	+y.yy%							
	-y.yy%							
Productivity percentage	+z.zz%							
	-z.zz%							
Customer Growth percentage	+w.ww%							
	-w.ww%							

49.4 Please confirm, or otherwise explain, that the Excel model provided above will work correctly to provide any range of sensitivity analysis required.

Response:

Confirmed.

50.0 Reference: FBC Exhibits B-1, B-1-1 Appendix D4

Capital Formula – Sensitivity Analysis

"The capital expenditures allowed under the PBR Plan is included below in Table B6-7. As for O&M Expense, the capital expenditures allowed under PBR will be recalculated yearly in the PBR Annual Review, based on updated forecasts of customers composite inflation rates, and those items tracked outside of the formula, for the upcoming year. The X-Factor, however, remains constant throughout the PBR Period." (FBC Exhibit B-1, p. 57, lines 9-13)

The Formulaic Capital calculation which results in the data in Tables B6-7 is in Appendix D4.

50.1 Using the model in Appendix D4 is the basis, please provide a working sensitivity analysis model which will allow for calculation of the change in the Formulaic Capital as a result of a change, for each year of the five year period, in any one, or all, of the variables: CPI percentage, AWE percentage, Productivity Factor percentage, and Customer Growth percentage.

Response:

Please refer to the working sensitivity model filed in Attachment 49.1 provided in response to FEI-FBC BCUC PBR IR 3.49.1.

50.2 Please add to the model the calculation of the 12 percent Rate Base Benefit Factor for the years 2014 through 2018, for example, as shown in Appendix D5 of B-1-1, and show in this model the change that results in the Plant Additions Benefit from a change in the variables identified above. This change in the Plant Additions Benefit would be the dollar amount that would be available for distribution under the ECM.

Response:

Please refer to the working sensitivity model filed in Attachment 49.1 provided in response to FEI-FBC BCUC PBR IR 3.49.1.

50.3 Please provide a table, similar to that in the previous IR, of the dollar amount in Formulaic Capital that results from each of the changes in the individual variables as identified below. Include in the table the total change in Formulaic Capital for the five years and the total available for ECM over the five years. The sensitivity change, to the base variable data as presented in Appendix D4, will be to each of the five years in the same amount. For example, a change to the CPI percentage of +0.5% / -1.0% would be to 2.33% vs 1.83% vs 0.83% for 2014 and 2.57% vs 2.07% vs 1.07% in 2015. The sensitivities to be analyzed are:

CPI percentage	+ 0.50% / - 1.00%
AWE percentage	+ 0.20% / - 1.00%
Productivity Factor percentage	+ 0.05% / - 0.05%
Customer Growth percentage	+ 0.05% / - 0.05%

Response:

The analysis provided is for informational purposes only and is not intended to be an accurate indication of actual company expenditures and/or savings and/or sharing over the PBR period. The figures represented are based on the high level 5 year forecast level of variables including, but not limited to, O&M and Capital expenditures, inflation rates and customer growth rates, each of which are subject to change according to updated forecasts to be conducted for the PBR Annual Reviews. The results of this table can be recreated using the working sensitivity model filed in Attachment 49.1 provided in response to FEI-FBC BCUC PBR IR 3.49.1. In the ECM column, negative amounts represent an amount to be returned to customers. Note that only the formula-driven portion of capital expenditures is included in the calculation of the ECM.

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Capital Sensitivity Analysis	Sensitivity Change	2014 Formula		2015 Formula		2016 Formula		2017 Formula		2018 Formula		Total $ Change 2014-2018		Total $ Efficiency Carry-Over for 2019-2024
												PBR Total:		
Proposed Scenario	**0.0%**	**$ 100,299**		**$ 78,947**		**$ 52,103**		**$ 53,183**		**$ 54,060**		**$ 338,592**		**$ (1,066)**
Variable														
CPI Percentage	**+0.50%**	$ 100,393	**0.09%**	$ 79,140	**0.25%**	$ 52,407	**0.58%**	$ 53,602	**0.79%**	$ 54,598	**0.99%**	**$ 1,548**	**0.46%**	**$ (814)**
	-1.00%	$ 100,107	**-0.19%**	$ 78,552	**-0.50%**	$ 51,496	**-1.17%**	$ 52,352	**-1.56%**	$ 52,996	**-1.97%**	**$ (3,090)**	**-0.91%**	**$ (1,568)**
AWE Percentage	**+0.20%**	$ 100,346	**0.05%**	$ 79,043	**0.12%**	$ 52,253	**0.29%**	$ 53,388	**0.38%**	$ 54,324	**0.49%**	**$ 761**	**0.22%**	**$ (943)**
	-1.00%	$ 100,064	**-0.23%**	$ 78,464	**-0.61%**	$ 51,362	**-1.42%**	$ 52,169	**-1.91%**	$ 52,762	**-2.40%**	**$ (3,771)**	**-1.11%**	**$ (1,123)**
Productivity Percentage	**+0.05%**	$ 100,278	**-0.02%**	$ 78,903	**-0.06%**	$ 52,036	**-0.13%**	$ 53,090	**-0.17%**	$ 53,941	**-0.22%**	**$ (345)**	**-0.10%**	**$ (1,123)**
	-0.05%	$ 100,320	**0.02%**	$ 78,991	**0.06%**	$ 52,171	**0.13%**	$ 53,276	**0.17%**	$ 54,180	**0.22%**	**$ 346**	**0.10%**	**$ (1,010)**
Customer Growth Percentage	**+0.05%**	$ 100,321	**0.02%**	$ 78,991	**0.06%**	$ 52,172	**0.13%**	$ 53,277	**0.18%**	$ 54,181	**0.22%**	**$ 349**	**0.10%**	**$ (1,010)**
	-0.05%	$ 100,277	**-0.02%**	$ 78,902	**-0.06%**	$ 52,035	**-0.13%**	$ 53,089	**-0.18%**	$ 53,940	**-0.22%**	**$ (348)**	**-0.10%**	**$ (1,123)**

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50.4 Please confirm, or otherwise explain, that the Excel model provided above will work correctly to provide any range of sensitivity analysis required.

Response:

Confirmed.

K. OTHER

51.0 Reference: FBC Exhibit B-7, BCUC 1.21.1

Proportion of Revenue Requirement determined under PBR

Given the proposed PBR mechanism, FBC states that approximately 18 percent of its total revenue requirements will be determined under the I-X mechanism.

51.1 In order to measure the cost benefit of the proposed PBR plan, is it also true that all of the stakeholder's efforts and regulatory costs involved in the determination of the appropriate X-Factor will only be used to determine ½ of the I-X formula, and in turn, is only meant to capture approximately 18 percent of FBC's total revenue requirement for each year of the PBR?

Response:

FBC does not understand the characterization of the cost and effort of the regulatory process as only determining "1/2 of the I-X formula". Examination of O&M Expense and capital expenditures, being the main controllable components of revenue requirements, takes up a very much greater portion of any rate setting proceedings than is suggested by the question and the formulaic approach to setting O&M and capital instead of using a cost of service approach is a major benefit of PBR. Please refer to the response to FEI-FBC BCUC PBR IR 3.51.3 for a discussion of why a consideration of an annual revenue requirement impact is not the correct basis to consider the benefits of the formula-driven capital expenditures.

For the same reason, the benefit of the PBR Plan is not measured by the proportion of revenue requirements that is subject to formulaic determination. The statement that the formula is "only meant to capture approximately 18 percent" (emphasis added) of the revenue requirement is misleading. The components of revenue requirements that are to be determined by formula (O&M and Capital Expenditures) are the components for which the formula is appropriate in that the formula is descriptive of the factors driving those costs (inflation and customer growth, less productivity improvements). The regulatory process will determine the entire PBR framework, of which the O&M and capital expenditure formulas are only a part. The process is addressing all aspects of the 5-year PBR Plan, the Company's proposed Rate Smoothing Deferral Mechanism and the entirety of the revenue requirements for 2014. The objectives of PBR are described in detail in Section B2 of the Application, and it is the achievement of those objectives that provide benefits to customers under a PBR regime.

In the table included in response to BCUC 1.21.1 (Exhibit B-7, FBC Application), FBC provides a list of cost items that will be determined under the PBR formula and also a list of cost items that will be determined outside of the PBR formula.

51.2 For the remaining 82 percent of the revenue requirement that is determined outside of the PBR mechanism, it appears that these cost items are determined either by way of flow-through costs (eg. Power purchases, water fees), captured in variance accounts which trues up to actual (eg. Property taxes, Incomes Taxes), or other Rate smoothing accounts (certain deferral and amortizations). Would it be reasonable to say that this 82 percent of costs are more representative of a cost-of-service mechanism? Would it also be fair to say that the Application represents a mixture of a PBR mechanism for a small portion of costs and cost-of-service for the majority of the costs? If FBC does not agree with this perspective, please explain why?

Response:

Disregarding the reference to the rate smoothing mechanism which is not relevant to a comparison between PBR and cost of service, it is not the case that the 82 percent of revenue requirements referred to in the question are subject to flow through treatment, which excludes items such as wheeling, other income, cost of equity and related income tax, and depreciation.

B&V provides the following further response.

Most PBR Plans are hybrid plans because not all of the utilities' costs fit neatly into the category of controllable costs that fit into a PBR Plan. Since FBC purchases a significant portion of its power it is not surprising that much of the revenue requirement flows through instead of being subject to the PBR Plan. The proper treatment of flow through amounts is on a cost of service basis. Hence the characterization of cost of service and PBR is correct for FBC but is also correct for most PBR Plans. A similar conclusion would apply for example for OEB electric distribution utilities where we find that controllable expenses vary significantly from utility to utility. Purchased power expense for four randomly selected LDC Electrics ranged from a low of 68.2% for Hydro One Networks to a high of 90.8% for Burlington Hydro Inc. Hydro One Brampton had an 85.5% ratio of purchased power to electric sales revenue and Niagara-on-the-Lake Hydro Inc. had 76.6% ratio. As a general rule of thumb, distribution costs for delivery utilities ranges from 20 to 30 percent of the delivered cost of electricity with factors such as type and size of customer and system density impacting the ratio. This is because of the wide range of distribution system types.

51.3 Please show in a similar table, the proportion of FEI's total revenue requirements determined under the PBR mechanism and those outside of the PBR mechanism.

Response:

The determination of annual gross O&M and capital additions under the PBR formula is estimated to result in an average of approximately 21 percent of FEI's total revenue requirements during the five year period of 2014-2018 (or 37 percent of FEI's delivery margin that is normally considered in its revenue requirement applications). Although capitalized overhead is not determined by a formula, it is a direct result of the formula based O&M. Similarly, taxes and earned return (debt and equity) are not determined by formula, but are a direct result of the formula based capital additions. A high level analysis is shown in the Table below.

REVENUE DEFICIENCY	Forecast 2014	Forecast 2015	Forecast 2016	Forecast 2017	Forecast 2018	Average 2014-2018	Remarks
Revenue Requirements determined under the PBR Framework:							
Gross O&M Expense	235,241	239,788	244,264	249,191	255,370	244,771	
Capitalized Overhead	(32,934)	(33,570)	(34,197)	(34,887)	(35,752)	(34,268)	Directly determined by Gross O&M
Income Taxes	(5,891)	(5,922)	(5,819)	(5,657)	(5,375)	(5,733)	Impact of PBR items
Cost of Debt	881	3,765	8,130	13,068	21,163	9,401	Component determined by PBR (New Plant in Service)
Cost of Equity	2,756	8,251	13,702	19,090	24,404	13,640	Component determined by PBR (New Plant in Service)
Depreciation and Amortization	0	5,410	11,118	16,877	22,890	11,259	Component determined by PBR (New Plant in Service inc. Cap O/H)
Total	**200,053**	**217,722**	**237,198**	**257,682**	**282,700**	**239,071**	
Revenue Requirements not determined under the PBR Framework:							
Cost of Gas Sold (including Gas Lost)	495,810	493,564	496,578	499,775	500,780	497,301	
Property and Sundry Taxes	48,797	49,335	50,614	51,598	52,691	50,607	
Other Operating Revenue	(23,290)	(23,694)	(23,952)	(24,121)	(24,159)	(23,843)	
Income Taxes	44,182	44,605	47,301	49,365	51,202	47,331	Impact of Non-PBR items
Cost of Debt	108,942	106,796	100,466	91,605	86,565	98,875	Component determined by rate base excluding new plant in service
Cost of Equity	91,198	87,620	83,920	79,728	75,371	83,568	Component determined by rate base excluding new plant in service
Depreciation and Amortization	149,000	148,905	153,250	154,515	156,112	152,356	Component determined by rate base excluding new plant in service
Total	**914,639**	**907,131**	**908,177**	**902,465**	**898,562**	**906,195**	
Total Revenue Requirement:	**1,114,692**	**1,124,853**	**1,145,375**	**1,160,147**	**1,181,262**	**1,145,266**	
Total Delivery Margin Revenue Requirement:	**618,882**	**631,289**	**648,797**	**660,372**	**680,482**	**647,964**	
Revenue Requirements determined under the PBR Framework as a % of Total Revenue Requirement:	**18%**	**19%**	**21%**	**22%**	**24%**	**21%**	
Revenue Requirements determined under the PBR Framework as a % of Total Delivery Margin Revenue Requirement:	**32%**	**34%**	**37%**	**39%**	**42%**	**37%**	

As shown in the table above, the annual revenue requirement impact of the formula capital expenditures is minimal (approximately 2.5 percent) as compared to the impact of the formula O&M. Concluding that this equates to the impact of these capital expenditures on revenue requirement overall would be incorrect. The benefits of these formula-driven capital expenditures extend well beyond one year. It is more appropriate to consider the capital benefits on an NPV basis as has been done in Appendix D5 of FEI's Application (Exhibit B-1-1). The capital expenditures under the formula will account for a significant proportion of the Company's revenue requirement over the lives of the associated assets.

Please also refer to the response to FEI-FBC PBR IR 3.51.1.

52.0 Reference: Exhibit B-11, BCUC 1.54.1;

Order G-44-12, FEU 2012-13 RRA Decision dated 2012-04-12;

Benefits from specific IT projects approved in the 2012-13 RRA

"The O&M benefits received from the BC OneCall project are realized in the Public Underground Locations department (formerly known as Location Records). The $600 thousand O&M reduction is reflected in the 2013 Base. … The Gas Asset Records Project is in the early stages of execution and O&M benefits have not yet been realized." (FEI Exhibit B-11, BCUC 1.54.1)

"Various technologies will be integrated allowing certain BC One Call information packages to be assembled with little or no human intervention. The project is estimated to cost $2.3 million spent over three years. Upon completion, it is estimated to provide an O&M cost saving of approximately $540,000 annually." (FEU 2012-13 Decision, p. 123)

52.1 Please explain if all the potential financial benefits from the BC OneCall project, expected at the end of the three year period, have been received. If not, please explain why financial benefits from the BC OneCall project which was approved in a prior non-PBR year would be recognized during the PBR period for sharing with FEI.

Response:

In terms of reduced O&M, yes. The BC One Call ticket processing automation was fully functional on April 30, 2012 with full benefit realization in 2013. Additional effort to further automate BC One Call ticket processing through the PBR period will be business cased and if approved, funded through the IT Capital budget. BC One Call requests are expected to steadily rise through the PBR Period and FEI has avoided the corresponding cost increase through this automation. The financial benefits from the BC One Call project are embedded in the 2013 O&M Base.

The Data Consistency and Conflation streams funded through the deferral account as approved by Commission Order G-44-12 will preserve FEI's ability to continue to efficiently respond to BC One Call requests and avoid future additional costs by reducing exceptions to the process, but are not designed to reduce existing O&M. The following are excerpts from page 417 of the FEU's 2012-2013 RRA where the Data Consistency and Conflation streams are described:

The intent of the Data Consistency Stream is to correct identified data inconsistency issues in order to reduce the numbers of exceptions requiring a stop to the BC One Call process. For example, under this stream, we will ensure that we have consistent asset and customer data in our SIA system for all areas of the Province in order to be able to

deploy automation Province wide. Improvement to the consistency of data consumed within the BC One Call ticket process is one of the foundation elements of automation.

The Conflation Stream will import the most current landbase available for the FEI service territory and shift the FEI gas mains/assets so that they correctly align with this new landbase. This stream of the project is necessary because the gas mains in the AMFM system are attached to a landbase that is about 8 years old and somewhat out of date. Having the most current Municipal landbase is essential to the successful automation of the BC One Call process.

52.2 Please explain why the financial benefits from the Gas Asset Records Project which was approved in a prior non-PBR year would be recognized during the PBR period for sharing with FEI.

Response:

The Gas Asset Records Project is not a project designed to reduce O&M but rather to allow the Company to continue to meet records management requirements. The project consists of three parts:

1. Project A to consolidate & scan critical gas system asset records into Filenet;
2. Project B to implement improved drawing management and control systems; and
3. Project C to review and analyze historical drawings.

A full description of the project was provided in the FEU 2012-2013 RRA on pages 411 to 415.

52.3 Please explain the logic of absorbing benefits from a Ratepayer funded investment in a prior year into the PBR period for sharing between FEI and the Ratepayers, when this Application proposes an Efficiency Carry-Over Mechanism to provide benefits to FEI after the end of the PBR period from investment during the PBR period.

Response:

FEI does not understand the reference to "absorbing benefits from a Ratepayer funded investment in a prior year into the PBR period for sharing between FEI and the Ratepayers". Any benefits related to the two projects described are embedded in the 2013 O&M Base and will not affect the earnings sharing or the efficiency carryover mechanism that are part of the PBR Proposal.

53.0 Reference: *Utilities Commission Act*, Section 49(c), Accounts and Reports

Safety Reports

53.1 Does FBC currently file reports with the Commission of every accident occurring to or on the plant, equipment or other property of the utility, if the accident is of such nature as to endanger the safety, health or property of any person? Please explain.

Response:

As requested on occasion by the Commission, FBC has filed reports relating to incidents involving FBC utility customers, property, or assets. FBC, as part of its Emergency Response planning protocols, does notify the Commission about incidents that could be of such nature as to endanger the safety, health or property of any person. Notifications have included details about large customer outages and other significant events that relate to FBC utility assets. FBC has also notified the Commission in cases where close media monitoring of incidents, such as third-party damage situations that cause significant traffic disruptions, such that timely information is conveyed as appropriate. These situations may also include seasonal forest fire or freshet flooding information, and details surrounding other unique events that may impact customers or the general public.

53.2 Using the past 7 years of WorksafeBC's historical data for WorksafeBC's premium charged per $100 of assessable payroll for Classification Unit 767003, Electric Utilities; please provide the mean and the standard deviation by year.

Response:

The mean and standard deviation calculations that have been provided reflect the data set over the period 2007-2013. WorkSafeBC reviews base rates each year. In July or August, WorkSafeBC announces the preliminary rates for the coming year. Final rates are approved and communicated to FortisBC each fall.

Year	FBC Premiums
2013	1.27
2012	1.40
2011	1.27
2010	0.94
2009	0.64

Year	FBC Premiums
2008	0.75
2007	0.86
Mean	1.018571
SD	0.29402

53.3 Using the same 7 years of FBC's historical data for Injury Frequency Rate, Injury Severity Rate, and All Injury Frequency Rate; please provide, in per unit format, the mean, and the standard deviation by year.

Response:

Data to support the response to this question has been provided for the years 2008-2013 YTD, as all calculation methodologies were aligned for this time period, such that reporting methodologies were consistently reported.

		Recordable Injuries Frequency			Severity		
Year	Quarter	Number of Injuries	Standard Deviation	Mean	Frequency Rate	Standard Deviation	Mean
2008	1	1.7			6.18		
2008	2	3.5			49.35		
2008	3	2.7			30.17		
2008	4	1.79			7.17		
Total		**9.69**	**0.85**	**2.42**		**20.65**	**23.22**
2009	1	1.8			12.75		
2009	2	0			17.11		
2009	3	1.96			30.36		
2009	4	1.93			31.77		
Total		**5.69**	**0.95**	**1.42**		**9.50**	**23.00**
2010	1	3.39			1.69		
2010	2	0.79			0		
2010	3	1.78			0		
2010	4	0.88			52.54		
Total		**6.84**	**1.21**	**1.71**		**26.00**	**13.56**

Year	Quarter	Recordable Injuries Frequency			Severity		
		Number of Injuries	Standard Deviation	Mean	Frequency Rate	Standard Deviation	Mean
2011	1	2.43			13.75		
2011	2	0			0		
2011	3	0			0		
2011	4	3.56			59.64		
Total		**5.99**	**1.79**	**1.50**		**28.28**	**18.35**
2012	1	0			0		
2012	2	4.15			39.83		
2012	3	0.9			4.66		
2012	4	1.79			8.95		
Total		**6.84**	**1.78**	**1.71**		**18.02**	**13.36**
2013	1	5.09			50.06		
2013	2	3.46			0		
2013	3	1.24			4.95		
Total YTD		**9.79**	**1.93**	**3.26**		**27.58**	**18.34**

53.4 Using the past 7 years of FBC's historical data for Vehicle claim severity ($/yr) and the frequency of claims (occurrences/yr); please provide, in per unit format, the mean, and the standard deviation by year.Main Heading (For Table of Contents Generation if Applicable)

Response:

Vehicle Claim Severity data is not available for FBC in the format requested and has not been provided. Data for the incidents and frequency has been provided in the table below for the years 2008-2013, since 2008 is as far back as FBC has consistently reported data.

		Incidents			Frequency		
Year	Quarter	Number of Incidents	Standard Deviation	Mean	Frequency Rate	Standard Deviation for VIR[6]	Mean for VIR
2008	1	4			1.67		
2008	2	1			0.58		
2008	3	1			0.80		
2008	4	2			1.60		
Total		**8**	**1.41**	**2**		**.55**	**1.16**
2009	1	2			1.8		
2009	2	1			0.72		
2009	3	3			3.28		
2009	4	4			4.2		
Total		**10**	**1.29**	**2.5**		**1.54**	**2.5**
2010	1	8			7.11		
2010	2	5			4.06		
2010	3	8			6.49		
2010	4	6			4.38		
Total		**27**	**1.5**	**6.75**		**1.51**	**5.51**
2011	1	9			7.8		
2011	2	7			5.63		
2011	3	7			5.61		
2011	4	9			6.84		
Total		**32**	**1.15**	**8**		**1.05**	**6.47**
2012	1	3			3.17		
2012	2	9			6.92		
2012	3	5			4.38		
2012	4	5			4.18		
Total		**22**	**2.51**	**5.5**		**1.59**	**4.66**

[6] VIR is the quarterly vehicle incident rate, reflecting incidents per millions of kilometers driven.

Year	Quarter	Incidents			Frequency		
		Number of Incidents	Standard Deviation	Mean	Frequency Rate	Standard Deviation for VIR[6]	Mean for VIR
2013	1	4			4.22		
2013	2	8			8.19		
2013	3	4			6.9		
Total YTD		**16**	**2.31**	**5.33**		**2.03**	**6.43**

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Attachment 4.1

FEI

Line No.			2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Actual	2012 Approved	Variance	2013 Projected	2013 Approved	Variance	2014 Forecast	2015 Forecast	2016 Forecast	2017 Forecast	2018 Forecast
1	B.C. Inflation (CPI):	Conference Board of Canada						2.16%		1.30%	2.00%		1.90%	2.10%	2.00%	2.10%	2.10%
		BMO								0.30%			1.70%	2.00%	2.00%	2.00%	2.00%
2		B.C. Ministry of Finance						2.00%		1.50%	2.10%		2.00%	2.10%	2.10%	2.10%	N/A
3		RBC Financial Group						1.80%		0.70%	N/A		1.60%	N/A	N/A	N/A	N/A
4		Toronto Dominion Bank						2.00%		1.00%	2.00%		2.00%	N/A	N/A	N/A	N/A
5		CIBC								0.80%			1.80%	N/A	N/A	N/A	N/A
6																	
7		Average CPI	2.09%	0.00%	1.34%	2.37%	1.12%	2.00%	-0.88%	0.93%	2.00%	1.07%	1.83%	2.07%	2.03%	2.07%	2.05%
8																	
9	AWE Labour Inflation																
10		StatsCan (2008-2012) / Conference Board of Canada (2013-2018)	2.56%	0.84%	3.01%	2.76%	2.92%			2.30%			2.70%	2.70%	2.60%	2.60%	2.50%
11																	
12	Labour Split																
13		Labour								55.00%			55.00%	55.00%	55.00%	55.00%	55.00%
14		Non Labour								45.00%			45.00%	45.00%	45.00%	45.00%	45.00%
15																	
16	CPI/AWE												2.31%	2.42%	2.34%	2.36%	2.30%
17																	
18	Productivity Factor									0.50%			0.50%	0.50%	0.50%	0.50%	0.50%
19																	
20	Forecast Service Line Additions									7,992			8,051	8,407	8,555	8,444	8,270
21																	
22	Average Customers									840,721			845,495	850,620	856,001	861,402	866,681
23																	
24	Customer Growth												0.57%	0.61%	0.63%	0.63%	0.61%
25																	
26	Income Tax Rate:	Federal					15.00%	15.00%		15.00%	15.00%		15.00%	15.00%	15.00%	15.00%	15.00%
27		Provincial					10.00%	10.00%		10.00%	10.00%		10.00%	10.00%	10.00%	10.00%	10.00%
28			31.50%	30.00%	28.50%	26.50%	25.00%	25.00%		25.00%	25.00%		25.00%	25.00%	25.00%	25.00%	25.00%
29																	
30	Foreign Exchange Rate:																
31		USD/CAD Exchange Rate	1.06	1.14	1.03	1.02	0.99	1.01	0.02	1.03	1.03	- 0.00	1.01	0.99	1.01	1.04	1.05
32		CAD/USD Exchange Rate	0.94	0.88	0.97	0.98	1.01	0.98	- 0.01	0.97	0.97	-	0.99	1.01	0.99	0.96	0.95
33																	
34	Cost of Capital:																
35		**FEI**															
36		Short Term Debt Interest Rates	5.00%	4.25%	2.25%	4.50%	2.50%	2.50%	-0.25%	1.75%	3.50%	1.75%	1.75%	2.50%	3.25%	3.75%	4.75%
37		Long Term Debt Interest Rates	7.21%	6.96%	6.95%	6.95%	6.85%	5.00%	1.95%	3.05%	5.50%	2.45%	3.80%	4.30%	4.80%	5.05%	5.05%
38		Return on Equity	10.83%	12.05%	9.42%	10.15%	10.12%	9.50%	-0.08%	8.75%	9.50%	0.75%	8.75%	8.75%	8.75%	8.75%	8.75%
39																	
40																	

Attachment 4.2

REFER TO LIVE SPREADSHEET MODELS

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Attachment 4.3

REFER TO LIVE SPREADSHEET MODEL

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Attachment 13.1

REFER TO LIVE SPREADSHEET MODEL

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Attachment 14.4

REFER TO LIVE SPREADSHEET MODELS

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Attachment 15.2

REFER TO LIVE SPREADSHEET MODEL

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Attachment 18.1

REFER TO LIVE SPREADSHEET MODEL

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Attachment 19.1

REFER TO LIVE SPREADSHEET MODEL

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Attachment 20.2

REFER TO LIVE SPREADSHEET MODELS

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Attachment 21.2

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Attachment 21.9

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Attachment 30.3

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Attachment 31.3

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Attachment 44.2

FortisBC
Customer Satisfaction Survey (Residential)
September 2010 (Q3)

Hello, my name is _____ I'm calling on behalf of FortisBC about the electricity service you receive and I would like to ask you a few questions, if I may, please?. Please be assured, we are not trying to sell anything.

INTERVIEWER NOTE: IF RESPONDENT ASKS, THE SURVEY TAKES ABOUT 10 MINUTES.

A1. Are you the person or one of the people responsible for paying your electricity bill for your household?

1	Yes	[SKIP TO Q.A3]
2	Yes, help make decisions	[SKIP TO Q.A3]
3	No, don't make decisions	[CONTINUE at A2]
8	Don't know	[TERMINATE]
9	Refused	[TERMINATE]

A2. May I speak to that person?

1	Yes	[Repeat Introductio]
2	No, not available now	[Tag as CALLBACK]
3	No	[TERMINATE]
8	Don't know	[TERMINATE]
9	Refused	[TERMINATE]

A3. Which of the following best describes the location where I have reached you today? Is it …? [READ LIST. SELECT ONLY ONE RESPONSE.]

1	A residential dwelling in a city or town	[CONTINUE at A4]	
2	A residential dwelling not in a city or town	[CONTINUE at A4]	
3	A commercial place of business	[TERMINATE]	
7	(DO NOT READ)	Other (i.e. farm, acreage, vineyard, etc)	[TERMINATE]
8	(DO NOT READ)	Don't know	[TERMINATE]
9	(DO NOT READ)	Refused	[TERMINATE]

A4. Are you or any member of your immediate family or household employed in the following sectors? (READ LIST)

1	Utility company	[TERMINATE]
2	Natural gas company	[TERMINATE]
3	Electricity company	[TERMINATE]
4	Market research company	[TERMINATE]
5	Newspaper, radio, or TV network	[TERMINATE]
6	Utility regulatory body	[TERMINATE]
7	No/none	[BRING UP QUESTIONNAIRE]

SECTION B: GENERAL SERVICE

1. First, I would like to get your opinion of the overall service provided by FortisBC. On a 10 point scale where 1 is "Not at all satisfied" and 10 is "Fully satisfied", how satisfied are you with the overall service provided by FortisBC?

(Code: 98 = NA, 99 = DK)

1	2	3	4	5	6	7	8	9	10	98	99

IF RESPONSE IS 6 OR LESS GO TO QUESTION 2, ELSE GO TO QUESTION 3.

---

2. Can you tell me the main reason why you gave a rating of _____? (Bring answer from Q1)

3. Taking into consideration your personal experience and general impressions, how satisfied are you with the following aspects of your electricity service? Please use a scale of 1 to 10 where 1 is "Not at all satisfied" and 10 is "Extremely satisfied". The first one is ….

(Code: 98 = NA, 99 = DK)

3.1 Reliability of electrical supply, that is the number of power outages.

1 2 3 4 5 6 7 8 9 10 98 99

3.2 Accuracy of meter reading.

1 2 3 4 5 6 7 8 9 10 98 99

3.3 The price you pay for electricity.

1 2 3 4 5 6 7 8 9 10 98 99

3.4 FortisBC staff being friendly and knowledgeable.

1 2 3 4 5 6 7 8 9 10 98 99

3.5 FortisBC operating in an environmentally responsible manner.

1 2 3 4 5 6 7 8 9 10 98 99

3.6 FortisBC showing concern for public safety.

1 2 3 4 5 6 7 8 9 10 98 99

3.7 FortisBC providing a bill that is accurate and easy to understand.

1 2 3 4 5 6 7 8 9 10 98 99

3.8 FortisBC's Power Sense providing information to help you conserve energy.

1 2 3 4 5 6 7 8 9 10 98 99

3.9 FortisBC resolving your issue the first time you call.

1 2 3 4 5 6 7 8 9 10 98 99

Validation rules

4. Now I would like to read you 8 items and I would like you to tell me which is most important to you and then next most important to you and so on….The 8 items are…

Get ranking on first four only!

4_1 Reliability and dependability of power with few outages.

4_2 The price you pay for electricity.

4_3 That the staff is friendly and knowledgeable.

4_4 That FortisBC operates in an environmentally responsible manner.

4_5 That FortisBC shows concern for public safety.

4_6 That FortisBC provides a bill that is accurate and easy to understand.

4_7 That FortisBC provides information to help you conserve energy.

4_8 That FortisBC resolves your issue the first time you call.

No validation rules

SECTION C: CONTACT CENTRE SERVICE

5. Now I would like to ask you a few questions about contacting FortisBC by phone. Have you called FortisBC within the past six months?

1. Yes **(Continue at Q6)**
2. No **(Skip to Q12)**
3. Don't know **(Skip to Q12)**

---

6. What was the main reason for your recent call to FortisBC?

DO NOT READ LIST. PROMPT IF NECESSARY. ACCEPT ALL APPROPRIATE RESPONSES. (Check boxes for multiple responses)

1. Connect a new service, name change, final read
2. Equal Payment Plan/ Pre-authorized Payment Plan/ electronic billing
3. Balance owing on account/ payment arrangements
4. Inquire about a meter reading or an estimated reading
5. Inquire on energy consumption (high bill)
6. To report a power interruption or electrical service problem
7. To ask about tree-trimming
8. To inquire about energy efficiency programs and information
9. Electrician/contractor/new service installation
10. Pole removal/ replacement
11. To report a problem with street lights
12. Other

Validation rule if item 12 is checked

IF ONLY ITEM 6 WAS CHECKED, SKIP TO QUESTION 9, ELSE CONTINUE AT QUESTION 7

7. Did the FortisBC representative complete your request or resolve your issue the first time you called the Contact Centre?

1. Yes **(Skip to Q9)**
2. No **(Continue at Q8)**

---

8. Can you tell me why you had to call more than once to have this issue resolved?

Validation rule.

---

9. Overall, on a scale of 1 to 10, where 1 is "Not at all satisfied" and 10 is "Fully satisfied", how satisfied are you in general with the service you receive from FortisBC customer service representatives over the phone?

(Code: 98 = NA, 99 = DK)

1 2 3 4 5 6 7 8 9 10 98 99

IF RESPONSE IS 6 OR LESS, CONTINUE AT QUESTION 10, ELSE SKIP TO Q11

---

10. Can you tell me the main reason why you gave a rating of _____? (Bring in answer to Q 9)

Validation rule.

---

11. Do you have any suggestions that will help FortisBC improve customer service by phone?

DO NOT READ LIST. ACCEPT ALL RESPONSES. PROBE (Check boxes for multiple responses)

1. Friendlier staff
2. Answer right away
3. Fewer busy signals
4. More automated options on the phone system
5. Get your questions answered on the first call
6. Customer Service Representative more knowledgeable re products and services
7. Leave a message for an agent to call back
8. More people answering phones/on staff
9. Don't know no opinion
10. Other

Validation rule if item 10 was selected

SECTION 3: FIELD SERVICE

12. Has the **Meter Reader** visited your home in the past six months?

1. Yes (Continue at Question 13)
2. No (Skip to Question 17)
3. Not sure (Skip to Question 17)

(Radio buttons)

13. What was the nature of the visit?

DO NOT READ LIST. ACCEPT ALL RESPONSES. (Check boxes for multiple responses)

1 Read the meter
2 Electrical service location
3 Wire or poles relocation
4 Wire clearances
5 Underground service installation
6 Street light installation
7 Damage claim
8 Dimming lights/voltage problems
9 Temporary disconnection
10 Transformer leak
11 Emergency repairs
12 Commercial demand calculations
13 Electrical service extension
14 Energy consumption/high bill
15 Energy efficiency programs
16 Other

Validation rule if item 16 was selected

14. Overall, on a scale of 1 to 10, where 1 is "Not at all satisfied" and 10 is "Fully satisfied", how would you rate the quality of service provided by the **Meter Reader**?

(Code: 98 = NA, 99 = DK)

1 2 3 4 5 6 7 8 9 10 98 99

IF RESPONSE IS 6 OR LESS, CONTINUE AT QUESTION 15, ELSE GO TO QUESTION 16

---

15. Can you tell me the main reason why you gave a rating of _____? (Bring in answer to Q 14)

Validation rule.

---

16. Do you have any suggestions that will help FortisBC improve their field service by the **Meter Reader?**

ACCEPT ALL RESPONSES. PROBE! (Check boxes for multiple responses)

1. Be more friendly
2. Get questions answered right away
3. Knowledgeable about products and services
4. Solve the problem or schedule a follow-up
5. More people on staff
6. Better explain issue and solution
7. Show an interest in wanting to help
8. Be more thorough in their work
9. Clean up after job complete
10. More prompt / come when expected
11. Don't know/no opinion
12. Other

Validation rule if Item 12 is selected

17. Has a **Linesman** visited your home in the past six months?

1. Yes (Continue at Question 18)
2. No (Skip to Question 22)
3. Not sure (Skip to Question 22)

(Radio buttons)

18. What was the nature of the visit?

DO NOT READ LIST. ACCEPT ALL RESPONSES. (Check boxes for multiple responses)

1 Read the meter
2 Electrical service location
3 Wire or poles relocation
4 Wire clearances
5 Underground service installation
6 Street light installation
7 Damage claim
8 Dimming lights/voltage problems
9 Temporary disconnection
10 Transformer leak
11 Emergency repairs
12 Commercial demand calculations
13 Electrical service extension
14 Energy consumption/high bill
15 Energy efficiency programs
16 Other

Validation rule if item 16 was selected

19. Overall, on a scale of 1 to 10, where 1 is "Not at all satisfied" and 10 is "Fully satisfied", how would you rate the quality of service provided by the **Linesman**?

(Code: 98 = NA, 99 = DK)

1 2 3 4 5 6 7 8 9 10 98 99

IF RESPONSE IS 6 OR LESS, CONTINUE AT QUESTION 20, ELSE GO TO QUESTION 21

---

20. Can you tell me the main reason why you gave a rating of _____? (Bring in answer to Q 19)

Validation rule.

---

21. Do you have any suggestions that will help FortisBC improve their field service by the **Linesman**?

ACCEPT ALL RESPONSES. PROBE! (Check boxes for multiple responses)

1. Be more friendly
2. Get questions answered right away
3. Knowledgeable about products and services
4. Solve the problem or schedule a follow-up
5. More people on staff
6. Better explain issue and solution
7. Show an interest in wanting to help
8. Be more thorough in their work
9. Clean up after job complete
10. More prompt / come when expected
11. Don't know/no opinion
12. Other

Validation rule if Item 12 is selected

22. Has a **Technician** visited your home in the past six months?

1. Yes (Continue at Question 23)
2. No (Skip to Question 27)
3. Not sure (Skip to Question 27)

(Radio buttons)

23. What was the nature of the visit?

DO NOT READ LIST. ACCEPT ALL RESPONSES. (Check boxes for multiple responses)

1 Read the meter
2 Electrical service location
3 Wire or poles relocation
4 Wire clearances
5 Underground service installation
6 Street light installation
7 Damage claim
8 Dimming lights/voltage problems
9 Temporary disconnection
10 Transformer leak
11 Emergency repairs
12 Commercial demand calculations
13 Electrical service extension
14 Energy consumption/high bill
15 Energy efficiency programs
16 Other

Validation rule if item 16 was selected

24. Overall, on a scale of 1 to 10, where 1 is "Not at all satisfied" and 10 is "Fully satisfied", how would you rate the quality of service provided by the **Technician**?

(Code: 98 = NA, 99 = DK)

1 2 3 4 5 6 7 8 9 10 98 99

IF RESPONSE IS 6 OR LESS, CONTINUE AT QUESTION 25, ELSE GO TO QUESTION 26

---

25. Can you tell me the main reason why you gave a rating of _____? (Bring in answer to Q 24)

Validation rule.

---

26. Do you have any suggestions that will help FortisBC improve their field service by the **Technician**?

ACCEPT ALL RESPONSES. PROBE! (Check boxes for multiple responses)

1. Be more friendly
2. Get questions answered right away
3. Knowledgeable about products and services
4. Solve the problem or schedule a follow-up
5. More people on staff
6. Better explain issue and solution
7. Show an interest in wanting to help
8. Be more thorough in their work
9. Clean up after job complete
10. More prompt / come when expected
11. Don't know/no opinion
12. Other

Validation rule if Item 12 is selected

27. Has the **Power Sense Representative** (An employees who helps you with energey conservation) visited your home in the past six months?

1. Yes (Continue at Question 28)
2. No (Skip to Question 32)
3. Not sure (Skip to Question 32)

(Radio buttons)

28. What was the nature of the visit?

DO NOT READ LIST. ACCEPT ALL RESPONSES. (Check boxes for multiple responses)

1 Read the meter
2 Electrical service location
3 Wire or poles relocation
4 Wire clearances
5 Underground service installation
6 Street light installation
7 Damage claim
8 Dimming lights/voltage problems
9 Temporary disconnection
10 Transformer leak
11 Emergency repairs
12 Commercial demand calculations
13 Electrical service extension
14 Energy consumption/high bill
15 Energy efficiency programs
16 Other

Validation rule if item 16 was selected

29. Overall, on a scale of 1 to 10, where 1 is "Not at all satisfied" and 10 is "Fully satisfied", how would you rate the quality of service provided by the **Power Sense Representative**?

(Code: 98 = NA, 99 = DK)

1 2 3 4 5 6 7 8 9 10 98 99

IF RESPONSE IS 6 OR LESS, CONTINUE AT QUESTION 30, ELSE GO TO QUESTION 31

---

30. Can you tell me the main reason why you gave a rating of _____? (Bring in answer to Q 29)

Validation rule.

---

31. Do you have any suggestions that will help FortisBC improve their field service by the **Power Sense Representative**?

ACCEPT ALL RESPONSES. PROBE! (Check boxes for multiple responses)

1. Be more friendly
2. Get questions answered right away
3. Knowledgeable about products and services
4. Solve the problem or schedule a follow-up
5. More people on staff
6. Better explain issue and solution
7. Show an interest in wanting to help
8. Be more thorough in their work
9. Clean up after job complete
10. More prompt / come when expected
11. Don't know/no opinion
12. Other

Validation rule if Item 12 is selected

SECTION E: COMMUNITY INVOLVEMENT & PUBLIC SAFETY

32. Now, on a scale of 1 to 10, where 1 is "Not at all satisfied" and 10 is "Extremely satisfied", I would like you to rate your satisfaction with how FortisBC contributes back to the community through initiatives such as donations to local charities and sponsorship of community programs and events.

(Code: 98 = NA, 99 = DK)

1 2 3 4 5 6 7 8 9 10 98 99

---

33. Can you recall any recent community events, activities or initiatives in which FortisBC has been involved? What were they?

Validation rule.

---

34. Again, using a scale of 1 to 10, where 1 is "Not at all satisfied" and 10 is "Extremely satisfied", how would you rate your satisfaction with FortisBC's efforts towards promoting public safety?

(Code: 98 = NA, 99 = DK)

1 2 3 4 5 6 7 8 9 10 98 99

---

35. Can you think of a particular way in which FortisBC has promoted public safety recently? Can you tell me how they promoted public safety?

Validation rule.

SECTION F: INFORMATION ABOUT YOU AND YOUR HOME

36. Do you use a clothesline to dry your clothes?

1 Always
2 Usually
3 Sometimes
4 Never
5 Refused

37. Are you planning to do any energy efficiency upgrades to your home within the next six months? (For example, will you put more insulation in your home, purchase a new furnace or put in new windows and doors.)

1 Yes (cont. at 38)
2 Maybe (con/t at 38)
3 No (skip to 39)
4 Don't Know (skip to 39)

38. If you are planning to make energy efficiency upgrades in your home, what will they be?

39. Do you currently receive your Fortis bill electronically?

1 Yes **(Skip to Question 41)**
2 No **(Continue at Question 40)**

40. Would you like to be contacted to receive your bill via e-mail?

1 Yes
2 No

41. Are you aware of the LiveSmart BC rebate program where you receive financial rebates for making energy efficiency upgrades to your home?

1 Yes
2 Maybe
3 No
4 Don't Know

42. Do you turn the heating thermostat down overnight or when you're away from your home during the day?

1 Always
2 Sometimes
3 Never
4 Don't Know

SECTION G: RESIDENTIAL DEMOGRAPHICS

43. In what type of dwelling do you currently reside? (**READ LIST. ACCEPT ONLY ONE RESPONSE)**

21. Single detached house
22. Multi-family dwelling (duplex, triplex, fourplex)
23. Apartment
24. Condo
25. Mobile Home
97 Other

Validation rule for item

98 Don't know
99 Refused

44. What is the primary fuel used to heat your residence? Is it….

Accept only one response. If more than one given, ask which one is used more/most.

1. Electricity
2. Natural gas
3. Oil
4. Wood
5. Other

45. What are the methods to heat your residence? Is it…

Accept all responses. Probe!

1. Central forced air furnace
2. Wired-in electric heater (baseboards)
3. Portable electric heaters
4. Hot water heating system
5. Heat pump
6. Wood stove
7. Fire place
8. Other

(Check boxes for multiple responses)

46. What is the approximate **total** square footage of your home? **ACCEPT DIMENSIONS IF AREA NOT KNOWN**

11 Less than 1000
12 1000 - 1999
13 2000 - 3999
14 4000 - 5999
15 Greater than 6000
97 Other

Validation rule for item

98 Don't know
99 Refused

47. Do you have any additional comments for FortisBC?

NO validation rule

THANK YOU VERY MUCH FOR YOUR HELP.

SUBMIT

Attachment 47.1

REFER TO LIVE SPREADSHEET MODEL

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Attachment 49.1

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