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May 23, 2019

VIA ELECTRONIC MAIL

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**Attention: Patrick Wruck, Commission Secretary
and Manager, Regulatory Support**

Dear Sirs/Mesdames:

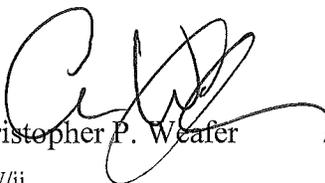
Re: FortisBC Energy Inc. and FortisBC Inc. (collectively "FortisBC") Multi-Year Rate Plan Application for 2020 to 2024 - Project No. 1598996

We are counsel to the Commercial Energy Consumers Association of British Columbia (the "CEC"). Attached please find the CEC's first set of Information Requests with respect to the above-noted matter.

If you have any questions regarding the foregoing, please do not hesitate to contact the undersigned.

Yours truly,

OWEN BIRD LAW CORPORATION



Christopher P. Weafer

CPW/jj
cc: CEC
cc: FortisBC
cc: Registered Interveners

**COMMERCIAL ENERGY CONSUMERS ASSOCIATION
OF BRITISH COLUMBIA**

INTERVENER INFORMATION REQUEST NO. 1

**FortisBC Energy Inc. (“FEI”) and FortisBC Inc. (“FBC”), (and collectively
“FortisBC” or the “Utilities”) Multi-Year Rate Plan Application for 2020 to 2024
Project No. 1598996**

May 23, 2019

REVIEW OF PBR

1. Reference: Exhibit B-3, Workshop Presentation page 6 and FEI PBR Decision page 85

Introduction

Rates were Managed Effectively during PBR Term

2014	Inflation Average 2%
to	
2019	FEI 0.9% Average Delivery Rate Increase
Rates	FBC 2.2% Average Rate Increase
Future Pre-tax Revenue Surplus of \$42 million (FEI) and \$5M (FBC)	

Efficiencies that can be expected to be achieved under PBR decline over successive PBR terms.¹

- 1.1 Is it FEI’s position that there are extremely few opportunities remaining for either of the Utilities to become more cost effective? Please explain and relate to evidence in the benchmarking study provided in Appendix C2 Exhibit B-1-1.

¹ FEI PBR Decision page 85

1.2 Please provide the total ROE that each of the Utilities earned over the PBR period for each year.

2. Reference: Exhibit B-1, page A-1

The Proposed MRPs build on the successes of FEI's and FBC's current multi-year performance-based ratemaking (PBR) plans (Current PBR Plans), while making changes to respond to the challenges experienced, stakeholder feedback, and changes in FortisBC's operating environment. Because many aspects of the Proposed MRPs remain similar or unchanged compared to the Current PBR Plans, the Companies believe that this Application can be addressed efficiently and effectively by way of a written public hearing process. In recognition that the BCUC may not be in a position to determine the appropriate regulatory process until after the first round of information requests (IRs), FortisBC has proposed a draft preliminary regulatory timetable consisting of a workshop on key elements of the proposal, an initial round of IRs, and then a procedural conference to determine the rest of the regulatory process. FortisBC's proposed regulatory process is set out in Section A3 and a draft procedural order is included in Appendix E1.

2.1 The Utilities do not propose a period of Cost of Service between PBRs. Please explain why not.

2.2 Have the Utilities traditionally had a Cost of Service period between formulaic ratemaking plans? Please explain.

2.3 Do the Utilities have direction from the Commission that a PBR is required for this period? Please explain.

2.4 Do the Utilities object to having a period of time between PBR-type regulation for rebasing to occur if the Commission so decides?

2.4.1 If not, would the Utilities object to having formula-based ratemaking during that period?

3. Reference: Exhibit B-1, page B-31 and B-32 and B-33

Table B2-2: FEI Formula O&M Savings from 2014 to 2019 (\$ millions)

Year	Actual (a)	Formula With 1.1% PIF (b)	Savings above the Formula (c= b-a)	Formula without 1.1% PIF (d)	Savings related to 1.10% PIF (e= d-b)	Total Savings to customer (f= 0.5*c + e)
2014 ⁴⁵	191.0	198.5	7.5	200.7	2.2	5.9
2015	225.4	235.6	10.2	240.4	4.8	9.9
2016	225.9	238.1	12.2	245.6	7.5	13.6
2017	232.5	240.4	7.9	250.7	10.3	14.3
2018	238.7	243.6	4.9	256.8	13.2	15.7
2019P	246.9	248.9	2.0	265.3	16.4	17.4
Total						\$76.8

Table B2-3: FBC Formula O&M Savings from 2014 to 2019 (\$ millions)

Year	Actual (a)	Formula with 1.03% PIF (b)	Savings above the Formula (c = b - a)	Formula without 1.03% PIF (d)	Savings related to 1.03% PIF (e = d - b)	Total Savings to customer (f = 0.5*c + e)
2014	52.0	52.7	0.7	53.3	0.5	0.9
2015	51.9	53.0	1.1	54.1	1.1	1.6
2016	51.8	53.6	1.8	55.3	1.7	2.5
2017	52.5	54.1	1.6	56.3	2.3	3.0

Year	Actual (a)	Formula with 1.03% PIF (b)	Savings above the Formula (c = b - a)	Formula without 1.03% PIF (d)	Savings related to 1.03% PIF (e = d - b)	Total Savings to customer (f = 0.5*c + e)
2018	53.9	54.8	0.9	57.6	2.9	3.3
2019P	55.6	56.1	0.5	59.6	3.5	3.8
Total						15.2

- 3.1 Please confirm that the PIF is a mathematical component of the formula establishing the O&M provided to the company without the sharing incentive.
- 3.2 Please provide substantive evidence that separates out the value of ‘productivity improvements’ from the companies’ O&M activities based on incentives versus those that could have or would normally be undertaken under prudent management.
- 3.3 Please confirm that 50% of ‘Savings above the Formula’ is the numerical difference between the formulaic O&M allowed to the company and that which was returned to the customers, which amounts to \$22.35 million for FEI and \$3.3 million for FBC.
- 3.4 Please confirm that if the same PBR formulas as above were used without an incentive mechanism and the results were the same, then ratepayers would have been \$25.65 million better off and the Utilities would have on average earned their allowed fair rate of return on their equity.
- 3.5 Please confirm or otherwise explain that under Cost of Service regulation the Utilities may be provided with an approved revenue requirement that does not necessarily provide for the full cost of inflation and/or full 1:1 revenues for customer growth, when FTE additions or spending from a project is disallowed.

4. Reference: Exhibit B-1, page B-29-30

The evaluation of a PBR plan can be conducted in different fashions. One measure of a PBR plan's success relates to the amount of savings achieved and its impact on rates. This would include the identification of cost savings embedded in the formulas' productivity value, the evaluation of variances between the actual costs and formula generated amounts in each year of the plan, the trend in costs and rates during the PBR term as well as the unaccounted for

- 4.1 Would the Utilities be willing to participate in a dedicated proceeding which evaluated the merits of the previous PBRs, including a review of the evidence provided in the Annual Reviews? Please explain.
- 4.2 Please provide the Utilities' agreement that all evidence and arguments from Annual Reviews during the Current PBR can be accepted as filed in this proceeding and can be referenced in submissions.
- 4.2.1 If not, please specify which evidence should not be accepted in this proceeding and explain why not.

5. Reference: Exhibit B-1, page B-42 and C-171

- **Rate Smoothing also played a role in FEI's rate profile:** The BCUC approved the deferral of FEI's revenue surpluses for both 2017 and 2018. Without this, FEI's actual rate performance over the PBR term would have been even better than portrayed in Figure B2-4. At the end of the Current PBR Plan term, a net balance in the 2017-2018 Revenue Surplus deferral account of \$42 million (before tax) is still available to customers for future rate mitigation or smoothing.

9.4 RATE IMPACTS ARE REASONABLE

FortisBC is not requesting approval of 2020 rates at this time. FortisBC will file for interim 2020 rates before the end of 2019. Included in the 2020 rates filings, the Companies will propose amortization of the revenue surplus from prior years. FEI and FBC will file for permanent 2020 rates after the BCUC's decision in this Application. However, to provide an understanding of the rate implications of the various proposals included in this Application, FEI and FBC have calculated indicative rates for 2020 which are provided below.

Overall, the indicative rate increases for 2020 are not out of line with historical rate increases, and after consideration of potential rate mitigation through the existing revenue surpluses, would be in line with inflation. These rate levels incorporate both the impacts of a number of studies which are summarized in Section D and some significant Major Projects that are coming into service in 2020.

- 5.1 Please confirm, or otherwise explain qualitatively and quantitatively, that there was an equal level of 'surplus' generated from customers over the PBR term that was provided to the Utilities.

- 5.2 Please confirm, or otherwise explain, that the revenue surplus plus the revenue provided to the Utilities was generated from customers over the last five year PBR period.
- 5.3 Please provide the total quantitative benefit that each of the Utilities earned over the PBR period.
- 5.4 Why do the Utilities propose to amortize the revenue surplus rather than distributing the surplus to customers at this time? Please explain.
- 6. Reference: Exhibit B-1, page C-1**

Rate Plan Principles	Elements of Proposed Multi Year Rate Plan
<p>Principle 1: The MRP should, to the greatest extent possible, align the interests of customers and the Utility; customers and the utility should share in the benefits of the MRP.</p>	<p>In its efforts to develop MRPs that recognizes the interests and issues of concern of interveners, FortisBC solicited input from interveners and where appropriate, incorporated changes to address intervener feedback provided. Enhancements include:</p> <ul style="list-style-type: none"> • Non-formula approach for determining capital funding; • Base O&M funding is index based; • Regulatory framework focused on the Companies' growth and performance in a challenging operating environment; and • Innovative technology funding. <p>Further, the proposed earning sharing mechanism will ensure that the interests of ratepayers and Utilities are aligned throughout the Proposed MRP term.</p>
<p>Principle 2: The MRP must provide the utility with a reasonable opportunity to recover its prudently incurred costs including a fair rate of return.</p>	<p>In accordance with the BCUC's determination in the 2014-2019 PBR Plan Decision, the rate plan has been designed to "achieve a proper balance of risks and rewards between the Companies and the ratepayer and reflect current reality"¹⁰³. FortisBC's rate plans include incentive to maximize the efficiency of capital and O&M spending through:</p> <ul style="list-style-type: none"> • A unit cost approach to O&M and FEI Growth capital spending, and • A 5-year capital forecast for FBC Growth and FEI/FBC sustainment and Other capital spending.

- 6.1 Please identify the 'benefits' that the Utilities believe should be shared in Principle 1.
- 6.2 Please confirm that as a result of PBR the Utilities are provided with the opportunity to earn more than its established rate of return, but are not expected to have the downside of a lower than established rate of return because they have the ability to access an off ramp from PBR and have not given up their regulatory ability to apply for a fair rate of return on equity investment.
- 6.3 Please identify any other benefits that the Utilities expect to have the opportunity to achieve as a result of the proposed MRP.
- 6.4 Please discuss in detail and quantitatively the risks and rewards that each of the Utilities bears as a result of the proposed MRP.

- 6.5 Please discuss in detail and quantitatively the risks that the ratepayers bear as a result of the proposed MRP.
- 6.6 Please confirm that from a ratepayer perspective ratepayers would be well-served if the Utilities earned their allowed return and the ratepayers received all of the benefits of good, competent, efficient and effective management of the Utilities at cost.
- 6.7 Please provide the input the Utilities received from ratepayer group representatives which approved of the MRP design for rate setting.
- 6.8 Please confirm that the principles proposed in the MRP design are more favourable to the Utilities than those in the past PBR process.
- 6.9 Please confirm that the Utilities have costs for managing the Utilities which are fixed over time and/or are partially fixed.

7. Reference: Exhibit B-1, page C-1

Rate Plan Principles	Elements of Proposed Multi Year Rate Plan
<p>Principle 3: The MRP should recognize the unique circumstances of FortisBC that are relevant to the MRP design.</p>	<p>The Proposed MRPs are designed to provide FortisBC the flexibility and incentive to address challenges and pursue opportunities presented by changes in its operating environment including:</p> <ul style="list-style-type: none"> shifting climate policies focused on reducing GHG emissions; changing customer expectations; an increasing need to engage stakeholders and Indigenous communities; aging infrastructure; increased security requirements; and the need for innovation and adoption of new technologies. <p>FortisBC has incorporated features such as its Innovation Fund and Targeted Incentives for achievement and performance in emerging and strategic areas.</p>

- 7.1 Please explain why the PBR form of ratemaking is relevant to the Utilities’ ability to address changes in the operating environment, and please address why the Utilities believe PBR would be superior to Cost of Service in addressing these issues.
- 7.2 Please provide evidence of the shifting climate policies focused on reducing GHG emissions and how these are expected to be greater than that experienced in the past.
- 7.3 Please provide evidence of changing customer expectations and explain how these are expected to be greater changes than those experienced in the past.
- 7.4 Please provide evidence of the increasing need to engage stakeholders and Indigenous communities and explain how these are expected to be greater than those experienced in the past.

- 7.5 Please provide evidence of the aging infrastructure and explain why it is necessary to address the infrastructure at this time, as opposed to deferring the work.
- 7.6 Please provide evidence of the increased security requirements and explain why these are significantly greater than those experienced in the past.
- 7.7 Please provide evidence of the need for innovation and adoption of new technologies, and why these are greater than the past, and must be undertaken at this time.
- 7.8 Please confirm that all six of these listed items were changing as indicated over the last few decades.
- 7.9 Please confirm or otherwise explain that the Utilities are competent and able to manage all six of these issues.
- 7.10 Please explain why expected, competent management of the Utilities with a fair allowed return on equity is insufficient to address these issues now
- 7.11 Please advise whether or not an incentive award to the Utilities' shareholder is, or is to be, shared with any employees of the company.
 - 7.11.1 If yes, please provide the particulars of the proposed sharing or incentives.

TERM

8. Reference: Exhibit B-1, page C-5

1.2 TERM

FortisBC proposes a five-year term for the MRPs, for the years 2020 to 2024. Five years remains a commonly adopted term for MRPs in North America, and is one year shorter than the six-year term of the Current PBR Plans, which were extended beyond the proposed five-year term because of the timing of the regulatory proceeding and decision "in order to realize the full benefits of a five-year term".¹⁰⁴

A five-year term addresses the key objective of regulatory efficiency as the term minimizes the frequency of comprehensive RRAs. A five-year period also provides an adequate amount of time for the Utilities to plan and undertake priority work and achieve efficiencies related to the longer-term planning horizon.

- 8.1 Please provide specific examples from the previous PBR where five years was necessary and appropriate to achieve the efficiencies, as opposed to any other shorter or longer term.
- 8.2 Please describe the characteristics of a comprehensive RRA.
- 8.3 Please describe the benefits of a comprehensive RRA.

- 8.4 Is it the Utilities' view that a comprehensive RRA assessment is being undertaken at this time, following the six year PBR? Please explain.
- 8.5 Please explain why a key objective of regulatory efficiency is to avoid comprehensive RRAs and why the objective for regulation would not be optimizing the cost-effectiveness of the Utilities' revenue requirements which might well be accomplished with versions of a comprehensive RRA.

9. Reference: Exhibit B-1, page C-5

In FortisBC's view, the generally positive experience of the Current PBR Plans support a five-year term for the 2020-2024 MRP. Proposed checks and balances implicit in the Proposed MRPs, discussed below, will mitigate risk to customers and the Utilities in the context of a five-year term. Moreover, the Annual Review of the Companies' performance promotes regulatory transparency. The achieved efficiencies, service quality measure results, earnings sharing

results, and the off-ramp mechanism (if necessary) all provide regular opportunities during the term to assess the success of the Proposed MRP.

- 9.1 Please confirm that assessing the success of the Proposed MRP on an ongoing basis would require the Commission and ratepayers to have access to information regarding the cost effectiveness of its programs and responses to opportunities.
- 9.1.1 If not confirmed, please explain why not.
- 9.2 Please confirm that the Commission has powers under the UCA to set formulas for ratemaking and to do so without providing incentives or other rewards to the Utilities beyond the opportunity to earn their fair rate of return.

INFLATION FACTOR

10. Reference: Exhibit B-1, page C-6

1.3 INFLATION FACTOR (I-FACTOR)

The use of an inflation or I-factor in an MRP provides recognition that utility costs are subject to the general inflationary pressures occurring in the economy, although the specific pressures or weightings of the various inflationary influences may be different than for the economy in general. As in the Current PBR Plans, FortisBC proposes to continue the use of a weighted composite I-Factor, consisting of the following inflation indexes: labour indexed to Statistics Canada's AWE:BC and non-labour indexed to the All-items Index for CPI:BC¹⁰⁵.

Using the composite factor weighting of 55 percent for labour and 45 percent for non-labour expenses, the I-Factor determination for the Proposed MRP remains:

$$I_t = 55\% \times AWE:BC_{t-1} + 45\% \times CPI:BC_{t-1}$$

Where: *I* = Inflation Factor
AWE:BC = labour index
CPI:BC = non-labour index
t-1 = most recent July to June values

As part of the Annual Reviews, FortisBC will update both the AWE:BC and CPI:BC rates as shown in the formula above to determine the value of the I-Factor for the years 2020 through 2024.

¹⁰⁵ In Orders G-164-14 for FEI and G-182-14 for FBC the BCUC also approved the use of Statistics Canada CANSIM Table 326-0020 (now 18-10-0004-01) to determine the CPI:BC and CANSIM Table 281-0063 (now 14-10-0223-01) to determine AWE:BC.

- 10.1 Please elaborate on the Utilities' statement that 'utility costs are subject to the general inflationary pressures occurring in the economy, although specific pressures or weightings of the various inflationary influences may be different than for the economy in general'. Please provide specifics as to the differences in inflationary pressures and provide quantitative evaluation of these influences where possible.
- 10.2 Please confirm that the Utilities intend to use the same sources for inflation assessment as those approved in the earlier PBRs.
- 10.3 The Utilities propose to utilize the 'most recent July to June values'. Please elaborate on why this is the appropriate time period and comment on when the values will be incorporated into the I-Factor such that it is possible to understand any lag.
- 10.4 Since the I-Factor is an historical figure do the Utilities consider that a true-up would be appropriate for the I-Factor? Please explain why or why not.
- 10.5 Please provide present and historical documentation dating back ten years justifying the 55% labour index and 45% non-labour index weightings for each of the Utilities.
- 10.6 What, if any, alternatives to AWE and/or CPI did the Utilities consider? Please discuss.

UNIT COST APPROACH TO O&M AND GROWTH FACTOR

11. Reference: Page C-6 and C-8

1.4 GROWTH FACTOR

Under the proposed unit cost approach to O&M, FortisBC proposes to maintain the average number of customers¹⁰⁶ as the growth factor. For the proposed FEI Growth capital formula, FEI proposes to adopt gross customer additions (instead of service line additions) as the growth factor.¹⁰⁷

For both the index-based O&M discussed in Section C2 and the unit cost approach to FEI's Growth capital discussed in Section C3.3.1, FortisBC is proposing to eliminate the two adjustments to the growth factor that were imposed under BCUC Orders G-138-14 and G-139-14. These two adjustments were:

1. a reduction in the growth factor by one half; and
2. the use of lagged actual customer growth.

The rationale for discontinuing these two adjustments is discussed below.

The following table compares FEI's approved Growth capital with Growth capital recalculated using actual additions.

Table C1-2: FEI's Approved Growth Capital vs. Growth Capital Using Actual Additions

Growth Capital \$000	2014	2015	2016	2017	2018	Total
Approved Growth Capital using lagging growth	21,809	28,480	33,263	33,477	37,485	154,514
Growth Capital recalculated using Actual Additions	30,508	34,172	34,136	44,028	46,376	189,221
Difference	(8,700)	(5,692)	(873)	(10,551)	(8,891)	(34,708)

The above table demonstrates that funding for FEI's Growth capital using a lagging growth factor underfunded the capital requirements by approximately \$35 million to the end of 2018¹⁰⁹. By using the lagging growth factor, the Growth capital formula provided too few dollars. By using a forecast of gross customer additions, the Growth capital provided by formula will be more closely matched to the funds required to connect customers.

- 11.1 Please provide an additional line in the table of the growth capital expended during the 2014-2018 PBR.
- 11.2 Are there Utilities which do not include a Capital component in a PBR or multiyear rate plan at all? Please explain and identify those Utilities where capital was excluded from formula.

- 11.3 Please explain and identify the metrics that ratepayers can utilize to understand whether or not capital spending is cost-efficient on a cost-benefit basis during the proposed MRP.
- 11.4 How can ratepayers determine if the growth capital provided is more or less than required? Please explain and provide specific examples of evidence that might suggest the formula may differ from the real needs in any given time period.
- 11.5 Do the Utilities have an incentive to expend growth capital if it is within formula even if it could be cost effectively deferred? Please discuss.

12. Reference: Exhibit B-1, page C-9

The anecdotal evidence goes both ways

To support its assumption of non-linearity between growth factors and growth-related expenses, the Panel's 2014 PBR Decision provided isolated examples of instances when costs do not increase linearly but rather only increase when a threshold in growth is reached. The anecdotal evidence, however, goes both ways.

That is, while it is possible to find examples of cost items that do not increase linearly, the anecdotal evidence also supports a need for an increase to the growth factor. An example is the costs attributed to the attachment of industrial customers. The O&M and capital funding required for attachment and servicing of one new industrial customer can be many times more than what the formula growth factor provides. This is because the formulas are indexed to the average costs of all customer (the majority of whom are residential), while the average cost of attaching and servicing a new industrial customer can be significantly higher than the average costs embedded in the formulas.

- 12.1 Please provide the directly variable O&M costs for connecting a residential customer, a commercial customer and an industrial customer.
- 12.2 Please provide the directly variable capital costs for connecting a residential customer, a commercial customer and an industrial customer.
- 12.3 Please provide the number of FEI's customers and customer connections by rate class for each of the last 15 years.
- 12.4 Please provide the forecast number of FEI's customers and customer connections by rate class for the next five years.
- 12.5 Please provide the cost for connecting customers for each of the last 15 years and provide the average cost for each by rate class.
- 12.6 Please provide the cost for connecting customers for each of the forecast five years and provide the average cost for each by rate class.

13. Reference: Exhibit B-1, page C-49 and Exhibit B-3, page 13

FortisBC proposes to determine indexed-based O&M on a per customer basis. A 2019 Base O&M is set out above in Section 2.4.2 FEI O&M Base, Table C2-1 and Section C2.5.2 FBC O&M Base, Table C2-13. The 2019 Base O&M is expressed as a function of the average number of customers for 2019, which is referred to as the Unit Cost O&M (UCOM). A 2019 Base UCOM is set by dividing the 2019 Base O&M by a projection of 2019 Average Number of Customers. The Companies' 2019 UCOM is set out in the sections referred to above and is equal to \$250 per customer for FEI and \$416 per customer for FBC.

The UCOM is then escalated using inflation during the term of the MRP. The inflation factor that FortisBC proposes to use is the same as the one that was approved for the Current PBR Plans and is described in more detail in Section C1.1.3.

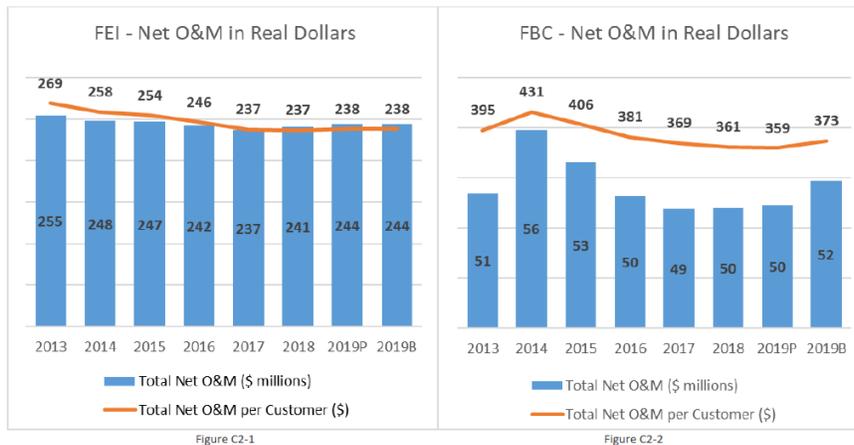
In summary, each year's indexed-based O&M is determined by applying an inflation factor to the previous year's UCOM and then multiplying by a forecast of the average number of customers, expressed as follows:

$$OM_t = UCOM_{t-1} \times (1 + I) \times AC_t$$

Where: *OM* = Indexed-based Operating and Maintenance Expense
UCOM = Unit Cost O&M
t = Forecast Year
I = Inflation Factor
AC = Average Number of Customers

Operations and Maintenance

2019 Net O&M per Customer Lower than 2013



13.1 Please confirm or otherwise clarify the CEC's understanding that FEI's and FBC's proposed formula for O&M is developed from the total O&M expense being calculated as a per customer cost (Unit Cost O&M), and then varied in a 1:1 relationship with the number of customers as may be shown in the simplified example below.

	<i>Base</i>	<i>Year 1</i>	<i>Year 2</i>	<i>Year 3</i>	<i>Year 4</i>	<i>Year 5</i>	<i>Year 6</i>	<i>Correl</i>
Customers	100	125	150	175	200	225	250	
O&M Base cost	\$ 10.00							
Calculated O&M cost/customer	\$ 0.10							
Forecast cost@ \$0.10/customer	\$ 10.00	\$ 12.50	\$ 15.00	\$ 17.50	\$ 20.00	\$ 22.50	\$ 25.00	1

- 13.2 Is it FEI and FBC's position that total O&M varies in a 1:1 relationship with the number of customers, and is expected to do so in the future? Please explain.
- 13.3 Is it FEI and FBC's position that total O&M has historically varied in a 1:1 relationship with the number of customers?
- 13.3.1 If yes, please rationalize FEI and FBC's position with the decreasing O&M cost per customer exhibited in Figures C2-1 and C2-2.
- 13.4 Please confirm or otherwise explain that FEI and FBC's O&M is composed of fixed, semi-variable and variable costs.
- 13.5 Please identify and quantify FEI's and FBC's fixed, semi-variable and variable O&M costs.
- 13.6 Is it FEI's and FBC's position that its O&M costs were variable in a 1:1 relationship with customer growth prior to its PBR? Please explain.
- 13.6.1 If no, please explain why not.
- 13.7 Is it FEI's and FBC's position that its O&M costs continued to be variable in a 1:1 relationship with customer growth over the PBR period?
- 13.7.1 If yes, please rationalize FEI's and FBC's statements that the Net O&M per customer has declined over the PBR period.
- 13.7.2 If no, please explain why not.
- 13.8 Is the staffing levels of the Utilities directly variable with the number of customers? Please explain.
- 13.9 Please provide the number of staff that FEI has had over the last 10 years.
- 13.10 Please provide the number of FEI's customers over the last 10 years.
- 13.11 Please provide the number of staff that FBC has had over the last 10 years.
- 13.12 Please provide the number of FBC customers over the last 10 years.

14. Reference: Exhibit B-1, page C-9

There is a high correlation between growth factors and expenditures

A correlation coefficient is a measure of the strength of the linear relationship between two variables and can be used to analyze the strength of linear relationship between the growth factor and actual expenditures. As explained in Section B2.3.2.1.1, the correlation coefficient between FEI's number of new attachments and actual formula-related growth capital costs is close to 0.95. Similarly, the correlation coefficients between the average number of customers and actual formula O&M expenditures for FEI and FBC are calculated at 0.95 and 0.90 respectively. These high correlation coefficient numbers indicate a strong linear relationship between the variables and negate the need for the 0.5 multiplier.

- 14.1 Please confirm that for O&M correlation the Utilities used the total customer base and the Total O&M costs.
- 14.2 Please provide the net customer additions correlation and the net O&M per year for both Utilities.
- 14.3 How many datapoints did FEI and FBC use to develop the correlation?
- 14.4 Please confirm or otherwise explain that a correlation of 0.95 and 0.90 implies no cause and effect.
- 14.5 Please confirm or otherwise explain that a correlation of 0.95 and 0.90 do not imply a 1:1 relationship, only that a strong relationship of some sort exists.
- 14.6 Please confirm or otherwise explain that a very high correlation can be obtained comparing a change in the number of customers with a change in costs where the costs include both a fixed component and a smaller component that varies with the number of customers as in the example below.

	<i>Base</i>	<i>Year 1</i>	<i>Year 2</i>	<i>Year 3</i>	<i>Year 4</i>	<i>Year 5</i>	<i>Year 6</i>	<i>Correl</i>
Customers	100	125	150	175	200	225	250	
O&M Base cost	10							
Variable cost/customer	\$0.05							
cost @ \$10 base +.05/customer increase	10	\$11.25	\$12.50	\$13.75	\$15.00	\$16.25	\$17.50	1

15. Reference: Exhibit B-1, page C-15

- Recruiting Employees: FortisBC has been successful in recruiting employees to meet the Companies' needs while maintaining its Human Resources department's staffing level. Since 2016, overall staffing levels at FortisBC have increased (FEI – 9 percent and FBC – 5 percent) contributing to a steady increase in recruitment activities. Additionally, the labour market has become more complex with low unemployment rates, skill shortages and higher retirement rates. With an increasingly competitive talent market, finding and retaining employees is projected to be the most difficult task facing human resources departments. FortisBC's Human Resources department has been able to meet the Companies' recruitment needs in this challenging labour market without additional resources.

15.1 Please provide the number of FTEs for each of the Utilities on a graph and in table form by year dating back to 2008.

16. Reference: Exhibit B-1, page C-16

2.3 2019 BASE O&M WILL REQUIRE FORTISBC TO DO "MORE WITH THE SAME"

- For FEI - Additional resources to enable continued investment in assets and customer service. Each year FEI is adding approximately 400 kilometers of new main and service pipe, 15,000 - 20,000 new services, pressure control stations, monitoring and controls. All of this capital requires resources to plan, install and commission the assets. The majority of capital related costs are charged directly to capital (i.e., quality assurance, construction crews, drafters, planners); however, some indirect costs (i.e., Operations Support Representatives (OSRs), capacity planning, management and other costs such as training activities) are included in O&M.

- For FEI - Additional employees in the Operations area are required to transition and provide for succession in the upcoming years due to retirements. The need for a successful transition is even more pronounced due to the recent period of high customer growth and associated higher employee base. This contributes to an increase in employee turnover as new positions filled create further openings and turnover within FEI. To support the employees that are new to FEI or new to their positions, an increase in requirements for learning and training is required. Key positions will be filled before employees leave to enable a smooth knowledge transfer.
- For FBC - Increased engineering and technology staffing to maintain the Supervisory Control and Data Acquisition (SCADA) system and the Outage Management System (OMS) and to maintain data for the Advanced Distribution Management System (ADMS), AML, and Geographic Information System (GIS).
- For FEI and FBC - Increased general and administrative costs in areas like Human Resources, Finance and Procurement to support the growing needs of the business. The Finance department will require resources to support increased compliance requirements and continued changes in accounting standards as well as supporting audits. Additional Procurement staffing is required to support growing needs and capital activities. Recruiting staff will be required to manage the increased level of recruitment activities.
- For FEI and FBC – Increased costs will be incurred in meeting evolving municipal regulations such as additional permitting, working arrangements, and restricted working hours.
- For FEI and FBC - Increased environmental and safety program requirements.

16.1 Please confirm that customer service costs are not directly related to the number of customers because there are a number of fixed and semi-variable costs in the cost structure for servicing customers.

16.2 Please confirm that succession planning is a long-term process and is undertaken continuously over time as part of prudent management.

16.2.1 If not confirmed, please explain why not.

16.3 Please provide quantification of the expected costs associated with transitions over the next five years.

16.4 When did FEI first become aware of and determine that it would likely incur additional costs as a result of retirements at this time? Please explain

16.5 Why does FBC require additional staffing for SCADA, OMS and ADMS. Please elaborate and quantify the number of existing staff as well as the additional staff required over the next five years.

17. Reference: Exhibit B-1, page C-17

Additionally, FortisBC is already aware of a number of circumstances where actual inflation will be higher than the proposed inflation index, which will cause cost pressures that the Companies will need to manage by finding offsets. For example, costs to insure and operate vehicles, fees for rights of way, and facilities lease contract increases will be higher than what will be provided for by a CPI-based inflation factor. FortisBC will continue to look for productivity and cost savings opportunities to manage these cost pressures. An example of a productivity initiative is the Gas Workforce Management system, details of which are provided in Appendix B6 – FEI Report on Major Initiatives During the Current PBR Term.

Under the proposed approach to O&M funding, FortisBC will require the inflation and customer growth escalators in O&M to accommodate these and other similar increases in staffing and non-labour costs.

- 17.1 How does FortisBC handle changes in the costs to insure and operate vehicles, fees for rights of way and facilities lease contract increases under the current PBR? Are they flowed through outside of O&M or treated as Z factors? Please explain and provide examples.
- 17.2 Under FortisBC’s proposal, how would ratepayers be able to ascertain what increases are appropriate for inclusion in the O&M formula justified by doing ‘more with the same’ versus those that are flowed through or added as a Z factor?

18. Reference: Exhibit B-1, C-19

2.4.2.1 Temporary 2018 Net Savings

Of the total net O&M savings above the formula achieved in 2018 of approximately \$4.9 million, \$1.677 million, representing less than one percent of the overall O&M funding, were temporary net savings that are not sustainable and that will require funding in during the term of the Proposed MRPs.

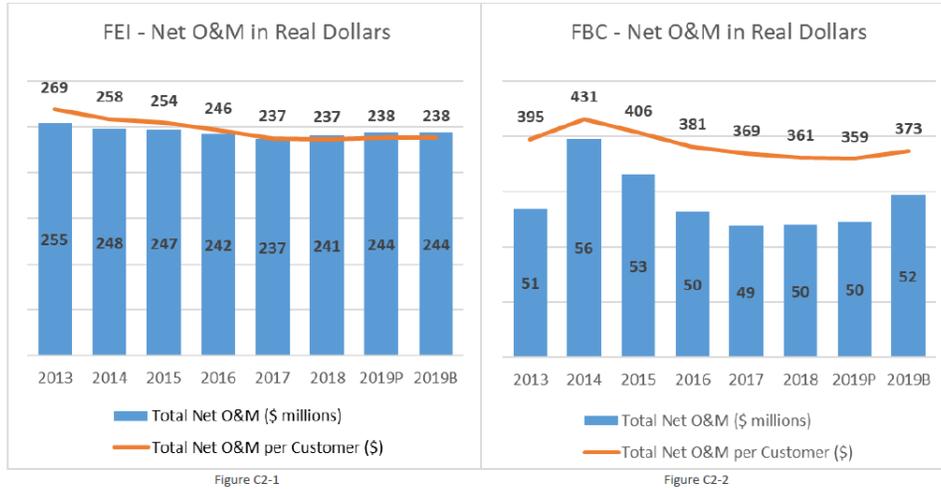
The temporary savings consisted of approximately \$0.770 million for meter reading and approximately \$0.900 million for bad debts.

- 18.1 Why should the Temporary Net Savings not be treated as ‘Doing More with the Same’?

19. Reference: Exhibit B-3, page 13

Operations and Maintenance

2019 Net O&M per Customer Lower than 2013



- 19.1 Please extend both graphs backwards to 2008.
- 19.2 Please provide the number of customers for each of the Utilities dating back to 2008. Please provide the data set and depict on the graphs.
- 19.3 Please confirm that 2019P means 2019 Projected.
- 19.4 Please confirm that 2019B means 2019 Base.

CAPITAL

20. Reference: Exhibit B-1, page C-52

FortisBC has been pursuing the development of a common asset management strategy across both the Gas and Electric divisions with the objective of continuing to improve upon maintenance and capital investment decisions, planning, and execution. These enhancements will help to demonstrate how FortisBC's decisions mitigate risks, improve performance and reduce non-essential costs.

The first step in the asset management strategy development was a high-level review of asset management competencies and practices compared to established industry practices derived from the international PAS55¹³⁸ standard. This was undertaken with the objective of identifying opportunities for improvement. The following four key principles were derived from this process:

1. Consistent and defensible decisions - Asset management decisions are made using consistent and objective processes across all asset classes.

20.1 Does FortisBC expect that there will be synergies and/or cost savings as a result of developing a common asset management strategy? Please explain.

20.1.1 If yes, please provide quantification of the value of the cost savings or other synergies.

20.2 Was the analysis relating to the common asset management strategy undertaken in the last five years and paid for using formula O&M costs? Please explain.

20.3 Please provide quantification of the costs expended to pursue the development of a common asset management strategy across the Gas and Electric divisions.

21. Reference: Exhibit B-1, page C-52 and C-53

The first step in the asset management strategy development was a high-level review of asset management competencies and practices compared to established industry practices derived from the international PAS55¹³⁸ standard. This was undertaken with the objective of identifying opportunities for improvement. The following four key principles were derived from this process:

1. Consistent and defensible decisions - Asset management decisions are made using consistent and objective processes across all asset classes.
2. Optimized decisions - Decisions are supported by the best data available, improving the ability of FortisBC to effectively balance decisions on safety, reliability and cost.
3. High accountability and ownership over assets – Employees are accountable and are engaged in their role in delivering safe, cost effective, and reliable services to ratepayers. Employees take on their day-to-day responsibilities like “owners” of the assets they are responsible for.
4. Integrated partnership model – The asset management planning department works closely with other departments and stakeholders to develop robust and achievable plans which balance sustainable system needs and regional priorities.

Since 2012, FortisBC has taken several steps to deliver on these principles, including:

- Placing asset management personnel within each region of the service territory to leverage local operational knowledge to inform decision making, while maintaining a consistent approach across all areas.
- Enhancing and standardizing the existing project planning methodology that moves investments through the stages of planning including need identification, scope definition, cost estimating, and execution.
- Improving the ability to generate and manage detailed multi-year capital plans to facilitate resource planning and deployment.

21.1 Did Fortis identify the projects undertaken as being part of its common asset management strategy across the Gas and Electric divisions during the previous PBR?

21.1.1 If yes, please provide the evidence where the common asset management strategy has been discussed.

22. Reference: Exhibit B-1, page C-170 and B-69

Non-Formula Approach for Determining Capital Funding

Interveners have commented that the existing formulaic capital funding mechanism is not working and that managing capital spending within the allowed funding was a challenge for FortisBC. In response, instead of continuing to use a formula approach to determine capital funding, FortisBC proposes to use a five-year cost of service forecast for the majority of its capital expenditures over the term of the Proposed MRPs. Interveners will have an opportunity to review the details of the proposed capital expenditures to ensure their reasonableness and appropriateness. This is discussed in Section C3 of the Application

An exception to the five-year capital expenditure forecast noted above is FEI's Growth capital. Due to the difficulties in forecasting customer attachment levels five years into the future, and to continue to focus on efficiencies in adding customers, FEI proposes to continue with a unit cost approach for FEI growth capital. FEI Growth capital is an area where FEI has experienced significantly higher capital expenditures than anticipated, partly due to an unprecedented number of customer attachments in recent years. The unit cost approach provides incentive for FEI to manage Growth capital expenditures efficiently. The unit cost approach for FEI growth capital is discussed in Section C3.3.1 of the Application.

The MRPs approved or considered in these jurisdictions can range from forecast multi-year rate plans with outcome-based positive earning opportunities through targeted incentives to fully indexed-based MRPs in the form of revenue or price cap indexes. The majority of plans, however, are hybrid plans with both traditional cost of service and incentive-based approaches working in alignment. Some jurisdictions with lumpy and variable capital expenditures for example may adopt a forecast cost of service approach for their capital investments while applying an indexed-based approach to their O&M expenditures. In the following sections, the main features of MRPs in major Canadian provinces as well as alternative incentive frameworks in two U.S. states are discussed.

22.1 Given the inability of the Utilities to meet the formulaic capital spending, please comment on the appropriateness of adopting a Cost of Service approach for all capital investments, including growth capital, while applying an index-based approach to O&M expenditures.

22.2 Do the Utilities consider that they have or could have 'lumpy' and/or 'variable' capital expenditures? Please explain and provide quantitative evidence to support the position.

23. Reference: Exhibit B-1, page C-58 and C-63 and C-64 and C-64

Table C3-1: FEI Growth Capital Expenditures 2014-2018 (\$000s)¹⁴¹

Growth Capital	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Actual
New Customer Mains	8,420	13,752	12,823	16,467	24,494
New Customer Services	24,675	30,064	31,246	39,149	53,993
New Customer Meters	1,583	1,960	3,430	3,927	4,397
System Improvements (DP)	2,439	5,723	2,953	3,566	4,433
CIAC	(3,757)	(2,805)	(2,505)	(2,770)	(2,529)
Total Growth (Net)	33,360	48,694	47,947	60,339	84,787
Gross Customer Additions	13,583	16,213	17,261	20,825	22,439
Growth Unit Cost (Net)	2,456	3,003	2,778	2,897	3,779

Table C3-4: FEI Sustainment and Other Capital Expenditures 2014-2019 (\$000s)

	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 YEF
Sustainment Capital	89,688	92,947	93,468	108,036	115,210	109,187
Other Capital	35,670	24,430	28,977	40,219	43,997	44,693
Total Capital	125,358	117,377	122,445	148,255	159,207	153,880

Table C3-6: FEI Sustainment Capital Expenditures 2014-2019 (\$000s)

	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 YEF
Customer Measurement	24,375	28,516	30,140	31,485	33,271	30,837
Transmission System Reliability & Integrity	22,043	30,409	31,738	37,596	39,095	42,301
Distribution System Reliability	13,634	18,346	14,213	18,232	17,686	13,088
Distribution System Integrity	29,635	15,676	17,378	20,722	25,158	22,960
Sustainment CIAC	(1,882)	(3,530)	(3,799)	(3,844)	(4,077)	(4,118)
Sustainment Capital – Total	87,806	89,417	89,669	104,192	111,133	105,069

23.1 Please provide Table C3-1 dating back an additional five years to 2009.

23.2 Please provide Table C3-4 dating back an additional five years to 2009.

23.3 Please provide Table C3-6 dating back an additional five years to 2009.

24. Reference: Exhibit B-1, page C-64

Table C3-5: FEI Sustainment and Other Capital Expenditures 2020-2024 (\$000s)

	Average 2017-2019P	2020	2021	2022	2023	2024
Sustainment Capital	110,811	113,408	114,214	119,399	118,541	124,527
Other Capital	42,970	49,770	49,916	46,474	46,403	45,351
Total Capital	153,781	163,178	164,130	165,873	164,945	169,878

Table C3-6: FEI Sustainment Capital Expenditures 2014-2019 (\$000s)

	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 YEF
Customer Measurement	24,375	28,516	30,140	31,485	33,271	30,837
Transmission System Reliability & Integrity	22,043	30,409	31,738	37,596	39,095	42,301
Distribution System Reliability	13,634	18,346	14,213	18,232	17,686	13,088
Distribution System Integrity	29,635	15,676	17,378	20,722	25,158	22,960
Sustainment CIAC	(1,882)	(3,530)	(3,799)	(3,844)	(4,077)	(4,118)
Sustainment Capital – Total	87,806	89,417	89,669	104,192	111,133	105,069

- 24.1 Please explain why FEI has used sustainment capital and other capital forecasting based on averages for 2017-2019 rather than for a longer period, such as dating back to 2014 or earlier.
- 24.2 Please explain why the Average for 2017-2019 P for Sustainment Capital is \$110,811,000 in Table C3-5, when the average is \$106,798,000 when calculated by the CEC using figures provided in Table C3-6.

25. Reference: Exhibit B-1 page B-35 and C-9

Figure B2-3 below shows the trend in the number of new attachments from 2014 to 2019 compared with the formula generated and actual growth capital amounts. As shown, the formula Growth capital lags the trend in new attachments. For instance, the trend in number of new attachments indicates a jump between 2016 and 2017. The increase in actual Growth capital from 2016 to 2017 reflects this change while the formula generated amount does not. A simple correlation analysis between the number of new attachments and actual and formula Growth capital amounts indicates that the correlation coefficient between the number of new attachments and actual costs is close to 0.95, while the correlation coefficient between the number of new attachments and the formula-generated Growth capital is lower at 0.79. This reinforces FEI's position in this Application, and its proposal in the FEI 2014-2018 PBR Plan proceeding, that formula inputs, and particularly the growth factor, should be forward looking and be set based on forecast numbers, and that the 0.5 multiplier to growth factor is not required.

Figure B2-3: FEI Trend in New Attachments Compared with Actual and Formula-driven Growth Capital



There is a high correlation between growth factors and expenditures

A correlation coefficient is a measure of the strength of the linear relationship between two variables and can be used to analyze the strength of linear relationship between the growth factor and actual expenditures. As explained in Section B2.3.2.1.1, the correlation coefficient between FEI's number of new attachments and actual formula-related growth capital costs is close to 0.95. Similarly, the correlation coefficients between the average number of customers and actual formula O&M expenditures for FEI and FBC are calculated at 0.95 and 0.90 respectively. These high correlation coefficient numbers indicate a strong linear relationship between the variables and negate the need for the 0.5 multiplier.

25.1 FEI and FBC state that the growth factor should be set on forecast numbers and that no 0.5 multiplier to growth factor is required. Is it FEI's and FBC's position that its capital costs are variable in a 1:1 relationship with customer growth at this time and will continue to be so in the future?

25.1.1 If no, please explain why not.

- 25.2 Please confirm or otherwise explain that both FEI and FBC capital cost structures include a combination of fixed costs, semi-variable and variable costs.
- 25.3 Please identify and quantify FBC’s fixed, semi-variable and variable capital costs over the last 10 years.
- 25.4 Please identify and quantify FEI’s fixed, semi-variable and variable capital costs over the last 10 years.
- 25.5 Please explain why FEI’s cost per new customer addition increased rapidly from 2014-2018.
- 25.6 Does FEI expect to continue at the increased level and please provide any quantitative assessment that FEI has done to explain the rapid change over time.

26. Reference: Exhibit B-1, page C-8

Table C1-2: FEI’s Approved Growth Capital vs. Growth Capital Using Actual Additions

Growth Capital \$000	2014	2015	2016	2017	2018	Total
Approved Growth Capital using lagging growth	21,809	28,480	33,263	33,477	37,485	154,514
Growth Capital recalculated using Actual Additions	30,508	34,172	34,136	44,028	46,376	189,221
Difference	(8,700)	(5,692)	(873)	(10,551)	(8,891)	(34,708)

The above table demonstrates that funding for FEI’s Growth capital using a lagging growth factor underfunded the capital requirements by approximately \$35 million to the end of 2018¹⁰⁹. By using the lagging growth factor, the Growth capital formula provided too few dollars. By using a forecast of gross customer additions, the Growth capital provided by formula will be more closely matched to the funds required to connect customers.

- 26.1 Please confirm that the above table line ‘Growth Capital recalculated using Actual Additions’ reflects FEI’s views as to what would have been the appropriate figure using a different methodology.

27. Reference: Exhibit B-1, page C-60 and C-61

3.3.1.3.2 PROPOSED GROWTH CAPITAL BASE UNIT COST

To set the base unit cost for 2020, the calculation starts with the average 2016-2018 actual unit costs as this amount is representative of FEI's level of capital investment required to provide service to new customers.

Two adjustments are then made to the 2016-2018 average actual¹⁴³ unit cost to arrive at the '2019 Base unit cost'. The adjustments are shown in lines 13 and 14 of Table C3-3 below. The goal of these adjustments is to determine the appropriate starting point for Growth capital unit costs for the Proposed MRP, incorporating known and measurable adjustments as appropriate. The two adjustments listed in the table are described in greater detail below.

Table C3-3: FEI Growth Capital Proposed Base Unit Cost

Line	Growth Capital (\$000)	2016 Actual	2017 Actual	2018 Actual	Average	Reference
1	New Customer Mains	\$ 12,823	\$ 16,467	\$ 24,494		
2	New Customer Services	31,246	39,149	53,993		
3	New Customer Meters	3,430	3,927	4,397		
4	System Improvements (DP)	2,953	3,566	4,433		
5	Subtotal Growth (Gross)	\$ 50,452	\$ 63,108	\$ 87,316		Sum of Lines 1 through 4
6	CIAC	(2,505)	(2,770)	(2,529)		
7	Total Growth (Net of CIAC)	\$ 47,947	\$ 60,339	\$ 84,787		Line 5 + Line 6
8	Inflation Adjustment	107.30%	104.86%	102.08%		
9	Infl Adj Growth (Net)	\$ 51,447	\$ 63,271	\$ 86,551	\$ 67,090	Line 7 x Line 8
10	Gross Customer Additions	17,261	20,825	22,439	20,175	
11	Unit Cost Growth Capital \$/CGA (Net of CIAC)				\$ 3,325	Line 9 / Line 10
12						
13	Construction Price Increase				\$ 9,146	
14	Muster Kit & Material alloc impact				642	
15	Incremental				\$ 9,787	Line 13 + Line 14
16	Average Gross Customer Additions				20,175	Line 10
17	Unit Cost Growth Capital \$/CGA Incremental				\$ 485	Line 15 / Line 16
18						
19	Total Unit Cost Growth Capital \$/CGA (Net of CIAC)				\$ 3,811	Line 11 + Line 17

- 27.1 Please explain why FEI did not calculate costs using data going back to 2014 or earlier.
- 27.2 Please extend the graph to 2009 and include the Unit Cost Growth Capital information in line 11 for each year as opposed to just showing an average.
- 27.3 Please explain why the 2018 Actual Unit Cost Growth \$/Gross Customer Addition calculated by the CEC as \$3,857 is approximately 30% higher than the \$2,976 for 2016 as calculated by the CEC.

28. Reference: Exhibit B-1, page C-61

- **Contractor Price Increases:** FEI uses a combination of internal and contract resources to execute construction of mains and services. FEI's mains and services contracts were competitively bid in 2018, with the new terms, including pricing, coming into effect in 2019. As a result, FEI has agreements in place with two different mains and services contractors. The final unit costs negotiated with the two successful bidders are higher than the unit costs in place in the 2016-2018 period. In aggregate, and taking into consideration historical regional allocations of new services, the new contractor pricing represents a 9 percent increase to unit costs compared to historical.
- **Regional Growth Activity:** FEI experienced a significant increase in growth activities on Vancouver Island through the 2014-2018 period. In 2017 and 2018, approximately 31 percent of all new customer attachments were on Vancouver Island, compared to 25 percent in 2015 and 2016. This increase in activity has resulted in cost pressures from

the higher unit costs associated with installation in this region (due to its subsurface conditions and the corresponding municipal, pavement and traffic control requirements). Due to these unique construction challenges, each mains and services contractor has agreed upon pricing for each of the three main regions of FEI's service territory (Interior, Lower Mainland, Vancouver Island) to represent the different construction challenges present in each. The increase in contractor pricing in the new contract is 10 percent for the Interior and Lower Mainland and 13 percent for Vancouver Island. FEI is anticipating sustained growth on Vancouver Island that will increase the average unit cost due to the higher proportion of more costly Vancouver Island services. The net result is a further 1 percent increase to the overall unit cost.

- 28.1 Please explain and provide quantitative evidence to support FEI's position that there will be sustained growth on Vancouver Island.
- 28.2 Does FEI expect to achieve economies of scale when it negotiates for services that it expects to increase? Please explain.

29. Reference: Exhibit B-1, page C-77

3.3.3 FEI Major Projects

As noted above, Major Projects are capital expenditures that do not form part of Regular capital spending as they are approved through a separate CPCN or other application. Thus, Major Projects are generally works that cost greater than \$15 million for FEI. Below, FEI provides examples of the Major Project applications that may arise during the course of the 2020-2024 MRP Application.

- FEI Inland Gas Upgrades;
- FEI Transmission Integrity Management Capability;
- FEI Okanagan Capacity Upgrade;
- FEI Pattullo Bridge Gas Line Replacement;
- FEI Southern Crossing Class Location Upgrades;
- FEI Sun Peaks Gas Conversion;
- FEI Sunshine Coast Capacity Upgrade; and
- FEI Advanced Metering Infrastructure.

29.1 Please explain how the Commission and ratepayers will become aware of any O&M costs, and costs related to growth capital, sustainment capital or other capital that could be impacted by the Major Projects.

29.2 How do the Utilities propose to address changes in O&M costs related to capital project implementation?

30. Reference: Exhibit B-1, page C-81

Table C3-20: FBC Actual and Projected Regular Capital Expenditures, 2014-2019 (\$000s)

	2014	2015	2016	2017	2018	2019P
Growth Capital	\$ 18,195	\$ 21,267	\$ 15,456	\$ 22,333	\$ 24,003	\$ 17,519
Sustainment Capital	41,158	27,301	25,645	29,367	28,616	33,227
Other Capital	8,408	8,183	9,307	13,882	11,942	15,225
Total Regular Capital	67,761	56,752	50,408	65,582	64,561	65,971

Table C3-21 below summarizes 2020-2024 forecast expenditures for Regular capital for FBC. Details of the forecast capital expenditures are provided in Sections C3.4.1.1 to C3.4.1.5 of the Application.

Table C3-21: FBC Regular Capital Expenditures 2020-2024 (\$000s)

	Average					
	2017-2019P	2020	2021	2022	2023	2024
Growth Capital	\$ 21,285	\$ 27,029	\$ 23,042	\$ 24,339	\$ 26,283	\$ 23,170
Sustainment Capital	30,403	50,743	50,098	43,110	44,657	53,901
Other Capital	13,683	15,752	14,712	14,756	15,281	15,134
Total Regular Capital	65,371	93,524	87,853	82,205	86,220	92,204

- 30.1 Please explain why FBC uses the average 2017-2019 P for forecasting its regular capital expenditures, rather than using figures dating back five years or longer.
- 30.2 Why did FBC's growth capital decline in 2019 P.
- 30.3 Why did FBC's other capital increase in 2017 and 2019, and why were they significantly higher in 2017-2019 overall than in the 2014-2016 period? Please explain.

CALCULATION OF REVENUE REQUIREMENT

31. Reference: Exhibit B-1, page C-113

4.4.2.4 Electric Vehicle (EV) Charging Stations (FBC)

At the time of filing, Phase 2 of the BCUC's EV Inquiry is underway. This Inquiry will determine whether FBC can invest in EV charging station assets as part of its regulated business, and, if so, under what parameters. Provided that FBC does include EV charging stations in its rate base, FBC proposes to forecast both the capital and the operating costs associated with the stations each year and record any cost of service variances in the Flow-through deferral account. EV charging stations will generate incremental tariff revenue, and these revenues will also be subject to flow-through treatment.

- 31.1 What treatment does FBC propose if the EV charging stations are approved for investment but not for inclusion in rate base?
- 31.2 Why does FBC believe that it is appropriate to capture the variances in the existing flow-through deferral account rather than establishing a new deferral account for EV charging stations?

FORTISBC CLEAN GROWTH INNOVATION FUND

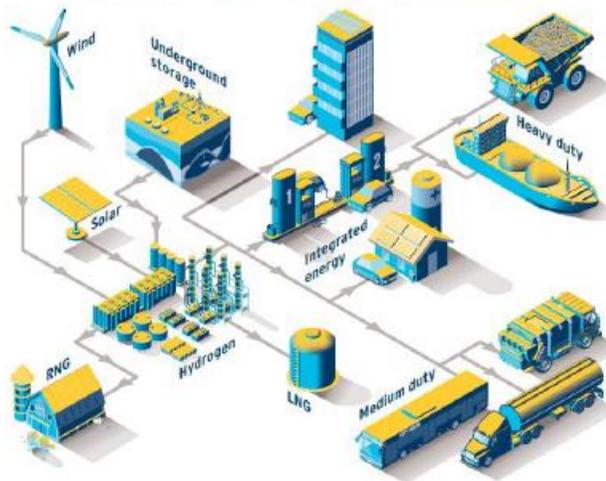
32. Reference: Exhibit B-1, page C-128

6.1 INTRODUCTION

As discussed in Sections B1 and B3, policy direction from all levels of government toward decarbonization has created an increased need for innovation and the adoption of new technologies. In this context, FortisBC has a clear vision for our future as described in submission to the Provincial government's recent CleanBC public consultation process:

We believe that FortisBC has an important role to play in helping British Columbians move to a low carbon, renewable energy future. We see ourselves as an energy delivery company that has climate and economic solutions in the buildings, transportation [and industrial] sectors.¹⁵⁶

Figure C6-1: FortisBC's Clean Growth Pathway to 2050



To realize this vision, the Companies are proposing the creation of a Clean Growth Innovation Fund (the Fund) to accelerate the pace of clean energy innovation, to achieve performance breakthroughs and cost reductions, and to provide cost effective, safe and reliable solutions for our customers. The Fund will assist FortisBC in addressing the expectation to reduce emissions and support the transition to a lower carbon economy while maximizing the use of its energy delivery systems for the benefit of its customers.

- 32.1 Does FortisBC have any specific direction from government or the BCUC that it must develop a Clean Growth Innovation Fund or equivalent? Please explain.

33. Reference: Exhibit B-1, page C-129

Table C6-1: Features of the Clean Growth Innovation Fund

Feature	Description
Responsive to climate policy	<ul style="list-style-type: none"> • Focuses on innovative activities that reduce GHG emissions.
Responsive to customer expectations	<ul style="list-style-type: none"> • Focuses on bringing forward cost-effective energy solutions which reduce customer emissions.
Clear focus for innovative activities	<ul style="list-style-type: none"> • Complementary and incremental to current activities. • Both pre-commercial and commercial stages of commercialization. • Span entire utility value chain (supply, transmission & distribution, and end uses).
Predictable funding	<ul style="list-style-type: none"> • Monthly charge of \$0.40 for FEI's and \$0.30 for FBC's customers. Annually, \$4.9 million for FEI and \$0.5 million for FBC.
Robust framework	<ul style="list-style-type: none"> • Three stages to develop projects (identification, evaluation and selection, and execution). • Senior management oversight and external advisory group. • Reporting in Annual Review process. • Unspent funds will be recorded in a deferral account and carried forward for the remaining term of the Proposed MRP.

33.1 Please confirm that customers can significantly reduce their emissions through the adoption of renewable natural gas.

33.2 Please provide evidence of customer expectations regarding the requirement for the development of cost-effective energy solutions which reduce customer emissions and discuss the need relative to the levels of customer adoption of renewable natural gas.

34. Reference: Exhibit B-1, page C-137 and C-138

6.4.1 Innovative Technologies

FEI's¹⁷⁶ Innovative Technologies program serves an important function in achieving DSM objectives to increase the efficient use of energy; however, the Innovative Technologies program is restricted from allocating funds for initiatives designed to reduce GHG emissions, and investment is limited to the building and industry sectors.

Since 2010, FEI has been providing DSM funds to evaluate innovative technologies. The primary objective is to identify pre-commercial and commercially available technologies that are not yet widely adopted in British Columbia, and which are suitable for the development of, or

inclusion in, the portfolio of ongoing DSM program offerings. This is accomplished through pilot and demonstration projects, pre-feasibility studies and evaluations to validate manufacturers' claims related to equipment and system performance. Those technologies must meet the definition of a technology innovation program as set out in the Demand-Side Measures Regulation and its cost-effectiveness is evaluated as part of the DSM portfolio as a whole.

Although approved funding exists for Innovative Technologies, additional funds are required for activities outside of DSM that are designed to adapt to government de-carbonization policies. The key difference between a DSM and a non-DSM innovative activity is whether the technology can directly or indirectly result in significant reductions of energy use or significantly more efficient use of energy. If the technology does, then the technology may be eligible to receive funding from the Innovative Technologies program. If it does not, then no DSM related funding can be provided, even though the activity may reduce GHG emissions.

Although approved funding exists for Innovative Technologies, additional funds are required for activities outside of DSM that are designed to adapt to government de-carbonization policies. The key difference between a DSM and a non-DSM innovative activity is whether the technology can directly or indirectly result in significant reductions of energy use or significantly more efficient use of energy. If the technology does, then the technology may be eligible to receive funding from the Innovative Technologies program. If it does not, then no DSM related funding can be provided, even though the activity may reduce GHG emissions.

34.1 Please elaborate further on how the Innovative Technologies program is restricted from allocating funds for initiatives designed to reduce GHG emissions.

35. **Reference:** Exhibit B-1, page C-129 and C-145

Table C6-1: Features of the Clean Growth Innovation Fund

Feature	Description
Responsive to climate policy	<ul style="list-style-type: none"> Focuses on innovative activities that reduce GHG emissions.
Responsive to customer expectations	<ul style="list-style-type: none"> Focuses on bringing forward cost-effective energy solutions which reduce customer emissions.
Clear focus for innovative activities	<ul style="list-style-type: none"> Complementary and incremental to current activities. Both pre-commercial and commercial stages of commercialization. Span entire utility value chain (supply, transmission & distribution, and end uses).
Predictable funding	<ul style="list-style-type: none"> Monthly charge of \$0.40 for FEI's and \$0.30 for FBC's customers. Annually, \$4.9 million for FEI and \$0.5 million for FBC.
Robust framework	<ul style="list-style-type: none"> Three stages to develop projects (identification, evaluation and selection, and execution). Senior management oversight and external advisory group. Reporting in Annual Review process. Unspent funds will be recorded in a deferral account and carried forward for the remaining term of the Proposed MRP.

6.6 REPORTING & ACCOUNTING TREATMENT

The Companies will provide an annual update on the progress on approved projects as part of its Annual Review process.

FortisBC proposes customer RD&D funding annually that is expected to generate approximately \$4.9 million for FEI and approximately \$0.5 million FBC (about half of those amounts in 2020 to provide sufficient time to ramp up activities). To achieve this, the Companies propose to use a basic charge rate rider in lieu of a volumetric rate rider so that all customers fund Innovation equally. Additionally, the Companies have calculated the rider below and propose to maintain it at the proposed level through the term of the Proposed MRP. Annual spending is not expected to exceed the approved annual funding (plus any amounts carried forward from prior years) unless additional funding is approved by the BCUC. The funds collected from customers less the amounts expended through the governance process set out above will be recorded in a deferral account and carried through the term of the Proposed MRPs, with the cumulative unspent funds at the end of the Proposed MRPs returned to customers.¹⁷⁸

The basic charge rider for FEI and FBC equals \$0.40 and \$0.30 month¹⁷⁹ respectively. The following calculations determine the rider.

- 35.1 Please provide the expected total cost for the fund over the MRP period, including all costs such as associated interest expense.
- 35.2 Please explain how the Utilities arrived at the expected funding levels and provide details as to how the funding will be spent.
- 35.3 Why do the Utilities believe it is important that ratepayers share equally in the cost rather than on a volumetric basis?

36. Reference: Exhibit B-1, page C-142

1. Ensure transparency

The Companies will be accountable to the BCUC in its administration and oversight of the Fund.

2. Pursue innovations with strong customer benefit

Focus on opportunities expected to deliver customer benefit. In addition to successfully responding to climate policy aimed at GHG reductions, benefits will include cost effectiveness, safety and reliability.

3. Use a portfolio approach to diversify risks

Adopting a portfolio approach to selecting innovative technologies will help to diversify risks and stay abreast of the different technologies under development in the marketplace.

4. Leverage partnerships

Leveraging partnerships with other organizations including governments, utilities, associations and innovative technology firms will provide greater access to capital, expertise and opportunities available.

5. Coordinate innovation centrally to ensure maximum value

FortisBC will coordinate and manage the different innovation opportunities it is pursuing to achieve value and create synergies between initiatives where possible. Funds collected from customers not invested will be returned to customers at the end of the Proposed MRP terms.

6. Optimize FortisBC's regulated assets and expertise

Focus on activities that ensure FortisBC's natural gas and electric assets continue to be fully utilized

- 36.1 Please provide specific measurements of how the fund will assess 'customer benefit'.
- 36.2 Please elaborate on how the fund will 'leverage partnerships'.
- 36.3 Please elaborate on and provide specific measurements of how the Utilities will evaluate the success or failure of the project.
- 36.4 Do the Utilities have specific objectives that they expect to achieve by the end of the MRP period?
 - 36.4.1 If yes, please provide.
 - 36.4.2 If no, please explain why not.
- 36.5 Do the Utilities expect to hire FTEs to conduct the work, or do they expect to utilize existing resources? Please explain.

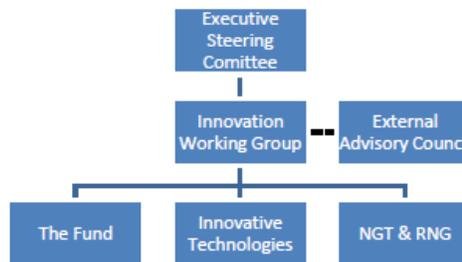
37. Reference: Exhibit B-1, page C-144 and C-145

6.5.3 Governance Structure

The Companies will ensure that the governance structure reflects the guiding principles of the Fund. FortisBC will establish two separate bodies with oversight of the Innovation Fund. First, an Innovation Working Group (the Group) will be responsible for the Identification, Evaluation and Selection, and Execution stages of projects. The Group will be comprised of staff from both the gas (FEI) and electricity (FBC) utilities to provide subject matter expertise from the supply, transmission and distribution and end use areas of FortisBC. The Group will foster collaboration and synergies amongst Innovative Technologies, NGT and RNG, and the Fund. Second, an

1 Executive Steering Committee (the Committee) will be established to provide the strategic
2 direction of the Fund. The Committee will be comprised of senior staff representing both FEI
3 and FBC. Additionally, FortisBC proposes to establish an External Advisory Council made up of
4 stakeholders to provide insight and feedback on the Companies' innovative initiatives on a
5 periodic basis.

Figure C6-8: Governance of the Fund



6.6 REPORTING & ACCOUNTING TREATMENT

The Companies will provide an annual update on the progress on approved projects as part of its Annual Review process.

FortisBC proposes customer RD&D funding annually that is expected to generate approximately \$4.9 million for FEI and approximately \$0.5 million FBC (about half of those amounts in 2020 to provide sufficient time to ramp up activities). To achieve this, the Companies propose to use a basic charge rate rider in lieu of a volumetric rate rider so that all customers fund Innovation equally. Additionally, the Companies have calculated the rider below and propose to maintain it at the proposed level through the term of the Proposed MRP. Annual spending is not expected to exceed the approved annual funding (plus any amounts carried forward from prior years) unless additional funding is approved by the BCUC. The funds collected from customers less the amounts expended through the governance process set out above will be recorded in a deferral account and carried through the term of the Proposed MRPs, with the cumulative unspent funds at the end of the Proposed MRPs returned to customers.¹⁷⁸

The basic charge rider for FEI and FBC equals \$0.40 and \$0.30 month¹⁷⁹ respectively. The following calculations determine the rider.

37.1 The Utilities do not propose to refund the Governance expenses, which are provided by FEI and FBC staff. How will the Utilities allocate the time and other expenses of the

Governance committees such that customers are not paying for staff or other expenses in the formulaic O&M or other cost area and also paying in the Clean Growth and Innovation Fund?

X FACTOR

38. Reference: Exhibit B-1, FEI 2014-2018 PBR Application page 48 and FortisBC Energy Inc. PBR Decision September 15, 2014 page 91

The X-Factor (also known as efficiency factor or productivity offset) is a fundamental element of performance-based regulation. It represents the amount by which a company is expected to outperform the industry and economy-wide productivity gains. The X-Factor can be described as part of a forward-looking benefit sharing mechanism in which the company allocates the expected X-Factor productivity gains to customers, regardless of the firm's realized productivity. FEI proposes a fixed X-Factor of 0.5 per cent (inclusive of any stretch factor) for its 2014 PBR.

Table 2.15 Approved X-Factors

<i>Utility</i>	<i>TFP</i>	<i>Stretch Factor</i>	<i>X Factor</i>
FBC	0.93	0.1	1.03
FEI	0.90	0.2	1.10

- 38.1 Please confirm that TFP means Total Factor Productivity.
- 38.2 Please confirm that the concept of Total Factor Productivity is to recognize ongoing productivity gains occurring in the industry overall.
- 38.3 Do the Utilities have evidence other than the article by Makhholm in B-1-1 Appendix C4-1 regarding the use of the X factor in either gas or electric Utilities?
- 38.3.1 If yes, please provide.
- 38.4 Please confirm that in the previous PBR the X factor included a TFP and a Stretch factor.
- 38.5 To the extent that the Utilities are proposing no X factor, is it the Utilities' view that the companies will not be capable of keeping up with industry and economy-wide productivity gains? Please explain.

BENCHMARKING ANALYSIS

39. Reference: Exhibit B-1, page B-53 and page B-54

Figure B2-6: Summary of Benchmarking Analyses for FEI

% Difference - FEI from Canadian Median	2012	2013	2014	2015	2016	2017
Distribution O&M + Total A&G per Customer	-27%	-28%	-28%	-29%	-30%	-32%
Distribution O&M + Total A&G per TJ	0%	-4%	0%	0%	-4%	0%
Distribution O&M + Total A&G per Employee	-27%	-29%	-25%	-21%	-23%	-28%
Distribution O&M + Total A&G per km of Mains	1%	-13%	-13%	-13%	-18%	-18%
Distribution Net Plant per Customer	7%	6%	6%	5%	3%	-1%
Distribution Net Plant per Employee	0%	14%	13%	14%	2%	-3%
Distribution Net Plant per km of Mains	0%	-2%	-4%	-6%	-12%	-14%
Administrative and General Expense per Customer	-49%	-50%	-50%	-49%	-51%	-53%
Administrative and General Expense per TJ	0%	0%	0%	0%	0%	0%
Customer Care Expense per Customer	-12%	-12%	-22%	-32%	-31%	-29%
Customer Care Expense per TJ	52%	55%	48%	42%	37%	31%
Interest Expense per Customer	11%	13%	12%	14%	17%	3%
Emergency Response Time (within 1 hr)	1%	1%	0%	0%	1%	2%
Telephone Service Factor - Emergency	NA	NA	NA	NA	NA	NA
Telephone Service Factor - Non-Emergency	-6%	-14%	-9%	-16%	-16%	-16%
First Contact Resolution	NA	NA	NA	NA	NA	NA
Telephone Abandon Rate	-9%	-25%	-14%	-13%	0%	-9%
DSM Expenditures (with incentives) per Customer	5%	11%	9%	19%	-4%	-14%
DSM Expenditures (without incentives) per Customer	2%	10%	10%	12%	-12%	-20%
DSM Expenditures (incentives only) per Customer	8%	11%	9%	23%	1%	-10%
Total Emissions tonnes CO ₂ e per Customer	0%	0%	0%	-16%	-20%	NA
Total Emissions tonnes CO ₂ e per TJ	3%	5%	17%	0%	0%	NA

In terms of the financial metrics, FEI outperformed or met the peer group median in seven out of the twelve metrics analyzed in all years studied. In general, FEI's performance was more favorable when expressed on a per-customer basis, and less favorable when expressed on a per-volume basis. As discussed herein, FEI has a high percentage of residential and commercial customers in its overall customer base, thus providing an explanatory factor in the difference between its results on the per-customer versus per-volume metrics. FEI's performance is better (i.e., results at or below the peer group median) at the broadest expense level analyzed (i.e., distribution O&M plus total Administration and General (A&G) expenses) on a per customer, per volume, per employee, and per kilometre of distribution mains basis, as well as FEI's financial performance related to A&G expense on both a per-customer and per-volume basis. Based on Concentric's analysis of different categories of expenses, FEI performed less favorably, on a relative basis, in the customer care costs per unit of volume. That performance, however, is balanced by FEI's relatively favorable performance on a customer care costs per customer basis and may be more indicative of FEI's customer mix rather than its actual cost performance.

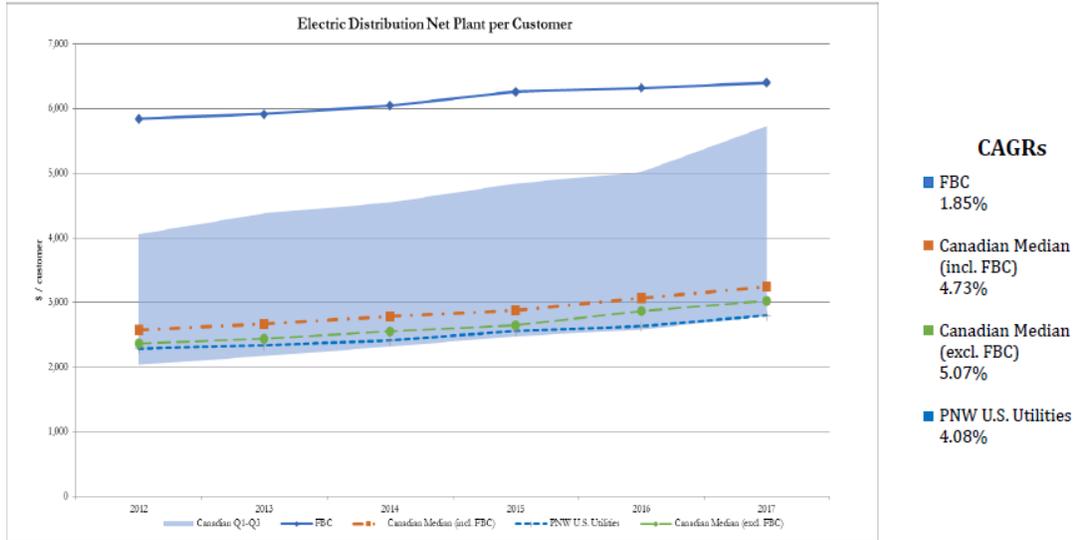
FEI performed less favorably than the peer group median on a net plant per customer and per employee basis until 2017, when it performed approximately at the peer group median. As discussed herein, that is indicative of FEI's relatively flat level of net plant over the course of the study period, whereas the Canadian peer group experienced rising net plant. FEI also had higher interest cost per customer than the Canadian peer groups, which is consistent with its higher level of net plant. Additionally, on a net plant per kilometre of distribution mains basis, FEI performed at the peer group median in 2012 and better than the peer group median in all subsequent years.

In summary, Concentric examined FEI's performance on a stand-alone basis, and also analyzed FEI's performance relative to 13 utilities in Canada and the U.S. across six years and 22 metrics. In terms of analyzing FEI's performance on an isolated basis, FEI's OM&A and net plant have increased modestly over the period studied on a nominal basis (five-year compound annual growth rates or CAGRs of 0.75 percent and 1.36 percent, respectively), and have decreased (in the case of operations, maintenance, and administrative or OM&A) or remained flat (in the case of net plant) on a real basis (based on a five-year average annual increase in the Consumer Price Index of 1.39 percent). On a relative basis, FEI performed at or better than the peer group median in the majority of the financial metrics analyzed, with the exception of net plant per customer and per employee, interest expense per customer, and customer care expenses per terajoule (TJ). In terms of service quality and reliability metrics, the results were more varied, but also require more context, whether it be understanding the target metrics to which FEI is performing (e.g., for TSF and FCR), or the drivers behind the performance trends (e.g., for DSM spending). Where possible in the Study, Concentric captured that context in order to provide perspective regarding FEI's benchmarked results.

- 39.1 Have the Utilities identified any areas in which they have plans to improve performance?
 - 34.2.1 If yes, please discuss.
 - 34.2.2 If no, please explain why not.

40. Reference: Exhibit B-1-1, Appendix C2 Benchmarking Reports 3, page 27

Highlights of FBC Benchmarking Study Net Distribution Plant/Customer



40.1 Please explain why FBC’s net distribution plant/customer is more than double that of the Canadian median without FBC.

40.2 Please explain why the Benchmarking study considers the median rather than averages.

Z FACTOR

41. Reference: Exhibit B-1, page B-28 and B-45 and B-71

2.2.7 Z-Factor

Similar to FortisBC’s previous MRPs, the Current PBR Plans include a Z-Factor mechanism for treatment of exogenous cost items. However, in contrast to the previous MRPs, the BCUC Panel set a materiality threshold as one of its five eligibility criteria, as listed here:

- attributable to events entirely outside the control of a prudently operated utility;
- directly related to the exogenous event and clearly outside the base upon which the rates were originally derived;
- impact of event is unforeseen;
- prudently incurred costs; and
- costs/savings must exceed the materiality threshold of 0.5 percent of base O&M amount.

The exogenous (Z-Factor) mechanism is another safeguard mechanism for treatment of exogenous cost items that are outside the control of the Utilities. In the most recent Annual Reviews for example, both Companies applied for and received approval of Z-Factor treatment of the 2019 Employer Health Tax and 2018 and 2019 Medical Service Plan premium reductions, both of which resulted from changes in government laws and regulation. FortisBC, however, reiterates that the inclusion of a materiality threshold on Z-Factor treatment of unexpected and non-controllable costs may prevent the Utilities from recovering their prudently incurred costs and should be discontinued. FortisBC's proposed criteria for exogenous factor considerations are discussed in Section C4.10.

- 41.1 Please provide examples of exogenous items that the Utilities were unable to bring forward to the Commission due to the materiality threshold.
- 41.2 Please confirm that the Utilities have a right to earn a fair return, which is not altered by formulaic ratemaking.
- 41.3 Please confirm that under Cost of Service the Utilities may be required to pay for non-controllable costs that are not within budget.
- 41.4 Please discuss how the Utilities address exogenous cost items under Cost of Service ratemaking.

42. Reference: Exhibit B-1 page B-71 and C-116

Z-Factor	Yes, unforeseen, outside management control, materiality threshold: dollar value of a 40 bps change in ROE on an after tax basis	Yes, unforeseen events, outside management control, materiality threshold: \$5.5 revenue requirement impact	Yes, Materiality threshold: \$50K for Revenue required (RR) less than \$10M; 0.5% of RR if \$10M < RR =< \$200 M, \$1M if RR > \$200M	Yes, unforeseen, outside management control, materiality threshold
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The 2014 PBR Decisions defined the materiality threshold at 0.5 percent of each Company's 2013 Base O&M.¹⁵² In their Compliance filings, FEI and FBC calculated their respective materiality thresholds, resulting in thresholds of \$1.140 million (0.5 percent times \$228.019 million) and \$0.301 million (0.5 percent times \$60.159 million), respectively.¹⁵³

Consistent with its position in the 2014 PBR proceedings, FortisBC believes that a materiality threshold is neither required not helpful. At that time, FortisBC stated that it should have the ability to bring forward any exogenous factor for discussion and review at Annual Reviews, for the BCUC to determine the appropriate treatment of the costs or savings. Further, based on its experience under the Current PBR Plans, FortisBC believes the materiality threshold resulted in confusion and lengthy submissions on how to define a threshold and how it should be applied, and that it would be administratively more simple and more efficient to bring forward for consideration any exogenous factors for approval that otherwise meet the criteria.

- 42.1 Would the Utilities agree that the definition of the threshold and how it should be applied has been largely determined in the current PBR?

42.1.1 If not, please explain why not and provide evidence of current Z factor treatments that are not clearly determined at this time.

SYSTEM REQUIREMENTS

43. Reference: Exhibit B-1, page B-21

1.5.2.2 Increasing Requirements for Generation Maintenance

Existing generation infrastructure is aging³⁵ and requires more frequent maintenance to extend its life and continue to meet or exceed BC Dam Safety Regulations. This includes updating the Public Safety Management Plan to comply with current Canadian Dam Association guidelines. These and other initiatives are necessary to enable FBC to continue to deliver safe and reliable service to our customers.

As an example, and in order to address specific concerns in the Grand Forks area, FBC filed an application for a CPCN regarding the installation of a second transmission transformer at the Grand Forks Terminal Station. Associated with this project is the decommissioning of approximately 45 kilometers of aging transmission line.

- 43.1 Please provide quantitative evidence that the infrastructure as a whole is aging to a degree that significantly affects its maintenance requirements. Please demonstrate how these have changed over the last 10 years.
- 43.2 Please provide forecasts of the increases in maintenance that FBC anticipates over the next five years
- 43.3 Please confirm that the Grand Forks area CPCN costs are treated as flow-through and do not impact FBC's expenditures within the formula.
- 43.4 Would FBC agree that the completion of the Grand Forks CPCN will result in lower maintenance expense than would otherwise have occurred in the absence of the CPCN?
- 43.5 If yes, please provide quantification for the maintenance savings that will be achieved as a result of the CPCN.
 - 43.5.1 If not, please explain why not and provide evidence with quantification that the maintenance costs will remain the same or increase.

44. Reference: Exhibit B-1, page B-23

1.7 CONCLUSION

There are many factors that are driving change in our operating environment. FortisBC has described the primary changes and their implications in this section of the Application. More than ever, FortisBC needs the flexibility to respond to these changes.

- 44.1 Please specify the requirements that FortisBC needs in order to provide it with ‘flexibility to respond to these changes’, ie. readily available Commission approval, more staff, greater capital allowance, greater O&M allowance, etc.

SERVICE QUALITY INDICATORS

45. Reference: Exhibit B-1, page C-147

Similar to the Current PBR Plans, FEI and FBC will report each year’s results to the BCUC and stakeholders at the Annual Review to allow a comparison of the Companies’ SQI performance against the benchmark targets and the thresholds for each of the SQIs. Also consistent with the Current PBR Plans, failure to meet SQI benchmark thresholds, if determined by the BCUC after further process to be considered a serious degradation of service quality in whole or in part due to the actions (or inactions) of the Companies, may result in a reduction to the share of earnings sharing retained by the Companies, up to a maximum reduction to reflect a 60 percent share to the customer (i.e., penalty of 10 percent of the earnings sharing earned to the Companies), instead of the standard 50 percent.

- 45.1 Please provide an estimate of what the maximum reduction could be in \$ values and explain how this is calculated.

46. Reference: Exhibit B-1, page C-150 and C-152

FEI believes the ASA is more directly related to the customer experience, with shorter wait times for customers preferable to longer wait times. FEI is also better able to analyze trends in this metric, as wait times at certain times on certain days can be isolated and explained in terms of staffing levels, unexpected absences, technology issues, etc.

To provide context, the table below shows FEI's ASA (in seconds), for the last five years. These figures show, for example, that ASA for emergency calls has continued to decrease since 2014 (with the exception of 2017).

Table C7-4: FEI Average Speed of Answer (2014 – 2018) in seconds

Description	2014	2015	2016	2017	2018
Combined	34.05	36.70	39.62	33.97	35.23
Emergency	11.64	8.46	8.32	8.75	7.46
Non-Emergency	35.62	38.91	42.52	36.49	37.58

7.3.4 Telephone Abandonment Rate

Similar to FEI discussed earlier, FBC proposes to replace the Informational Indicator Telephone Abandonment Rate with another Informational Indicator, Average Speed of Answer.

The table below shows FBC's ASA (in seconds), for the last five years. These figures show, for example, that ASA for calls has continued to decrease since 2014 (with the exception of 2017). It should be noted that ASA in 2014 was impacted by the six months of job action that took place in Q3 and Q4 of 2013. Because meters were not getting read as regularly, more bills were estimated, causing significantly increased call volumes as bill adjustments were made.

Table C7-8: FBC Results during the PBR Plan for Average Speed of Answer (in seconds)

Description	2014	2015	2016	2017	2018
Average Speed of Answer	225.78	49.07	48.48	48.71	48.64

- 46.1 Please provide evidence from comparable Utilities as to the Average Speed of Answer for Combined, Emergency and Non-Emergency.
- 46.2 Please provide any literature the Utilities have available as to appropriate average speed of answer for Canadian Utilities.
- 46.3 Does the Average Speed of Answer measure the time period before a customer reaches a customer service representative who can assist with their issue, or some other value?
- 46.4 Can the Utilities measure total wait times that a customer may experience including when they are answered at first, but later placed on hold? Please explain.
- 46.5 If the Information was available in 2014, please explain why this metric was not included in the former PBR.

INCENTIVES

47. Reference: Exhibit B-1, page C-157

8.3 TARGETED INCENTIVES

To increase the focus of the Companies on the challenges and opportunities that it faces in its operating environment, FortisBC believes that targeted incentives in emerging and strategic areas are appropriate and in the public interest. This approach is consistent with the observation that utility regulators are increasingly turning their attention to new aspects of utility performance, such as customer engagement (including tools to empower customers to better manage their bills), environmental impacts, and clean energy policy goals.¹⁸⁶

Both FEI and FBC have been developing a number of strategic, longer-term initiatives that are treated outside the Current PBR Plans' framework. FEI, for example, has been a North American leader in RNG and NGT related programs and has introduced a number of unique innovations to these developing fields. For instance, FEI is the first company in the world to offer an on-board truck-to-ship LNG bunkering system. As stated in Section B1, FortisBC believes it is in the public interest for it to continue to support climate objectives and adjust its business so that it can continue to serve its customers in a lower carbon future. Thus, it must focus on these initiatives, innovate, and advance emerging businesses for the benefit of customers.

FortisBC therefore proposes a suite of targeted incentives focused on areas where success will benefit customers by advancing the adoption of cleaner, lower emissions energy solutions and contribute to the realization of energy and emissions goals, increase customer engagement and manage rate increases through growth in system throughput.

FortisBC's proposed incentives are based on the Companies' level of success in achieving the scorecard targets included under each target section below. The financial incentive for successful achievement of a target is an amount equivalent to additional basis points added to the Companies' allowed ROE. For simplicity, this amount is to be calculated outside of the proposed Earnings Sharing Mechanism, as follows:

$$\text{Targeted Incentive} = \text{Total Basis Points Achieved} \times \text{Equity Portion of Approved Rate Base}$$

- 47.1 Please confirm that it is in the Utilities' best interests to pursue projects which address its strategic and other challenges.
 - 47.1.1 If not confirmed, please explain why not.
- 47.2 Is it the Utilities' position that they would not continue the work being done, or on the challenges and opportunities it faces in the absence of incentives? Please discuss.
- 47.3 Does the BCUC have the authority to direct the Utilities to conduct such initiatives without offering incentives to do so or not? Please explain and provide reference links to any authorities cited.

PROPOSED RATE PLAN

48. Reference: Exhibit B-1, page C-129 and C-142 and C-158 and C-159

Table C6-1: Features of the Clean Growth Innovation Fund

Feature	Description
Responsive to climate policy	<ul style="list-style-type: none"> Focuses on innovative activities that reduce GHG emissions.
Responsive to customer expectations	<ul style="list-style-type: none"> Focuses on bringing forward cost-effective energy solutions which reduce customer emissions.
Clear focus for innovative activities	<ul style="list-style-type: none"> Complementary and incremental to current activities. Both pre-commercial and commercial stages of commercialization. Span entire utility value chain (supply, transmission & distribution, and end uses).
Predictable funding	<ul style="list-style-type: none"> Monthly charge of \$0.40 for FEI's and \$0.30 for FBC's customers. Annually, \$4.9 million for FEI and \$0.5 million for FBC.
Robust framework	<ul style="list-style-type: none"> Three stages to develop projects (identification, evaluation and selection, and execution). Senior management oversight and external advisory group. Reporting in Annual Review process. Unspent funds will be recorded in a deferral account and carried forward for the remaining term of the Proposed MRP.

Table C6-2: Forecast Clean Growth Expenditures in 2020

Stage of Value Chain	Investment Area
Supply	Blending Hydrogen
	Renewable Natural Gas
	Digital Natural Gas Feedstock
Transmission & Distribution	Fugitive Emissions Reduction
	Carbon capture
Energy Use	Natural Gas for Transportation
	Hydrogen for Transportation
	Electric Vehicles and Charging Stations
	End Use Technologies
Supply, T&D & End Use	Natural Gas Innovation Fund

For example, if FEI experienced slow upfront growth of renewable gas, but introduced a large new renewable gas supply towards the end of the Proposed MRP, FEI may have missed annual targets at the beginning of the Proposed MRP period even though the overall supply target was achieved in the end. To recognize this issue and to ensure sustained progress towards achieving the target, achievement of the MRP Total for each incentive will trigger the

'successful' completion overall and any annual targets missed will be added to the final total incentive.

Table C8-1 below summarizes FortisBC's proposed targeted incentives.

Table C8-1: Targeted Incentives for the Proposed MRP

Targeted Incentives			
Item	Applicable to	Opportunity	Proposed Incentive (equivalent basis points)
Growth in Renewable Gas	FEI	Incentive to exceed forecast renewable gas volumes	10 BPS
Growth in NGT	FEI	Incentive to exceed load growth forecast for transportation customers	10 BPS
GHG Emissions Reduction (Customer)	FEI	Incentive to exceed forecast natural gas conversion activity	5 BPS
GHG Emissions Reduction (Internal)	FEI	Incentive to reduce internal GHG emissions below targeted levels	5 BPS
Customer Engagement	FEI / FBC	Incentive to increase the adoption of digital service channels	5 BPS each
Growth in Electric Vehicle Transportation	FBC	Incentive to support the deployment of EV Charging infrastructure (subject to EV Inquiry)	5 BPS
Power Supply Incentive	FBC	Incentive to optimize power purchases	PSI calculated separately

- 48.1 How do the Utilities propose to account for overlapping benefits that could be derived from the Clean Growth Innovation fund, such as increased customer awareness, increased growth in electric vehicles and consequent actions that would be paid for by customers separately?
- 48.2 Please confirm, otherwise explain, that the Utilities have typically in the past excluded the consequences of situations that are not directly within the Utilities' control from its PBR type ratemaking.
- 48.3 How do the Utilities plan to measure the changes that are due to its specific activities and those that are simply arising as a result of the changing environment, government regulations, etc? Please explain and provide details of the metrics that would be utilized to separate the effects caused by the Utilities.

49. Reference: Exhibit B-1, page C-164

convenient access to services and information and, while not all interactions are best suited for digital channels¹⁹⁷, increasing the adoption of these channels benefits customers by providing convenient, low effort interactions.

FortisBC measures the use of its digital channel offerings by recording the proportion of customer interactions that occur digitally versus through traditional channels. The table below illustrates the historic adoption rates of digital channel offerings.

Table C8-8: Historic Proportion of Digital Customer Interactions

	2014	2015	2016	2017	2018	2016-2018 Average	Average Annual Growth
FEI	21%	23%	25%	28%	36%	29%	4%
FBC	24%	28%	18%	22%	26%	22%	1%

The use of digital channels can be influenced by certain external events. For example, a large outage on the electrical system has historically driven high call volumes. Similarly, a cold winter period has historically driven higher calls relating to high bill inquiries. In order to normalize some of this variability, the average annual growth in digital tool adoption was used for the period of 2014 to 2018 as the target for the annual increase in adoption. In setting initial targets, FortisBC considered the annual volatility and the three-year average digital channel use rates. In the table below, a 4 percent (average annual growth) target is added each year to the baseline 2018 level.

Table C8-9: Digital Channel Use Target

	2020	2021	2022	2023	2024	MRP Total
FEI	40%	44%	48%	52%	56%	>48% avg.
FBC	27%	28%	29%	30%	31%	>29% avg.

In order to continue to increase adoption, FortisBC must continue to drive customer adoption of existing channels while also providing new and enhanced digital channel options. Achievement of the annual target will justify a “successful” rating for this component of the scorecard. Achievement of the MRP Target will add any missed annual targets to the 2024 incentive calculation.

- 49.1 Does the use of ‘digital channels’ result in cost savings to either or both of the Utilities? If yes, please quantify with regard to the savings that would be achieved in O&M or elsewhere as a result of increased use of digital channels.

50. Reference: Exhibit B-1, page C-166

FBC is, therefore, requesting approval of a Power Supply Incentive (PSI) to encourage the FBC to increase efficiency, reduce costs, and enhance performance in the area of power supply as detailed Appendix C7 of this Application as part of its suite of Target Incentives. The following provides a summary of the PSI mechanism that will be calculated separately from other targeted incentives.

The PSI mechanism is based on the following power supply optimization / mitigation activities:

- Displace BC Hydro Power Purchase Agreement (PPA) energy purchases with lower priced energy (PPA Energy Displacements);
- Displace capacity under the BC Hydro PPA with lower priced capacity (PPA Capacity Displacements);
- Release surplus Waneta Expansion capacity on a day-ahead basis (Surplus Sales); and
- Other optimization activities as brought forward and approved during future Annual Review processes.

50.1 Please confirm that FortisBC has always maintained that it works to the best of its ability to manage Power supply as cost effectively and safely as possible.

50.1.1 If not confirmed, please elaborate on when FortisBC has not worked to the best of its ability because it was not directly incented to do so. Please provide specific examples.