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June 17, 2019

Commercial Energy Consumers Association of British Columbia
c/o Owen Bird Law Corporation
P.O. Box 49130
Three Bentall Centre
2900 – 595 Burrard Street
Vancouver, BC
V7X 1J5

Attention: Mr. Christopher P. Weafer

Dear Mr. Weafer:

**Re: FortisBC Energy Inc. and FortisBC Inc. (collectively FortisBC)**

**Project No. 1598996**

**Application for Approval of a Multi-Year Rate Plan for 2020 through 2024 (Application)**

**Response to the Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1**

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On March 11, 2019, FortisBC filed the Application referenced above. In accordance with the British Columbia Utilities Commission Order G-64-19 setting out the Regulatory Timetable for the review of the Application, FortisBC respectfully submits the attached response to CEC IR No. 1.

If further information is required, please contact the undersigned.

Sincerely,

**FORTISBC ENERGY INC.**

***Original signed:***

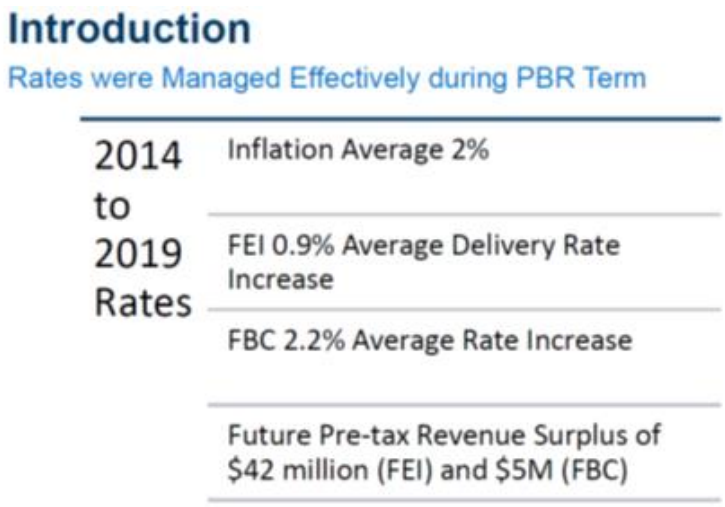
Doug Slater

Attachments

cc (email only): Commission Secretary
Registered Parties

**REVIEW OF PBR**

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




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.

**Response:**

It is FortisBC's experience that opportunities to become more cost effective are becoming increasingly difficult to identify and the Companies expect to be challenged to continue to find such opportunities over the term of the MRPs. However, even if the opportunities are "extremely few", one of the purposes of the proposed MRPs is to give an incentive to FortisBC to continue to seek out and pursue such opportunities. FortisBC provides further discussion in the context of O&M and Capital in the paragraphs below.

***O&M***

As indicated in Section B3.3 of the Application, the Current PBR Plans have been successful in driving FEI and FBC to achieve cost efficiencies in O&M spending. As FortisBC has been under I-X rate methodologies for many years, it is becoming increasingly difficult to deliver on further

[1] FEI PBR Decision page 85.

cost reductions as has been exhibited in the later years of the Current PBR Plans. The benchmarking study conducted by Concentric discussed in Section B2.4 of the Application indicates that FEI and FBC already perform well against industry peer benchmarks in terms of O&M spending. Furthermore, as discussed in the Application, FortisBC has identified cost pressures due to its operating environment that will put upward pressure on O&M spending. In this context, the proposed MRPs include an incentive for FortisBC to contain annual index-based O&M expenditures to a level at or below that calculated under the gross O&M per customer amount. FortisBC will therefore continue to pursue productivity improvements during the term of the proposed MRPs, with a focus on the efficient allocation of resources and "doing more with what we have".

***Capital***

Regarding capital expenditures (net plant as defined for the purpose of the Benchmarking Study), both FEI and FBC were above the median on a net distribution plant per customer basis compared to other utilities in study, possibly indicating opportunities for the future. As noted by Concentric in the responses to BCUC IRs 1.14.6 and 1.15.4.1, while the benchmarking data provides useful information regarding relative performance, it does not provide the cause of that differential, or why that differential changes over time, other than if specific contributors can be identified. Concentric notes also that the standard benchmarking comparison is a relative one, and therefore does not offer insights into performance in an absolute sense. Similar to O&M expenditures, FortisBC will continue to pursue productivity improvements during the term of the proposed MRPs for capital expenditures. Specifically, the proposed MRPs include incentive to contain Regular capital spending at the approved level or, in the case of FEI's Growth capital, at or below the amount set through the index-based unit cost.

This, combined with the incentive in O&M, will encourage the Companies to continue to be focussed on cost efficiencies in both capital and O&M spending.

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

**Response:**

Please refer to the response to MoveUP IR 1.4.1 for a table which includes the actual before and after-sharing ROEs achieved by FEI and FBC from 2014 through 2019P, with a comparison to the approved amounts for each of the respective years.

**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.

**Response:**

The Utilities did not propose a period of Cost of Service between the Current PBRs and the proposed MRPs because it was not necessary for the following reasons:

1. Mechanically, forecasts for many of the elements of the revenue requirement items are prepared and approved in the same fashion under either approach, including revenue and demand forecasts, gas and electricity commodity costs, other revenues, forecasted O&M and capital, deferral accounts, property taxes, income taxes, and earned return;

2. Rate base is being re-based using 2018 actuals and 2019 projection, which allows for the re-basing to current costs, the same way that re-basing would occur under a Cost of Service application but with greater regulatory efficiency;

3. The vast majority of capital is covered under a forecast (all except FEI Growth capital) which is prepared in the same way under Cost of Service;

4. FEI's unit cost approach to Growth capital, which is rebased using 2016-2018 actuals (with adjustments), is fundamentally the same as the way FEI forecasts its Growth capital unit cost under Cost of Service; and

5. Index-based O&M which is rebased using 2018 actuals (with adjustments) is the only major element that would otherwise be prepared differently under Cost of Service. Using 2018 Actuals (with adjustments) is reasonable given that it reflects multiple years of cost efficiencies achieved under the Current PBR Plans. FortisBC has also identified cost pressures that it has not incorporated into its proposed Base O&M, but instead proposes to manage within the indexed-based amount. If FortisBC were to prepare a cost of service forecast of O&M for 2020, FortisBC would incorporate those cost

pressures into its forecast, in addition to the incremental spending it has proposed in the Application.

Accordingly, FEI and FBC do not believe it is necessary or beneficial to propose a period of Cost of Service as this would reduce regulatory efficiency and increase costs.

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

**Response:**

Although FEI and FBC have had cost-of-service revenue requirements applications between PBR plans, both utilities have had significant extension periods added to initial PBR terms without a cost-of-service review. The Utilities' experience with PBR prior to the Current PBR Plans is described in Appendix C1. FEI's 1998-2000 plan was extended to 2001 and its 2004-2007 plan was extended to 2009, without a cost-of-service period before the extensions. FBC's 1996-1998 plan was extended four times for a total term of 9 years. FBC's 2007-2008 formula-based plan was extended by three years to 2011. Again for FBC, there was no cost-of-service period before the extension periods for these two PBRs. These examples of extensions to previous rate plans demonstrate that the transition between rate plans does not require a cost of service review.

In addition, FBC's Base O&M Expense for its 2007-2011 PBR Plan was not based on a current cost of service review. The most recent cost of service review in this instance was in 2005. FBC's 2006 Revenue Requirement was determined using an incremental approach to O&M Expense, similar to the approach in this Application, and the approved 2006 O&M Expense was the Base O&M for the 2007-2011 PBR Plan.

As discussed in the response to ICG IR 1.1.1, when entering into a new PBR or MRP term, it is important to re-base (re-establish the linkage between revenues and costs); two ways that this can be accomplished are through a cost of service proceeding, or a review of recent actual results.

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

**Response:**

As noted on page B-48 of the Application, in the BCUC direction provided for the Benchmarking Study, the BCUC commented that:

> … the Panel considers that it would be useful have one completed prior to the application for the next phase of the PBR.

While the BCUC has not provided a specific order directing FortisBC to file another PBR Plan, FortisBC has prepared its proposed MRPs, a combination of performance-based and cost of service elements, consistent with the expectations in the statement above from the BCUC referencing "the next phase of PBR" and intervener feedback received during consultations. FortisBC's proposed MRPs strike the appropriate balance between maintaining an efficiency focus, allowing for continued investment in a safe and reliable system, and achieving climate related goals that allow the continued viability of the Utilities for the future.

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?

**Response:**

FortisBC presumes this question is linking rebasing to a cost of service application. FortisBC considers that the Application already includes a considerable amount of rebasing; a cost of service application is not required to achieve this.

**Rate Base (Gross Plant, Accumulated Depreciation, CIAC, Accumulated Amortization of CIAC, Deferrals, Working Capital):** The Utilities have used 2018 actual rate base with a projection of 2019 to provide the indicative rates outlined in Section C9.4. The Annual Review for 2020 Rates will also use 2018 actual rate base and depending on timing, 2019 actual rate base (or an updated projection), to determine 2020 rates for approval. This mechanism is the same whether the Utilities had proposed a cost of service application for 2020 or this Application.

**Volume and Revenues, Energy Costs, Property Taxes, Income Taxes, Earned Return, Depreciation, Amortization, Other Revenue:** The Utilities have forecast and calculated all of these items in the same manner for this Application (and will do so for the Annual Review for 2020 Rates) as they would do in a cost of service application.

**O&M**: Section C2 of the Application includes a detailed discussion of 2019 Base O&M, how it is derived from 2018 actuals and adjustments to determine the proposed base. Although the

determination of 2019 Base O&M is different than the approach that would be taken in a cost of service application, the starting point of 2018 actuals provides a reasonable approach and a level of O&M that includes the efficiencies from the Current PBR Plans (is effectively rebased).

For the reasons stated above, a period of cost of service rate making between the Current PBR Plans and proposed MRPs is not needed.

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

**Response:**

The Utilities have brought forward an inflation-indexed mechanism (formula) for O&M and FEI's Growth capital in this Application. Please also refer to Section C9.3 of the Application (The Plan Addresses Intervener Concerns) for further discussion of the changes FortisBC made to address concerns expressed by interveners.

**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.

**Response:**

Confirmed. The Productivity Improvement Factor (PIF) is embedded in the current O&M formula and all benefits of this performance factor accrue to ratepayers.

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.

**Response:**

FortisBC interprets the reference in this question to "incentives versus those that could have or would normally be undertaken under prudent management" is to a cost of service ratemaking arrangement versus FortisBC's Current PBR Plans.

FortisBC believes that the savings and efficiencies achieved to date have been driven in full or in part by the incentive mechanisms and other features of the Current PBR Plans, including the six-year test period. However, the Utilities cannot speculate what they would have done in the hypothetical situation in which they were under a series of forecast cost of service ratemaking plans over the same time period. As such, FortisBC cannot identify the portion of savings and efficiencies achieved to date (e.g., O&M productivity improvements that could have or would have normally been undertaken under prudent management absent the Current PBR Plans) that would not have been achieved in the absence of the incentive mechanisms and other features of the Current PBR Plans.

While it is impossible to answer the hypothetical question posed, the features of the Current PBR Plans were designed to increase efficiency, reduce regulatory costs, and provide incentive for the Utilities to find cost savings while maintaining a high quality of service. For example, one of the features of the Current PBR Plans is that they extended the period before rebasing. This allowed the Utilities to invest in measures and obtain a payback of investment in circumstances where rebasing after a typical test period of one or two years would otherwise preclude the Utilities from recovering that investment. For instance, some of the Major Initiatives with an efficiency aspect outlined in Appendix B6 (FEI Report on Major Initiatives During the PBR Term) of the Application have a longer payback time horizon and therefore are unlikely to have been pursued in the same timeframe in a forecast cost of service ratemaking regime where rebasing occurs in one or two years.

The longer test period and incentives under the Current PBR Plans also facilitated a longer-term view by the Utilities which:

- Embedded a culture of productivity and discipline into the organization;
- Freed up utility resources to look at customer service initiatives and growth opportunities;
- Encouraged the Utilities to invest resources to look at new and potential opportunities;

- Enabled a speedier and more flexible approach to the timing of projects and investment; and
- Encouraged the Utilities to prioritize resources and projects effectively.

All of these factors facilitated a broad-based focus on productivity throughout the Utilities over the term of the Current PBR Plans that led to discovery and implementation of cost saving initiatives.

The Current PBR Plans have generated benefits to both customers and the Companies. The two most common cited benefits of a PBR plan are its effectiveness in incenting a utility to capture efficiencies and to promote regulatory efficiency. FortisBC believes it has delivered both these benefits to date under the Current PBR Plans while maintaining service quality. For example, FEI's annual increases to O&M funding have been limited to inflation and customer growth factors, and also met or exceeded the productivity factor that represents a minimum level of benefits that flow to customers. Delivery rates have remained flat over the past two years and the increase is below inflation for 2019. This success is consistent with FEI's experience with its past two PBR plans (1998-2001 and 2004-2009). As the Current PBR Plans were designed to increase efficiency, it is reasonable then to attribute, to a large degree, the efficiencies achieved to the design of the plans.

FortisBC notes that the question of whether the same results would have been achieved under a PBR plan with incentives compared to that under a cost of service ratemaking was discussed as part of the workshop held in December 2018 on Review of Multi-Year Rate Plans and Cost of Service Regulation. Please refer to Appendix C-3 of the Application, slide numbers 34 to 37 of the presentation "Review of Multi-Year Rate Plans and Cost of Service Regulation".

Dr. Lawrence Kaufmann facilitated the workshop and commented on the question "how do we know the same results could not have been obtained under COSR"? Mr. Kaufmann in the discussion noted that "No one can ever know with certainty what might have happened if another path was chosen" and suggested "but at least three factors imply MRPs can improve on COSR".

1. On a theoretical level, PBR is explicitly designed to create strong incentives to enhance productivity and be more innovative. COSR was not explicitly designed for these purposes.

2. If there are positive outcomes under a PBR Plan, it is not unreasonable to ascribe them to the ***stronger*** incentives created by the plan.

3. The importance of "local" and/or firm-specific knowledge. Who's better positioned to understand what measures are most likely to succeed and improve utility performance? Utility employees and managers with decades of experience and unique, detailed, first hand knowledge of operations OR outside observers and analysts.

4. Local and firm-specific knowledge only exists within the firm, and it could be an important source of performance gains if companies are appropriately incentivized.

5. Performance improvements also not always reflected in "major initiatives" that can be monitored and measured. Many small "minor initiatives" that fly under the radar can also lead to performance gains. Incentivized environment can promote performance gains in myriad ways that are not always easy to identify and/or measure.

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.

**Response:**

50 percent of the Savings above the Formula equals $22.35 million for FEI and $3.3 million for FBC. This is the amount of the Savings above the Formula (one half) that was shared with customers.

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.

**Response:**

FortisBC interprets the question as asking whether, if the approved amounts were equal to the formula amounts, and the same actual results were achieved, but there was no sharing mechanism (equivalent to how cost of service regulation operates), would the ratepayers have received an additional $25.65 million. If this is the question, then the answer is no. Under cost of service regulation, variances fall to the bottom line to the account of the shareholder with the exception of those that are captured in deferral accounts. The shareholder would have earned more and the ratepayers would have been worse off.

Regardless, attempting to speculate about what results would have been achieved in the absence of the incentives or under a different ratemaking regime is engaging in hypothetical

counterfactual analysis which is not productive. Please also refer to the response to CEC IR 1.3.2.

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.

**Response:**

Confirmed. Under Cost of Service regulation, the Utilities may be provided with an approved revenue requirement that is greater than or less than the full cost of inflation or full 1:1 revenues for customers growth. The BCUC makes decisions in various respects that affect the Utilities' approved revenue requirements regardless of the ratemaking regime. If, based on the evidence, the BCUC determines that a utility's revenue requirement should be reduced either in cost of service or otherwise, such as through determinations of base amounts for formulae, or through the formulae themselves, the utility would seek to manage within that constraint while ensuring safe and reliable service for its customers.

**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.

**Response:**

As FortisBC has submitted in the past, an additional proceeding is not needed to evaluate the merits of the previous PBR plans and would be inefficient and unproductive. Evaluation of the Current PBR Plans has been an ongoing exercise in the Annual Reviews. Further, Section B2.3 of the Application includes a thorough evaluation of the Companies' Current PBR Plans from O&M expenditures, capital expenditures, regulated efficiency, and rate trend perspectives and provides an analysis of the Current Plans' strengths and weaknesses. Further, Section B2.4 considers the relative performance of the Utilities during the PBR years compared with their peers. The analysis and other related information are open to interrogatories and can be efficiently considered in the context of the current proceeding.

In FEI's Annual Review for 2019 Delivery Rates, CEC requested that the BCUC hold a separate proceeding to evaluate the Current PBR Plan. CEC's request was not granted by the Panel. To the contrary, the BCUC stated that it expected evaluation to occur in the next rate application, stating:[2]

> Regardless of whether FEI's proposed rate-setting approach beyond the current PBR Plan term is cost of service or some form of PBR, the Panel expects that the application would include an evaluation of the current PBR Plan.

The BCUC similarly declined a later request by MoveUP for a separate proceeding to conduct a summary review of the current PBR Plan, stating:

> With regard to MoveUP and other stakeholders' comments on rate-setting and a review of FortisBC's PBR Plans, if, and when, a rate application is filed by FortisBC in the upcoming months, we welcome MoveUP and other parties to

[2] Appendix A to Order G-237-18, p. 14 of 16.

participate in that process and bring forward any alternative rate setting proposals to be reviewed and considered at that time.[3]

The BCUC has therefore determined that there is no need for a separate proceeding to evaluate the Current PBR Plans.

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.

**Response:**

FortisBC agrees.

4.2.1 If not, please specify which evidence should not be accepted in this proceeding and explain why not.

**Response:**

Please refer to the response to CEC IR 1.4.2.

[3] Letter from BCUC to Mr. Quail dated February 1, 2019.

**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.

**Response:**

The amounts recorded in the Revenue Surplus deferral accounts were generated from customer revenue exceeding utility forecast/formula-based costs during the Current PBR Term. As approved by the BCUC, the surplus amounts are being held in deferral accounts, earning interest at the Utilities' WACC for the purpose of rate mitigation or rate smoothing for the benefit of customers in future periods.

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.

**Response:**

Please refer to the response to CEC IR 1.5.1.

5.3 Please provide the total quantitative benefit that each of the Utilities earned over the PBR period.

**Response:**

The quantitative benefit earned by each utility is the difference between the ROE achieved before and after earnings shared with customers. However, because earnings sharing has been positive in each year of the PBR Plans, the earnings benefit is to the account of customers, not to shareholders. In the absence of an earnings sharing mechanism, the utility would retain all of the earnings benefit. Tables 1 and 2 below show the after-sharing and before-sharing utility income for 2014-2018 for FEI and FBC and the total benefits, $17.356 million and $2.198 million, respectively. Projected earnings for 2019 are not yet available. The additional customer benefit from the Productivity Improvement Factors embedded in rates is not included in Tables 1 and 2 but is quantified in Tables B2-2 and B2-3 (pages B-31 to B-33) of the Application.

**Table 1: FEI Utility Income, 2014-2018 ($000s)**

| | 2014 | 2015 | 2016 | 2017 | 2018 | Total |
|---|---|---|---|---|---|---|
| After-Sharing | $ 96,988 | $128,987 | $131,379 | $129,767 | $151,045 | |
| Before-Sharing | 100,645 | 133,585 | 136,541 | 132,711 | 152,040 | |
| Difference | $ (3,657) | $ (4,598) | $ (5,162) | $ (2,944) | $ (995) | $ (17,356) |

**Table 2: FBC Utility Income, 2014-2018 ($000s)**

| | 2014 | 2015 | 2016 | 2017 | 2018 | Total |
|---|---|---|---|---|---|---|
| After-Sharing | $ 44,457 | $ 46,336 | $ 48,093 | $ 48,072 | $ 49,121 | |
| Before-Sharing | 44,789 | 46,817 | 48,820 | 48,597 | 49,254 | |
| Difference | $ (332) | $ (481) | $ (727) | $ (525) | $ (133) | $ (2,198) |

5.4 Why do the Utilities propose to amortize the revenue surplus rather than distributing the surplus to customers at this time? Please explain.

**Response:**

The revenue surplus will be distributed to customers by way of amortizing the credit balance in the surplus account regardless of the time period in which it is distributed. FEI and FBC will discuss the amortization of the revenue surplus accounts in their respective rate filings for 2020. The revenue surpluses will be used to mitigate future rate increases, which are not known at this time.

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

| Rate Plan Principles | Elements of Proposed Multi Year Rate Plan |
|---|---|
| **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. | 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:<br>• Non-formula approach for determining capital funding;<br>• Base O&M funding is index based;<br>• Regulatory framework focused on the Companies' growth and performance in a challenging operating environment; and<br>• Innovative technology funding.<br>Further, the proposed earning sharing mechanism will ensure that the interests of ratepayers and Utilities are aligned throughout the Proposed MRP term. |
| **Principle 2:** The MRP must provide the utility with a reasonable opportunity to recover its prudently incurred costs including a fair rate of return. | 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:<br>• A unit cost approach to O&M and FEI Growth capital spending, and<br>• 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.

**Response:**

Savings achieved (either capital-related or O&M related) during the MRP term are shared equally between Utilities and ratepayers through the proposed Earnings Sharing Mechanism. In addition, as explained in the response to BCUC IR 1.71.4, FortisBC expects that the proposed Clean Growth Innovation Fund will directly benefit ratepayers by achieving performance breakthroughs and supporting the transition to a lower carbon economy. Further and as stated in the response to BCUC IR 1.18.6, the various Targeted Incentives proposed can benefit customers directly or indirectly through improved system efficiency, increased demand, improved affordability, reduction in GHG emissions, increased customer engagement and reduced costs.

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.

**Response:**

Not confirmed. Regardless of the ratemaking structure, the Utilities should be afforded a reasonable opportunity to earn a fair return on their invested capital. However, the reasonable opportunity does not mean a guarantee to earn the exact authorized return. Irrespective of the ratemaking regulation (cost of service, PBR or MRP), the Utilities may earn more or less than their authorized returns. The MRPs' off-ramp provisions are symmetrical and may be used to mitigate the risks of windfall losses or gains for both customers and Utilities. Maintaining the financial health of the Utilities is in the best long-term interest of customers.

6.3 Please identify any other benefits that the Utilities expect to have the opportunity to achieve as a result of the proposed MRP.

**Response:**

Please refer to the response to CEC IR 1.6.1. FortisBC's MRPs include a combination of Traditional and Targeted Incentives, which provide benefits to customer and the Utilities.

Traditional Incentives, shared equally with customers through the earnings sharing mechanism, provide incentive to the Utilities to:

- contain annual index-based O&M expenditures to a level at or below that calculated under the gross O&M per customer amount, and
- contain Regular capital spending at the approved level, or in the case of FEI's Growth capital, at or below the amount set through the index-based unit cost.

Targeted Incentives provide incentive to encourage the Utilities to enhance their performance in addressing the challenges and opportunities in the operating environment including emerging and strategic areas which are appropriate and in the public interest. Please refer to the response to BCUC IR 1.96.7 for a detailed discussion of the costs and benefits of the incentives.

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.

**Response:**

FortisBC provides a qualitative assessment of the proposed MRPs' incentives and their associated risks and rewards in the response to BCUC IR 1.19.8. A cost/benefit analysis of the proposed Targeted Incentives is provided in the response to BCUC IR 1.96.7.

6.5 Please discuss in detail and quantitatively the risks that the ratepayers bear as a result of the proposed MRP.

**Response:**

Please refer to the response to CEC IR 1.6.4.

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.

**Response:**

Not confirmed. FortisBC believes that ratepayers receive the benefits of good, competent, efficient and effective management today while the Utilities have an incentive to move beyond that standard.

The situation described in the question is one where ratepayers would always pay actual costs incurred, and bear the risk of both over and under performance in achieving the ROE, and the utilities would receive no incremental incentives.

As Dr. Kaufmann explained in his December 14, 2018 presentation (Appendix C3 of the Application) and further expanded on by FortisBC in Section B2.6.4 of the Application as well as in the response to BCUC IR 1.18.7, while the traditional view of utility regulation (cost of service regulation) served customers reasonably well for the last century by enabling the development of extensive and highly reliable energy networks with near-universal access to service at

relatively affordable rates for most consumers, it is increasingly criticized for its disadvantages including weaker incentive for cost control, less efficient allocation of resources, lower incentive for innovation and lower regulatory efficiency. The weaker incentive for innovation and cost control inherent in cost of service regulation is particularly important since incentives are increasingly used by various regulators to justify alternative forms of incentive frameworks that can better serve customers need in the 21st century and prepare utilities for industry transition to a less carbon intensive, more integrated and more innovative energy networks.

6.7 Please provide the input the Utilities received from ratepayer group representatives which approved of the MRP design for rate setting.

**Response:**

Please refer to the response to BCUC IR 1.19.3 for references to intervener feedback commenting on positive aspects of the Current PBR Plans.

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.

**Response:**

Not confirmed. Please refer to the responses to BCUC IRs 1.19.7 and 1.19.8.

6.9 Please confirm that the Utilities have costs for managing the Utilities which are fixed over time and/or are partially fixed.

**Response:**

Please refer to the response to BCUC IR 1.17.7 which discusses why the proposed Index-Based formulaic approach is reasonable and appropriate for determining allowed O&M funding for the proposed MRPs.

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

| Rate Plan Principles | Elements of Proposed Multi Year Rate Plan |
|---|---|
| **Principle 3:** The MRP should recognize the unique circumstances of FortisBC that are relevant to the MRP design. | 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:<br>• shifting climate policies focused on reducing GHG emissions;<br>• changing customer expectations;<br>• an increasing need to engage stakeholders and Indigenous communities;<br>• aging infrastructure;<br>• increased security requirements; and<br>• the need for innovation and adoption of new technologies.<br>FortisBC has incorporated features such as its Innovation Fund and Targeted Incentives for achievement and performance in emerging and strategic areas. |

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.

**Response:**

FortisBC has proposed a multi-year rate plan that contains both cost of service and formula-based items as well as specific incentives that are designed to work together to address these issues. It would not be correct for FortisBC (or any other party) to state that PBR would be superior to Cost of Service (or vice versa) without an understanding of the specific elements of the plans.

The ratemaking model affects the incentives given to the Utilities and shapes the strategies they choose to address challenges in their operating environment. For instance, some ratemaking structures such as the type proposed by the Utilities in this Application have superior incentives to incent innovative solutions while managing costs at or below rate of inflation. Other structures such as traditional cost of service regulation lack incentives to promote innovation and are more focused on traditional utility solutions.

As explained in the Application, the recent technological advances and public policy in various jurisdictions to promote GHG emission reduction and innovative solutions to utility challenges have led to an interest by regulators and regulatory economists to take a fresh look at utilities' traditional revenue models. These parties are increasingly questioning the reliance on traditional cost of service regulation for the "utility of future" and are exploring alternative incentive frameworks to complement the incentives embedded in traditional revenue models.

FortisBC's proposed MRPs are superior in their ability to incorporate the flexibility and incentive necessary to address the challenges and opportunities in the operating environment. For example:

- the MRPs include a term that supports an increased focus on managing the business with a long-term view and increased operational flexibility to address the increasing pace and growing scope of energy industry transformation.
- the MRPs are a form of performance or incentive ratemaking designed to provide incentives to the Utilities to achieve certain objectives including pursuing cost efficiencies and addressing the challenges noted in the preamble.
- the MRPs provide an approach to O&M funding that encourages utility management to focus on the efficient allocation of resources within the business over time and promote a culture of overall efficiency in comparison to more frequent O&M rebasing inherent in Cost of Service rate regulation.

For more information regarding the relative superiority of MRPs over cost of service regulation in cost reduction and promoting innovation, please refer to Dr. Kaufmann's presentation (Appendix C3), Section 6 of Appendix C4-2, and Section B2.6.4 of the Application.

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.

**Response:**

Evidence of shifting climate policies focused on reducing GHG emissions at the federal level is provided in the federal government's plan to address climate change and grow the clean economy, the Pan-Canadian Framework on Climate Change, as well as in the provincial government's CleanBC Plan (CleanBC). Some local governments have also adopted policies to transition to 100 percent renewable energy by 2050 including the Cities of Vancouver, Victoria, Saanich and Nelson.

Please also refer to the responses to BCUC IRs 1.1.1, 1.1.1.1, and 1.1.1.2 for discussion of the impact of these policies which is 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.

**Response:**

Please refer to the response to BCUC IR 1.3.1.

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.

**Response:**

Over the last several years, numerous Federal and Provincial policies and regulations have been introduced that require increased stakeholder, community and Indigenous engagement as well as policy development. These policies create the need for additional resourcing and funding to address this changing landscape. Examples of the policies that have been introduced or are being introduced in the term of the proposed MRPs supporting the need for additional the proposed incremental funding, are as follows:

***Federal***

- **Pan-Canadian Framework on Climate Change –** December 2016
    - Canada's climate strategy was unveiled in December 2016. Cornerstones of the strategy include carbon pricing backstop and the Clean Fuel Standard (CFS, see below), new efficiency and emissions standards for buildings and vehicles, and a focus on clean transportation. The strategy also includes funding opportunities for clean technology, transportation hubs, ports, and other initiatives.
- **Clean Fuel Standard (CFS) –** announced late 2016; however, there continues to be ongoing discussions and development at the Federal level.
    - This is one of the key emission reduction policies in the Pan-Canadian Framework and is expected to reduce 30 million tonnes/year by 2030. The CFS applies to liquid, gaseous and solid fuels. Nowhere else in the world has a CFS been implemented for gaseous fuels, which raises obvious technical and regulatory challenges. Please note that FortisBC has proposed incremental funding for "early stage policy and program development including legal fees associated with regulatory developments" to provide input into issues such as

jurisdictional considerations pertaining to the implementation of a federal CFS and provincial Low Carbon Fuel Requirements Regulation (LCFRR).

- **United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)** - adopted in 2007 by the United Nations (UN) and then recognized at the UN by Canada in May 2016
    - Canada has pledged to adopt the principles of free, prior and informed consent from Indigenous Peoples on any actions that infringe on Indigenous rights and territory. As FortisBC does yet not know how UNDRIP will be implemented we will need resources to deal with upcoming legislation and FN expectations. As of April 2019, a Federal UNDRIP bill (Bill C-262, a private members bill, to adopt UNDRIP) is currently before the Senate and it is unclear as to whether they will also be in harmony with Provincial bills. This means FEI will need to enhance our activities with Indigenous communities and have funding increases relating to legal costs for negotiations, engagement and capacity funding.
- **Bill C-69 (Environmental Assessment)** – February 2018 (proposed)
    - New environmental assessment process aims to revamp the way new major infrastructure projects are approved. Bill C-69 adds a new "pre-assessment" process and proposes to include both upstream and downstream emissions impacts. It aims to more clearly reflect the Government's commitment to UNDRIP and increased levels of participation, engagement, consultation with Indigenous peoples. Bill C-69 also removes the "standing test" which determines who can testify before the regulator, thus opening the Environmental Assessment process up to any group that demonstrates interest in a project. Uncertainty around the new process could provide delays, and lead to new resource project costs. It also replaces the National Energy Board with a new regulatory body.

***Provincial***

- **UNDRIP** – February 2019 (details to be determined)
    - In B.C's Throne Speech in February 2019, Premier John Horgan committed to being the first province to introduce legislation to implement UNDRIP. Legislation could affect land-use planning and industry. Article 32 is among those in the declaration often cited by Indigenous leadership. It directs states to obtain free, prior and informed consent from Indigenous groups before approving projects that would affect their lands or territories. Provincial legislative councils are currently working on the details. FortisBC is preparing for implementation, but many details are not yet known including how economic benefits flow to nations if activities are going to take place in their title lands and traditional territories will be implemented.

- **CleanBC –** Phase 1 December 2018 (Phase 2 expected in 2019-2020)
    - At the provincial level, the B.C. government is committed to meeting the province's climate goals and has introduced legislated GHG reduction targets of 40 percent below 2007 levels by 2030, 60 percent by 2040, and 80 percent by 2050. To achieve these targets, the provincial government released the CleanBC, which outlines the priority areas for GHG reduction and the actions it will take.
    - The government's climate change strategy focuses on shifting natural gas use in homes, commercial buildings and industry to electricity, with significant financial incentives. New buildings are to be net-zero ready by 2032. Also, it provides opportunity to switch medium/heavy duty vehicles to CNG and RNG and is also an opportunity to focus on turning organic waste into RNG.
    - **15 percent renewable gas target –** A component of CleanBC but a significant development for FortisBC. This requires robust engagement with provincial, municipal, non-government organizations, business stakeholders as well as engagement with Indigenous communities.
    - **Low Carbon Fuel Requirement Regulation (LCFRR)** – the program started tracking affected parties for compliance in 2010 and the compliance period began in 2013 with a 10 percent target by 2020.
    - CleanBC increased B.C.'s low carbon fuel standard to 20 percent by 2030. FortisBC will need to work to ensure that it aligns with the Federal CFS.
- **B.C. Energy Step Code –** April 2017
    - Optional compliance path in the BC building code for local governments to accelerate efficiency in buildings. Use of natural gas will be increasingly constrained in new buildings, particularly as the Code moves to net zero in 2032.
    - Pressure to develop greenhouse gas (GHG) metrics in building code – no policy on this yet, but the BC Ministry of Housing is exploring.

***Municipal***

- **Climate Action Charter –** 2007
    - Local governments committed to becoming carbon neutral in their operations and reduce community-wide emissions. FortisBC will need to provide support and education to local governments so they understand how to achieve these goals using natural gas and the natural gas system. Municipalities have been developing Corporate as well as Community Energy & Emissions Plans.
- **100 percent Renewable Energy by 2050** – (2015 City of Vancouver Renewable City Strategy)

- Six local governments have since committed to the goal—Vancouver, Victoria, Saanich, Nelson, Regional District Central Kootenay, Village of Slocan. Current strategies rely on driving natural gas use entirely out of buildings. FortisBC will continue to partner and educate municipal governments to assist them in meeting climate objectives through the use of FortisBC's energy solutions, including the use of RNG in municipal assets.

- **City of Vancouver Zero Emissions Building Plan** (2016) **& Green Buildings Policy for Rezonings** (2010, but most recently amended in 2017 and 2018)
  - Similar to the Energy Step Code above. All re-zonings must be near-zero emissions buildings or low emissions, green buildings. The City of Vancouver's goal is to eliminate emissions from new buildings by 2030.

- **Climate Emergency Declarations** (2019)
  - At the time of writing, local governments that have signed Climate Emergency Declarations include: Vancouver, Richmond, North Vancouver, New Westminster, Capital Regional District (includes 13 Vancouver Island communities), and Powell River.
  - In response to their declaration of a climate emergency, the City of Vancouver council just adopted a strategy for zero emissions space and water heating by 2025 (i.e., all new and retrofit heating and hot water systems to be zero emissions within 5 years).

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.

**Response:**

Please refer to the response to BCUC IR 1.47.1 which shows 55 percent of FEI's transmission lines and 36 percent of distribution lines are over 40 years old. Approximately 30 percent of FBC's transmission and distribution poles are over 40 years of age, and FBC's generation dams range in age from 87 years old to 112 years old.

FortisBC addresses the challenges of aging infrastructure through both its O&M activities and its capital investments - these are discussed separately below. In both cases, FortisBC does not carry out repairs or replacements of assets based solely on the asset's age. All asset repairs and replacements are in response to a history of failures or deficiencies observed during routine inspections and condition assessments.

O&M Impacts to Aging Infrastructure: Addressing aging infrastructure through operating and maintenance activities includes carrying out additional inspections or repairs on assets to detect and/or mitigate time-dependent threats that could lead to a failure of that asset. Examples include:

- FEI carrying out additional integrity digs to confirm and repair corrosion or other anomalies on the transmission pipelines;
- FEI recoating above ground piping on bridge crossings and realigning the supports;
- FEI overhauling station regulators to replace parts subject to fatigue or wear;
- FBC carrying out substation inspections and assessments and performing equipment maintenance and correcting deficiencies that are not capital.

If this work is deferred, it increases the probability that deficiencies will result in failures and potential safety hazards or negative impacts to customer reliability. Addressing deficiencies proactively, before they become failures, not only prevents a potentially dangerous asset failure, it also decreases cost by performing the repair in an efficient and planned manner instead of an emergency response.

Capital Impacts to Aging Infrastructure: Addressing aging infrastructure through capital investment generally means replacing an asset that is at its end of useful life. Examples include:

- FEI replacing mains and services that have a history of leaks;
- FEI rebuilding regulator stations that have equipment in poor condition, obsolete/unmaintainable equipment, or equipment that no longer meets the load requirements of the station;
- FBC rehabilitation of deteriorating concrete structures and other infrastructure at FBC's generation stations, following upgrades of much of the generating equipment in recent years;
- FBC transmission and distribution line rehabilitation to replace poles and associated equipment such as guy wires, anchors and cross arms.

If this work is deferred, it increases the probability that deficiencies will result in failures and potential safety hazards or negative impacts to customer reliability. If FortisBC were to consistently defer replacements of aging assets, the deferred work would accumulate to the point where a significant replacement program would be required which could exceed FortisBC's capacity to safely and effectively execute the additional work in a timely manner. Such a program could also trigger significant rate volatility and cost increases to customers.

7.6 Please provide evidence of the increased security requirements and explain why these are significantly greater than those experienced in the past.

**Response:**

As more devices are automated and connected to communication systems, and more data is made available to customers and employees, enhanced and additional security is required. FortisBC continually monitors the evolving cybersecurity threat landscape, and uses a cybersecurity risk management methodology to determine where new or enhanced cybersecurity is required to provide adequate protection. In addition, the threat landscape has been changing and has evolved quickly over the past few years, and the effort and tools required to provide a reasonable level of security for FortisBC's digital assets has increased and is reflected in the costs identified in the Application.

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.

**Response:**

Policy direction from all levels of government is trending increasingly towards decarbonization. This creates 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 our submission to the Provincial government's recent CleanBC public consultation process.

The proposed Clean Growth Innovation Fund recognizes the need to accelerate investment in innovation in order to provide customers with clean and cost-effective energy sources for the future. This fund will help the Utilities gain the flexibility to innovate and adapt to the evolving policy environment. Please also refer to the responses to BCUC IR 1.1.1 and 1.2.1.

Please also see the relevant parts of the Application, including sections B1 and C6 and related appendices.

7.8 Please confirm that all six of these listed items were changing as indicated over the last few decades.

**Response:**

FortisBC's operating environment continues to evolve and change over time. While some of the influences noted in the preamble may have been present for the last few decades, their degree of influence on the Utilities changes over time and are reaching a level where they will have a transformative impact on our operations. For example:

- Climate policy aimed at reducing GHG emissions is now a consistent and widespread focus at all levels of government;
- The need to engage with stakeholders and in particular, Indigenous communities, continues to transform as federal and provincial governments increase their commitment and support for the implementation of the United Nations Declaration on the Rights of Indigenous Peoples; and
- Increased requirements for mobile computing, increased demand for information, and increased activism requires that cyber and physical security programs continue to evolve.

These influences are discussed in detail in Section B1 of the Application.

7.9 Please confirm or otherwise explain that the Utilities are competent and able to manage all six of these issues.

**Response:**

FortisBC confirms that it is competent to manage these issues. To manage the issues, FortisBC requires a supportive regulatory environment and, for that reason, has proposed the MRPs, which are specifically designed to assist in addressing the challenges and opportunities in the operating environment.

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

**Response:**

Please refer to the responses to CEC IRs 1.6.6 and 1.7.1.

Please also refer to the responses to BCUC IRs 1.96.1 and 1.96.2.

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.

**Response:**

The proposed targeted incentive rewards are not expected to change employee compensation structures.

7.11.1 If yes, please provide the particulars of the proposed sharing or incentives.

**Response:**

Please refer to the response to CEC IR 1.7.11.

**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.

**Response:**

Appendix B6: FEI Report on Major Initiative During the PBR Term describes examples of multi-year initiatives that FEI implemented during the term of the Current PBR Plan. The longer term planning horizon provided by the Current PBR Plans (i.e., five years) allowed FortisBC to implement different projects over the course of the Current PBR Plan term, prioritizing the projects and ensuring an adequate amount of time to plan and undertake the required work to achieve the projects' efficiencies. Additionally, a longer term (i.e., five years) provides a reasonable period of time for the financial benefits of the initiatives to be shared between the customers and FortisBC.

Similarly for capital spending, as discussed in past FEI Annual Reviews[4], the longer term planning horizon for the Current PBR Plan provides FEI with more certainty in funding and the opportunity to initiate projects earlier in the planning process in order to better assess and schedule resourcing requirements for design and construction. Projects and programs are prioritized to allow for early engineering and design, and optimized procurement of equipment and contracting services. This flexibility to prioritize projects over multi years of the Current PBR Plan allows FEI to manage it capital investment plan to maintain a safe and reliable gas delivery system and acceptable risk profile for the system, optimize resources and spending, and achieve efficiencies.

[4] FEI Annual Review of 2019 Delivery Rates, page 12.

For FBC, the predictability and flexibility provided by the longer term of the Current PBR Plan has enabled it to achieve greater capital efficiencies. For example, by having the ability to enter into multi-year agreements with vendors/contractors that may not otherwise be possible under a shorter term rate making agreement, FBC has been able to achieve cost efficiencies. An example of this was discussed at the FBC Annual Review for 2018 Rates Workshop on the topic of Capital Efficiencies[5] where Mr. Marshall explained:

> I'd also like to share the following example regarding FortisBC's distribution condition assessment program, as it shows the benefits of leveraging the predictability offered by PBR. In 2016, FortisBC was presented with an opportunity to seek proposals from vendors for their distribution condition assessment program for a three-year period spanning from 2017 to 2019. Following the RFP process, FortisBC entered into an agreement with one of its contractors for the three-year period. In addition, the agreement included the two one-year optional extensions for 2020 and 2021. By providing the contractor with a multi-year commitment, the contractor was willing to make investments that it would not otherwise had. This resulted in annual savings of approximately $300,000, or 25 percent annually, until the end of the PBR period, and potentially in to 2021 [dependent] on whether or not those optional extensions are taken.
>
> In summary, FortisBC has pursued three avenues in order to achieve cost efficiencies on capital work. These are economies of scope, economies of scale, and risk management. Furthermore, FortisBC has leveraged the predictability, and the flexibility afforded by PBR in order to achieve greater cost efficiencies.[6]

8.2 Please describe the characteristics of a comprehensive RRA.

**Response:**

A comprehensive RRA is one that affords the opportunity to fully examine the adequacy of the utility's revenue requirements at the level of each cost account. In the case of FortisBC's Current PBR Plans and proposed MRPs, the majority of cost accounts are determined annually on a cost of service basis in each Annual Review proceeding. In setting the framework for the multi-year plans, as in the 2014 PBR proceeding and the current MRP proceeding, comprehensive examinations are then necessary only to determine the base values of the formulaic or indexed (non-cost of service) components of rates. These are the O&M expense

[5] FBC Annual Review of 2018 Workshop Presentation, slide 16.
[6] FBC Annual Review of 2018 Rates Workshop Transcript, pages 66 and 67.

and capital expenditures in the 2014 PBR Plans and the O&M expense and Growth capital expenditure components of the proposed MRPs.

FortisBC's approach to setting Base O&M Expense is an incremental approach that builds from the efficiencies gained during the Current PBR Term. FortisBC uses its 2018 actual expenditures as the starting points for the O&M Base amounts as they are representative of the current levels of O&M funding required to operate its systems safely and reliably, maintain its overall service quality levels, and reflects the cost pressures that the Companies have been managing and the savings that have been achieved in recent years. Known and measurable adjustments are incorporated as appropriate, and these are quantified and described in detail in Sections C2.4 and C2.5 of the Application.

Similarly, the derivation of FEI's unit cost for Growth capital expenditures, which is the only other component not based on annual cost of service forecasts under the MRPs, is quantified and described in detail in Section C3.3.1.

8.3 Please describe the benefits of a comprehensive RRA.

**Response:**

The primary benefits of comprehensive examinations of revenue requirements are transparency of costs and other aspects of a utility's operations for the regulator and stakeholders, and the assurance of an opportunity for the utility to recover prudently-incurred costs and a return of and on its capital.

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.

**Response:**

Please refer to the response to CEC IR 1.8.2, which explains that the proposed MRPs are characterized by a comprehensive assessment of the non-cost of service revenue requirements accounts being undertaken in this proceeding and that the assessment of the remaining items occurs in each Annual Review. This approach ensures that the indexed components of the MRPs are set using fully justified base amounts and that the cost of service components are examined independently for each test year.

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.

**Response:**

Regulatory efficiency and optimizing the cost-effectiveness of the Utilities are not mutually exclusive objectives. As explained on page B-41 of the Application, a 2017 study conducted by Dr. Lowry et al and sponsored by Lawrence Berkeley National Laboratory (LBNL), indicates that the regulatory efficiency attributed to MRPs can lead to better management of utility resources. The same report found that more frequent rate cases are statistically correlated with poorer utility productivity and higher customer costs[7]:

> Both lines of research suggest that the frequency of rate cases can materially affect utility cost performance. For example, the multifactor productivity (MFP) growth of the electric, gas and sanitary sector of the U.S. economy was materially slower than that of the economy as a whole from 1974 to 1985, when rate cases were frequent due in part to adverse business conditions, than in the early postwar period, when favorable business conditions encouraged less frequent rate cases. We also found that the MFP growth of utilities that operated for many years without rate cases, due to MRPs or other circumstances, was significantly more rapid than the full sample norm. Cumulative cost savings of 3 percent to 10 percent after 10 years appear achievable under MRPs.

Referring to the same study, a 2017 article titled "Fewer rate cases mean better utility performance and growth, LBNL finds" published in UtilityDive website[8] concluded:

> It is not simply that customers pay the costs of regulatory proceedings, which can be substantial. More significantly, it is that frequent rate cases require a utility to focus on the near term and keep it from seeing the opportunities in innovation that lead to bigger rewards over the long term.

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[7] Lawrence Berkeley National Laboratory (2017); "State Performance-Based Regulation Using Multiyear Rate Plans for U.S. Electric Utilities", page. V.

[8] Trabish (2017), "Fewer rate cases mean better utility performance and growth, LBNL finds", retrieved from the following link: https://www.utilitydive.com/news/fewer-rate-cases-mean-better-utility-performance-and-growth-lbnl-finds/448700/.

**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.

**Response:**

Not confirmed.

The purpose of the proposed MRPs, similar to the current PBR Plans, is to provide market-like incentives (under the proposed MRPs, this includes traditional and non-traditional incentives as described in Section 8 of the Application) and leave the utilities' management to make decisions that lead to benefits measured by the level of customer rates, bottom line earnings and progress in addressing some of the challenges and opportunities in the operating environment. It is not the purpose to impose the type of additional regulatory review implied by the need for the utility to demonstrate how the benefits were achieved (i.e., information regarding the cost effectiveness of its programs and responses to opportunities). In fact, using this as a standard would effectively reduce the benefits through added regulatory oversight and thus contradict a fundamental purpose of PBR and FortisBC's proposed MRPs.

Additionally, the regulatory framework in this province, whether under a cost of service or PBR or hybrid, is for the BCUC to set rates based on forecasts, and for a utility to manage its own affairs within its budgets. FortisBC's approach under the proposed MRPs is consistent with that fundamental framework.

Interveners will have a forum in the proposed Annual Review process to continue to assess the ongoing success of the proposed MRPs. The Annual Review process has worked well for the Current PBR Plans and FortisBC believes this same Annual Review process will work for the proposed MRPs.

9.1.1 If not confirmed, please explain why not.

**Response:**

Please refer to the response to CEC IR 1.9.1.

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.

**Response:**

In relation to the first part of the question about setting formulas for ratemaking, FortisBC confirms that the Utilities Commission Act states:

> 60 (1) In setting a rate under this Act
>
> (a) the commission must consider all matters that it considers proper and relevant affecting the rate,
>
> (b) the commission must have due regard to the setting of a rate that
>
> (i) is not unjust or unreasonable within the meaning of section 59,
>
> (ii) provides to the public utility for which the rate is set a fair and reasonable return on any expenditure made by it to reduce energy demands, and
>
> **(iii) encourages public utilities to increase efficiency, reduce costs and enhance performance,**
>
> (b.1) the commission **may use any mechanism, formula or other method of setting the rate that it considers advisable**, and may order that the rate derived from such a mechanism, formula or other method is to remain in effect for a specified period…[emphasis added]

In relation to the part of the question starting "without providing incentives or other rewards to the Utilities beyond the opportunity to earn their fair rate of return", FortisBC first notes section 60(1)(b)(iii) of the Utilities Commission Act quoted above.

Further, if FortisBC understands the intent of the question, it is based on the concept that cost of service ratemaking is a type of ratemaking approach that does not provide incentives or other

reward beyond the opportunity to earn their fair return. However, all ratemaking structures provide some form of incentive. For example, the Alberta Utilities Commission in Decision 2012-237 explained the incentives under cost of service regulation, as follows:

> If the company is able to provide service for less than it had forecast during the previous two years, or if billing units (the number of customers, electricity or natural gas use, etc.) are greater than were forecasted, the company is permitted to keep the extra revenue as extra profit in those years. However, the forecast revenue requirement and rates for the next two years are to take into account the actual results from the previous two years. In this way, customers receive the benefit of the company's improved productivity (lower costs and higher billing units) from the previous period in the rates determined for the next two years. If the company then improves its productivity in these next two years, those benefits will again be passed on to customers in the next period, etc. Of course, the actual results for the immediate prior year are not available to assist in assessing the forecasts for the two test years of a new test period. This means that any efficiency gains in the prior year may not be fully incorporated into those forecasts.[9]

The BCUC commented on the incentives under cost of service ratemaking on page 14 of the FEI 2014 PBR Decision as follows:

> The interveners may take comfort in the fact that one of its advantages is that it requires more frequent rebasing and hence there is a limit on the time before any sustainable savings directly impact customer rates. However, with COS regulation, there is little incentive to make sustainable efficiency gains and even less so when an investment is required. In fact, perversely, the utility may be incented to make unsustainable savings.

Recognizing that all ratemaking approaches provide incentives, FortisBC's proposed MRPs provide a set of traditional and targeted incentives that align with the interests of customers and the public and that are responsive to the challenges and opportunities in FortisBC's operating environment.

[9] Decision 2012-237, Rate Regulation Initiative: Distribution Performance-Based Regulation (September 12, 2012), paragraph 10.

**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:BC[105].
>
> 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:
>
> $$I_t = 55\% \ x \ AWE{:}BC_{t-1} + 45\% \ x \ CPI{:}BC_{t-1}$$
>
> *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.

**Response:**

Please refer to the responses to BCUC IRs 1.22.11 and 1.22.11.1.

10.2 Please confirm that the Utilities intend to use the same sources for inflation assessment as those approved in the earlier PBRs.

**Response:**

Confirmed.

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.

**Response:**

As in the Current PBR Plans, the July to June values were selected because at the time that FortisBC files its Annual Review applications, around early August each year, the July to June values are the most current whole year available. While there is a half-year lag that is unavoidable, both CPI and AWE inflation have not varied greatly year over year.

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.

**Response:**

Please refer to the response to CEC IR 1.10.3.

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.

**Response:**

The information requested is provided in the table below.

The 55 percent labour/ 45 percent non-labour is based on the 2018 (rounded) combined weighting for FEI and FBC in 2018, which is 54 percent labour/ 46 percent non-labour. FortisBC changed its accounting for intercompany charging in 2018 to properly reflect intercompany charges as labour instead of non-labour as was previously the case. This resulted in an increase in the proportion of labour for both utilities. For this reason, the pre-2018 labour/non-labour proportions are not appropriate for use in the MRP formula. Although the labour component for FBC is higher than for FEI, FortisBC proposes to use a single formula for both utilities based on the combined weightings for simplicity.

The impact of using the combined weighting for the formula calculation is small for both Utilities, compared to using separate weightings. For comparative purposes, FortisBC compared the results of replacing the combined 55 percent labour/ 45 percent non-labour (used in the Current PBR Plans as well as the proposed MRPs) with the individual 2018 weightings from the table below. For FEI, the change to 52 percent labour/ 48 percent non-labour would have decreased formula O&M for 2019 by 0.08 percent, or $0.201 million. For FBC, the change to 60 percent labour/ 40 percent non-labour would have increased formula O&M for 2019 by 0.16 percent, or $0.088 million.

| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | FEI | | | | | |
| Labour | $ 96 | $ 103 | $ 108 | $ 132 | $ 130 | $ 138 | $ 134 | $ 129 | $ 125 | $ 142 |
| Non-Labour | 123 | 134 | 138 | 123 | 135 | 119 | 126 | 131 | 134 | 129 |
| Gross O&M | $ 219 | $ 237 | $ 246 | $ 254 | $ 265 | $ 258 | $ 260 | $ 259 | $ 260 | $ 272 |
| | | | | | | | | | | |
| Labour | 44% | 43% | 44% | 52% | 49% | 54% | 51% | 50% | 48% | 52% |
| Non-Labour | 56% | 57% | 56% | 48% | 51% | 46% | 49% | 50% | 52% | 48% |
| | | | | | FBC | | | | | |
| Labour | $ 33 | $ 32 | $ 35 | $ 34 | $ 33 | $ 38 | $ 36 | $ 33 | $ 32 | $ 35 |
| Non-Labour | 13 | 14 | 18 | 20 | 23 | 22 | 22 | 23 | 24 | 23 |
| Gross O&M | $ 46 | $ 46 | $ 53 | $ 54 | $ 57 | $ 60 | $ 58 | $ 56 | $ 56 | $ 57 |
| | | | | | | | | | | |
| Labour % | 71% | 70% | 65% | 63% | 59% | 64% | 62% | 59% | 57% | 60% |
| Non-Labour % | 29% | 30% | 35% | 37% | 41% | 36% | 38% | 41% | 43% | 40% |
| | | | | | Combined | | | | | |
| Labour | $ 129 | $ 135 | $ 143 | $ 165 | $ 163 | $ 176 | $ 170 | $ 162 | $ 157 | $ 177 |
| Non-Labour | 136 | 148 | 156 | 142 | 158 | 141 | 148 | 153 | 158 | 152 |
| Gross O&M | $ 265 | $ 283 | $ 299 | $ 308 | $ 322 | $ 318 | $ 318 | $ 315 | $ 315 | $ 329 |
| | | | | | | | | | | |
| Labour % | 49% | 48% | 48% | 54% | 51% | 56% | 53% | 51% | 50% | 54% |
| Non-Labour % | 51% | 52% | 52% | 46% | 49% | 44% | 47% | 49% | 50% | 46% |

10.6 What, if any, alternatives to AWE and/or CPI did the Utilities consider? Please discuss.

**Response:**

The Utilities did not consider any alternatives to CPI/AWE. Both CPI and AWE are the BC indices published by Statistics Canada and, as noted in the response to CEC IR 1.10.3, the indices do not vary greatly year over year. Further, they have already been approved for use by the BCUC, and FortisBC's objective with the MRPs was to make changes only in those areas that needed to be addressed.

## 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 customers[106] 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 2018[109]. 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.

**Response:**

When preparing this response FEI identified an omission in Table C1-2 from the Application. The table omitted the additional costs that the amalgamation of FEVI and FEW caused on the unit cost per SLA. When including those additional costs the Growth capital recalculated using Actual Additions increases. FEI has provided a revised Table C1-2 below followed by the response to this question, and which will be included in an Errata to be filed in the near future.

| Growth Capital $000 | 2014 | 2015 | 2016 | 2017 | 2018 | Total |
|---|---|---|---|---|---|---|
| Approved Growth Capital using lagging growth | 21,478 | 28,480 | 33,263 | 33,477 | 37,485 | 154,183 |
| Growth Capital recalculated using Actual Additions | 30,508 | 43,042 | 42,997 | 55,457 | 58,414 | 230,418 |
| Difference | (9,031) | (14,563) | (9,734) | (21,979) | (20,929) | (76,236) |

Please see revised Table C1-2 below with the additional line for actual Growth capital during the years 2014 to 2018.

| Growth Capital $000 | 2014 | 2015 | 2016 | 2017 | 2018 | Total |
|---|---|---|---|---|---|---|
| Approved Growth Capital using lagging growth | 21,478 | 28,480 | 33,263 | 33,477 | 37,485 | 154,183 |
| Growth Capital recalculated using Actual Additions | 30,508 | 43,042 | 42,997 | 55,457 | 58,414 | 230,418 |
| Difference | (9,031) | (14,563) | (9,734) | (21,979) | (20,929) | (76,236) |
| Total Growth Expenditures | 34,677 | 45,776 | 47,500 | 59,543 | 82,884 | 270,380 |

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.

**Response:**

Yes. Utilities with lumpy capital plans that are not suitable for a formula approach may propose to forecast the capital expenditures).

For instance, and as explained on page B-72 of the Application, Ontario's custom incentive rate-setting (IR) Plan option is often used by utilities with significantly large and highly variable capital plan profiles not suitable for formulas. Therefore, the capital expenditures under these plans are often forecast. The Enbridge Gas Distribution 2014-2018 MRP (prior to amalgamation with Union Gas) is one recent example that is included in Appendix C4-2, Jurisdictional Comparison. In this case, the forecasts are still subject to incentives. Another example is the Hydro Quebec Transmission MRP which also excludes capital investments from formula and uses a forecast approach. Prior to the approval of its revenue cap plan, Hydro Quebec

Distribution also used to forecast the capital while applying an index formula to the O&M expenses. In addition, as explained in Appendix C4-2, under New York's forecast MRP approach, the capital expenditures are forecast. For more information please refer to Appendix C4-2 of the Application.

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.

**Response:**

FortisBC interprets the reference to "capital spending is cost-efficient on a cost-benefit basis" as meaning incurring capital expenditures that result in financial payback/return to ratepayers and not necessarily capital expenditures that are considered cost efficient by comparing expenditures to a reference point (i.e., allowed funding, historical spending, other utilities spending).

As discussed on page C-55 of the MRP Application, due to the non-repetitive nature of some capital work, efficiencies and savings achieved in one project are not necessarily applicable to the next project, and may be negated by cost pressures elsewhere. Further, not all capital projects result in quantifiable financial benefits and instead are completed for other reasons such as to maintain safety and reliability of the delivery system.

This makes the task of identifying appropriate metrics to measure cost efficiency for capital spending on a cost-benefit basis challenging.

Despite the challenges noted in identifying appropriate metrics, FortisBC believes that it is incurring capital expenditures in a prudent manner and that are considered cost efficient and in the best interests of ratepayers. This is evidenced by the robust Capital Planning Process and the Asset Investment Planning Process that the Companies use and as described on pages C-52 to C-55 of the Application. As part of the proposed MRPs, interveners will also be provided the opportunity as part of the Annual Review process to review the Companies' capital expenditures.

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.

**Response:**

Apart from the evidence provided in the Annual Reviews supporting the unit cost increase in Growth capital, it is clear from the correlation between Growth capital and actual gross customer additions that there is a significant linear relationship between the Growth capital required and actual gross customer additions. Although correlation does not necessarily denote cause and effect, there is no other reason why actual Growth capital expenditures correlates so well with the actual gross customer additions except for the effect that gross customer additions has on Growth capital.

Any time that a component of the Growth capital funding mechanism creates a difference between actual gross customer additions and the gross customer additions used in the mechanism, under (and over) funding can occur. The lagging growth factor and the 50 percent reduction to the growth factor in the current formula create this difference, and the ability for the mechanism to adequately fund Growth capital is reduced. In Section B2.3.2.1.1 of the Application, the correlation between formula Growth capital and actual gross customer additions (new attachments) is shown to be 0.79, which reflects that the current formula funding Growth capital is misaligned with the required capital.

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.

**Response:**

There is no incentive for the Utilities to overspend on Growth capital. Under the Current PBR Plans the Utilities assume the risk[10] within the dead band so there is no incentive to overspend. Under the proposed MRPs, the Utilities have the same risk, but not bounded by a dead band and therefore increased.

[10] Shared 50/50 with customers through the ESM.

**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.

**Response:**

O&M costs directly attributable to capital activity, such as connecting a natural gas customer, and which are not directly charged to capital projects, are accounted for in the overhead capitalized rate. These costs are not tracked separately for each customer and therefore FEI is not able to ascertain costs for each customer group as requested in the question. The overhead includes, but is not limited to, activities such as planning and design, operations support and crew supervision. Please refer to page D-53 of the Application for details of the capitalized overhead allocation.

Please also refer to the response to BCUC IR 1.17.7 which discusses why the proposed Index-Based formulaic approach is reasonable and appropriate for determining allowed O&M funding for the proposed MRPs.

12.2 Please provide the directly variable capital costs for connecting a residential customer, a commercial customer and an industrial customer.

**Response:**

The directly variable capital cost for connecting all of the above noted customer types fall into categories of Mains, Services and Meters. Mains are extensions to the distribution system

generally located under a public way; services are extensions to the distribution system from a main to a meter set generally located on private property; and meters are the meter sets located at a customer's premises. The cost for mains and services typically include amounts for labour (which include costs for contact centre resources speaking with customers and processing orders), materials, vehicles and transportation, heavy equipment, planner costs, employee expenses, government, consulting and land costs, and contractor costs where contractors are used. The cost for meters generally includes amounts for the meter set materials and installation.

Some of these costs are not tracked on a per customer basis; rather they are tracked per installed main or service. Each new service, and especially each new main extension, may serve more than one customer and/or more than one type of customer. FEI currently has no means of attributing installed main costs back to individual new customers and therefore cannot determine a typical installed cost for residential, commercial and industrial customers. However, FEI has provided the overall unit costs of Growth capital in its response to BCOAPO IR 1.54.2.

12.3 Please provide the number of FEI's customers and customer connections by rate class for each of the last 15 years.

**Response:**

The table below shows customer connections, that is gross customer additions (new customers that required a meter and service) by rate class for the period 2012 to 2018. FEI is not able to extract similar data for the period prior to 2012 as FEI started recording gross customer additions in this format starting in 2012.

| FEI_FTN Gross Customer Additions | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|
| RS 1 | 11,214 | 10,084 | 12,173 | 14,804 | 15,783 | 19,242 | 20,570 |
| RS 2 | 879 | 792 | 1,328 | 1,312 | 1,379 | 1,478 | 1,774 |
| RS 3 | 52 | 32 | 68 | 90 | 96 | 97 | 87 |
| RS 23 | 51 | 16 | 4 | - | 1 | 2 | 2 |
| Industrial | 9 | 1 | 10 | 7 | 2 | 6 | 6 |
| NGT | | | | | | | |
| Company Use | 1 | 1 | - | - | - | - | - |
| **Total** | **12,206** | **10,926** | **13,583** | **16,213** | **17,261** | **20,825** | **22,439** |

*Note: Includes company use and Fort Nelson customers.*

FEI customer counts from 2004 through 2018 are shown below:

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RS 1 | 782,864 | 796,724 | 809,468 | 825,262 | 836,583 | 844,306 | 853,492 | 860,403 | 854,050 | 863,189 | 873,661 | 886,169 | 897,528 | 910,885 | 930,142 |
| RS 2 | 79,028 | 81,214 | 82,091 | 83,289 | 84,619 | 85,065 | 85,193 | 85,704 | 81,123 | 82,452 | 83,625 | 85,076 | 86,074 | 86,973 | 88,244 |
| RS 3 | 959 | 5,482 | 5,360 | 5,290 | 5,460 | 5,429 | 5,466 | 5,451 | 5,220 | 5,134 | 5,169 | 5,301 | 5,189 | 5,441 | 6,028 |
| RS 23 | 5,869 | 1,038 | 1,206 | 1,303 | 1,306 | 1,348 | 1,406 | 1,433 | 1,520 | 1,529 | 1,522 | 1,724 | 1,803 | 1,712 | 1,648 |
| Industrial | 1,294 | 1,248 | 1,324 | 1,197 | 1,145 | 1,113 | 1,017 | 951 | 954 | 981 | 977 | 976 | 955 | 976 | 1,024 |
| NGT | - | - | - | - | - | - | - | 2 | 5 | 10 | 18 | 31 | 42 | 56 | 44 |
| **FEI Total Customer** | **870,014** | **885,707** | **899,450** | **916,341** | **929,114** | **937,261** | **946,574** | **953,943** | **942,872** | **953,295** | **964,971** | **979,277** | **991,591** | **1,006,043** | **1,027,130** |

Please note that the customer counts per rate class shown above are counted at year end and will not match average customer counts as a result.

12.4 Please provide the forecast number of FEI's customers and customer connections by rate class for the next five years.

**Response:**

Please refer to the response to BCUC IR 1.41.4.

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.

**Response:**

FEI's interprets "the cost for connecting customers" to relate to the total Growth capital expenditure in a given year, as shown in Table C3-1 on Page C-58 of the Application. This expenditure includes the cost of mains, services, meters, distribution system improvements, and growth-related CIAC.

Please note that FortisBC's cost data for the installation of new mains, services and meters is not recorded on a per-connecting customer and per-rate class basis. For example, there can be multiple customers in multiple rate classes that connect to a single main over a number of years making cost tracking and allocation impractical. Accordingly, FEI does not track costs in this manner so is unable to provide average costs by rate class.

However, FEI is able to provide gross customer additions by rate class. Please refer to the response to CEC IR 1.12.3.

Finally, for details relating to the aggregated unit cost of Growth capital for the last 10 years, please refer to the response to CEC IR 1.27.2.

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.

**Response:**

Please refer to the response to BCUC IR 1.41.4.

**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

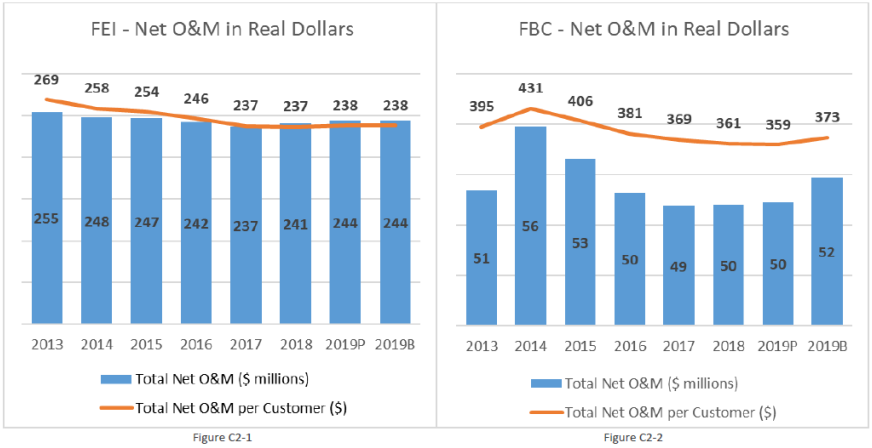



Figure C2-1 Figure C2-2

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.

| | Base | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Correl |
|---|---|---|---|---|---|---|---|---|
| **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** |

**Response:**

Confirmed. In addition, Base O&M Expense is escalated by the weighted AWE/CPI inflation index.

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.

**Response:**

The correlation values provided in the Application were focused on the actual "formula O&M" and not the Total O&M. FortisBC expects Total O&M to have some linear relationship with customer counts; however, compared to the formula O&M, the Total O&M should have a weaker correlation with the average number of customers as it includes various additional cost items such as pension and OPEB, insurance and some exogenous factors that are not well correlated with the change in customers number.

Please refer to the response to BCUC IR 1.17.7 which discusses why the proposed Index-Based formulaic approach is reasonable and appropriate for determining allowed O&M funding for the proposed MRPs.

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?

**Response:**

Please refer to the response to CEC IR 1.13.2.

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.

**Response:**

As demonstrated in the preamble above, the decreasing unit cost discussions in the Application are in relation to real dollars. While using real dollars is appropriate for the purposes of analyzing unit cost trends over time, nominal dollars should be used for any correlation analysis. Using real dollars in correlation analysis can cause illogical results such as negative correlation numbers between the number of customers and the costs. Please refer to the response to CEC IR 1.13.2.

Please refer to the response to BCUC IR 1.17.7 which discusses why the proposed Index-Based formulaic approach is reasonable and appropriate for determining allowed O&M funding for the proposed MRPs.

13.4 Please confirm or otherwise explain that FEI and FBC's O&M is composed of fixed, semi-variable and variable costs.

**Response:**

Confirmed.

13.5 Please identify and quantify FEI's and FBC's fixed, semi-variable and variable O&M costs.

**Response:**

Please refer to the response to BCUC IR 1.17.7 which discusses why the proposed Index-Based formulaic approach is reasonable and appropriate for determining allowed O&M funding for the proposed MRPs.

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.

**Response:**

The correlation analysis was based on the actual formula O&M numbers so the analysis is limited to the years formula was used. Please refer to the response to CEC IR 1.14.5.

Please also refer to the response to BCUC IR 1.17.7 which discusses why the proposed Index-Based formulaic approach is reasonable and appropriate for determining allowed O&M funding for the proposed MRPs.

13.6.1 If no, please explain why not.

**Response:**

Please refer to the response to CEC IR 1.13.6.

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?

**Response:**

Please refer to the response to BCUC IR 1.17.7 which discusses why the proposed Index-Based formulaic approach is reasonable and appropriate for determining allowed O&M funding for the proposed MRPs.

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.

**Response:**

Please refer to the response to CEC IR 1.13.3.1.

13.7.2 If no, please explain why not.

**Response:**

Please refer to the response to CEC IR 1.13.7.1.

13.8 Is the staffing levels of the Utilities directly variable with the number of customers? Please explain.

**Response:**

Over the long run, FortisBC views all of its costs, including labour costs (staffing levels) as related to providing service for our customers. From this perspective, then staffing levels and associated labour costs which compromise a substantial portion of FortisBC's O&M and capital costs, are impacted by the number of customers served.

Staffing levels are affected by a number of factors other than the number of customers served, including the choice of making use of employed staff versus contract personnel. Contract personnel may be used for situations requiring specialized skillsets and knowledge and as a workforce to handle peak resource requirements. The choice of employed staff versus contracted personnel follows established union agreements in effect with the unions, which outline the type of work that is considered within the jurisdiction of unions. Additionally, staffing levels may also fluctuate depending on the nature (i.e., sustainment capital) and the significance (i.e., investment level) of the capital investment programs.

Due to a number of factors including the ones discussed above, it is difficult to quantify a causal relationship between the number of customers served and staffing levels (labour costs) for FortisBC.

13.9 Please provide the number of staff that FEI has had over the last 10 years.

**Response:**

Please refer to the response to CEC IR 1.15.1 providing full-time equivalents (FTEs) which is representative of staffing levels for FEI.

13.10 Please provide the number of FEI's customers over the last 10 years.

**Response:**

FEI's average customers for the last 10 years are as follows:

2018: 1,016,353
2017: 997,380
2016: 983,807
2015: 968,766
2014: 959,196
2013: 945,880
2012: 939,121
2011: 931,017
2010: 922,518
2009: 913,498

13.11 Please provide the number of staff that FBC has had over the last 10 years.

**Response:**

Please refer to the response to CEC IR 1.15.1 providing full-time equivalents (FTEs) which is representative of staffing levels for FBC.

13.12 Please provide the number of FBC customers over the last 10 years.

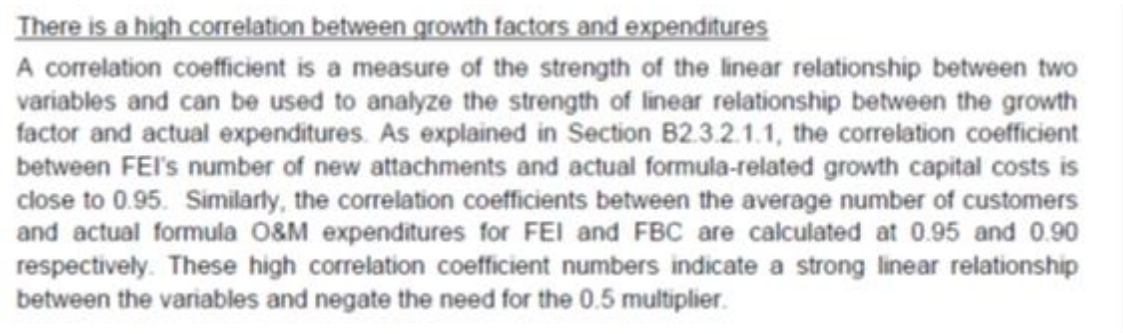
**Response:**

FBC's average customers for the last 10 years are as follows:

2018: 137,300
2017: 134,246
2016: 132,480
2015: 131,016
2014: 129,525
2013: 128,557
2012: 113,484
2011: 112,669
2010: 111,611
2009: 110,381

FBC's direct customers increased by approximately 15,000 due to FBC's purchase of the utility assets of the City of Kelowna effective March 31, 2013.

**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.

**Response:**

The correlation analysis performed was based on the average number of customers and actual formula O&M which excludes items such as pension and OPEB costs, insurance, MRS, etc (all the items that were excluded from the O&M formula).

14.2 Please provide the net customer additions correlation and the net O&M per year for both Utilities.

**Response:**

The year-over-year change in Actual O&M correlated against the net customer additions (which is the year over year change in total customers) is -0.03 for FEI and 0.50 for FBC.

14.3 How many datapoints did FEI and FBC use to develop the correlation?

**Response:**

The Utilities used six data points 2014 through 2018 actuals and 2019 projected.

14.4 Please confirm or otherwise explain that a correlation of 0.95 and 0.90 implies no cause and effect.

**Response:**

The Pearson correlation coefficient is used to quantify the direction and strength of the linear association between two variables. The correlation analysis on its own, however, does not necessarily confirm a causal relationship.

The first step before conducting any correlation analysis is to establish the causal relationship between the dependent and independent variables. In this case, the causal relationship between customer counts and utilities' O&M expenditures is well-established and recognized by all utility practitioners. This is particularly true for utilities such as FEI with a large residential customer base.

The next step after establishing the causal relationship is to measure how well correlated the two variables are and understand if the change in the independent variable can explain the change in the dependent variable. In this context, the coefficient of correlation, or r, indicates the strength and direction of the correlation. Further, the coefficient of determination, or $r^2$, calculated as the square of the correlation coefficient, provides the proportion of the variance (fluctuation) of one variable that is predictable from the other variable. For instance, in a perfect correlation scenario both the coefficient of correlation and the coefficient of determination are 1 which would imply that 100 percent of variations in the dependent variable is explained and accounted for by its linear relationship with the independent variable.

The data can then be modeled into a regression equation for additional analysis. The slope of the regression equation indicates the predicted change in the dependent variable (increase if the slope is positive; decrease if the slope is negative) for a one-unit increase in the independent variable.

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.

**Response:**

The discussion of correlation coefficient and the values for this measure provided on page C-9 of the Application were used to rebut the statements made in the 2014 PBR Decision that the

relationship between the growth factor and the costs are non-linear. The correlation analysis shows that there is in fact a strong linear relationship between the growth factor and costs.

In order to respond more fully to the question FortisBC must first explain its understanding of what is meant by a 1:1 relationship. In FortisBC's view, a 1:1 relationship is best characterized by the expectation that the per customer O&M cost increase arising from adding new customers is the same as the average O&M per customer embedded in the Base O&M. With that understanding FortisBC agrees that, although a 0.90 or 0.95 correlation coefficient strongly support a linear relationship, they do not necessarily imply a 1:1 relationship. However, as explained further in the response to BCOAPO IR 1.23.1, the regression analysis for FEI O&M and FBC O&M versus their respective average customer counts over the 2014-2019 PBR term in fact supports a 1:1 relationship (although neither utility is exactly 1:1) and supports FortisBC's proposal in the Application to eliminate the 50 percent scaling factor applied to O&M.

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.

| | Base | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Correl |
|---|---|---|---|---|---|---|---|---|
| **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 |

**Response:**

In the above example, the formula used to calculate the y-variable can be expressed as (Base $OM_{t-1}$) + 0.05 * (customer $count_t$ – customer $count_{t-1}$). As can be seen, the Base O&M in this formula is variable.

Regardless, FortisBC agrees that a high correlation result can be obtained from a variety of engineered numbers. However, FortisBC has used actual results to produce its correlation coefficients. As explained in the response to CEC IR 1.14.4, the first step before doing any correlation analysis is to establish a causal relationship between the variables studied. Without this important first step, the correlation numbers are not indicative of anything in particular other than two variables are correlated.

Further, as explained in the response to BCUC IR 1.17.7, FortisBC can agree that in the short-term some of its O&M expenses may be fixed. However, the majority of fixed O&M costs are already accounted for since the O&M index formula applies to the average O&M unit cost which reflects the fixed costs. During the MRP term, some of the cost pressures may go above the average cost (sometimes additional cost are incurred without adding a single customer), some are at the average cost rate and some may be lower than the average cost. The correlation results, however, indicate that most of the variations in the O&M costs can be explained by the variations in the number of customers and that there is no particular need to adjust the unit cost index formulas.

**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.

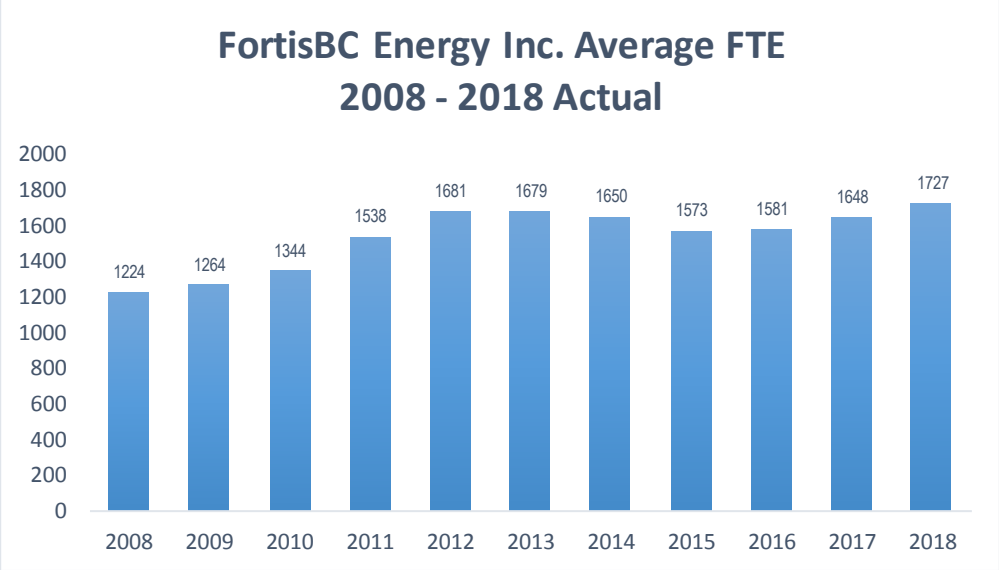
**Response:**

Provided below are the average FTEs for FEI and FBC from 2008 to 2018. The average FTE count is calculated using the average monthly FTEs of the 12-month calendar period (January to December).

FTE includes all current (active) full-time regular, full-time temporary (FTT), part-time regular (PTR) and part time temporary (PTT) employees at the end of the month. Each full-time employee is counted as 1 FTE if the employee meets the criteria of being an active employee at the end of the month. Part-time hours are calculated and converted into FTEs and added to the full-time employees counted to obtain the final FTE count.

***FEI:***

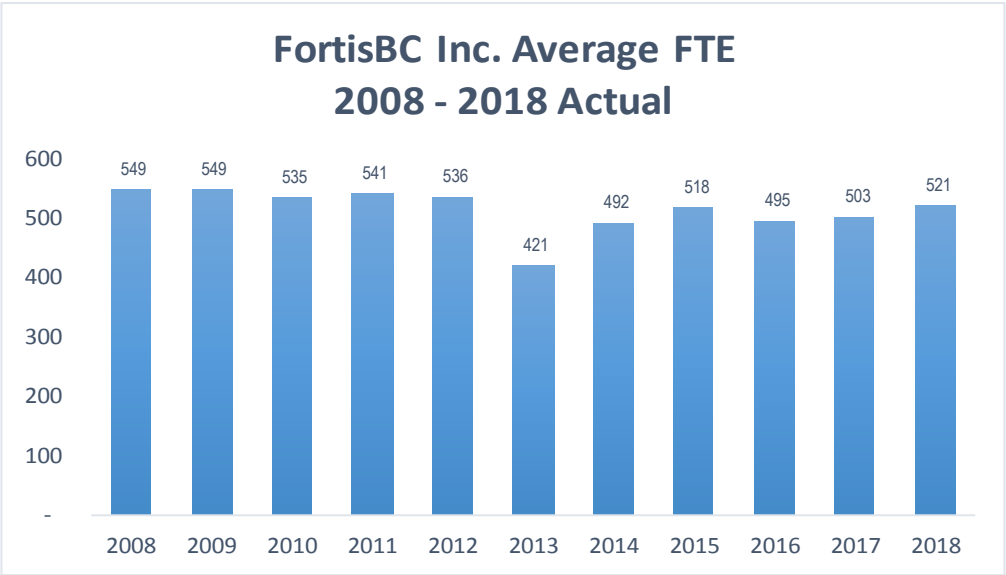
| 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,224 | 1,264 | 1,344 | 1,538 | 1,681 | 1,679 | 1,650 | 1,573 | 1,581 | 1,648 | 1,727 |




In responding to this IR, FBC noticed the table in Appendix A2-2 used year-end customer numbers instead of average customer numbers. The corrected table is provided below, and will be included in an Errata to be filed in the near future.

***FBC:***

| 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|---|---|
| **549** | **549** | **535** | **541** | **536** | **421** | **492** | **518** | **495** | **503** | **521** |




*2013 FTE is affected by IBEW labour disruption.*

**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), AMI, 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.

**Response:**

Confirmed. Please refer to the response to BCUC IR 1.17.7 which discusses why the proposed Index-Based formulaic approach is reasonable and appropriate for determining allowed O&M funding for the proposed MRPs. Customer service costs are included within the discussion of total O&M costs in that response.

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

**Response:**

Succession planning at FEI and FBC is an important strategic function required to ensure a steady stream of high quality talent is available in key areas such as Operations and Engineering to continuously drive operational excellence. FEI and FBC forecast and monitor retirement eligibility which continues to grow and remains unpredictable in timing. FEI and FBC employ a variety of HR practices to prudently manage employee development and succession planning. All succession planning activities are developed based on individual and collective assessments, and are continually updated.

16.2.1 If not confirmed, please explain why not.

**Response:**

Please refer to the response to CEC IR 1.16.2.

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

**Response:**

FEI has not prepared a forecast of employee transition costs over the MRP period.

Please refer to the response to BCUC IR 1.22.4 for a current estimate of the employee transition labour (FTEs) and costs.

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

**Response:**

FEI has monitored retirement eligibility of its workforce on an annual basis since 2008 to determine succession requirements. Along with this review, the annual budgeting process includes the identification of headcount and related costs required to operate the business, the classification of eligible retirements, and rationale for transitionary headcount. This process is continuous and ongoing as part of workforce planning and forecasting.

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.

**Response:**

FBC requires additional staffing for the Supervisory Control and Data Acquisition (SCADA), Outage Management System (OMS) and Advanced Distribution Management System (ADMS) due to significant workload increases over time resulting from the implementation of the OMS/ADMS, and increasing automation at the substations and on distribution feeders. FBC currently has one position dedicated to supporting Operational requirements for SCADA, OMS and ADMS. Over the next five years, FBC anticipates hiring an additional full time position to increase the level of support dedicated to SCADA, OMS and ADMS.

**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.

**Response:**

In general, FortisBC considers the noted O&M formula costs related to keeping the business running and part of the normal course of business. Unless included as part of an uncontrollable event and the associated costs that qualify for Z-factor treatment (refer to Section C4.10 Exogenous Factors), under the Current PBR Plans, changes in the noted O&M costs considered as part of formula O&M are included as part of the actual formula O&M expenditures subject to the 50/50 sharing mechanism.

For example, increases for facilities contracts are captured in actual formula O&M expenditures and subject to the 50/50 sharing mechanism.

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?

**Response:**

Please refer to Section C4.4: O&M, pages C-110 to C-114 of the Application, outlining the proposed treatment of the items that are considered outside of index-based O&M.

Please refer to Section C4.10: Exogenous Factors, pages C-115 to C-116 of the Application, for discussion of the costs that may be eligible for Z-factor treatment. The primary consideration is the costs must be attributable to events outside the control of a prudently operated utility. Any items brought forward for consideration as Z factors will be subject to review and approval by the BCUC at the Annual Review.

Any incremental O&M costs not included in the above two categories would be included in the index-based O&M funding and subject to the proposed 50/50 sharing mechanism. FortisBC's approach to "doing more with the same" is not an avenue for the Companies to seek additional funding from ratepayers. Instead, "doing more with the same" is a productivity approach focused on the efficient allocation of resources within the business to manage the expected cost pressures during the proposed MRPs.

FortisBC is not requesting incremental funding for these costs. Thus, absent a triggering exogenous event, escalation in these costs would be part of managing the index-based O&M.

**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.

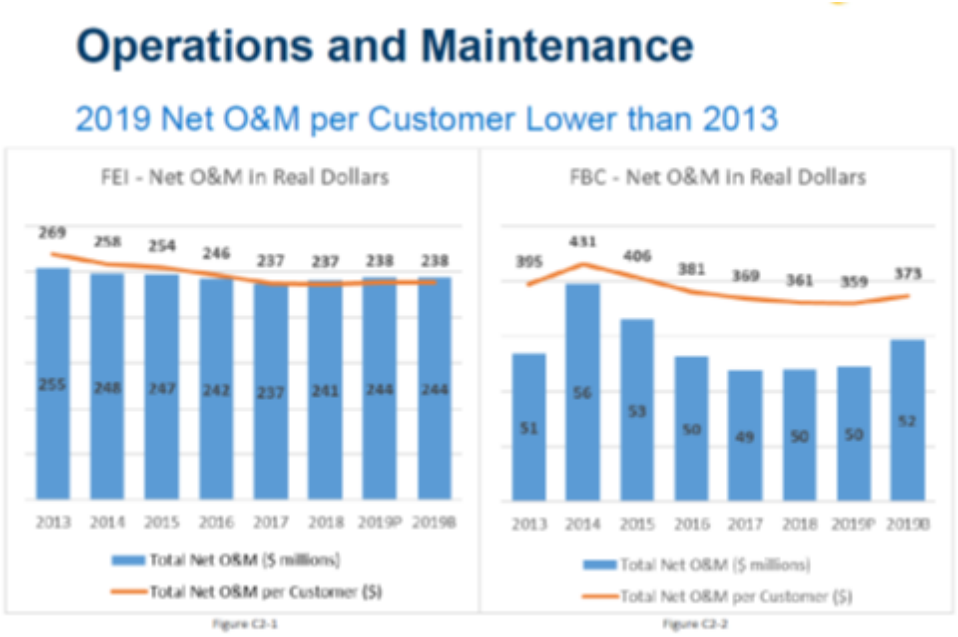
18.1 Why should the Temporary Net Savings not be treated as 'Doing More with the Same'?

**Response:**

Temporary net savings are not the same as "doing more with the same". Temporary net savings are savings that are not sustainable. Examples of temporary net savings are meter reading costs and bad debts expense for FEI which were temporarily reduced in 2018 and that the costs are expected to be higher again in the future.

"Doing more with the same" is a productivity approach focused on the efficient allocation of resources within the business to manage the expected cost pressures during the proposed MRP term. Savings achieved with the "doing more with the same" approach are sustainable.

**19. Reference: Exhibit B-3, page 13**

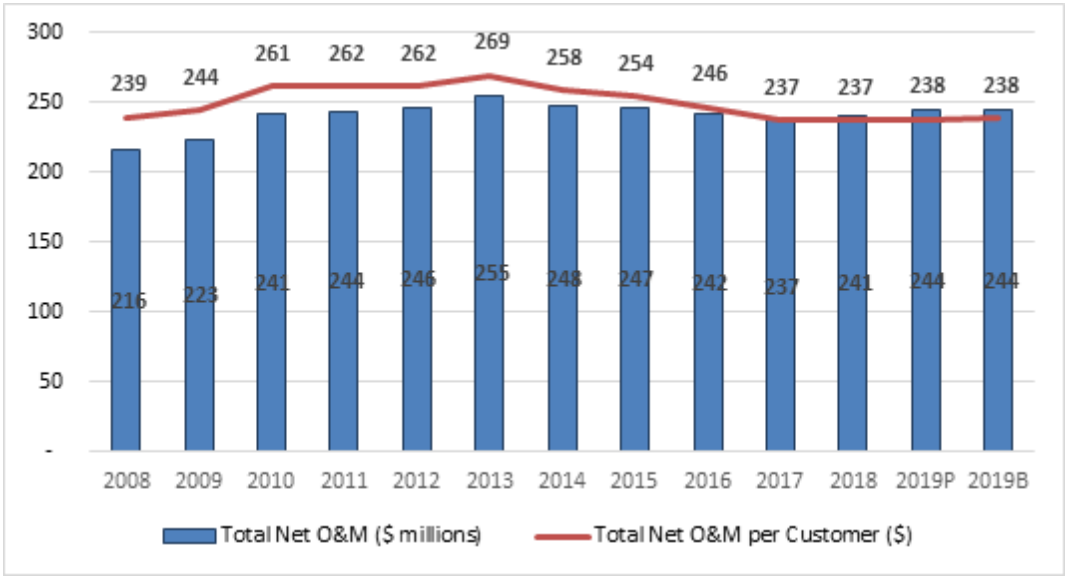



19.1 Please extend both graphs backwards to 2008.

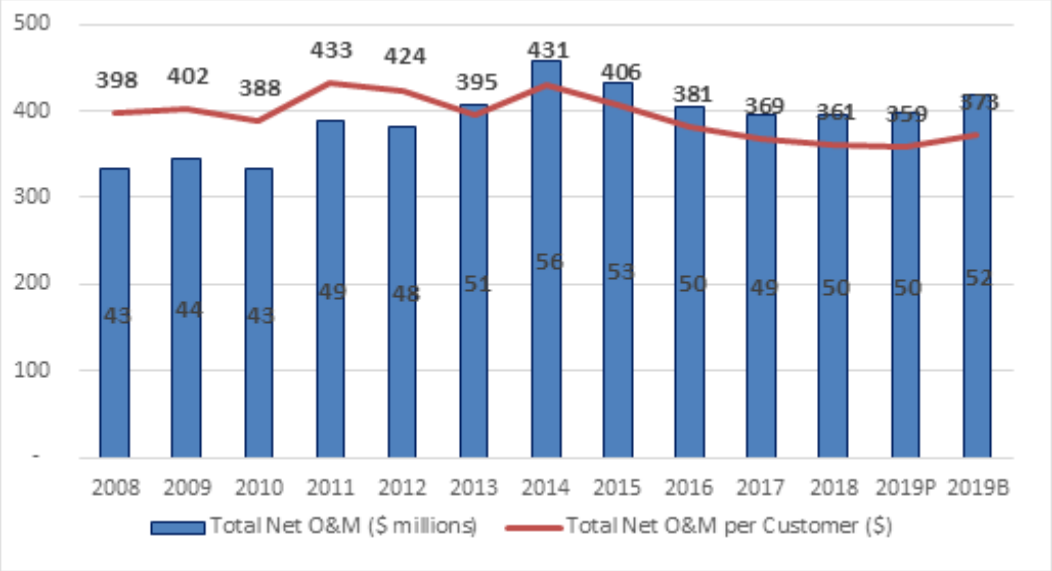
**Response:**

Provided below are the FEI and FBC graphs extended backwards to 2008.

**FEI – Net O&M in Real Dollars:**



**FBC – Net O&M in Real Dollars:**

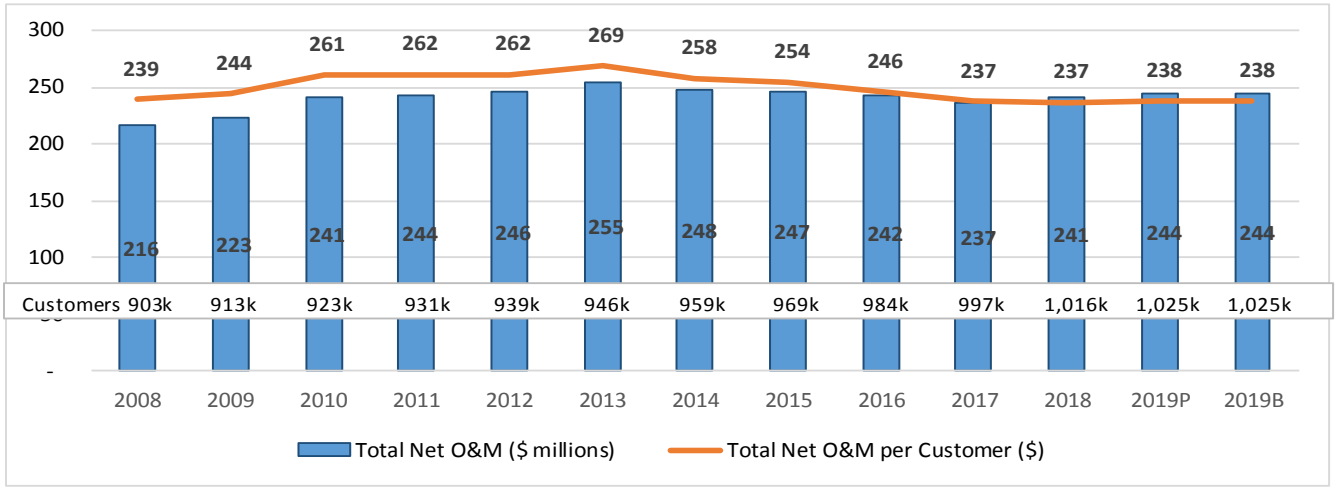



19.2 Please provide the number of customers for each of the Utilities dating back to 2008. Please provide the data set and depict on the graphs.

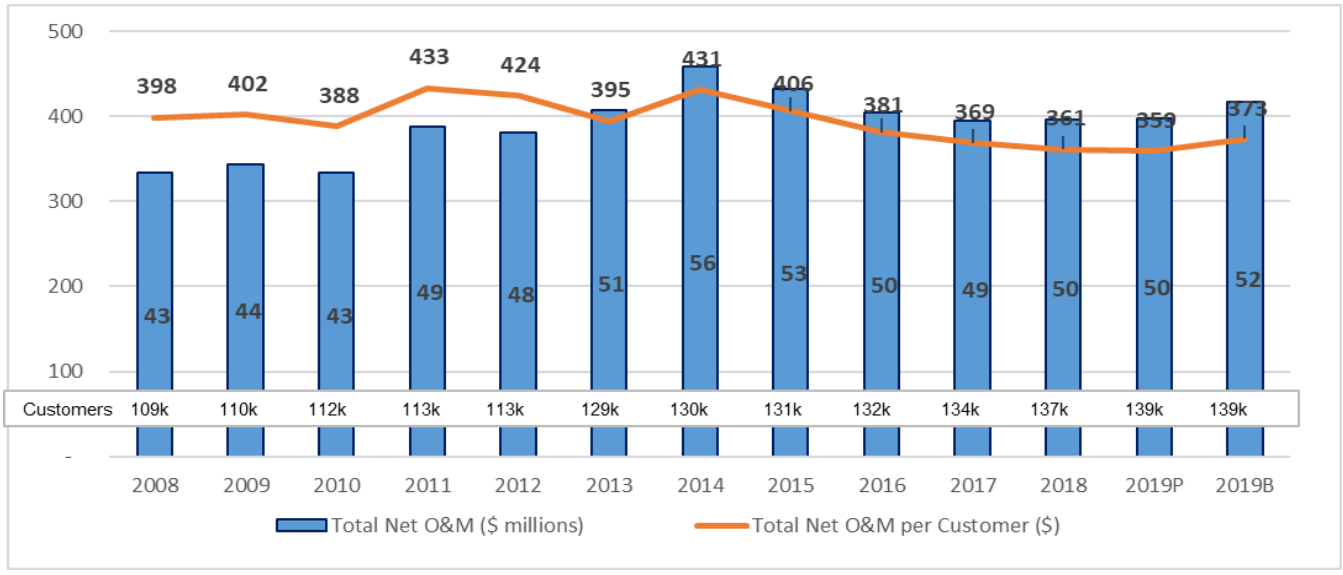
**Response:**

Provided below are the same graphs previously provided, updated to include the number of customers.

| FEI: | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019P | 2019B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Number of Customers | 903,124 | 913,498 | 922,518 | 931,017 | 939,121 | 945,880 | 959,196 | 968,766 | 983,807 | 997,380 | 1,016,353 | 1,024,962 | 1,024,962 |




| FBC | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019P | 2019B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Number of Customers | 108,801 | 110,381 | 111,611 | 112,669 | 113,484 | 128,557 | 129,525 | 131,016 | 132,480 | 134,246 | 137,300 | 138,649 | 138,649 |




19.3 Please confirm that 2019P means 2019 Projected.

**Response:**

Confirmed.

19.4 Please confirm that 2019B means 2019 Base.

**Response:**

Confirmed.

**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 PAS55[138] 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 defendable 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.

**Response:**

To clarify, both FEI and FBC are implementing an asset management strategy, and this strategy is common to both FEI and FBC. FortisBC does not, however, generally refer to the initiative as its "common asset management strategy" and it is not intended to refer to assets that are common to FEI and FBC, although certain assets (such as information systems) are shared.

The objective of pursuing the common asset management strategy is to improve upon maintenance and capital investment decisions, planning, and execution. FortisBC is not expecting any measurable O&M cost savings as a result of this initiative because the time and effort required to identify projects, evaluate alternatives, develop a cost estimate, and provide justification has not measurably changed. The benefits to the common asset management strategy are:

- Capital investments can be compared to inform the overall capital planning and execution to deliver the best value.
- Decisions are supported by the best data available, improving FortisBC's ability to effectively balance decisions on safety, reliability and cost.
- Detailed multi-year capital plans are developed to facilitate resource planning and deployment.

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

**Response:**

Please refer to the response to CEC IR 1.20.1.

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.

**Response:**

Yes, the analysis was completed in the last five years using formula O&M costs. It was completed primarily by existing staff as well as a consultant to facilitate the work and provide subject matter expertise. The total consultant costs incurred for this work from 2013 to 2015 were approximately $306 thousand.

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.

**Response:**

Please refer to the response for CEC IR 1.20.2.

**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 PAS55[138] 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 defendable 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?

**Response:**

The initial planning workshop for the initiative was held at the end of May in 2013. The outcome of the workshop was the development of the four key principles listed in the preamble and the identification and prioritization of opportunities that would help FortisBC achieve those principles. Following the workshop, smaller working groups were established to further develop

those opportunities and make recommendations for implementation. The development and implementation of these initiatives has spanned the Current PBR Plan term. The first initiative to be executed was the organizational changes to place asset management personnel within each region of the service territory, which occurred in 2014. The most recent initiative to be executed as part of the overall strategy is the implementation of the Asset Investment Planning (AIP) tool, as described on page C-53 of the Application, which was initiated in 2017 and is expected to be fully implemented by the end of 2019.

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

**Response:**

FEI and FBC's Asset Management strategy has been discussed in the following:

- Section 4.3.4 on page 210 of the 2014-2018 Multi-Year PBR Plan;
- Section 4.2 of Appendix C4 of the FEI Annual Review for 2018 Rates;
- Section 4.1 of Appendix C4 of the FEI Annual Review for 2019 Rates;
- Section 3.2 of Appendix B of the FBC Annual Review for 2019 Rates; and
- Section C3.2 on page C-52 of the FEI-FBC Application for Approval of a Multi-Year Rate Plan for 2020 through 2024.

**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.

**Response:**

It is appropriate to retain an index-based approach to costs in the context of an MRP where reasonable. O&M expenses performed well under the Current PBR Plans and FortisBC has therefore proposed an indexed mechanism for the MRP. FEI's proposed index-based approach to Growth capital is reasonable as it addresses the issues in the previous Growth capital formula and more appropriately reflects FEI's ongoing Growth capital requirements.

Given the challenges of managing the Utilities' capital requirements within a formula-driven framework, which were thoroughly examined during the PBR Term, FortisBC determined that the more appropriate approach to forecasting capital spending (other than FEI's Growth capital) is a bottom-up cost-of-service approach. The cost drivers under the Current PBR Term did not prove to be an accurate predictor of capital spending requirements. The five-year capital plans included in the Application explain the need for these expenditures at the project or program level.

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.

**Response:**

Yes, FortisBC's capital expenditures are variable to some extent. Year to year variability is generally caused by the number and timing of larger, discrete projects. While FortisBC attempts to levelize its capital expenditures to the extent possible, in order to optimize the resources utilized for capital projects and to avoid rate fluctuations associated with capital spending, it is not possible to eliminate all variability. The extent of capital spending variability for FEI and FBC over the term of the MRPs is shown in the responses to BCUC IRs 1.46.1 and 1.51.1, respectively.

The challenges faced by FEI and FBC in managing capital expenditures on a formula-driven basis are discussed in Section B2.3.2 and in Appendices B8-1 and B8-3. These challenges, which were recognized by interveners during the Current PBR Plan term, as set out in the response to BCUC IR 1.19.4, led to FortisBC's proposal for a cost of service approach to capital spending in this MRP.

**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.

**Response:**

Please see below Table C3-1 for the five years from 2009 to 2013.

| Growth Capital | 2009 Actual | 2010 Actual | 2011 Actual | 2012 Actual | 2013 Actual |
|---|---|---|---|---|---|
| New Customer Mains | 8,690 | 6,517 | 7,260 | 7,103 | 7,706 |
| New Customer Services | 17,778 | 19,046 | 19,104 | 22,850 | 22,936 |
| New Customer Meters | 2,092 | 2,313 | 2,779 | 2,651 | 2,548 |
| System Improvements (DP) | 4,012 | 1,604 | 806 | 535 | 1,079 |
| **Subtotal Growth (Gross)** | 32,573 | 29,480 | 29,949 | 33,138 | 34,270 |
| CIAC | (2,314) | (667) | (2,176) | (2,472) | (3,051) |
| **Total Growth (Net)** | 30,260 | 28,813 | 27,773 | 30,666 | 31,219 |
| **Gross Customer Additions** | 13,094 | 15,762 | 7,693 | 12,206 | 10,926 |
| **Growth Unit Cost (Net)** | 2,311 | 1,828 | 3,610 | 2,656 | 2,857 [11] |

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

**Response:**

Please see below Table C3-4 for the five years from 2009 to 2013:

| | 2009 Actual | 2010 Actual | 2011 Actual | 2012 Actual | 2013 Actual |
|---|---|---|---|---|---|
| Sustainment Capital | 56,937 | 53,029 | 67,086 | 70,178 | 89,051 |
| Other Capital | 27,555 | 23,103 | 27,026 | 25,801 | 42,890 |
| **Total Capital** | **84,492** | **76,132** | **94,112** | **95,979** | **131,941** |

*Note: 2012/13 Other capital expenditures include Biomethane Interconnection Facilities and Upgrader Equipment.*

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

[11] The amended table does not include the adjuster consistent with Table C3-1 in the Application. Gross Customer Additions include Fort Nelson. Upon approval of the methodology for setting the Unit Cost Growth Capital, FortisBC will recalculate the unit cost excluding Fort Nelson from Gross Customer Additions. FortisBC expects that this will create a small increase to the unit cost.

**Response:**

Please see below Table C3-6 for the five years from 2009 to 2013.

**FEI Sustainment Capital Expenditures 2009-2013 ($000s)**

| | 2009 Actual | 2010 Actual | 2011 Actual | 2012 Actual | 2013 Actual |
|---|---|---|---|---|---|
| Customer Measurement | 15,409 | 20,307 | 24,056 | 24,575 | 27,006 |
| Transmission System Reliability & Integrity | 17,304 | 13,607 | 14,824 | 17,715 | 24,357 |
| Distribution System Reliability | 9,723 | 6,573 | 9,157 | 9,579 | 8,947 |
| Distribution System Integrity | 14,501 | 12,542 | 19,049 | 18,310 | 28,740 |
| Sustainment CIAC | (5,954) | (4,569) | (5,589) | (3,586) | (6,986) |
| **Sustainment Capital - Total** | **50,983** | **48,460** | **61,497** | **66,592** | **82,066** |

**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.

**Response:**

FEI is not using the average 2017-2019P values to forecast capital expenditures. The three-year average is provided for reference only. Capital expenditures for the proposed term of the MRP are developed using a bottom-up approach based on known capital requirements for the 2020-2024 period.

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.

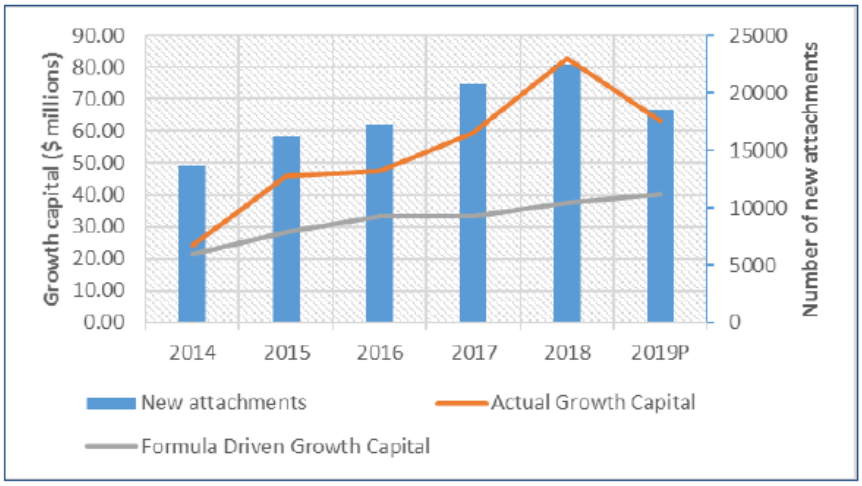
**Response:**

Sustainment capital expenditures summarized in Table C3-5, Page C-64 of the Application are stated on a Gross basis while total sustainment capital expenditures in Table C3-6 include Sustainment CIAC. The average 2017-2019 for Sustainment capital is $110.811 million if Sustainment CIAC is excluded from the calculation.

**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?

**Response:**

Growth capital is highly correlated with customer additions. Therefore, the Growth capital costs are closely variable in a 1:1 relationship with gross customer additions. Please refer to the responses to BCUC IR 1.8.2 and 1.8.3 for a discussion of the correlation between Growth capital and gross customer additions. Please also refer to the response to BCUC IR 1.41.2 for a comparison of the Growth capital formula components and the rationale supporting the proposed formula.

FBC has proposed a forecast approach for all of its capital expenditures (including the growth capital) which renders the question, in relationship to FBC, moot.

25.1.1 If no, please explain why not.

**Response:**

Please refer to the response to CEC IR 1.25.1.

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.

**Response:**

In the long term, all capital costs are variable. In the short term, however, the Utilities' capital cost structures include a combination of fixed, semi-variable and variable costs.

Specifically with respect to Growth capital, it is highly variable with customer additions in the short term. The use of contractors for new customer additions enables the utility to generally incur costs only when customers are added.

Sustainment and Other capital costs are generally a combination of semi-variable and fixed costs. Expenditures that are incurred to maintain the condition and integrity of existing assets are fixed costs that are required to ensure the ongoing safe and reliable operation of the gas and electrical systems and are independent of customer additions. Sustainment expenditures that are incurred to add capacity to stations or system components are related to customer

additions, but it is not a direct relationship and there are other condition-related and operational considerations that also impact investment decisions.

25.3 Please identify and quantify FBC's fixed, semi-variable and variable capital costs over the last 10 years.

**Response:**

FBC does not account for its capital costs as fixed, semi-variable and variable and therefore is unable to quantify the amounts incurred in these categories.

25.4 Please identify and quantify FEI's fixed, semi-variable and variable capital costs over the last 10 years.

**Response:**

FEI does not account for its capital costs as fixed, semi-variable and variable and therefore is unable to quantify the amounts incurred in these categories.

25.5 Please explain why FEI's cost per new customer addition increased rapidly from 2014-2018.

**Response:**

Please refer to the responses to BCUC IRs 1.8.9, 1.8.10 and 1.8.11.

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.

**Response:**

Please refer to the responses to BCUC IRs 1.8.13 and 1.8.19.

Please also refer to Exhibit B-1-1, Appendix B8-1, Section 2.1, FEI Capital Directives for a detailed explanation of the factors contributing to both the activity and cost variances over the Current PBR period.

**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 2018[109]. 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.

**Response:**

Not confirmed. The referenced table line utilizes actual additions; it is not possible to know actual additions in advance. The table shows the impact that the lag in the growth factor had on the Growth capital spending formula in the Current PBR. To resolve the lag issue, FEI has proposed to forecast gross customer additions (with a true up to actuals) which FEI believes will better match the timing of actual customer additions than the currently approved lagging growth factor. Additionally, please refer to the response to CEC IR 1.11.1 for a revised version of Table C1-2.

**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 actual[143] 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.

**Response:**

Please refer to the response to BCUC IR 1.8.13.

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.

**Response:**

FEI has extended the table to 2009 and recalculated the Unit Cost Growth capital using ten years of expenditures and gross customer additions. Please see the Unit Cost Growth Capital in the table below[12].

[12] Gross Customer Additions include Fort Nelson. Upon approval of the methodology for setting the Unit Cost Growth Capital, FortisBC will recalculate the unit cost excluding Fort Nelson from Gross Customer Additions. FortisBC expects that this will create a small increase to the unit cost.

| Line | Growth Capital ($000) | 2009 Actual | 2010 Actual | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | Average | Reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | New Customer Mains | $ 8,690 | $ 6,517 | $ 7,260 | $ 7,103 | $ 7,706 | $ 8,420 | $ 13,752 | $ 12,823 | $ 16,467 | $ 24,494 | | |
| 2 | New Customer Services | 17,778 | 19,046 | 19,104 | 22,850 | 22,936 | 24,675 | 30,064 | 31,246 | 39,149 | 53,993 | | |
| 3 | New Customer Meters | 2,092 | 2,313 | 2,779 | 2,651 | 2,548 | 1,583 | 1,960 | 3,430 | 3,927 | 4,397 | | |
| 4 | System Improvements (DP) | 4,012 | 1,604 | 806 | 535 | 1,079 | 2,439 | 5,723 | 2,953 | 3,566 | 4,433 | | |
| 5 | **Subtotal Growth (Gross)** | $ 32,573 | $ 29,480 | $ 29,949 | $ 33,138 | $ 34,270 | $ 37,117 | $ 51,499 | $ 50,452 | $ 63,108 | $ 87,316 | | Sum of Lines 1 through 4 |
| 6 | CIAC | (2,314) | (667) | (2,176) | (2,472) | (3,051) | (3,757) | (2,805) | (2,505) | (2,770) | (2,529) | | |
| 7 | **Total Growth (Net of CIAC)** | $ 30,260 | $ 28,813 | $ 27,773 | $ 30,666 | $ 31,219 | $ 33,360 | $ 48,694 | $ 47,947 | $ 60,339 | $ 84,787 | | Line 5 + Line 6 |
| 8 | **Inflation Adjustment** | 120.92% | 118.33% | 115.35% | 113.06% | 112.28% | 110.30% | 108.81% | 107.30% | 104.86% | 102.08% | | |
| 9 | **Infl Adj Growth (Net)** | $ 36,590 | $ 34,095 | $ 32,036 | $ 34,671 | $ 35,053 | $ 36,796 | $ 52,984 | $ 51,447 | $ 63,271 | $ 86,551 | $ 46,349 | Line 7 x Line 8 |
| 10 | **Gross Customer Additions** | 13,094 | 15,762 | 7,693 | 12,206 | 10,926 | 13,583 | 16,213 | 17,261 | 20,825 | 22,439 | 15,000 | |
| 11 | **Unit Cost Growth Capital $/CGA (Net of CIAC)** | $ 2,794 | $ 2,163 | $ 4,164 | $ 2,840 | $ 3,208 | $ 2,709 | $ 3,268 | $ 2,981 | $ 3,038 | $ 3,857 | $ 3,090 | 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** | | | | | | | | | | | 15,000 | Line 10 |
| 17 | **Unit Cost Growth Capital $/CGA Incremental** | | | | | | | | | | | $ 652 | Line 15 / Line 16 |
| 18 | | | | | | | | | | | | | |
| 19 | **Total Unit Cost Growth Capital $/CGA (Net of CIAC)** | | | | | | | | | | | $ 3,742 | Line 11 + Line 17 |

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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.

**Response:**

Please refer to the responses to BCUC IRs 1.8.9, 1.8.10 and 1.8.11.

**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.

**Response:**

Natural gas service became available on Vancouver Island in the fall of 1991. Since then, FortisBC and its predecessors have attached over 120 thousand customers. In the past five years, FortisBC has added over 21 thousand gross customer additions on Vancouver Island, with over 8 thousand coming from existing homes and businesses converting to natural gas, and 13 thousand coming from new buildings.

**FEI Gross Customer Additions**

| | 2014 | 2015 | 2016 | 2017 | 2018 | Grand total |
|---|---|---|---|---|---|---|
| Conversion | 1,021 | 1,381 | 1,123 | 2,137 | 2,983 | 8,645 |
| New Construction | 1,411 | 2,181 | 2,873 | 3,233 | 3,272 | 12,970 |
| Total | 2,432 | 3,562 | 3,996 | 5,370 | 6,255 | 21,615 |

On Vancouver Island, there are over 54 thousand existing buildings on or near gas main that are not yet attached to the gas system. Based on the recent percentage of uptake of natural gas service both on and off main, FortisBC believes that approximately 35-40 percent of the remaining existing buildings not yet attached currently use either oil or propane for heating. With the stable competitive price of natural gas compared to oil and propane expected to continue, FEI anticipates the overall annual increase in the demand for gas service to existing homes, both on and off main, throughout Vancouver Island will continue as seen in the table above.

While new home construction is expected to dip compared to the last two years, the demand for new homes on Vancouver Island is expected to remain strong over the next five years. According to CMHC data "*the CRD grew by 1.2% or 5,843 persons. The CRD also has Canada's lowest unemployment rate of 3.3% (May 2019). These factors combined suggest that higher than normal housing starts for the CRD will remain constant for the foreseeable future"*.[13]

With respect to the Mid Island, according to CMHC*, "Combined data indicates that strong construction market activity continues with overall increases YTD in both housing starts and completions. Low unemployment and a net increase in migration to the area underpins a forecasted continuation in above average housing activities."*

Overall, FortisBC anticipates a total of approximately 15 thousand to 20 thousand customer additions on Vancouver Island over the next five years. Demand for new homes on Vancouver Island remains higher than supply.

28.2 Does FEI expect to achieve economies of scale when it negotiates for services that it expects to increase? Please explain.

**Response:**

While FEI recognizes that it might be a reasonable expectation that there would be economies of scale for increasing service levels (all other market conditions being equal), that has not been the case in the Current PBR Plan term. The mains and services contract was not subject to a negotiation on pricing during the Current PBR Plan term until the fall of 2018 when FEI was forecasting a reduction in overall customer growth activity. Therefore, FEI does not expect to achieve economies of scale as we cannot guarantee a work volume to contractors.

Please also refer to the response to BCUC IR 1.42.3.1 for a discussion of factors that influence contractor mains and services pricing.

[13] CMHC Stats and Completion Survey 2019.

**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.

**Response:**

All O&M and capital costs associated with Major Projects will be addressed in their respective CPCN applications, as provided in the 2015 CPCN Guidelines which includes "estimates of the value of all of the costs and benefits" for the project under consideration. Following approval of a CPCN, any changes to O&M and Regular capital as a result of the CPCN project will be brought forward in the appropriate rate-setting proceeding, consistent with the treatment under the Current PBR Plans. Specifically, in the 2014 PBR Decisions, the Panel recommended that:

> if capital associated with a particular CPCN is excluded from the formula, the CPCN review of that project should include an assessment by the Commission of any potential impact of the project on O&M. If appropriate, an adjustment to the formula based O&M spending envelope should then be made while associated O&M increases or decreases will be added to Base O&M.[14]

FortisBC will continue with this treatment.

[14] FEI PBR Plan Decision, page 182 and FBC PBR Decision, page 175.

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

**Response:**

Please refer to the response to CEC IR 1.29.1.

**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.

**Response:**

FBC is not using the average 2017-2019P values to forecast capital expenditures. The three-year average is provided for reference only. Capital expenditures for the proposed term of the MRP are developed using a bottom-up approach based on known capital requirements for the 2020-2024 period.

30.2 Why did FBC's growth capital decline in 2019 P.

**Response:**

The projected decrease in FBC's Growth Capital in 2019 is mainly the result of lower customer new connects. (Please refer to the response to BCUC IR 1.52.1 which shows the components of Growth capital for 2014-2019P). FBC is expecting a lower volume of customer connections compared to 2018 due to economic factors. For example, the BC Government has reduced its initial forecast of economic growth for 2019 from 3.1 percent to 2.3 percent. In addition, housing

starts in the Okanagan and Kootenay regions for the first quarter of 2019 were approximately 25 percent lower than in the same period in 2018.

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.

**Response:**

Other capital consists of Equipment, Facilities and Information Systems expenditures. Please refer to the response to BCUC IR 1.52.1 which shows the Other capital expenditures by category for the period 2014-2019P.

Increased spending for Equipment is due to increased capital expenditures for Vehicles, which had been deferred from the 2014-2016 period due to overall capital pressures at FBC.

Facilities deferred projects for the 2014-2016 period due to overall capital pressures at FBC. In 2017, 2018 and 2019 the Facilities Other capital expenditures are higher to allow completion of these projects, as well as deal with the aging building asset inventory.

IS capital expenditures in 2017, 2018 and 2019 were higher than previous years due to the increased demand for technology and technology projects, as well as improvements in resiliency. This included cybersecurity, particularly for external facing customer systems, and system availability, as more systems are required to be available 24/7.

**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?

**Response:**

The statements in the preamble to this question are not intended to imply that investments in EV charging station assets would be approved for any treatment other than rate base. FBC expects that the outcome of Phase 2 of the BCUC's EV Inquiry will permit public utility investment in, and allow for recovery through rate base treatment of, EV charging stations.

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?

**Response:**

The treatment of variances would be the same in either case. The proposal to capture flow-through variances in a single deferral account (with the exception of variances for which specific deferral accounts had already been approved) is consistent with the treatment approved by Order G-163-14. The Reasons for Decision accompanying G-163-14 stated:

> the Commission Panel **approves the use of a single deferral account for each of FBC and FEI to capture all of the flow-through variances.** The Panel considers this approach to be both consistent with the approach utilized in FBC's

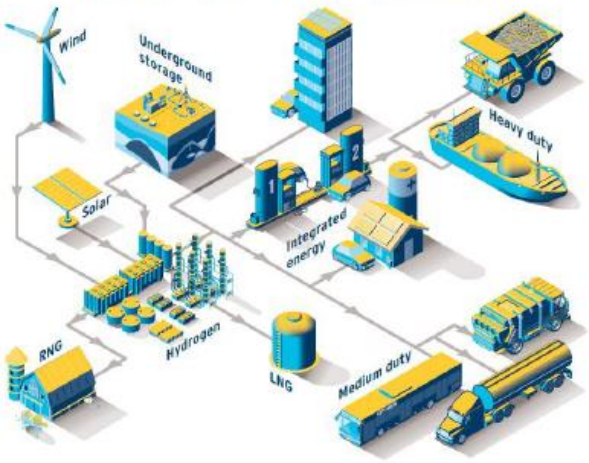
previous PBR plan and to be the most administratively efficient way to achieve the flow-through of costs/revenues to rate-payers.[15]

This treatment also aligns with FEI's treatment of its NGT fueling station variances. Each item included in the Flow-through account is tracked and reported individually to ensure transparency.

[15] Order G-163-14, Appendix A, page 2.

**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 mov toward decarbonization has created an increased need for innovation and the adoption of r 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.

**Response:**

No. The Clean Growth Innovation Fund is one of FortisBC's strategic responses to specific climate policy direction from government such as the CleanBC's renewable gas content target of 15 percent by 2030. As also stated in Section C6.2.3 of the Application, advancing clean growth innovation is a shared responsibility between utilities, regulators and policy makers.

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

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

| Feature | Description |
|---|---|
| Responsive to climate policy | • Focuses on innovative activities that reduce GHG emissions. |
| **Responsive to customer expectations** | • Focuses on bringing forward cost-effective energy solutions which reduce customer emissions. |
| Clear focus for innovative activities | • Complementary and incremental to current activities.<br>• Both pre-commercial and commercial stages of commercialization.<br>• Span entire utility value chain (supply, transmission & distribution, and end uses). |
| Predictable funding | • 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 | • Three stages to develop projects (identification, evaluation and selection, and execution).<br>• Senior management oversight and external advisory group.<br>• Reporting in Annual Review process.<br>• 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.

**Response:**

Confirmed.

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.

**Response:**

Customer participation in various programs offered by FEI and FBC provides evidence of customers' expectations that the Companies will develop cost-effective energy solutions which reduce customer emissions.

The fact that FEI and FBC have a DSM program, and that customers are voluntarily participating, is evidence of customer expectations. This program has been in place for a number of years and has resulted in significant GHG reductions.

Similarly, the RNG service offering provides evidence that customers are seeking cost effective energy solutions which reduce customer emissions. The RNG program is a voluntary program that substitutes GHG emissions-free fuel for regular natural gas to accomplish the same function. RNG sells for a premium versus regular natural gas, but is more cost effective than other renewable energy types such as electricity. The RNG program has seen strong growth since its inception and has been in place since 2011 for residential customers and since 2012 for commercial customers. There are now more than 10,000 customers participating in the RNG program today, with just over 150 commercial customers included in that number.

Additionally, FEI's 2016 RNG Customer Segmentation Report showed that approximately one-half of FBC residential customers had an interest and were willing to pay an additional amount for RNG. Customers were motivated by a desire to help the environment by reducing pollution and lowering carbon emissions. Nearly six-in-ten customers expressed this view.

The government of BC published CleanBC in November 2018 which, among other things, established a target of 15 percent renewable gas by the year 2030. FEI expects that the amount of RNG supply will continue to grow and there will be a further reduction in emissions over time as FEI works toward this goal.

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

> **6.4.1 Innovative Technologies**
>
> FEI's[176] 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.

**Response:**

To clarify, the DSM Innovative Technologies program is not restricted from allocating funds for initiatives designed to reduce GHG emissions as long as the activities meet the definition of "demand-side measure" in the *CIean Energy Act*, including conserving energy or promoting energy efficiency, or reducing energy demand. The Clean Growth Innovation Fund is designed to address those gaps where GHG emissions are possible but a funding mechanism is not available. An example of a technology that doesn't meet the definition of demand-side measure would be a device that doesn't capture waste heat to reduce the overall buildings natural gas

1 consumption but rather scrubs carbon from exhaust gases to reduce the amount of GHGs
2 emitted to the atmosphere.

3

**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 | • Focuses on innovative activities that reduce GHG emissions. |
| Responsive to customer expectations | • Focuses on bringing forward cost-effective energy solutions which reduce customer emissions. |
| Clear focus for innovative activities | • Complementary and incremental to current activities.<br>• Both pre-commercial and commercial stages of commercialization.<br>• Span entire utility value chain (supply, transmission & distribution, and end uses). |
| Predictable funding | • 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 | • Three stages to develop projects (identification, evaluation and selection, and execution).<br>• Senior management oversight and external advisory group.<br>• Reporting in Annual Review process.<br>• 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 month[179] 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.

**Response:**

Please refer to the response to BCUC IR 1.70.2.1. FortisBC has not included financing costs in the referenced IR because the timing of collection of funds and incurring expenditures is as yet unknown.

35.2 Please explain how the Utilities arrived at the expected funding levels and provide details as to how the funding will be spent.

**Response:**

Please refer to the response to BCUC IR 1.70.1 and Exhibit B-1-1: Appendix C6-4.

35.3 Why do the Utilities believe it is important that ratepayers share equally in the cost rather than on a volumetric basis?

**Response:**

Please refer to the response to BCUC IR 1.79.3.

**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'.

**Response:**

Please refer to the responses to BCUC IRs 1.81.1 and 1.81.2 and BCOAPO IRs 1.5.1, 1.5.3 and 1.5.4.

36.2 Please elaborate on how the fund will 'leverage partnerships'.

**Response:**

Please refer to the responses to BCUC IRs 1.71.5.2 and 1.71.5.3, and BCOAPO IR 1.85.3.

36.3 Please elaborate on and provide specific measurements of how the Utilities will evaluate the success or failure of the project.

**Response:**

Please refer to the responses to BCUC IRs 1.80.1, 1.80.1.1 and 1.80.2.1 to 1.80.2.4.

36.4 Do the Utilities have specific objectives that they expect to achieve by the end of the MRP period?

**Response:**

FortisBC describes the purpose and objective of the Clean Growth Innovation Fund on page C-142 of the Application. For ease of reference, FortisBC states there that the purpose of the Innovation Fund is to ensure there are opportunities for FortisBC to participate and thrive in an evolving climate policy context by continuing to utilize its natural gas and electric delivery systems. The Fund's main objective is to accelerate the pace of clean energy innovation to achieve performance breakthroughs and cost reductions to provide widely affordable, safe and reliable clean growth solutions for our customers (per Canada's commitment to Mission Innovation). Please also see Appendix C6-4 of the Application which described the main innovation activities identified. FortisBC has also set out the principles of the Innovation Fund as quoted in the preamble. FortisBC has not developed more specific objectives for the Innovation Fund at this time.

36.4.1 If yes, please provide.

**Response:**

Please refer to the response to CEC IR 1.36.4.

36.4.2 If no, please explain why not.

**Response:**

Please refer to the response to CEC IR 1.36.4.

36.5 Do the Utilities expect to hire FTEs to conduct the work, or do they expect to utilize existing resources? Please explain.

**Response:**

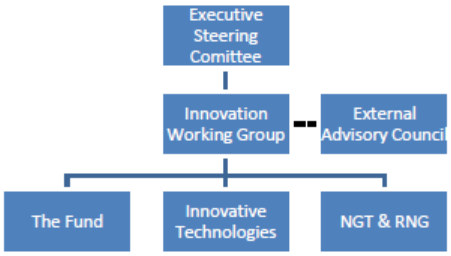
FortisBC does not expect to hire additional employees to conduct the work related to the Innovation Fund.

**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 Executive Steering Committee (the Committee) will be established to provide the strategic direction of the Fund. The Committee will be comprised of senior staff representing both FEI and FBC. Additionally, FortisBC proposes to establish an External Advisory Council made up of stakeholders to provide insight and feedback on the Companies' innovative initiatives on a 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 month[179] 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?

**Response:**

For clarity, FEI and FBC have not proposed to allocate time/labour to the Fund; however, it is expected that some expenses (approximately $100 thousand) will be incurred related to incremental travel and support costs. These incremental costs are included within the Fund and recovered by the proposed rate rider. In other words, they are not double counted as suggested in the question. Please refer to the responses to BCUC IRs 1.78.1 to 1.78.6.

**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**

| *Utility* | *TFP* | *Stretch Factor* | *X Factor* |
|---|---|---|---|
| **FBC** | 0.93 | 0.1 | 1.03 |
| **FEI** | 0.90 | 0.2 | 1.10 |

38.1 Please confirm that TFP means Total Factor Productivity.

**Response:**

Confirmed.

38.2 Please confirm that the concept of Total Factor Productivity is to recognize ongoing productivity gains occurring in the industry overall.

**Response:**

Not confirmed. The main concept of Total Factor of Productivity is to calculate the average change in industry productivity over time and not necessarily the "ongoing productivity gains". As explained in response to BCUC IR 1.13.2 as well as Appendix C4-2 of the Application, a review of recent productivity numbers produced by various experts in other regulatory proceedings indicate that in the last 10 to 15 years the average utility industry productivity has been trending downward.

38.3 Do the Utilities have evidence other than the article by Makholm in B-1-1 Appendix C4-1 regarding the use of the X factor in either gas or electric Utilities?

**Response:**

Yes. The Application includes a discussion of productivity study results and the decisions of regulators in Appendix C4-2. For a summary of FortisBC's approach in this proceeding regarding the X-Factor determination please refer to the responses to BCUC IRs 1.13.2 and 1.17.5.

38.3.1 If yes, please provide.

**Response:**

Please refer to the response to CEC IR 1.38.3.

38.4 Please confirm that in the previous PBR the X factor included a TFP and a Stretch factor.

**Response:**

Confirmed.

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.

**Response:**

No. Please refer to the responses to BCUC IRs 1.17.3, 1.17.4 and 1.17.5.

# 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 CO2e per Customer | 0% | 0% | 0% | -16% | -20% | NA |
| Total Emissions tonnes CO2e 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?

**Response:**

As explained in the response to CEC IR 1.7.1, the ratemaking model affects incentives and influences the strategies that the Companies may adopt to address utility challenges. In this context, FortisBC will adapt its business plans to the BCUC-approved rate plan. Therefore, at this time and until a decision is received, FortisBC does not have specific plans to improve performance in specific areas during the term of the proposed MRPs.

FortisBC believes it has developed an appropriate MRP framework, providing the necessary incentives, traditional and non-traditional (i.e., targeted incentives), to encourage a continued focus on productivity and efficient operations, while enabling FEI and FBC to address the longer-term challenges and opportunities facing the Utilities.

During the term of the Current PBR Plans, FortisBC has been successful in creating a productivity focused culture and undertaken a number of productivity initiatives, contributing to improved performance and realized efficiencies. To ensure continued diligence on performance during the term of the proposed MRPs, FortisBC will be maintaining its broad-based productivity focus that it has successfully cultivated.

The benchmarking studies offer potential areas for improving performance for FortisBC to consider. However, as indicated by Concentric, the benchmarking study has limitations, including its inability to quantify causal relationships between operating circumstances and costs, and between inputs and outputs. Further, the standard benchmarking comparison is a relative one, and therefore does not offer insights into optimal performance in an absolute sense.

39.2.1 If yes, please discuss.

**Response:**

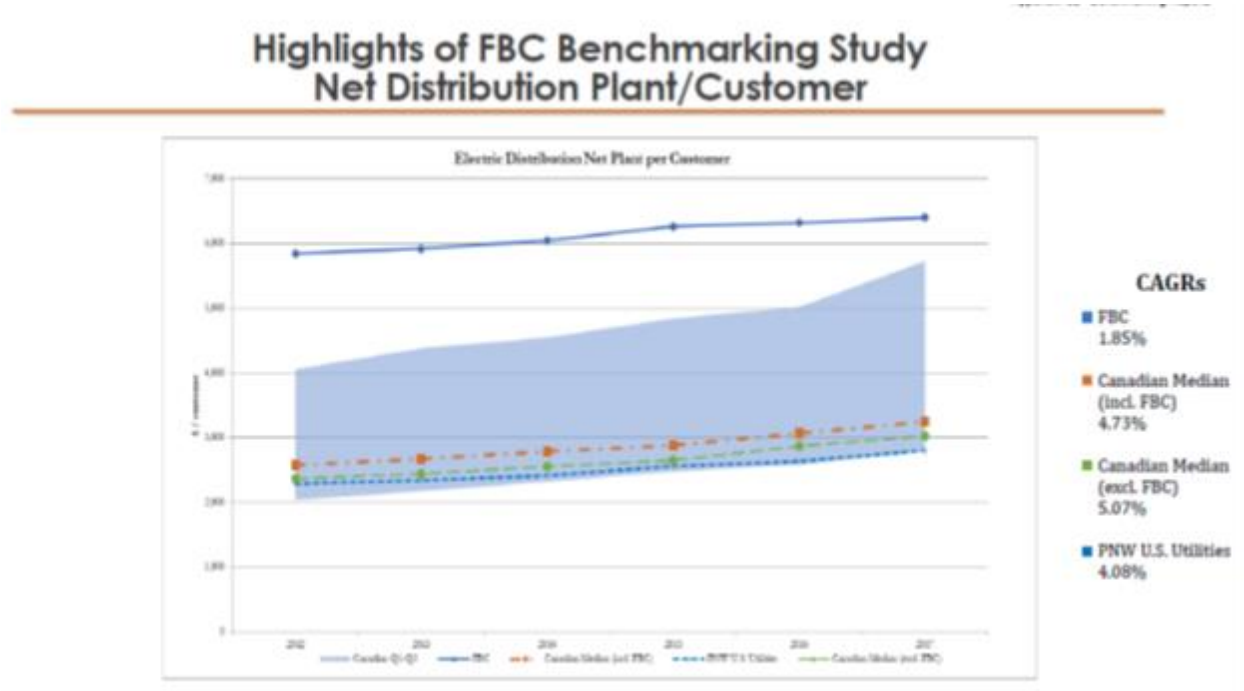
Please refer to the response to CEC IR 1.39.1.

39.2.2 If no, please explain why not.

**Response:**

Please refer to the response to CEC IR 1.39.1.

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




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

**Response:**

The following response has been prepared by Concentric.

While benchmarking data provides useful information regarding relative performance, it does not provide the cause of that differential other than if specific contributors can be identified. In this case, as discussed on page 20 of Appendix C2-2, FBC's capital spending from 2005 through 2012 appears to be a significant contributor to the differentials noted between FBC and the peer groups. One other potential factor that Concentric identified in the study is economies of scale. Specifically, as discussed in the study, the lack of scale of FBC compared to the peer companies is a potential factor contributing to net plant per unit being greater than the peer company medians.

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

**Response:**

The following response has been prepared by Concentric.

The benchmarking study considers medians rather than averages due to potential impacts that outliers would have on the averages for each metric due to the size of the peer group.

**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.

**Response:**

FortisBC has not tracked its costs in this way, but is able to provide the following two examples of items that would have been approved for exogenous factor treatment in the Current PBR term[16], but for the incremental costs not exceeding the materiality thresholds for FBC:

- O&M Expenses arising from new or amended Mandatory Reliability Standards approved by Orders R-32-14 (Assessment Report No 7) and R-32-16 (Assessment Report No. 9). The incremental costs were $0.020 million and $0.080 million respectively.

[16] Approval was received for these same items where the costs did exceed the materiality threshold.

- Capital Expenditures related to damage from wildfires in 2015 ($0.250 million) and 2017 ($0.483). These amounts were not eligible for exogenous factor treatment because the repair costs at individual locations did not exceed the threshold.

41.2 Please confirm that the Utilities have a right to earn a fair return, which is not altered by formulaic ratemaking.

**Response:**

The Utilities have the right to a reasonable opportunity to earn a fair return on their invested capital, irrespective of the ratemaking approach.

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.

**Response:**

This cannot be confirmed without an understanding of the circumstances. In some cases non-controllable costs may not be recoverable; however, this is not a certain outcome of cost of service regulation. A fundamental principle of rate regulation is that utilities are afforded the opportunity to recover prudently-incurred costs, and utilities are not precluded from applying for recovery of material expenditures that were unknown at the time that rates were set.

For example, in December 2012 FBC applied to establish a deferral account to capture 2012 and 2013 O&M costs related to Mandatory Reliability Standards audit and compliance activities, which had not been known at the time of FBC's application for 2012-2013 rates. The deferral of these costs was approved by Order G-23-13 and the disposition of the accounts was reviewed and approved in the next rate setting proceeding and approved by Order G-139-14. As illustrated by this example, recovery of non-controllable costs is not a unique component of PBRs or MRPs.

41.4 Please discuss how the Utilities address exogenous cost items under Cost of Service ratemaking.

**Response:**

Please refer to the response to CEC IR 1.41.3.

**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 |

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?

**Response:**

The application of the materiality threshold to different circumstances still has the potential to give rise to confusion or complexity, as future exogenous events may present new facts and circumstances not previously considered.

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.

**Response:**

Please refer to the response to CEC IR 1.42.1.

**SYSTEM REQUIREMENTS**

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

> ***1.5.2.2 Increasing Requirements for Generation Maintenance***
>
> Existing generation infrastructure is aging[35] 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.

**Response:**

Generation infrastructure such as concrete structures and auxiliary systems including cooling systems, valves, piping, pumps, cranes, hoists and gates have been in service between 78 to 110 years. While the 15 major generating units in operation have undergone upgrades in the past, plant auxiliary systems have not. As concrete structures and auxiliary systems age, they require additional maintenance. The following examples illustrate the nature of maintenance activities that have increased over the last 10 years as FBC infrastructure ages:

- Major generating unit Inspections require more in depth condition assessments and testing to ensure that the units and auxiliary systems are functioning as required. FBC has had to implement a variety of asset management tools such as condition assessments, 3D scanning and advanced testing methods (such as bearing clearance checks) to improve maintenance practices and equipment condition knowledge. Due to the absence of detailed drawings of the existing generating units, FBC needs to implement a program to 3D scan the unit, parts and pieces and use the 3D model as an engineering tool to develop drawings and disassembly and assembly instructions that will help provide for safer work practices.
- Customized tooling, jigs and fixtures are required to safely jack the unit shafts around to determine bearing clearances and to lower and remove the guide bearing housings safely.

- Equipment such as drop stops, audible alarms, hook latches, load limiters, rail sweeps, load capacity markings are required to be installed and maintained on cranes and hoists. These items were not required when the cranes and hoists were commissioned. Each FBC plant has a variety of cranes and hoists which have components that have not been upgraded since first installed. Today's standards for this type of equipment are more stringent than when they were first commissioned.
- The intake gates and tailrace gates used to isolate the generating units from the water flow require additional sealant to eliminate leaks. Due to their style (metal to metal) and age, the seals on the gates are not effective in stopping the water entering the unit water passage and FBC needs to place ash between the gates and the embedded seals to obtain an adequate seal.
- Concrete spalling is present on some concrete structures. The spalling is a result of corrosion on the reinforcing bars used in the concrete. More frequent inspections and maintenance is required to manage the structure.

43.2 Please provide forecasts of the increases in maintenance that FBC anticipates over the next five years

**Response:**

FBC is proposing an Index-Based approach to determine overall O&M funding for the MRP period. As a result, FBC has not prepared a five-year forecast for the term of the proposed MRP.

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.

**Response:**

Confirmed. The 2019 expenditures for the FBC Application for a CPCN for the Grand Forks Terminal Station Reliability Project (GFT CPCN Application) will be excluded from 2019 formula spending.

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?

**Response:**

Yes. O&M savings will be realized from a reduction in expense from annual line patrols and brushing for the transmission lines that will be salvaged and rebuilt as distribution, net of slightly higher station O&M expense. Following approval of the CPCN and completion of the project, FBC will reduce Base O&M expense by $0.089 million (in $2021) as set out in the CPCN application.

43.5 If yes, please provide quantification for the maintenance savings that will be achieved as a result of the CPCN.

**Response:**

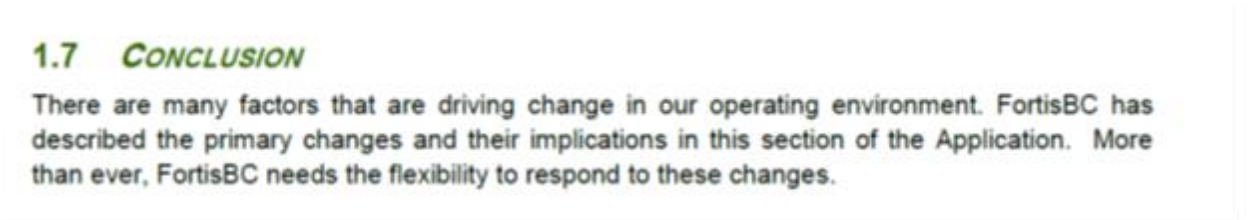
Please refer to the response to CEC IR 1.43.4.

43.5.1 If not, please explain why not and provide evidence with quantification that the maintenance costs will remain the same or increase.

**Response:**

Please refer to the response to CEC IR 1.43.4.

**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.

**Response:**

Please refer to the response to BCUC IR 1.1.1.

**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.

**Response:**

As provided in the tables below, the actual total earnings sharing benefit received by customers from 2014 through 2018 was $17.356 million for FEI customers and $2.195 million for FBC customers.

By simply multiplying those amounts by 60/50 or 1.20, the revised earnings sharing benefit for customers using a 60/40 customer/utility split can be derived. Assuming the SQI penalties were applicable to every year of the PBR term, the difference between the revised sharing (60 percent to customers) and actual sharing (50 percent to customers) would result in an additional benefit to FEI customers of approximately $3.471 million and an additional benefit to FBC customers of approximately $439 thousand.

Note, the tables below do not include 2019 actual results as they are not available yet; however, the SQI benchmarks would also be applicable for that year.

| FEI ($000s) | 2014 | 2015 | 2016 | 2017 | 2018 | Total |
|---|---|---|---|---|---|---|
| Actual Earnings Sharing (50%) | $ 3,657 | $ 4,599 | $ 5,162 | $ 2,943 | $ 995 | $ 17,356 |
| Earnings Sharing with SQI penalties (60%) | $ 4,388 | $ 5,519 | $ 6,194 | $ 3,532 | $ 1,194 | $ 20,827 |
| Difference (SQI Penalties Sharing - Actual Sharing) | $ 731 | $ 920 | $ 1,032 | $ 589 | $ 199 | $ 3,471 |

| FBC ($000s) | 2014 | 2015 | 2016 | 2017 | 2018 | Total |
|---|---|---|---|---|---|---|
| Actual Earnings Sharing (50%) | $ 330 | $ 481 | $ 727 | $ 524 | $ 133 | $ 2,195 |
| Earnings Sharing with SQI penalties (60%) | $ 396 | $ 577 | $ 872 | $ 629 | $ 160 | $ 2,634 |
| Difference (SQI Penalties Sharing - Actual Sharing) | $ 66 | $ 96 | $ 145 | $ 105 | $ 27 | $ 439 |

**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.

**Response:**

Please refer to the response BCUC IR 1.88.2.

46.2 Please provide any literature the Utilities have available as to appropriate average speed of answer for Canadian Utilities.

**Response:**

Please refer to the response BCUC IR 1.88.2.

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?

**Response:**

Please refer to the response BCUC IR 1.88.4.

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.

**Response:**

FBC and FEI do not track “total wait times” as one combined metric. Rather, FBC and FEI track the average speed of answer (ASA) and hold times as two separate metrics as they are two different parts of the customer experience. Average speed of answer records the time prior to speaking with a customer service representative (CSR) and the hold time tracks the time a customer is placed on hold while on the call with the CSR.

46.5 If the Information was available in 2014, please explain why this metric was not included in the former PBR.

**Response:**

Average Speed of Answer (ASA) was available in 2014 and discussed during the proceedings as a supportive metric to Telephone Service Factor (TSF) and not as an SQI. Based on intervener recommendations, FortisBC was directed to add abandonment rate as an informational indicator by the BCUC in Order G-138-14, dated September 15, 2014. Please refer to the response to BCUC IR 1.88.3 for the reasons why FortisBC is proposing ASA as an informational indicator in place of the telephone abandonment rate.

**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:
>
> Targeted Incentive = Total Basis Points Achieved x 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.

**Response:**

It is in the best interest of customers, the Utilities and society for the Utilities to pursue projects which address strategic and emerging issues, serve customer needs, and maintain the long-term health of the Utilities. In this regard, FortisBC believes its interests are aligned with its customers.

47.1.1 If not confirmed, please explain why not.

**Response:**

Please refer to the response to CEC IR 1.47.1.

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.

**Response:**

Please refer to the response to BCUC IR 1.96.3.

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.

**Response:**

The BCUC cannot direct FortisBC to achieve the proposed targets. As context for the discussion below, assuming such a direction were valid, the utility would be liable for administrative penalties or other sanctions if it failed to achieve the direction.

By their nature, FortisBC's proposed targets are not something that can be directed by the BCUC. The proposed targets are designed to be stretch targets that will require significant effort to achieve and may not be achievable over the term of the proposed MRPs. The targets for Renewable Natural Gas, for example, require agreements with third party suppliers, while achieving growth in Natural Gas for Transportation requires businesses to agree to convert their fleets and become customers of FEI. The purpose of the proposed targeted incentives is to provide an incentive for FortisBC to engage in the extraordinary efforts required to achieve the proposed stretch targets, which will in turn provide benefits to customers. It would not be

reasonable for the BCUC to direct a utility, punishable upon default, to achieve a target that is not necessarily achievable or relies on the agreement of third parties.

More generally, such a direction would intrude about the zone of utility management. The case of *British Columbia Hydro and Power Authority v. British Columbia Utilities Commission*, [1996] B.C.J. No. 379, 71 B.C.A.C. 271, 20 B.C.L.R. (3d) 106, put it this way:

> 58 Taken as a whole the *Utilities Act*, viewed in the purposive sense required, does not reflect any intention on the part of the legislature to confer upon the Commission a jurisdiction so to determine, punishable on default by sanctions, the manner in which the directors of a public utility manage its affairs.

While directions punishable upon default are not an option, FortisBC's proposed targeted incentives provide a ratemaking mechanism whereby the BCUC can provide leadership, direction and encouragement to the Utilities to achieve certain positive outcomes for customers in alignment with the public interest.

**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 | • Focuses on innovative activities that reduce GHG emissions. |
| **Responsive to customer expectations** | • Focuses on bringing forward cost-effective energy solutions which reduce customer emissions. |
| Clear focus for innovative activities | • Complementary and incremental to current activities.<br>• Both pre-commercial and commercial stages of commercialization.<br>• Span entire utility value chain (supply, transmission & distribution, and end uses). |
| Predictable funding | • 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 | • Three stages to develop projects (identification, evaluation and selection, and execution).<br>• Senior management oversight and external advisory group.<br>• Reporting in Annual Review process.<br>• 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?

**Response:**

There are minimal overlapping benefits from the Clean Growth Innovation Fund and consequent actions that would be paid for by customers separately. A key benefit of the of the Clean Growth Innovation Fund would be successful research and development activities that ultimately lead to the commercialization or improvement of a technology in renewable gas, clean transportation, or emissions reductions. However, commercialization is just the first step in

adopting and benefiting from a new technology. For example, a breakthrough in renewable gas technology that reduces costs or increases availability would still need to be developed into viable projects and implemented over a number of years. In other words, a considerable effort would be required to reap the benefits of the technology brought to commercialization through the Clean Growth Innovation Fund.

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.

**Response:**

FortisBC's past PBR plans have generally made allowances for exogenous factors or costs that are not within the control of the utility, and similar treatment has been afforded in cost of service plans. Typical costs that might be afforded treatment outside the PBR formulas are taxes (controlled by different levels of government), cost of capital-related issues such as interest rates (affected by capital market conditions and/or BCUC decisions), or extraordinary costs from natural disasters. However, FEI's 2004-2009 PBR recognized that certain categories of costs, such as property taxes, may be partially controllable by the utility, and therefore a positive incentive mechanism was developed to encourage the utility to make extra efforts to reduce or optimize costs in this area[17]. The "Partially Controllables" provision of the 2004-2009 PBR plan also allowed FEI, interveners, or BCUC staff to bring forward other proposals for positive incentives with respect to partially controllable costs in the Annual Reviews[18].

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.

**Response:**

Please refer to the response to BCUC IR 1.96.5.

[17] BCUC Order G-51-03, Appendix A, Pages 3 and 15, and Appendix 5 (Appendix A, Pages 29 and 30).
[18] BCUC Order G-51-03, Appendix A, Page 16.

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

convenient access to services and information and, while not all interactions are best suited for digital channels[197], 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.

1 **Response:**

2 Please refer to the response to BCOAPO IR 1.92.7.1.

3

**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.

**Response:**

FBC continues to manage power supply costs effectively and safely. FBC is proposing the PSI to incent FBC to increase efficiency, reduce costs and enhance performance in the area of power supply, which will further align the interests of the customer and FBC. Customers benefit when FBC exerts substantial effort on power supply optimization, and further alignment of these interests will provide additional benefits to the customer.

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.

**Response:**

Please refer to the response to CEC IR 1.50.1.